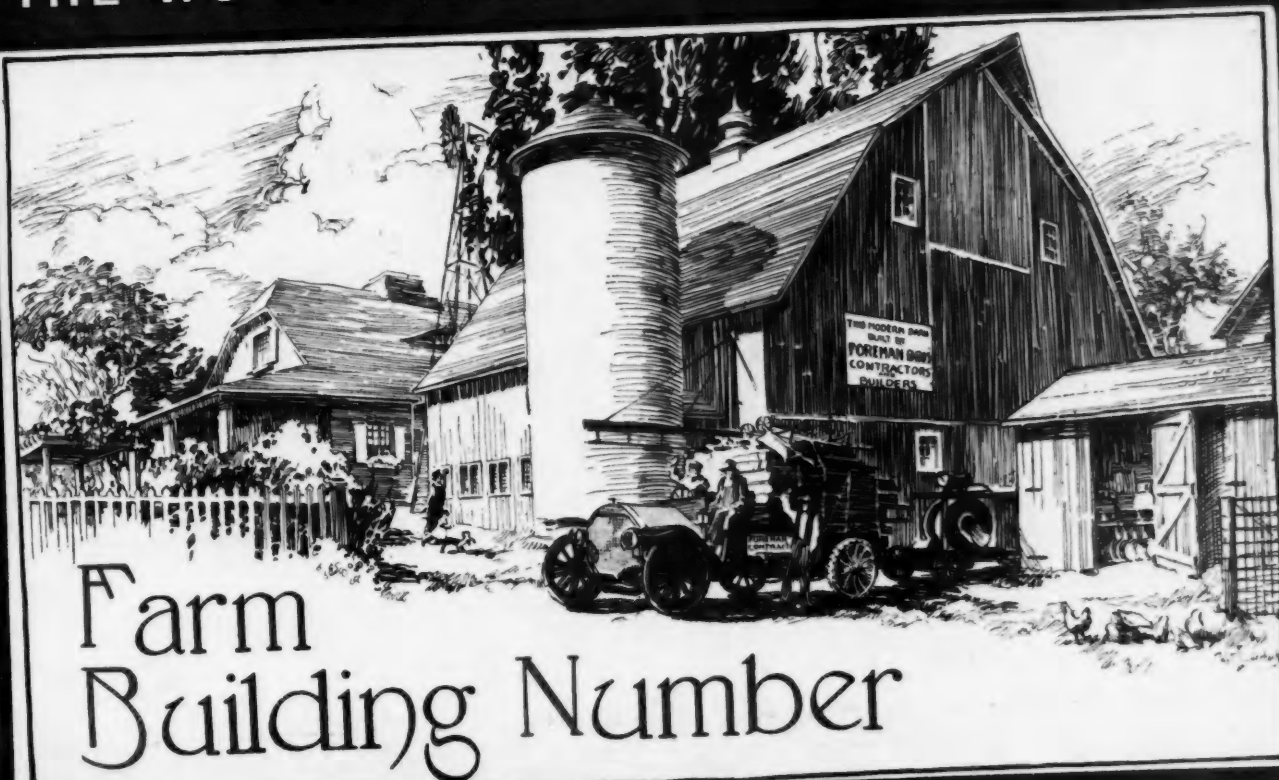


FEBRUARY 1915

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER



Price 20 Cents

The Greatest Mixer Price Ever Made

The manufacturing facilities that are responsible for the astonishing price at which we sell the National Mixer are made possible only by our tremendous selling power. After you read over the following specifications you will see that only great volume of outlet could make such figures possible at all:—

DRUM: Capacity, 5 cu. ft. unmixed material, 34" x 32", semi-cast-steel heads, steel centre, steel blades raised off drum.

POWER: 4-h.p. National Engine, standard equipment. Novo Engine supplied if desired.

DRIVE: Special chain through National clutches.

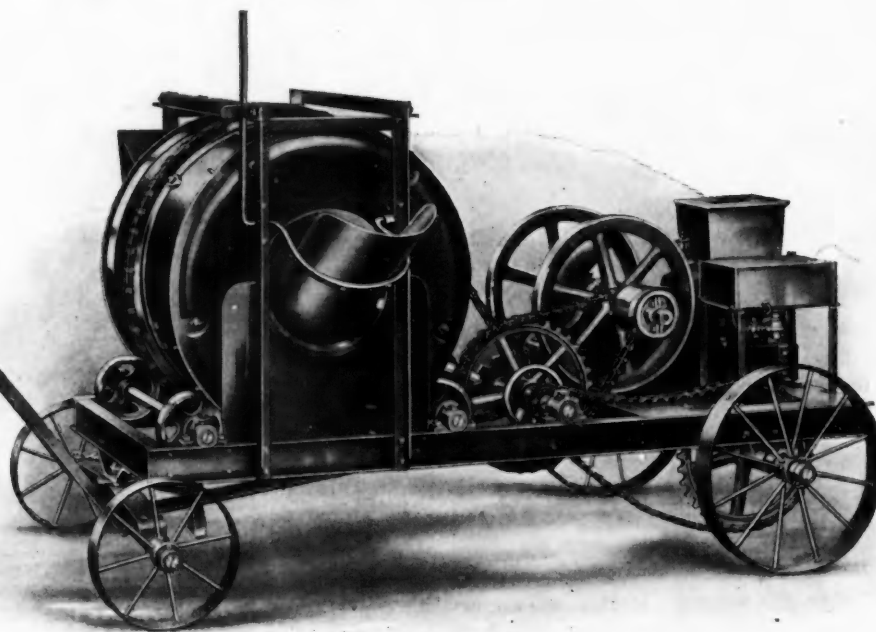
WHEELS: Steel 14" x 16" on 1½" steel axles.

HOPPERS: Standard charging batch and side-loader.

TRACTION: On rear wheels, controlled by Jaw and National clutches.

STEEL CONSTRUCTION THROUGHOUT.

The National Mixer



*You Can Buy the "National" Concrete Mixer Direct From Us or Through
YOUR DEALER*

A free booklet will be sent you upon request telling all about this wonderfully efficient and low-priced mixer.
Send for it today.

Just See This Machine at the Cement Show

NATIONAL MIXER CO., ²⁰⁰ Sixth Street, Oshkosh, Wisconsin

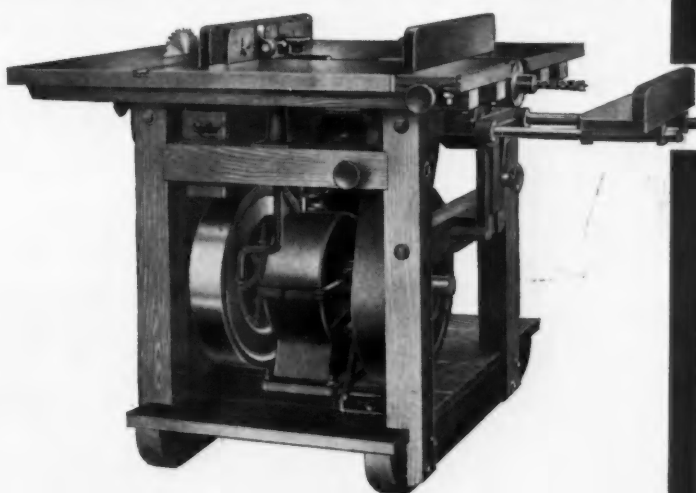


One Machine Nine Operations

WE'LL be glad to give you the names of those who are using the "Eveready" Saw Rig---the one machine that performs nine duties and does them all well---the machine that lives up to its name ---

The Eveready Saw Rig

**It Cross-Cuts,
Rip-Saws,
Joints, Sands,
Jig-Saws,
Grooves, Bores,
Mitres and
Grinds Tools**



Saves the Wages of Six Men

We would like to submit to you the proof of this statement: "Every day you operate without investigating the merits of the Eveready Saw Rig you are doing your pocket-book an injustice." We would like you to know, among other things, what users of the Eveready think of it---men who have paid out their good hard money for it.

Our Big Free Book will be sent you for your name and address on a postal.

Oshkosh Eveready Saw Rigs and Oshkosh Mixers will be Exhibited at the Chicago Cement Show February 10-17, 1915.



OSHKOSH MFG. CO.

316 S. Main Street

::

OSHKOSH, WISCONSIN

"It Does Just as Good Work as in 1907"



Batavia, N. Y., Jan. 5, 1915.

THE KNICKERBOCKER CO.
Jackson, Mich.

Gentlemen:—

How cheap can you supply us a new 1½ H. P. Ideal engine for our old power mixer, purchased of you April, 1907. The old Mixer is in pretty good shape. It runs and does just as good work as in 1907.

Wishing you good luck for 1915, I am,

Yours very truly,
E. G. BUELL,
(Buell & Burr).

Mr. Buell bought this Coltrin Mixer in April, 1907—it
has been in constant use since.

In July, 1912, he bought a second Coltrin for their block plant.
In April, 1913, they bought the third Coltrin for outside work.
In January, 1915, they write us the above letter.

What Does It All Mean?

It means that the concrete has been satisfactory all these years.
It means that the mixers have been built to stay up on the job.
It means that our mixers have been money makers for Buell & Burr.

Now Isn't This What You Are Looking For?

Let us mail you our 1915 catalog showing

The Knickerbocker Line Concrete Mixers

The "Coltrin" Continuous

The "Knickerbocker" Batch

The Knickerbocker Company

JACKSON, MICHIGAN

(See our mixers at Chicago Cement Show, Coliseum, Feb. 10-17, '15, Spaces 55-56)

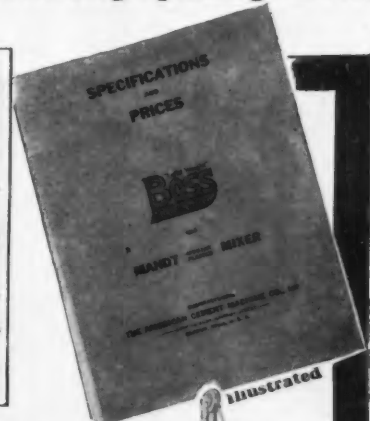
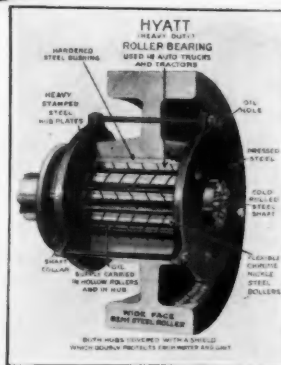
For Long Hauls Over Bad Roads

"Light Weight"
BOSS
Steel King Mixer

HIGHWAY SPECIAL

Equipped With Hyatt Roller Bearings

Write For New
Price List. Low
1915 Prices on "One
Sack" Mixer—Stops Ce-
ment-Bag-Splitting Evil.



Three Sizes
POPULAR MIXERS

Six, Eight and Ten-Foot

GAS - STEAM - ELECTRICITY

Also Furnished with Hoist, Load-
ing Platform and On Skids

High Wheels Furnished

28" Rear, 20" Front, 4" Tires
WHEELS RUN IN WAGON TRACKS

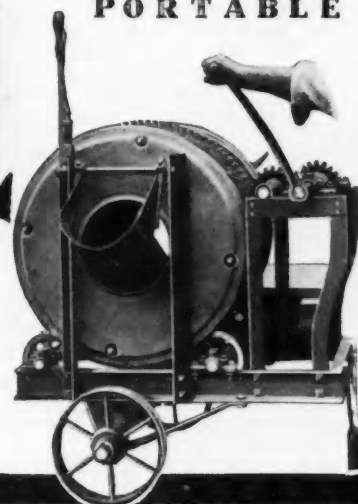
M. E. Gifford, Madison, Wis., of Elkhart Bridge
Co., ordered 6th "Highway Special," says "Other
5 mixers never caused a minute's delay."

Sold on Trial. Cash or Easy Payments

THE AMERICAN CEMENT MACHINE COMPANY, Inc.
1006 JOHNSON ST., KEOKUK, IOWA

\$78⁵⁰

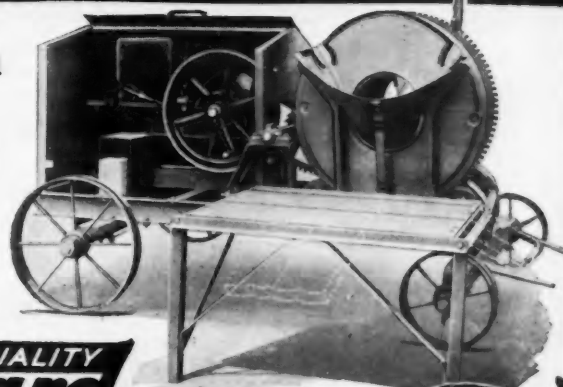
Buy
A Real Hand Mixer
Capacity up to 4 1-2 Feet
Wick Oiling Boxes
PORTABLE



Lowest Charging Mixer Now Furnished With Steel Hinged Loading Platform

5 Ft.
Capacity

Also
Furnished With
Hoist
Power Loader
Batch Hopper
Measuring
Water Tank



SPEED QUALITY
Packard
HAND AND POWER MIXER.

STURDY

Portable Quality Mixer
At Wholesale Price

Steel Construction, Semi-Steel Gears

CASH OR PAYMENTS

Fully Guaranteed—Money Back After Five Days' Trial

CONTRACTORS MACHINERY COMPANY
105 ELEVENTH ST., KEOKUK, IOWA

\$185

Mixer on steel trucks
3 H.P. Engine, Steel
Housing, Low Barrow
Hopper, Ready to Run

FAMOUS

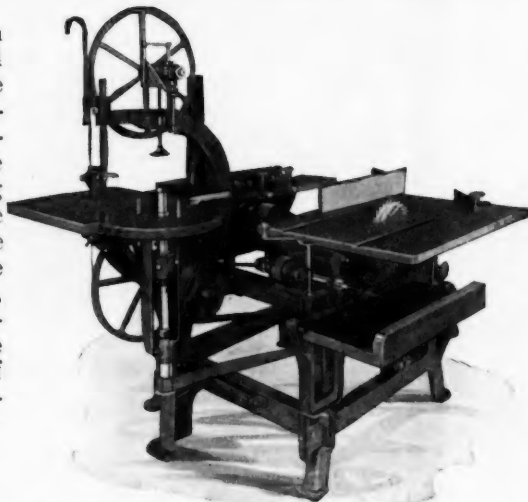
New Famous No. 40



Note Easy Operation of Jointer and Band Saw.

The wide range of this machine is interesting, as we offer an equipment to suit your needs, taken from the following sizes: 20", 27" or 32" Band Saws, 8" or 12" Removable Head Jointers, extra large Saw Table hinged for depth cutting and arranged for grooving and gaining, independent boring machine, arranged to take on all attachments, Single Spindle Variety Shaper with removable head, either one way or reversible motion. Self contained belts, with extra long drives, not a belt outside of the machine to interfere with easy operation.

THIS is not an experimental machine, but the result of years of careful study of the requirements of the modern woodworking shops. We put the Famous No. 40 on the market backed by the Famous guarantee, which has been substantiated by the recommendations of 4,000 satisfied operators.



Note Independent Boring Machine and Single Spindle Shaper, Suitable for All Attachments.

FOUR IMPORTANT FACTS

We realize the importance of individual operation, in a combination machine, and have so arranged the five attachments that will make up any one of the No. 40 types, so that each part can be operated independent of the other, and it is possible to work five men on this machine at one time, which is an impossibility on any type other than the "Famous."

By far the most important of these four facts, workers in large quantities, we have so reduced date carpenter shop equipment at a price that you are now being asked for one individual machine. The price of the No. 40 is astonishing, and places it within the reach of every class of trade.

is that by manufacturing these Universal Wood-

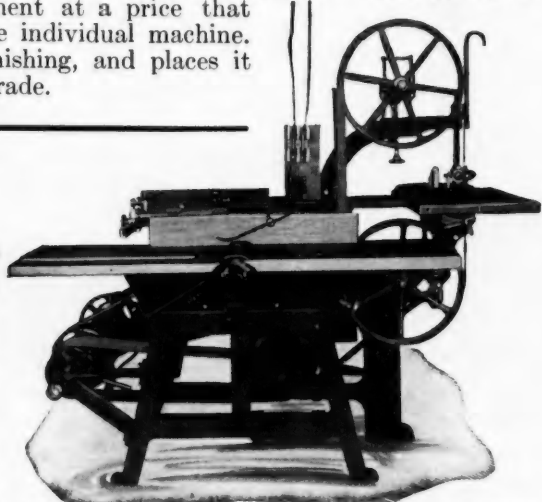
the cost, that we are able to offer a complete up-to-



Note Large Saw Table and Extra Long Drive Belts.

The
Sidney
Tool
Co.

Sidney, O.



Self-contained Motor Driven Type Furnished if Desired.

FAMOUS

Universal Woodworker

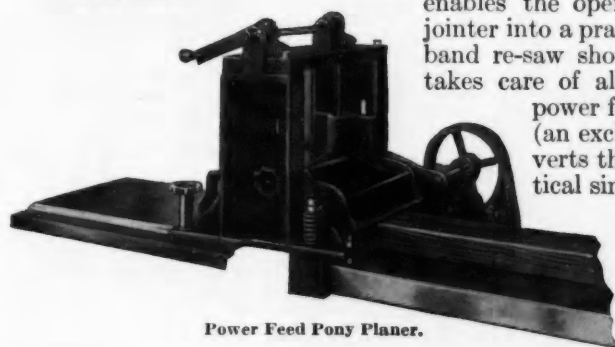
Eight of the Possible Attachments on the No. 40 Machine



Drum Sander.

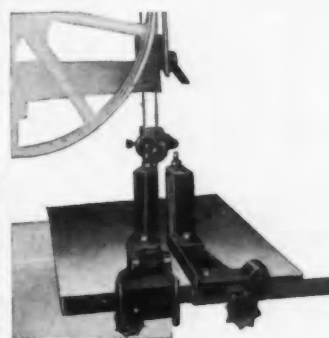
IN considering the purchase of a universal woodworker, carefully investigate whether or not it is really universal. The true meaning of a universal machine is one that will take the place of a complete equipment of individual machines. The attachments shown on this page are a few of those that you can use on the Famous No. 40 woodworker.

The drum sander, which can be used only on a machine with a removable jointer head, and which enables the operator to convert his hand jointer into a practical sanding machine. The band re-saw shown, fits the band saw and takes care of all kinds of resawing. The power feed pony planer attachment (an exclusive Famous feature) converts the hand jointer into a practical single surfacer or pony planer.



Power Feed Pony Planer.

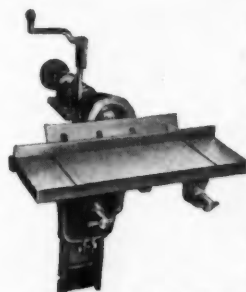
The disc sander used on a boring attachment for all circular or end sanding. The knife grinder attached to the borer for grinding planer and joiner knives,



Band Re-saw.



Special Disc Sander.



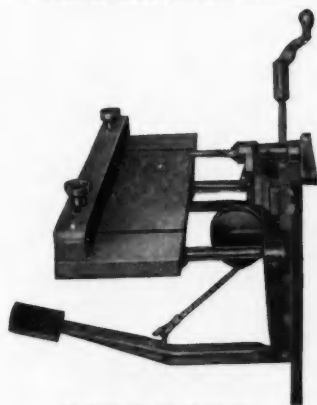
Knife or Disc Grinder.

furnished with gauge. Single end tenoning attachment to fit the shaper with double cutting tenoning saws, traveling table for all classes of tenons. The mortising attachment for borer with universal table and adjustable bit and chuck. Panel raiser to fit the shaper head for raising one side of all styles of planers.

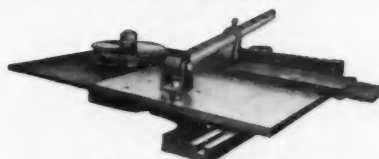
There are more attachments than these shown that will fit the No. 40 woodworker. In fact, we can give you an attachment for most any kind of work in your line, and from our extensive line you can choose an

equipment exactly suited to your particular requirements.

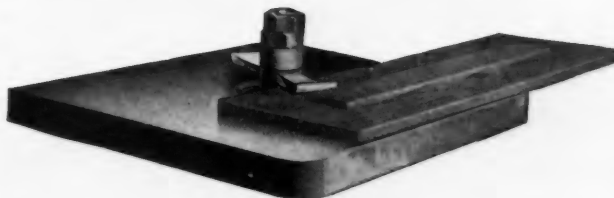
Write today and get special circular No. 12 on the new No. 40 machine and our interesting low price.



Hollow Chisel Mortiser.

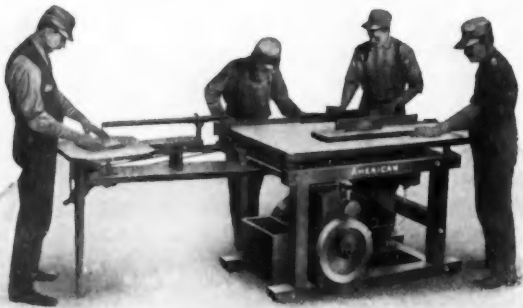


Single End Tenoner.



Panel Raiser.

The Sidney Tool Co.
Sidney - - - - - Ohio



**Contractors and Builders
Like You Have This
To Say About The
"AMERICAN"
CONTRACTORS' PORTABLE VARIETY
WOOD-WORKER**

"My 'American' is saving me on an average of \$10.00 per day."

"I use the 'American' on making concrete forms and while I can't say just how much it saves me, I know it was 'a good buy.'"

"It has materially assisted thirty of our contractors."

"It saved us its cost on one job."

"I am satisfied it will save enough time and material to pay for itself in a year."

"Power for my 'American' averages \$3.00 per month and it enables me to utilize practically all of what used to be waste material."

Why not make these **your** experience?

Send for the "American" Pamphlet No. 47.

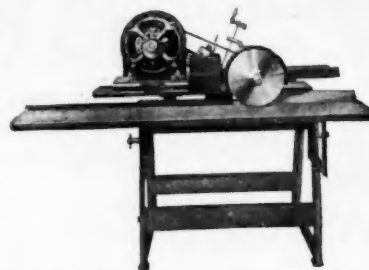
**AMERICAN SAW MILL
MACHINERY CO.**

80 Main Street
HACKETTSTOWN
NEW JERSEY

1360 Hudson Terminal
NEW YORK CITY
NEW YORK

**The ELLIOT
WOODWORKER**

On the job or in the shop the Elliot Woodworker will save more time and money for you than any other single machine on the market today.



Patented 1910-1914. Other patents pending.

Over 500 are in successful use. Runs on any house lighting current. Cuts 3" thick; it will cut 3" joist, 2x4 fence boards, house out a pair of stair strings 16 ft. long in 35 minutes, and all other dadoing, grooving, etc., required.

Can be swung like a mitre-box to cut any angle and will successfully cross-cut long lumber, as the saw is drawn back and forth like a swing-saw.

The Elliot Woodworker is different from any other machine and will do more work and more different kinds of work than any other.

Write for free illustrated catalogue and liberal terms.

THE ELLIOT WOODWORKER, Ltd.,
2405 Woodward Ave. - - DETROIT, MICH.

Canadian Factory, College and Bathurst Streets,
TORONTO, ONT.



**Every Carpenter and
Builder Needs Me—**

In a small shop I will take care of all planing, jointing, rabbetting, etc.

I am so handy that the hand plane is practically eliminated wherever I am used.

I take up small floor space.

I consume hardly any power in operation.

I can not cut off any fingers as I am fitted with a patented circular safety cutterhead.

I will turn out perfectly smooth work because my safety head is round, runs true and is fitted with thin, air-hardened "Tungsten" steel knives which require sharpening only once a week if jointing attachment is properly used.

I have made money for every wood-shop in which I am used. I am sold at a price within the reach of any carpenter, and quickly pay my own way.

**I am the FAY-EGAN No. 254 Bench
"Lightning" Hand Planer and Jointer**

To find out more about me ask
J. A. FAY & EGAN CO., 545-565 West Front St., Cincinnati, O.,
to send you Bulletin H-7

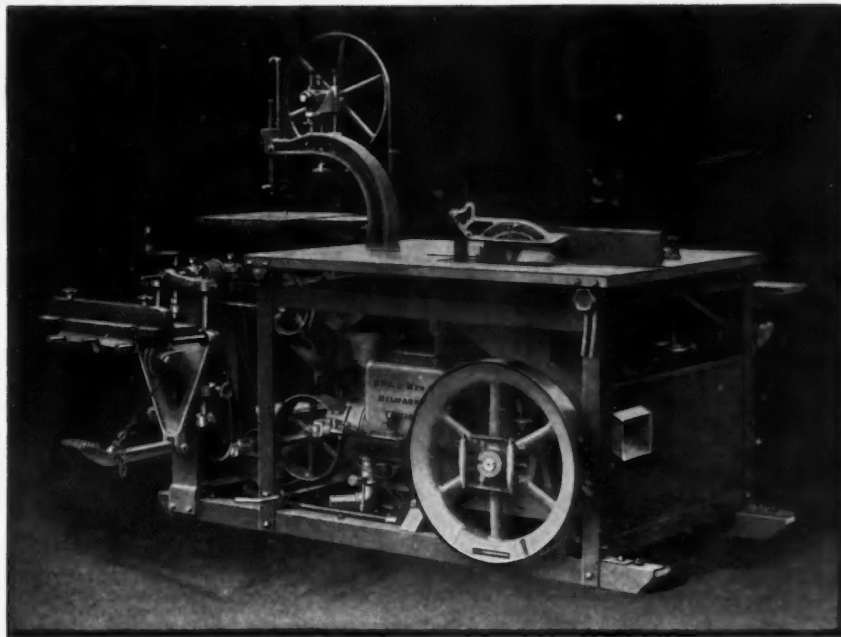
The New C.H.&E.

No. 6 PORTABLE SAW RIG

The new **No. 6 C. H. & E. Portable Saw Rig** is our very latest model and is a combination outfit, each attachment operating independent of the other, arranged and mounted on a solid angle iron frame with four horse power C. H. & E. Gasoline Engine or Electric Motor mounted directly in and under the Saw Table.

Each attachment is started and stopped independently with its own lever. There are four complete units as follows: a Saw Table, a Band Saw, a Jointer, and a Borer and Mortiser.

More than enough power so that four men can work this No. 6 at the same time.



YOU want to write for our special folder descriptive of this No. 6 Portable Saw Rig, which shows large cuts of each and every attachment. We manufacture six sizes of Portable Saw Rigs, as well as a full line of Contractors' Equipment, consisting of Hoists, Elevators, Pumps, etc.

C.H.&E. Manufacturing Co., Inc.

322 Mineral Street

::

::

MILWAUKEE, WIS.

A Portable Bench Planer

This machine will take as **heavy** a cut as the largest machines, and you can joint **long** and **heavy** stock on it. It is not flimsy, but as **durable** as the costliest machines. It is **light** and **cheap** because we got down to **fundamentals**. It is fully **guaranteed**, and will be sent on trial anywhere.



WALLACE BENCH PLANER

Either Belt or Motor Driven

Easily portable, can be carried to the job.

Stands on bench without fastening.

Table adjustable to any depth of cut.

Fence adjustable to any angle.

Runs from an electric light socket.

Capacity, any length, and up to 4 inches wide.

Length of tables over all, 18 inches.

Weight of machine with motor, 50 pounds.

Our descriptive folders give full information.

J. D. WALLACE

525 W. Van Buren Street - - - CHICAGO

THE HUTCHINSON COMBINATION WOODWORKER

The saw can be set to cut at any angle, and can be raised or lowered 8 inches. This operation makes no difference to the belt, as is the case with other makes of machines. There is no overhanging slide. The table is clear of all obstructions, all work is in full view, and is operated with a 1½ H. P. Motor.

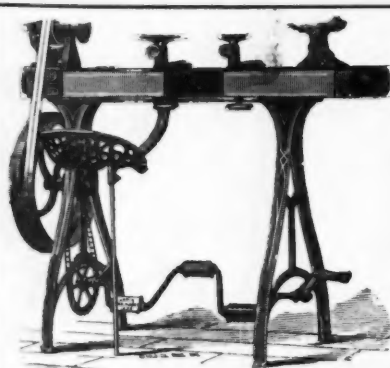
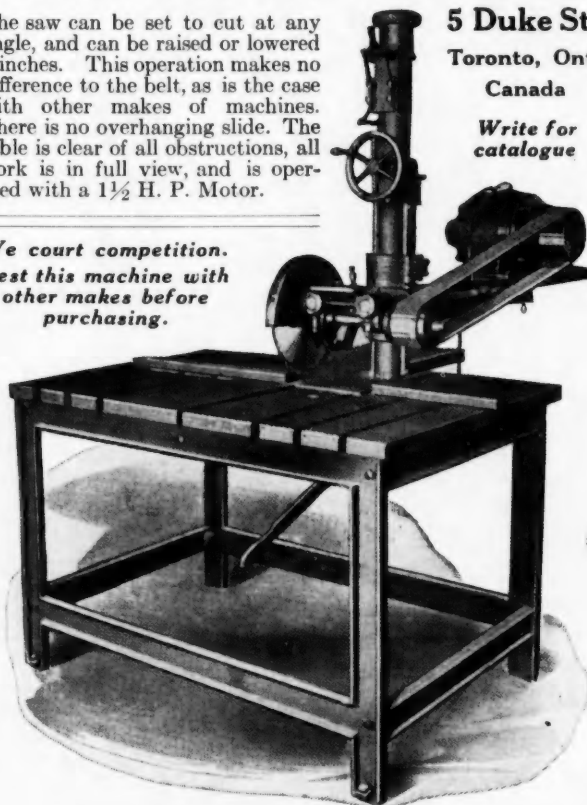
5 Duke St.

Toronto, Ont.

Canada

Write for catalogue

We court competition.
Test this machine with
other makes before
purchasing.



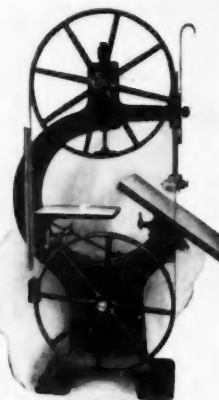
COMPLETE OUTFIT

Hand and Foot-Power
MACHINERY

Our No. 3 Wood Turning Lathe can be speeded from 1,000 to 2,000 revolutions a minute with perfect ease. Stopped or reversed at will of operator.

Write for Particulars

W. F. & Jno. Barnes Co. 74 RUBY ST., Rockford, Ill.

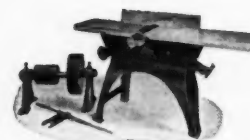


27 inch Band Saw \$58.50

12 inch Jointer . 80.00

Both Machines for \$135.00

F. O. B. Kansas City



Write for our complete Money Saving Catalog and Prices.

Standard Machine Tool and Supply Co.
1st and Main Sts., Kansas City, Mo.

Write for catalogue showing full line of Wood Working Machinery for Carpenters and Builders. Also Bargains in second hand Machinery.

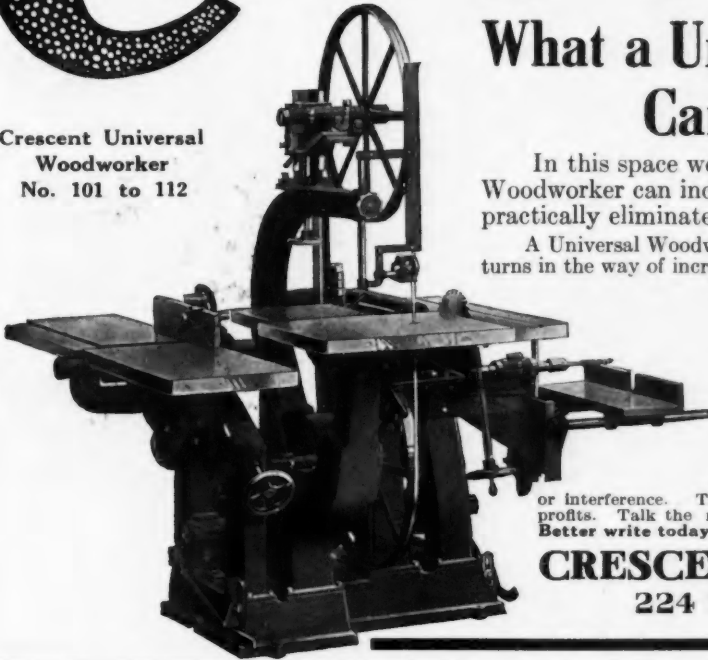


CHICAGO MACHINERY EXCHANGE

1215-1223 WASHINGTON BOULEVARD
CHICAGO, ILLINOIS

Crescent

Crescent Universal
Woodworker
No. 101 to 112



What a Universal Woodworker Can Do for You?

In this space we can only begin to tell you how a Universal Woodworker can increase your profits, enlarge your business and practically eliminate competition in your locality.

A Universal Woodworker is an investment that will bring you large returns in the way of increased business and enlarging your field in this way.

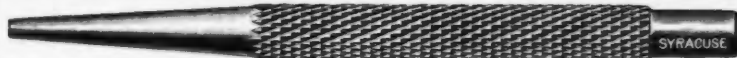
It will enable you to do all your own millwork—everything. Interior Trim, Cabinet Work, Window Sashes, etc., in fact it's a compact woodworking mill especially designed for Contractors and Builders.

We make two models of Universal Woodworkers, one being a little lighter than the other. Both, however, consist of five principal parts, Band Saw, Jointer, Saw Table, Shaper and Borer. They are all mounted on a solid one-piece base insuring absolute rigidity. Each of these units apart can be operated independently of the others and each is provided with a separate starting and stopping lever.

Four men easily work on a Crescent without inconvenience or interference. Think it over—start this year, to increase your business and profits. Talk the matter over with us and get our handy little catalogue. Better write today.

CRESCENT MACHINE COMPANY

224 Main Street, Leetonia, Ohio



Made in 3 sizes—2-32"—3-32"—4-32" points—Price 10 cents each. If your hardware dealer does not sell "SYRACUSE" Nail Sets, we will send you one or more at 10 cents each. Specify the size you want.

SYRACUSE TWIST DRILL CO., Syracuse, N. Y.

NAIL SETS

Syracuse Nail Sets hold their points longer and give real service. Each one thoroughly tested.



We can offer something **SPECIAL** in the way of **PRICE**. Write for catalog and particulars.

"A Bit of Utility"

FORSTNER BITS are DIFFERENT from all other wood boring tools. Being guided by the outer rim they may be turned in any direction. The work is left smooth and polished.

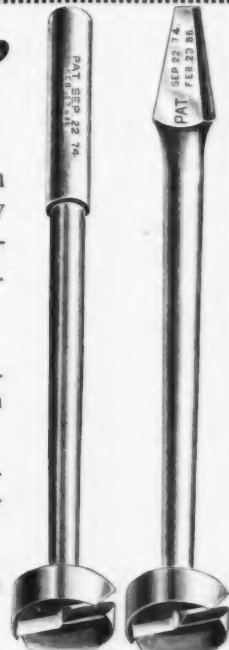
Unequaled for Delicate Work

Practical for use as gouges or chisels, suitable for scalloping, fancy scrolls, twists, columns, newells, ribbon mouldings, mortising, etc.

Cabinet and pattern workers are enthusiastic over them. They do more work and cost no more than other bits.

The Progressive Mfg. Co.

Torrington, Conn.



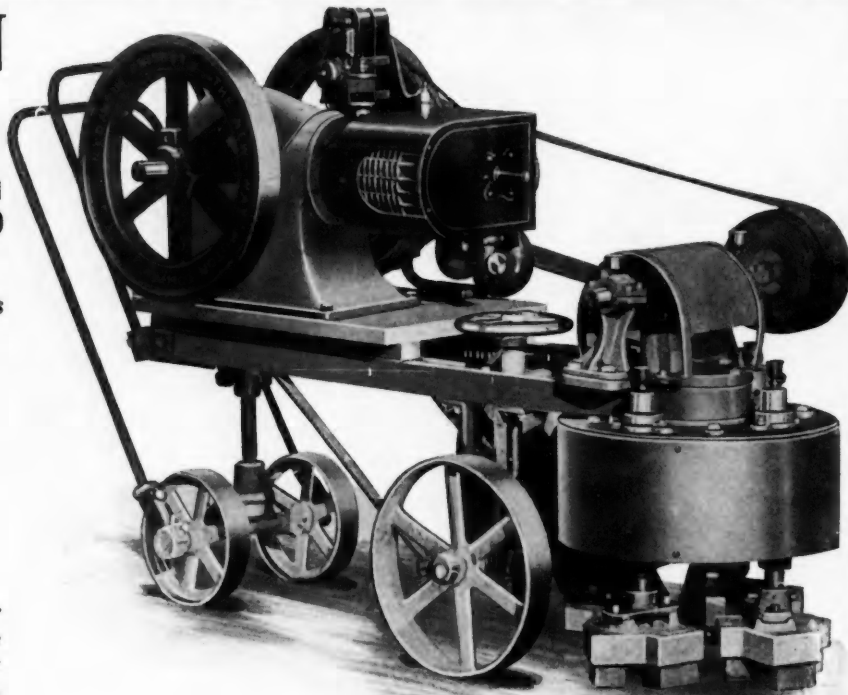
NORTHERN FLOOR SURFACERS

For Surfacing All Floors

Wood
Terrazzo
Mosaic
Marble
Concrete
Composition
Tile, Etc.

This is the only Surfacers manufactured that can be operated by either electric motor or gasoline engine.

It will pay you to investigate this Floor Surfacers. Write today for catalogue.



CHICAGO BUILDERS SPECIALTY CO.
450-470 Old Colony Building CHICAGO

FOX

"UNIVERSAL TRIMMER"

TRADE MARK

A
Machine
For
Every
Need



A
Need
For
Every
Machine

6A. FOX "UNIVERSAL TRIMMER"

**You Will Never Know What Perfect Work is Until You
Use a Fox "Universal"**

*The fitting of interior finish is greatly improved
by using a Fox Universal.*

Write TODAY for Our New Catalog

FOX Machine Co.

22 FRONT AVENUE N. E.
GRAND RAPIDS, . . MICHIGAN

\$15.00

The FOX JR. Floor Scraper

Why pay more. Just the right size for the average amount of floor-finishing Carpenters and Builders do.

Why invest in a high-priced machine when the Fox Jr. can handle your work fast and economical or why scrap floors by hand when you can get a high-grade scraper at such a low price.

Scrapes all Floors

including Georgia Pine and all hard woods. Makes an even uniform cut. Equipment includes besides the scraper six Fox tempered knives, one oil stone, one burnishing steel and ore wrench. Weight of machine 70 pounds.



Sent on 10 Days' Trial

Write for circular and full information about this low cost, efficient Floor-Scraper.

Fox Supply Co.
Dept. A. BROOKLYN, WIS.

**Use This
Outfit
a Week
at My
Expense**



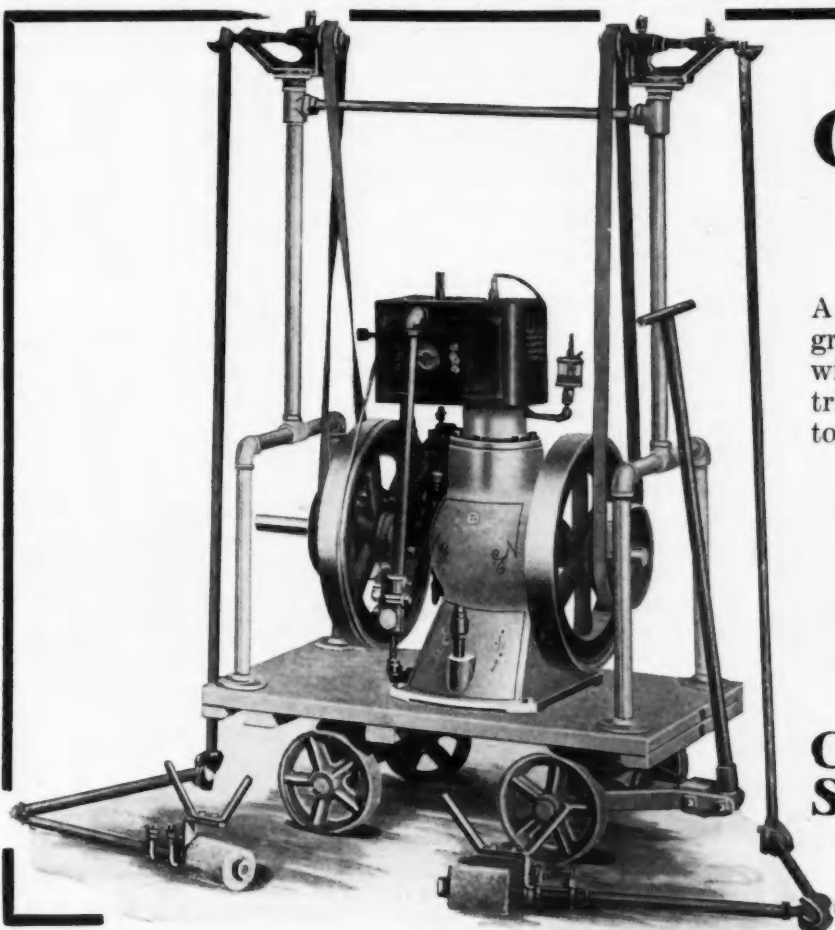
I know this Acme Floor Scraping Outfit will do your work better, quicker and cheaper. I know if you once use it for a week you won't be willing to part with it. That's why I say: "I'll send you this outfit free. Try it for a week, then if you don't want it, send it back—and you are under no obligation." The

ACME FLOOR SCRAPING OUTFIT

is the most complete hand operated equipment made. There are thousands in daily use, giving perfect results.

Write now for free trial.

JOS. MIOTKE 247 Lake Street Milwaukee, Wis.



C. B. S. Cove Base Machine

A wonderful machine that is a great labor-saver. This machine will rub any radius cove. Electric or gasoline power. No jar to operate.

Hundreds in use all over the country. If you want to save money investigate this machine.

Sent on two days' free trial. Write for catalogue.

Chicago Builders Specialty Co.
450 Old Colony Building
CHICAGO



YOU LOST THAT BIG JOB BECAUSE YOUR BID WAS TOO HIGH

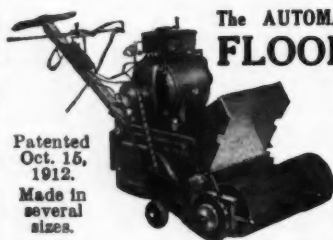
YOU ALSO LOST THE ADVERTISING WHICH THAT JOB
WOULD HAVE GIVEN YOU. IT HURTS, BUT NEXT TIME

REDUCE YOUR BID \$400.00 TO \$700.00

AND DEPEND UPON THIS FLOOR MACHINE TO MAKE
GOOD EVERY CENT OF IT. IT RUNS BY ELECTRICITY.

THINK THIS OVER—THEN WRITE US—NOW.

**THE AMERICAN FLOOR SURFACING MACHINE CO.
TOLEDO, OHIO**



The AUTOMATIC BALLBEARING Electric FLOOR SURFACING MACHINE

Patented
Oct. 15,
1912.
Made in
several
sizes.

will save you money by
rapidly finishing your
new or old floors just the
way you want them. Is
self-propelling—you sim-
ply guide.

Write today for Booklet telling all about the machine, our
free trial offer, and list of users near you.

WAYVELL CHAPPELL & CO.

Dept. D. 4847E Ravenswood Ave. CHICAGO
Phone Ravenswood 4143.

THE IDEAL

Electric Floor Sander

For surfacing all grades of wood floors, works
equally well on new or old floors. Removes
paint, varnish, dirt, grime. Will surface
5,000 square feet once over in eight hours.

The lowest priced and most efficient floor
sander on the market.

The Ideal Floor Sander is simplici-
tly itself and built mechanically
correct to withstand years of hard
service.

Write for our FREE
TRIAL proposition

**Ideal Floor
Sander Co.**

Not Inc.
105-109 N. Canal St.
CHICAGO

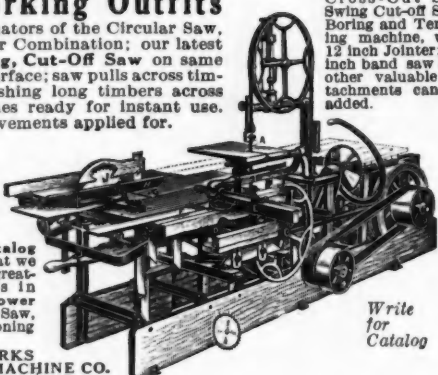


Parks Portable Single and Combination Wood Working Outfits

We are the originators of the Circular Saw,
Band Saw, Jointer Combination; our latest
innovation, **Swing, Cut-Off Saw** on same
base; long table surface; saw pulls across tim-
ber instead of pushing long timbers across
saw. All machines ready for instant use.
Patents on improvements applied for.

Machines are
made in large
quantities which
enables us to sell
at lowest prices
and make im-
mediate ship-
ment. Ask for catalog
and you will find that we
have also let in the great-
est improvements in
Foot and Hand Power
Circular Saw, Band Saw,
Mortising and Tenoning
Machines.

THE PARKS
BALL BEARING MACHINE CO.
Fugus St. & C. H. & D. Ry.
Cincinnati, Ohio. U. S. A.



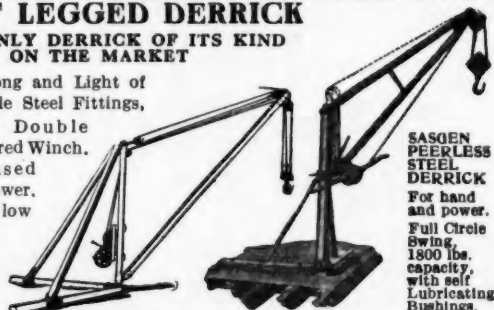
Circular Rip and
Cross-Cut Saw,
Swing Cut-Off Saw,
Boring and Tenon-
ing machine, with
12 inch Jointer; 22
inch band saw and
other valuable at-
tachments can be
added.

Write
for
Catalog

THE NEW SASGEN PORTABLE 1-TON STIFF LEGGED DERRICK

THE ONLY DERRICK OF ITS KIND
ON THE MARKET

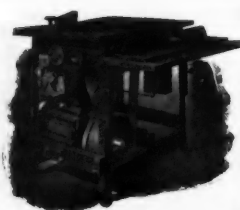
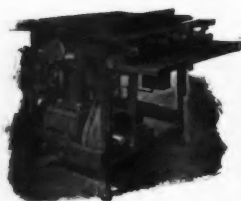
Built Strong and Light of
all Crucible Steel Fittings,
including Double
Drum Geared Winch.
Can be used
hand or power.
Price very low
according
to length
of boom.



SASGEN
PEERLESS
STEEL
DERRICK
For hand
and power.
Full Circle
Swing,
1800 lbs.
capacity,
with self
Lubricating
Bushings.

SASGEN DERRICK CO.
2053 N. Racine Ave., Chicago.
Canadian Office, 1 Wabash Ave., Toronto

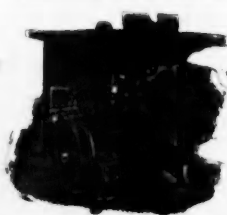
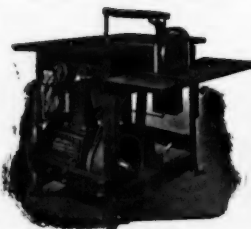
Price only \$45.00 complete ready
for use, \$43.00 for hand power
only. Write for Circular No. 2.
Satisfaction—Prompt Shipment Guaranteed.



Standard Portable Combination Woodworker

9 Machines in 1
6 H. P. ENGINE

SEND FOR CATALOG G
ATLANTIC ENGINE CO.
Meadville - Penna.



ROOF SLATES

STRUCTURAL SLATE BLACKBOARDS

E. J. JOHNSON

38 Park Row New York

Quarry Operator

BLACK, GREEN, PURPLE, RED

Booklet, Samples and Prices on Application

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

INTERLOCKING MASTER SLIDE RULE

Measures Both Inside and Outside Accurately

A Carpenter's practical rule that will take inside and outside measurements correctly. Two Rules in one. Made of select boxwood, trimmed with brass plated steel. Strong, Rigid and convenient. Made in all lengths—two to eight feet. Low priced. Send 15 cents a lineal foot (in U. S. A.) if your dealer cannot supply you, and get one by mail.



Circulars giving full description sent FREE.
DAHL MANUFACTURING CO.

51-G East 42nd St.
 NEW YORK CITY

Blue Ribbon Special Saw Files

come in four shapes—Slim Taper, Extra Slim Taper, Slim Blunt and Extra Slim Blunt Saw. If your Dealer cannot supply you, we will send any size at 15 cents each.

LIVERIGHT BROTHERS, - North Philadelphia, Penna.

SAW FILES

made of best steel, perfectly tempered and very carefully cut. If you want a high-grade saw-file that will stand up, get "Blue Ribbon Special Saw Files."

FREE TRIAL:**RAPID—FLEXIBLE—AUTOMATIC****ELECTRIC FLOOR SURFACERS**

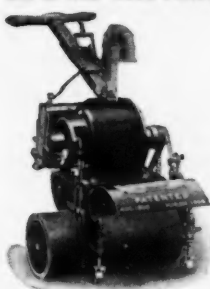
Mosaic, Marble
 or Composition Floors

Old or New Wood Floors



SEVERAL SIZES

Send for our proposition



SEVERAL SIZES

M. L. SCHLUETER, 225 W. Illinois St., Chicago, Ill.

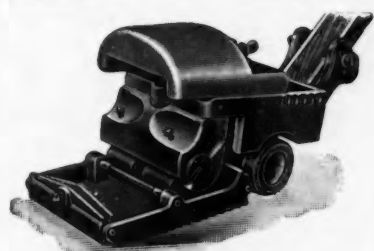
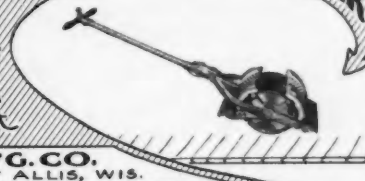
The WEBER DOUBLE ACTING Floor Scraper

CONVINCES ANY JUDGE OR JURY ON EARTH THAT THE WEBER

IS THE BEST ON THE MARKET

5 Days Free Trial Will Prove It

WEBER MFG. CO.
 870-71st AVE, WEST ALLIS, WIS.



Sander, FREE to Cash Buyers

Why Pay More

Than The Other Fellow?

Is his money better than yours?

When you get the genuine **ADJUSTABLE FLOOR FINISHER** you pay only for the actual cost of manufacture with but one small profit added, for I sell only to the user **Direct**. There are no dealers' profits or commissions for you to pay.

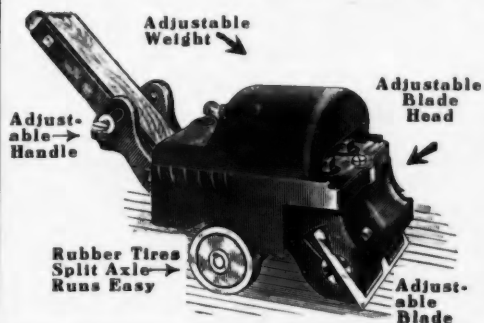
GUARANTEE:—You may use it for **Ten Days FREE**. Put it to the hardest tests you know of—scrapping wood floors, hard or soft—old or new.

If it doesn't do your work in a manner entirely satisfactory to **YOU**—quickly, easily, perfectly—if it doesn't prove to be the biggest **time and labor saver—money maker** for the money you ever saw—or if for any reason at any time you are not well satisfied, you may have your money back if you want it.

SCRAPER, complete with six extra blades, burnisher, wrench, etc., on ten days' Free Trial... \$22.00

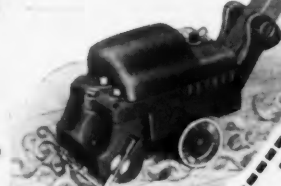
SANDER ATTACHMENT..... \$2.50

SANDER FREE if cash accompanies order



Mail Coupon at Once

H. P. Didriksen
 ANDERSON, IND.



THIS COUPON IS WORTH \$2.50

H. P. Didriksen, Anderson, Ind.

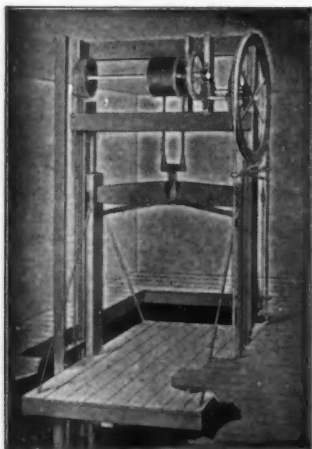
Without obligating me in any way, you may send your printed matter, provided you accept this coupon as payment for the Sander, if I decide to buy for cash.

Name.....

Town..... State.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

This Elevator — IS — PAR--EXCELLENT



in all that name implies.

So also are our *Dumbwaiters, Side-walk Lifts, Carriage, Auto and Store Elevators.*

Mr. Contractor, you should install our line exclusively. It will mean satisfaction for your client, and lasting good reputation and profit for you. No worry. No bother. No trouble.

Easily installed from our complete plans and instructions which are sent with each elevator.

The Reasonable Cost Will Interest You

Write to us today stating requirements, giving style of machine wanted, size of platform and number of feet travel and we will name you a money-saving price on equipment made to serve you well.

SIDNEY ELEVATOR MFG. WORKS, Sidney, Ohio

DUMBWAITERS AND ELEVATORS

CHelsea

EXEMPLAR OF QUALITY

Made in the U. S. A.

SHIPPED OR ERECTED ANYWHERE

Our Catalog "C" Mailed on Request

We manufacture only one quality and that is the best that can be made. So we guarantee each Dumbwaiter we make.

CHelsea ELEVATOR CO.

334 W. 36th St.

NEW YORK CITY



THE COLUMBIA

DUMB WAITERS ELEVATORS
CELLAR HOISTS
JUMPER DISAPPEARING DUMB WAITERS
CHAIN HOISTS, CRANES and TROLLEYS
SEND FOR CATALOGUE.

J. G. SPIEDEL, Reading, Pa.



CARPENTERS WANTED AS AGENTS
During Fall and Winter Months. Big Money!
Ready Seller.

SANITARY AUTOMATIC DUMBWAITER

saves carrying food to and from the cellar. Perfectly ventilated; screened openings; finished inside with durable white enamel. Keeps food perfectly. Top lies flush with kitchen floor. You can walk over it. Operates with push button or lever. Also furnished as a Refrigerated Dumb Waiter. Cost of installation nominal.

Write for new catalog just now

York Automatic Dumbwaiter Works, 639 W. Market St., York, Pa.

WHEN YOU BUY A SEDGWICK YOU BUY A COMPLETE DUMBWAITER

A Sedgwick outfit comes to you complete in every detail—no extras, nothing to buy locally.

This means more to you than a mere saving of trouble and extra expense. It means **absolute satisfaction to your customers**, which reflects credit upon your skill as a builder.

Buying a complete Sedgwick Dumbwaiter outfit puts the responsibility up to us. For you know that what we furnish is bound to be right—we couldn't afford to let it be otherwise.

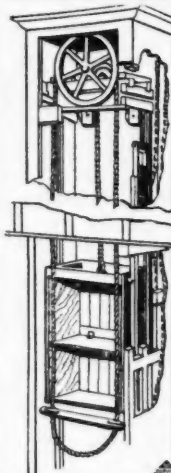
When you buy only part of an outfit, and supply the rest yourself, you relieve the manufacturer of all responsibility for the final operation.

When you buy a complete Sedgwick Dumbwaiter you and your customer get an outfit with a five-year guarantee that we stand back of.

Write for Catalog "L" Giving Prices

Sedgwick Machine Works

132 LIBERTY ST. - - NEW YORK



A. B. C. DUMBWAITERS

Called This For Their Simplicity And Perfection

They can be relied on to give permanent satisfaction. The design is right, the workmanship and materials of the best. Our broad experience and reputation stands back of all our Dumbwaiters. Why not handle King Dumbwaiters. They will net you a good profit and make all your customers boosters.

The King "Safety Check"

is part of the equipment of all our Dumbwaiters. It will hold load at any floor. Our catalog describes it. Send us your specifications and let us figure them. Send for catalog now.

WM. F. KING

20 Kingsland Ave. Brooklyn, N. Y.

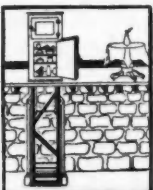
STORM Dumbwaiters and Hand Elevators

No stock sizes. Built to fit the place. Ask your hardware dealer and write us for catalog. Let us send you our new Catalog with Discounts.

THE STORM MFG. CO.

Herman & Vesey St.,

NEWARK, N. J.



CARPENTERS AND BUILDERS

make extra money by installing this practical necessity in new and old homes. It saves 3650 trips to the cellar each year. "WIFE'S JOY" DUMBWAITER—Ball Bearing—Disappearing Operates quickly by a press of the button. Takes up no room. Top lies flush with floor; can be walked on. Practical for any home. Keeps food perfectly. Can be installed complete in 2 hours. WRITE FOR CIRCULARS.

Fifteen Days' Free Trial Without Any Deposit.

AMERICAN ELEVATOR CO. - - Bloomsburg, Pa.

GREYHOUND SUPERIOR SAWS



BISHOP'S BEST

We offer to Carpenters and Builders the final result of years of experimenting and experience in producing good saws. This superior saw is known as our "GREYHOUND". We have satisfied ourselves that a better saw cannot be made. The GREYHOUND is a saw that will hold its sharpness and set longer than any other good saw. This saw should be in the hands of every mechanic who appreciates a good tool. We are proud of this saw and its easy running quality. Its symmetrical lines, toughness and fine adjustment typify its name "GREYHOUND".

30 DAYS TRIAL---MONEY BACK IF NOT SATISFIED

We are so confident that this saw will meet with your approval that we offer it on trial for 30 days. If it does not come up to your expectations or fails to satisfy you in any way we will refund your money.

Made in Both Straight and Skew Back also Ship Carpenters Pattern

Length	18	20	22	24	26	28	30	inches
Each	\$2.35	\$2.50	\$2.65	\$2.80	\$3.00	\$3.30	\$3.65	net

PACKED ONE IN A BOX

GEO. H. BISHOP AND COMPANY

::

Lawrenceburg, Ind.



Triple "A" Floorsmoothers



The Machine with the Spring Motor Drive

The only convenient motive power.

The Floor-surfacing Capacity of this machine is equal to that of Electric Sanders and three times greater than that of ordinary Hand Power Scraper Machines.

The Quality of its work cannot be equaled.

Its Cost of Operation per Square is less than one-third that of any other.

Its Simplicity of Construction is such as to enable us to offer this superior machine at a remarkably low price.

THE TRIPLE "A" SPRING DRIVEN FLOORSMOOTHER can be used as a Scraper, Sander or Blade Sharpener—adjustments made in a few seconds. Seeing it in operation is wanting it—every builder will buy one eventually.

We want a practical man of the building trade as Agent in each county and will make an especially low price on the first machine to be used as a working sample, and pay a liberal commission on future sales. Write us at once or send in Coupon.

Triple "A" Machine Co.

Room 335, 300 W. Grand Avenue

Chicago, Ill.

Date.....

Triple "A" Machine Co.,
300 W. Grand Av., Chicago:

Send me full particulars of your Agency offer

Expect to have square feet of floors to

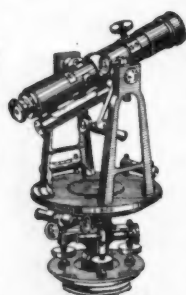
Surface about 191....

Name.....

Address.....

Occupation.....

Remarks.....



Builder's Transits

For the builder or architect who wants to raise the standard of his work—who takes conspicuous pride in the accuracy of his efforts, this transit is especially designed. It is but one of the complete line of Beckmann quality instruments. Send for our complete free catalog.

The B. L. BECKMANN CO.

7500 Adams Street :-: Toledo, Ohio



How to Get Lumber at Mill Prices

We ship direct from our Yellow Pine Mills, at Mill Prices to you. We carry in stock over 25,000,000 feet of dry, bright lumber and the capacity of our mills is over 75 million feet annually.

**Contractors
Home Builders**

We can furnish promptly, lumber of every character. Special bills cut to order. Low prices quoted on millwork, asphalt roofing and superior wall board. Contractors and home builders write us for delivered prices.

**Send No
Money**

We guarantee the quality of our lumber and ship subject to inspection and approval to all responsible parties.

Home Lumber & Supply Co.

343 S. Dearborn St., Chicago, Ill.

Dept. 6086

You Can't Afford to Buy a Transit every day!



When you *do* buy, select the Instrument with Accuracy, Rigidity and Service built right into it!

Up-to-date construction means less weight, greater strength, easier to operate, longer service, minimum up-keep cost.

Write *to-day* for Vest Pocket Manual, No. 30 Circular and Special Offer for this month.

WARREN-KNIGHT CO.,

Makers of
"Sterling" Transits and Levels

136 N. 12th Street

Philadelphia, U. S. A.

The G & B Convertible Level

is Accurate, Durable and Simple to operate. A high-grade, well made instrument

Sent on Approval

Have the G & B Convertible Level sent on approval—if you have several makes you will decide on ours. Our Guarantee is money back if not satisfied. Send for Circular A, prices and terms. We are reasonable.

GEIER & BLUHM

672 River Street, Troy, N. Y.

Builder's Transits
or
Architect's Level

The
G & B



1853



BROS.

1915

Fine Beveled Edge
Shank and Socket

Chisels

Tang and Socket Butt Chisels

Plain and Beveled Edges

Send for illustrated Catalog

Buck Bros., Millbury, Mass.

Straight-grained cedar that cuts like cheese; smooth, tough leads that make clean-cut, strong marks—that's the way Dixon's Carpenter Pencils are described. Send 16c for generous sample lot 183J.

JOSEPH DIXON CRUCIBLE CO.

❖❖❖ JERSEY CITY, N. J. ❖❖❖

Why Carry A Heavy Transit?



Architects, Contractors, and Builders, this is the serviceable instrument for you. A portable transit that is of special light design. It is easily carried and handled. Is thoroughly accurate and especially adapted for fast work. Built upon practical substantial lines. We manufacture a complete line of surveying instruments in various sizes and at a wide range of prices.

All instruments guaranteed by us. Our Circular No. 27 will explain our instruments to you in detail. It will pay you to get it before deciding upon any surveying instruments.

KOLESCH & COMPANY, 138 Fulton Street, NEW YORK
Surveying Instrument Makers. Established 1885.

Miller's Lock Mortiser TWO MINUTES

Will cut an opening in a door for a mortise lock

IMPROVED AND UP-TO-DATE

cuts true, in any kind of wood for any size lock from 1" to 1 1/2" thick. Easy to operate; durable in construction. Builders use it everywhere.



Sent subject to trial.

A. W. Miller Mfg. Co.

Riverside, Calif. :-: Cincinnati, Ohio

Our Butt Mortiser and Hole Gauge for 75c., Postpaid

"THE LITTLE DEVIL"

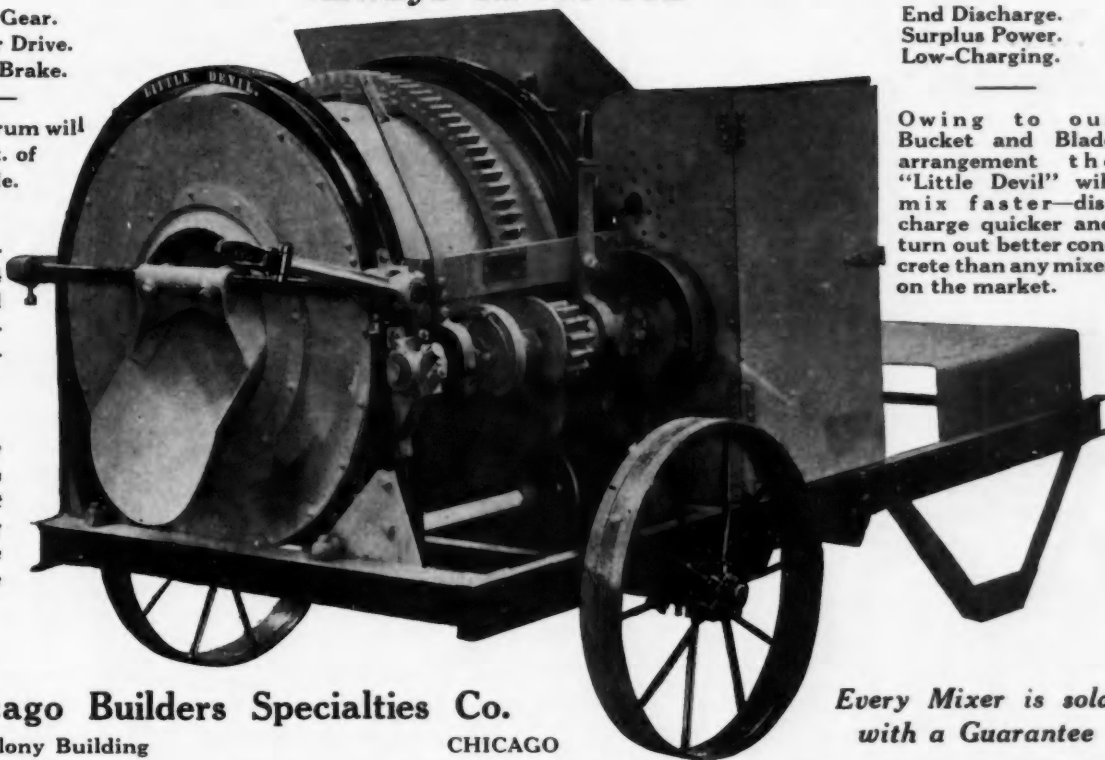
Always on the Job

Segmental Gear.
Direct Gear Drive.
Hoist with Brake.

Hoisting Drum will
Hold 150 ft. of
 $\frac{1}{4}$ -inch Cable.

Can Fur-
nish with 4
Wheels and
Batch Hopper
if Desir-
ed.

Write today
for prices
and booklet
showing
the "Little
Devil on the
Job".



End Discharge.
Surplus Power.
Low-Charging.

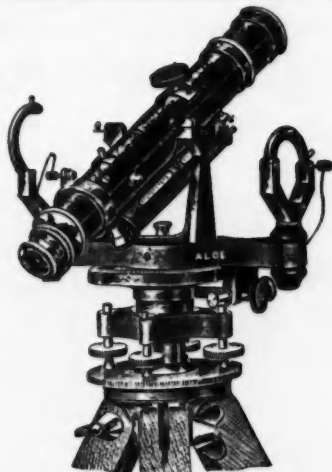
Owing to our
Bucket and Blade
arrangement the
"Little Devil" will
mix faster—dis-
charge quicker and
turn out better con-
crete than any mixer
on the market.

Chicago Builders Specialties Co.

450 Old Colony Building

CHICAGO

Every Mixer is sold
with a Guarantee



Rent This Level 10 Months Then It's Yours

Builders and Contractors

This is not an old style Level. It is the newest 1915 model *convertible level*. There is not a single Builder or Contractor who has not almost daily need of this instrument. For laying out buildings, locating foundation piers, leveling up foundations, walls and floors, aligning shafting, walls, piers, etc., for getting angles, locating levels anywhere, ditching, laying streets and walks, running straight lines, and a hundred other uses.

Instruction Book Free

Complete illustrated booklet, telling how a builder or contractor can use the convertible level, sent free on request.

WARNING

The Level we offer is the new Aloe Convertible Level. Don't confuse the Convertible Level with the ordinary old style Architect's Level. The only work that can be satisfactorily done with the ordinary Architect's Level, is the determining of elevations. But the Convertible Level, besides its use as a level, is a modified transit and broadens the use of the level 100%. You can't afford to buy any but the Aloe Convertible Level.

HALF CENTURY REPUTATION

We have been manufacturers of transits and levels since 1863, and our instruments are the standard of the world.

FREE TRIAL

We allow you to convince yourself by a trial of the instrument before you obligate yourself.

THE RENT BUYS IT

No large cash outlay needed. Just pay the rent for a few months and the instrument is your absolute property.

Send Coupon---No Obligation

Send the attached coupon today and we'll send illustrated booklet and complete details of how you can own the Aloe Convertible Level for 10 months' rent.

A. S. Aloe Co., 621 Olive St., St. Louis, Mo.

COUPON

A. S. Aloe Co., 621 Olive St., St. Louis, Mo.
Please send free instruction book on the use of the Convertible Level and complete details of your rental plan. This request in no way obligates me.

Name

Occupation

Street

City..... State.....

Am.C.&B. Feb. 15

The Handy Northfield Mixer Will Save You Money On Every Job.

You have no job so small that this little mixer can't be used economically on it and none so large but there's work to be done that it will do for you to better advantage than any other mixer made.

It's the light weight Champion of all mixers. Small enough and light enough in weight to be hauled in the farm wagon with your tool box and your crew. **Big enough to run out thirty to sixty cubic yards of slush concrete a day under ordinary working conditions.**

A New Mixing Action

No other mixer made has the mixing action of the Northfield. It works on a new principle—stirs the batch 180 times every thirty seconds. Turns out a perfectly mixed, four-foot batch of concrete every minute. Every batch is right, too—there's no mixer on earth produces a better mixture than the Northfield.

Architects and inspectors like to see the Northfield on the job. They know it delivers the goods—turns out evenly mixed concrete all day and every day.

Users Call It

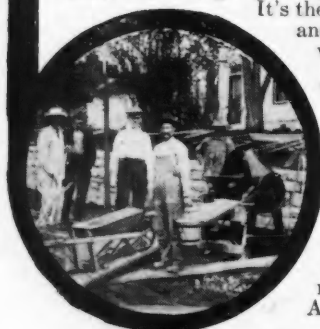
"The Continuous Batch Mixer"

If you want to mix concrete for your small jobs at less cost—and do it better—if you want a bigger profit from all your jobs, investigate the Northfield Mixer. Biggest value, in a hand-mixer, your money can buy. Substantial in construction, easy to operate, durable in service.

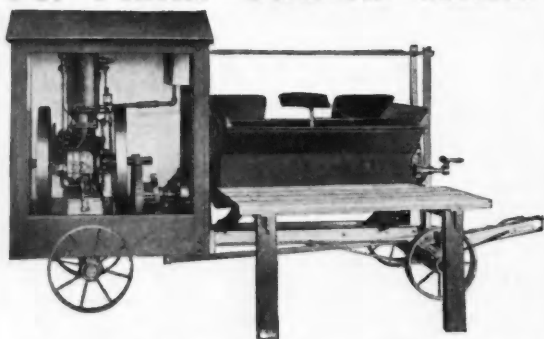
Write for our catalog and prices, today. You'll find the catalog interesting and the prices surprising—lowest ever made on a high grade mixer. Northfield Iron Company, 402 Water St., Northfield, Minn.



A 4 ft. Batch
Every
Minute



Blystone Batch Mixer For Plaster - Concrete - Mortar



A saving of \$25.00 per day was made in mixing hardwall plaster for the big Machinery Palace for the Panama Pacific Exposition.

The Cement Tile & Block Mfg. Co., of Osgood, Ohio, paid for their Blystone in three months work in their block plant.

One man slaked lime and made mortar for ten masons and had time to spare for other work on a job recently done by G. Ed Berry, of Harrisburg, Ills. Mr. Berry also says he got 10% more mortar per barrel of lime.

H. A. Farmer, St. Petersburg, Fla., recently wrote us as follows: "I am so well pleased with mixer, I want another just like it. Ship me another one as soon as possible."

Write for catalog today.

BLYSTONE MANUFACTURING COMPANY
115 Carpenter St.,
CAMBRIDGE SPRINGS, PA.

BUY THE SIMPLEX BATCH MIXER

1915 Model



Note the heavy, substantial construction, Low Hopper, Heavy Cast Heads, Drum of No. 8 Steel, Concealed Gears, All-Steel Frame, Rear Discharge, also Side Discharge if desired. And best of all our attractive offer.

Write to-day for catalog.

Reliable Agents Wanted.

THE MILES MFG. CO.
307 E. Franklin Street Dept. B Jackson, Mich.

The Step

From Carpenter to General Contractor is a Concrete Mixer

It is the key that unlocks the door to General Contracting—a Mixer is the vital part of every Contractor's equipment. Nearly every job requires cement or concrete work and a good many jobs are concrete entirely.

If you are a Builder, get into this broader field. Start this spring. The opportunities are unlimited—be the General Construction man in your locality. Be the man they come to for Buildings, Bridges or Sidewalks. In most vicinities a different man handles each phase of construction. Combine concrete construction with your building work and you have a combination that can underbid them all. The mixer you buy will be an important factor in your success. A Mixer that you can rely on to back you up and work most efficiently for you is

The No. 1 Archer Special

There are many reasons why the Archer Special is the better mixer for every kind of work. It is the most portable mixer in existence. This is an important point, both on the job and taking it to the different jobs. It is **end discharge**, making it possible in many places on account of its great portability to spout concrete direct into forms (saves time, money). It is loaded in front away from discharging end, eliminating interference or inconvenience between men. Easily loaded—simply wheel barrows on platform and dump in hopper. It is strongly built and all gear-drive. Gear-drive does away with broken chains and trouble. It also makes a smooth-running vibrationless mixer. Engine is high grade and operates economically and is practically fool-proof. Steel frame is riveted through heavy gusset plates, making it a solid, compact unit. Archer Mixers guarantee a thorough and perfect mix and have a capacity of $4\frac{1}{2}$ cubic feet of wet concrete per batch. The Archer will earn you many a dollar—get busy now and investigate.

Tell us just how you're situated;
let us have a friendly chat about
how you can start in doing Gen-
eral Contracting. Get our advice.
Spring will soon be here. Bet-
ter write today.

Archer Iron Works
2430 W. 34th St. CHICAGO



Don't Divide Your Profits!

Do all your own Foundation work. Make them of concrete. There are many places where concrete can be used to better advantage than stone and it will cost much less.



On Sidewalk Work

The Archer cannot be equalled. See how it can run between forms and spout concrete right in forms. No other mixer can do this and it saves considerable money in wheeling. The Archer is used for Foundations, Concrete Buildings, Miscellaneous Concrete Structures, Concrete Roads and Driveways, Viaducts, Dams, Bridges and Culverts, Silos, etc.



No. 7. Regular

**Easy to Operate
Easy to Place Concrete
Easy to Do Good Work**

Ideal Cincinnati Batch Mixers

keep your crew jumping from morning till night. Run them right up to the forms, they are light and easily handled.

Built just like the big fellows and just as sturdy and dependable. It's easy to mix and place 50 cu. yds. of thoroughly mixed concrete a day with our No. 7 Mixer.

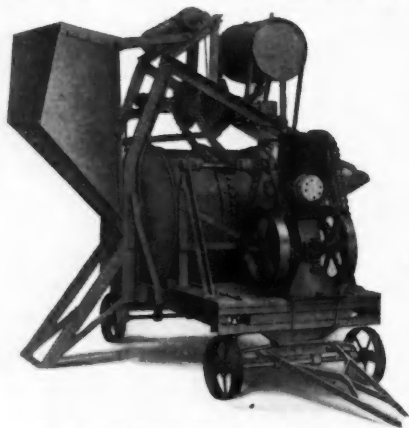
*Positive proof of above
claims sent upon request.*

IDEAL CONCRETE MACHINERY CO.

1308 Monmouth Ave.

Windsor, Ont.

CINCINNATI, OHIO



No. 7. Mixer with Power Loader

Make Your Own CONCRETE Champion Power Batch Mixer

Is a big money maker on the farm, for laying barn floors and curbs, walks, fence posts, silo blocks, etc. Will mix more than one-third cubic yard at a batch. Can be used as feed mixer when desired. Strongly built, repair proof, will do steady, hard work for years.

Price Only \$35.00

Guaranteed to satisfy you or money refunded. Special price when mounted on truck with engine attached. We make also a hand mixer of same pattern at lower price. WRITE US TODAY—ILLUSTRATED LITERATURE FREE

Requires
only a
2 H. P.
Engine



**Save \$5
to \$10
Per Day**

Drum
36 in.
Dumps Clean
Both Length

**Weights Only
400 lbs.**

Champion Mfg. Co. 425 B Ave. Cedar Rapids, Ia.

Why Pay More?

\$100 buys a regular Builders' Mixer that's reliable for all block, brick, foundation or sidewalk work.



SIMPLEX JUNIOR MIXER

is the best ever sold at the price. Perfect in every way. Economical and mixes thoroughly. Low-charging—Labor-saving. Top of hopper is only 2 feet from ground when mixer is on skids. Easily hauled around.

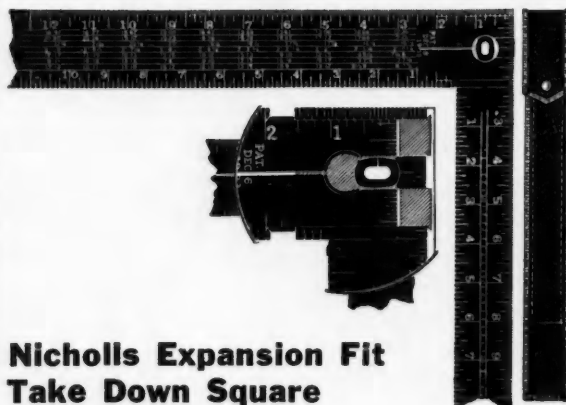
On Trucks With Engine, \$100. On Trucks Without Engine, \$55.

On Skids Without Engine, \$35.

The SIMPLEX is Sold At Your Price. Guaranteed.
FREE TRIAL OFFER. Write Us Today.

WESTERN MFG. CO., Oskaloosa, Iowa

We Manufacture All Types of Mixers, also Culvert Forms.



Nicholls Expansion Fit Take Down Square No. Z-100R

Eccentric Cam expands end of body in milled portion of tongue, making an absolutely solid joint, also taking up wear.

Long bearings assure accuracy.

Strength where tongue joins on to body. All other Take Down Squares are cut half into at this point.

These are stamped with our **Rafter Framing Rule**, giving cuts for seventeen different pitches of roof.

Send for our **Little Book** on Rafter Framing. It is **Free**.

We have a number of Atkins & Disston Miter Box Saws, sizes ranging from 28x4 to 30x5, special price, 50c small size; 75c large size; weight 5 lbs. Include enough postage for parcels post charges.

NICHOLLS MFG. CO.
OTTUMWA, IOWA

LITTLE WONDER "FIVE"

without
Side Loader
Cap. 5 cu. ft.
per batch—
35 to 50 cu.
yds. per
day.



Enlarge Your Field

WITH THE

LITTLE WONDER "FIVE" CONCRETE MIXER

"The Mixer that Makes the Money"

In the face of all competition and imitation it maintains its supremacy, because it pays the largest dividends per dollar of investment.

Profit by the Experience of Others—

Several thousand of them to whom the LITTLE WONDER has opened a wider field and larger profits, and with whom we can put you in touch to prove the statement.

You've thought of buying a mixer, of course? You're convinced that the more complete your equipment the more business you'll do?

Then you naturally ask: "Which machine has behind it the largest endorsement, covering the widest range of use over the widest territory?"

The answer is: LITTLE WONDER "FIVE," with or without Side Loader or Auxiliary Hoist, according to the capacity demands of your work.

DO WE ALONE SAY THIS? No—thousands of more than satisfied customers say it also, and their letters are on file for your verification.

To the best of our knowledge no other concrete mixer has ever had such enthusiastic endorsement as the WONDER. No other mixer has ever scored so heavily in repeat orders, and no single mixer has ever displaced so many other machines because of its greater efficiency and actual money-earning capacity.

And it Mixes Mortar, too!

The LITTLE WONDER is widely used for this with great success, thereby doubling the efficiency of the machine. With or without our Auxiliary Hoist for elevating material, the WONDER is the ideal mixer for you.

See it at the Cement Shows

CHICAGO, FEBRUARY 10-17 and OMAHA, MARCH 2-5

Compare WONDER mixers with other types and note the Simplicity, Strength and Quality of WONDER construction. See the steel I-beam frame and axles. See three A-frames supporting drum and driving gear where others have only two. See the perfect mixing action and easy cleaning drum. See the long main shaft. See the ball bearings and force-feed, dust-protected lubrication system. Note swift operation, quality of output and easy, one-man control.

GET OUR NEW CATALOG

It takes you right into the shop and shows how WONDERS are built—explains what *real service* means.

100 Agencies—Ask for the nearest to you.

WATERLOO CEMENT MACHINERY CORP'N

103 Vinton St., Waterloo, Iowa

NEW YORK
PHILADELPHIACHICAGO
SAN FRANCISCO

LITTLE WONDER "FIVE" with Side Loader.
Side Loader increases capacity nearly 100 per cent.



Big Money in Foundation Work

Build Yourself a **Sheldon Home-Made Concrete MIXER** and Clean Up!

Here's your chance to pick up some extra money! You don't get money-making opportunities every day. So, grab this, and be ready to estimate and contract for concrete foundation work, as well as the other portion of building.

You can handle any ordinary foundation job with my wonderful little mixer. And the beauty of it is that you don't have to tie up any money in one—that is—none to speak of.

I'll supply you, at astonishingly low prices, with the necessary gears, pulleys, bearings, trunnions, tracks, mixing paddles, boxes, bearings, shafting, bolts, nuts, etc. You supply a few 2x6's, a second-hand linseed barrel and a little of your time. Then, with the **Blue Print Plans**, which I'll furnish absolutely free, you can

BUILD THIS MIXER YOURSELF AT LOWEST POSSIBLE COST

Look on the opposite side of this advertisement—read about some of the big features of this little mixer.

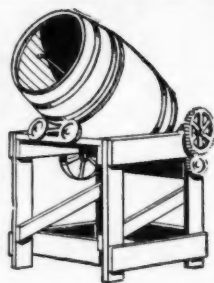
Then write me. Do it right away, for I'm ready right this minute to send to you, **ABSOLUTELY WITHOUT CHARGE**, my complete plans for building this mixer, and my literature and prices on the mechanical parts.

You're not obligated to buy a nickel's worth of me even after you get my plans. But I know I'll sell you at least some parts of the mixer after you learn about my thousands of successful users and my remarkably low direct-to-you prices.

Go to the bottom of this extra-money opportunity with me. Just drop me a post card, this very minute, tell me you are a reader of the American Carpenter & Builder, and I'll send to you, by return mail, complete illustrated literature, price list, and the **BLUE PRINT PLANS ABSOLUTELY FREE**. Will you bet a penny against such an opportunity?

GEORGE C. SHELDON, President, Sheldon Mfg. Co., Box 320, Nehawka, Neb.

Concrete MIXER



"Your mixer is the wonder of our town. I put down 1400 sq. ft. of walk, a 16-inch wall 80 ft. long, using 287 sacks of cement. On October 22nd, mixed 122 sacks and on 23rd mixed 122 sacks up to 4 p. m. Morning of 24th, put in 6 walls 30 ft. long for double crib. All of this in one week."—W. H. Sampson, Biencoe, Iowa.

Look at These Big Features

1. The Sheldon Mixer is a **Batch mixer**, not a continuous mixer.
2. It has metal deflectors, so arranged inside the mixing drum that the batch is absolutely completely broken up with each few turns of the drum. Material positively will not ball up in center.
3. Has tilting dump. No doors to open each time batch is ready to discharge. Just tilt the drum.
4. Dumps directly into wheel-barrow. Many batch mixers dump only on ground or dumping box, necessitating extra shovelling. None of this extra work with the Sheldon Mixer.
5. Mixing is done in plain sight at all times—a big advantage over the "closed" type of mixer.
6. Hand machine can be operated easily by one man.
7. Power machine easily run by 1 h. p. gas engine.
8. Hand machine can be quickly and in expensively converted into a power machine, greatly increasing capacity.
9. Cast boxes and bearings are extra long, reducing wear.
10. Two-piece cast boxes can be adjusted to take up wear.
11. Oil holes in bearings have waste-pocket, to keep out dirt, sand, etc.
12. Gears are extra heavy, to reduce breakage risk.

The Sheldon Power Mixer will work one, two, three, four, five or six men, and will mix more material than any other mixer at double the price.



When
you want
tools of any kind
—tools that you
can bank on to be
just the kind and qual-
ity you want them to
be, insist on the Swan
Trade Mark.



It's a plain guide to all that
is best in carpenters' tools
and your assurance that
you are dealing with an
old, reliable firm that
makes tools as good and
solid as its reputation.

ASK FOR CATALOG
The
JAMES SWAN CO.
Seymour,
Conn.



Ideal Fastenings

When attaching joists, beams, scantlings, fixtures or apparatus of any kind to hard substances such as brick, stone or concrete, use

SEBCO

Expansion Bolts or Screw Anchors

They insure a quick, neat and absolutely dependable job.
The bolts are for heavy work.
The Anchors, for lighter work, are non-rusting, which especially adapts them to work in marble and tile.

*Sold by Dealers Everywhere.
Send for Samples and Catalog.*

STAR EXPANSION BOLT CO.

147 Cedar St., NEW YORK CITY
120 West Lake Street, CHICAGO



LET THIS MIXER COIN MONEY FOR YOU, TOO

The "Northwestern Special" has coined money for a lot of contractors during the past year. It will make money for a lot more during 1915. You be among them. Get this handy, speedy, perfect mixer on the job, get the work done quicker, better—**make more money**. It's a whirlwind for speed, keeps a good sized crew going every minute and turns out a mix that simply can't be improved upon. And, at our special low price, it's clearly the biggest bargain buy in the mixer market today.

A Real Five Foot Mixer At a Real Bargain Price

Our "Northwestern Special" is a handy mixer for big jobs as well as small jobs. Just what you need for sidewalks, curbs, gutters, foundations, floors, piers, small bridges, etc. There isn't another Mixer of its size that will equal this **real five foot mixer**. The shape and tilt of drum, arrangement of paddles and the special combination of the cone and cylindrical principle make it the best big-little mixer ever designed.

Has big, open charging end, paddle arrangement, combination of drop or shower, as well as "whirlpool" mix, closed discharge, permitting use of chute or hopper, enabling operator to unload in three revolutions of drum, and a discharge controlled by an independent outside lever. Most convenient, easily handled and operated Mixer ever perfected. Even if you are now operating a large capacity Mixer, you will find this machine a splendid investment because of its convenience and portability.

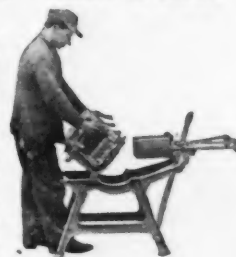
The "Northwestern Special" is light in weight, easily accessible for adjustment and repair, can be hauled anywhere on the job by three men, and requires only a two and one-half H. P. Engine. Handles 40 to 50 yards of concrete per day and is remarkably useful on either large or small jobs. Price is so low that the big contractor can easily afford to add it to his equipment and the small contractor simply cannot afford to be without one. Write quick for our special low price on this outfit.

Everything for Concrete Work at Wholesale Prices

The Northwestern line includes everything for cement-concrete work at bed-rock prices. Block Machines, Brick Machines, Batch Mixers, Sewer Pipe and Drain Pipe Moulds, Ornamental Moulds, Burial Vault Moulds, Cap and Sill Moulds, Lawn Vase Moulds, Silo Moulds, Finishing Tools, Engines, Well Curbing Moulds, Crushers, Fence Post Moulds and everything else for the cement contractor. Get our low **factory** price before you buy.

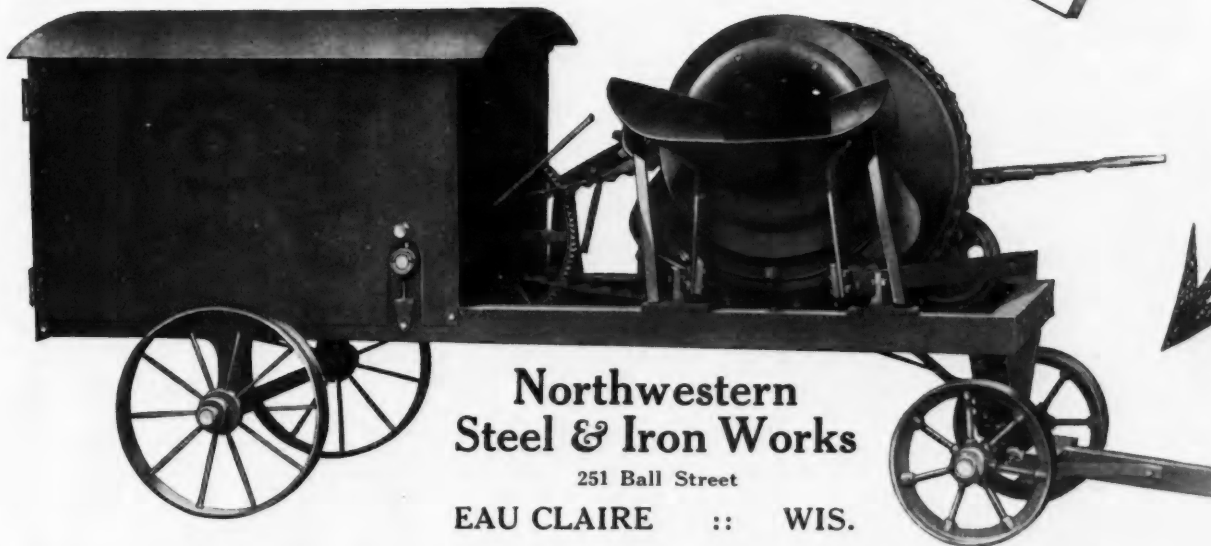
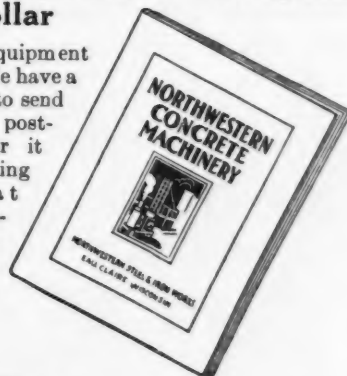
"Northwestern" Face Down Block Machine

We are in position to start you on smallest investment possible consistent with quality equipment. The machine here illustrated has the construction, capacity and convenience for economical profitable operation and the price is such that you should investigate before buying. There is good profit in making concrete blocks with Northwestern equipment. Write us today and we will tell you **how** and **why**.



Get This Book Before You Spend a Dollar

for concrete equipment of any kind. We have a copy all ready to send you, free, and post-paid. Ask for it today. In writing mention what kind of equipment you are in the market for.



**Northwestern
Steel & Iron Works**

251 Ball Street

EAU CLAIRE :: WIS.

The LITTLE BUILDER CONCRETE and MORTAR MIXER

"Ball Bearing"

Will pay for itself in a week's time, and the low price places it within everyone's means. It costs only a few cents a day to operate and saves from two to six men's time. The ease with which it can be moved and operated makes it most convenient for general contracting work.

No job is too small and but very few too large for the Little Builder to handle at a profit, and a mighty good profit, too. Use it for floors, steps, foundations, drives, form work—everything in the concrete line. It will "knock the spots" off from hand mixing and will "stand up" even with some of the largest mixers for speed and low cost of production.

\$165.00

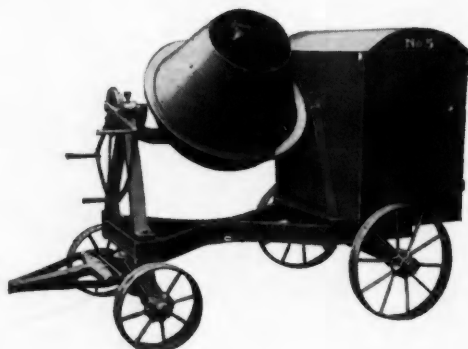
Complete as Illustrated

\$265.00

with Power Loader

\$30.00

For Hoisting Attachment



The Little Builder

Is made of steel and iron throughout. It is strong and durable with the best engine that money can buy. We guarantee this engine better than any engine being furnished on similar outfits, in fact there is nothing better made.

The mixer is loaded from one side and discharged on the other, and the gravel is never in the way of the wheelbarrow. It is an easy mixer to operate, because the shoveling is just the right height, or power loader can be furnished if desired.

Compare the price, specifications, material, workmanship and the engine with similar mixers and you will find the mixer worthy of your investment.

Write today for catalog.

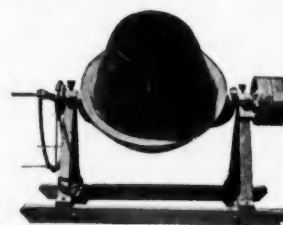


Discharging

Lansing Company
1002 Cedar St. LANSING, MICH.

Branch Houses

NEW YORK BOSTON PHILADELPHIA CHICAGO
MINNEAPOLIS KANSAS CITY SAN FRANCISCO



Shop Mixer

Ransome's BANTAM

Light as to Weight—Large as to Capacity

2700 lbs.

1 bag batch up to 1-3-6

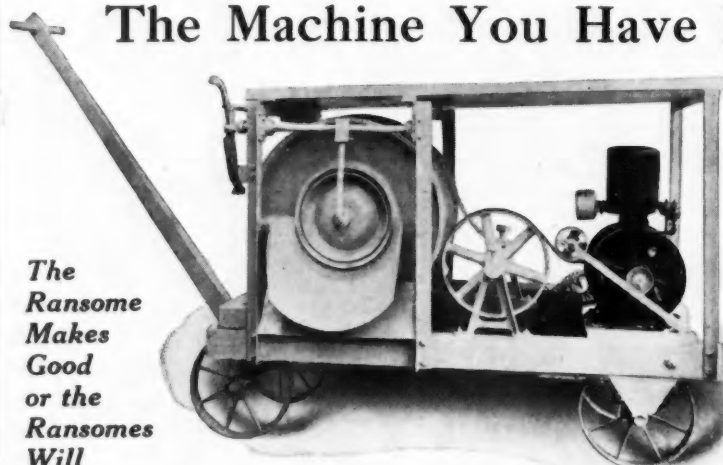
Low as to Feed

27 inches

Low as to Price

\$275.00 f. o. b. Dunellen, N. J.

The Machine You Have Been Waiting For



The
Ransome
Makes
Good
or the
Ransomes
Will

Here Is What One of Our Customers
Says About One of Our
Little Bantams:

Philadelphia, Pa., Dec. 11, 1914.

I am in receipt of your letter dated the 10th, and will say that the Bantam Mixer that you have sold us we have had on three separate jobs, and have mixed over 1000 cu. yds. up to date in it. This machine has given us absolute satisfaction in its workings, and it is the handiest little machine to get around with, we have ever owned as yet.

Should we be in need of another small machine, we do not know where we could place our hands on any as good or better for the money.

Respectfully yours,

(Signed) WM. LINKER CO.

Write Us for More Complete Information

RANSOME CONCRETE MACHINERY COMPANY

::: Dunellen, N. J.

WINNER

They Hit the Profit Bull's-Eye Everytime

More than ten years' experience in the manufacture of concrete machinery and our big plant make Winner Mixers and Winner prices possible.

We couldn't give you better principle, better workmanship or better material for the purpose if you were to pay us twice the price we ask for Winner Models.

Winner Mixers are designed right, built right and sold right. They stand the knocks and abuse and give users satisfaction month after month and year after year.

Thousands of Winners are in operation on all kinds of work—big jobs and small jobs. Winner Mixers are saving men's backs and making men PROFIT in all parts of these concrete states.

We build the Winner in four sizes—the **Baby Two**, the **Little Three**, the **Big Four**, and the **Light Six**—and you can buy them with engines or without engines, with trucks or without trucks—any way to suit your majesty, the buyer.

Try It---Then Buy It

That's the plan. We have faith in the machines we produce and we have faith in you and are willing to put any Winner on your work and let you be the sole judge and jury as to whether or not it meets with your requirements. If it suits, you keep it, and if it don't suit, you send it back. Is that fair?

Our new catalog, just off the press, will give you the whole story. Send for it **today**, and learn how Winner Mixers will save you from forty-five to sixty-five cents on every yard of concrete you turn out, and **how** we save you from \$25.00 to \$100.00 on the purchase price.



This illustration shows the Winner in loading position. Notice that you only shovel to the waist line.



This illustration shows the Big Four all complete with side loader. Absolutely the most simple and most efficient loader machine on the market regardless of price.

The Cement Tile Machinery Co.
137 Rath Street :: WATERLOO, IOWA

MIXERS

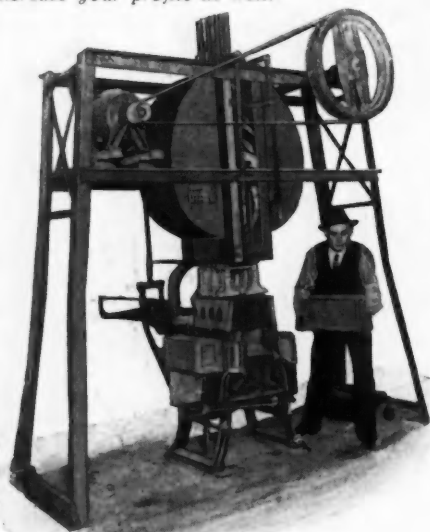


Double Your Output With No Extra Expense



Competition is so keen that every business man is constantly looking for methods by which his overhead can be reduced without affecting his profits or product.

Double Speed Machines will do it. You can not only double your output with the same labor cost, but you can increase your profits as well.



Every *Double Speed Machine* is guaranteed to double the output of any other make of its size. They are easy to operate. No trouble or complicated parts. They will pay for themselves in fifteen days.

DOUBLE SPEED POWER TAMPER

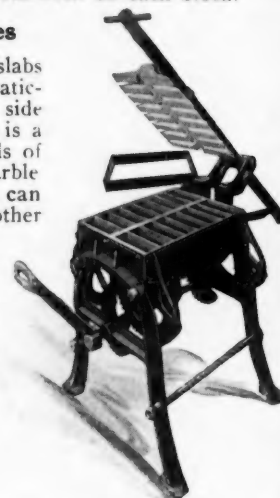
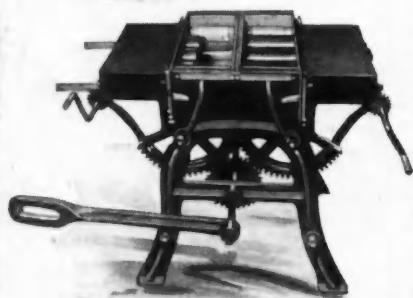
One *DOUBLE SPEED* power tamper will turn out 1,500 blocks or from 12,000 to 15,000 bricks per day. It only requires a 2 h.p. gasoline engine or electric motor to drive it or can be run from line shaft. This tamper can work over the brick or block machine by simply changing the feet. Has automatic device for removing surplus material after blocks are tamped, which means a perfect face and smooth back on each block.

DOUBLE SPEED—Block Machines

will make twice as many blocks or building slabs as any other machine. This machine automatically makes two blocks or two slabs at each side with only one operation of the lever. This is a face-down machine and can produce all kinds of beautiful designs, with granite faces, marble dust, etc. All styles of Blocks and Slabs can be turned out double the speed of any other machine.

DOUBLE SPEED— Cement Brick Machines

Make sixteen bricks at one time—think of it—delivering eight bricks at each side of the machine with one operation of the lever. It is also a face-down machine, allowing all kinds of ornamental faces to be produced on it. This machine actually pays for itself in 15 working days.



YOU CAN DEFY COMPETITION

With *Double Speed Machines* you can meet a competition, no matter how keen. They cut your costs to a minimum and enable you to sell for less and still make a greater profit.

Don't Delay—Write today for catalog and full particulars. Get the bigger profits. Just let us prove that with *Double Speed Machines* you can make more money.

Northwestern Manufacturing Co., 31 Orcutt Bldg. **Sioux City, Iowa**



GUARANTEED EDGE TOOLS

This Stamp (T. H. WITHERBY WARRANTED) on Edge Tools assures complete satisfaction sure your chisels, gauges or draw knife bears the above stamp. For sale by all dealers. Send for illustrated booklet showing all styles.

THE WINSTED EDGE TOOL WORKS

It assures longest service too. We stand back of our guarantees. Be sure you get the best.

WINSTED, CONN.

-LUMBER SNAP-

Your bills of lumber and building material received during month of January will be figured at lowest prices ever made on high grade brand new stock. Never, in our entire history, have we been situated to quote such low prices.

Through 22 years of our successful growth we have never found it necessary to recognize any competition in high-grade, brand new building material. Proof of this statement is given by our already large and rapidly increasing lists of satisfied patrons. Send us your **lumber bills today for low January figures.** Upwards of 20 million feet of up grade lumber always on hand, suitable for all work. Also doors, windows, frames, cabinet work, interior finish and all building material at lowest of low prices.

THESE SPLENDID BOOKS ARE FREE

\$10,000.00 Plan Book of 100 modern Harris homes, barns and other buildings, profusely illustrated with floor plans. Outlines of our unbeatable home building proposition. Ask for Plan Book C-149.

Building Material Book. The greatest carpenters' and builders' buying guide ever published. A wide range of bargains in doors, cabinet work, siding, flooring, interior finish, etc. Ask for Catalog C-149.

Half Price Pre-inventory List of Odds and Ends Now Ready
Ask for List No. C-149

HARRIS BROTHERS CO., 35th & Iron Sts.
CHICAGO



Brick Machine.

CONTRACTORS AND BUILDERS

Why not manufacture your own brick for one-half the price you are paying for them. This can be done on the Perfect Automatic Adjustable Brick machine. Write for catalogue. It contains a full line of the latest improved Concrete machine. Retain this coupon it will answer as cash to the amount of \$10.00 on your purchase, on either Brick, Block, or Power Tamper. The Perfect Line consists of Brick, Block, Machines, Power Tampers, Cistern Well, and Silo Molds. Address



Block Machine.

C. S. WERT, Kendallville Ind.

15
Days' Trial
Before
You Buy15
Days' Trial
Before
You Buy15
Days' Trial
Before
You Buy15
Days' Trial
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Days' Trial
Before
You Buy15
Days' Trial
Before
You Buy

There Are Other Good Mixers—but they COST MORE!

There Are Other Low-Priced Mixers—but they're NOT AS GOOD!



Patent
No. 842262 and
782700

What is the purpose of a concrete mixer, anyway? To save labor, isn't it? And to save time—and to mix the concrete the most efficiently.

The mixer that fills the above requirements with the greatest degree of satisfaction is the mixer you should buy.

This is the reason why a **DUNN Mixer** has particular claim on your attention—it's the reason why every sale of Dunn Mixers is the result of good buying judgment.

Nothing Small About DUNN Mixers—Except the Prices

The drum on Dunn mixers is longer than ordinarily; this means more mixing room. The opening is larger, permitting inspection of the contents at will.

The mixing is accomplished mechanically—not by gravity. Two blades at each end assure thorough mixing.

The drum should be tilted and held at different angles to suit the different mixes. You can do this on Dunn Mixers; you can not do it on other mixers.

Dunn No. 1 Mixers can be discharged by power—a time and labor saving feature, and an exclusive one.

The above are five of twenty important Dunn Mixer features; post yourself on the other fifteen by writing for the Dunn Mixer catalog at once.

Dunn Mixers are made in several styles and sizes, and sold on 15 days' trial. Prices.....

\$67.50
to \$224

Concrete Porches Pay a Bigger Profit Than You Think



The ornate appearance, permanence and dignity of concrete porches made with **DUNN Molds** make them ready sellers wherever shown. Dunn Molds will make porches as illustrated, also Columns, Vases, Chimneys, Balusters, Flower Boxes, etc. All sold on 15 days' trial. Full details in catalog, free upon request. Price of outfit for making porch shown. **\$39**



Don't Tamp Sewer Pipe—POUR It!

•Tamping a semi-dry mixture, to make large drain tile and sewer pipe, is not only slow, troublesome and costly—but unnecessary. Pouring a wet mixture into **DUNN Molds**, besides being the most efficient method, assures the strongest product. Reduces manufacturing costs, too, and increases the profits.

Dunn Molds permit the manufacture of all size pipe, from 6 to 26 inches in diameter. All sold on 15 days' trial. Pipe Mould catalog gives full descriptions and prices; ask for a copy. Price of 12-inch mold... **\$7.50**

Chicago Cement Show, Spaces 130-131



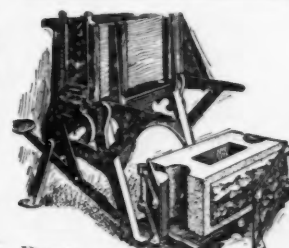
W. E. Dunn Mfg. Co.

4132 Fillmore St., - Chicago



General Specifications

3½ to 5 cubic feet to batch.
Power or Handwheel discharge.
12-gauge boiler plate drum.
One-piece hollow yoke.
Speed, a batch a minute.
Heavy cast iron frame.
Heavy steel trucks with steel wheels.
2½ h.p. water cooled, 4-cycle engine.
Every part rigidly guaranteed.



Use Three Block Machines—But Buy Only One

To make Face Down, Side Face and Two-Piece Hollow Cement Blocks usually requires three machines. But one **DUNN Combination Cement Block Machine** will make all three types. Saves two-thirds of the usual investment.

By using a wet mixture it saves considerable tamping, and makes a stronger block. And a special oil-bearing system protects each block against breakage. Capacity, 150 blocks daily. Sold on 15 days' trial; write for Block Machine catalog. Price..... **\$40**

The Concrete Fence Posts that Sell the Quickest

are those of high quality and moderate price.

These are the kind that **DUNN Concrete Fence Post Molds** make. The Dunn system enables quick and economical manufacturing. Tamping is eliminated by our special **Vibratory Base** which compacts each post to uniform density and firmness. Made in batteries of four and ten. Sold on 15 days' trial. Price of 4-mold battery..... **\$12.50**





Jaeger

A-MIX-A-MINUTE CONCRETE MIXERS

No matter what kind of work or how much work you do there is a **Jaeger Mixer** built to suit your individual needs. Made to earn you big profits and made to give service—years of it. Every Jaeger whether the "**Big**" or the "**Little**," is made of best materials and all deliver a good thorough mix in "A Minute." Read carefully the details about each machine.

The Jaeger BIG MIXER

"A Sack a Batch." If you do large work here is just the Mixer you have long wished for—a dependable large capacity mixer at the right cost. It is of the same dependable design as our well-known "**Big-an-Little**," only it has a capacity of 10 cubic feet instead of 5 or 6. It is equipped with our own make "**Dependable**" engine developing 5 H. P. Has all steel frame, all steel trucks and is equipped with all steel side loader, controlled from either end. Bucket is of large size and easily holds batch. If you handle large work, you will find the Jaeger Big Mixer without equal.

The Jaeger LITTLE MIXER

A popular mixer for the Contractor and Builder. Mixes concrete, mortar and plaster equally well. This mixer is especially handy for the man who does not have great quantities of work at any one time. This Jaeger Little Mixer has a capacity of 3 cubic feet of wet material and delivers a batch in "A Minute." Trucks and Frame are all steel, strong and rigid. Remember, this Little Mixer has the same Reputation and Company behind it as the "Big-an-Little."

The Famous "BIG-AN-LITTLE"

The Standby of many a Contractor. For the big job—for the little job you will find this mixer a real money-maker. We are justly proud of the "Big-An-Little" Mixer, because it gives real service and delivers the goods. But with all its exclusive features and the high quality in its make-up, it is not high-priced. The cost is just right and it will soon pay for itself in profits made. The "Big-An-Little" is simple, yet very efficient. No complicated parts, consequently less trouble and easily kept clean. If you handle all kinds of jobs, the "Big-An-Little" is the logical mixer for you to buy.



Our Catalogue takes up all the Jaeger Machines in detail. If you use concrete in any form get in touch with us. We'll show you where Jaeger Machines will increase your profits.

The Jaeger Machine Co.

318 W. Rich St.

- Columbus, Ohio

THE *Atlas* MIXER



CAPACITY—5 ft. batch, easily fifty cubic yards per day.

“Notice”

Our success with the Atlas Mixer, and the large sales made the past year have enabled us to reduce factory and selling costs.

We are going to share this extra profit with our customers.

You cannot afford to buy any Mixer until you have asked us the price of this machine **for 1915.**

Send for particulars of the “7-ft.” Atlas with pressed steel drum.

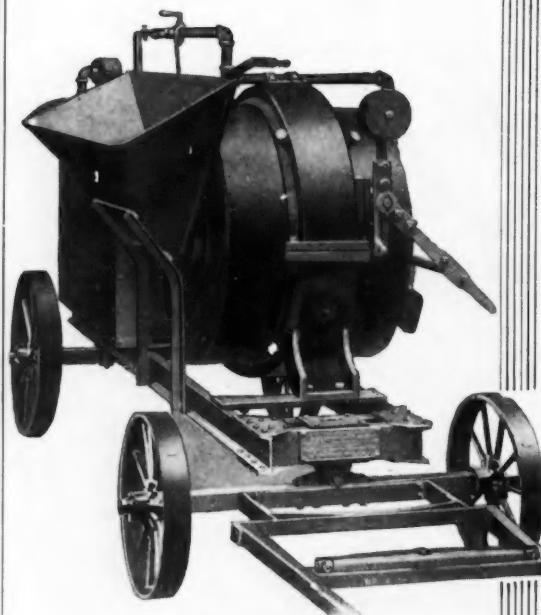
The Atlas self-propelled road machine for paving work is a sensation.

It's worth the trip to the Cement Show. Booths 59-60-61-63-64.

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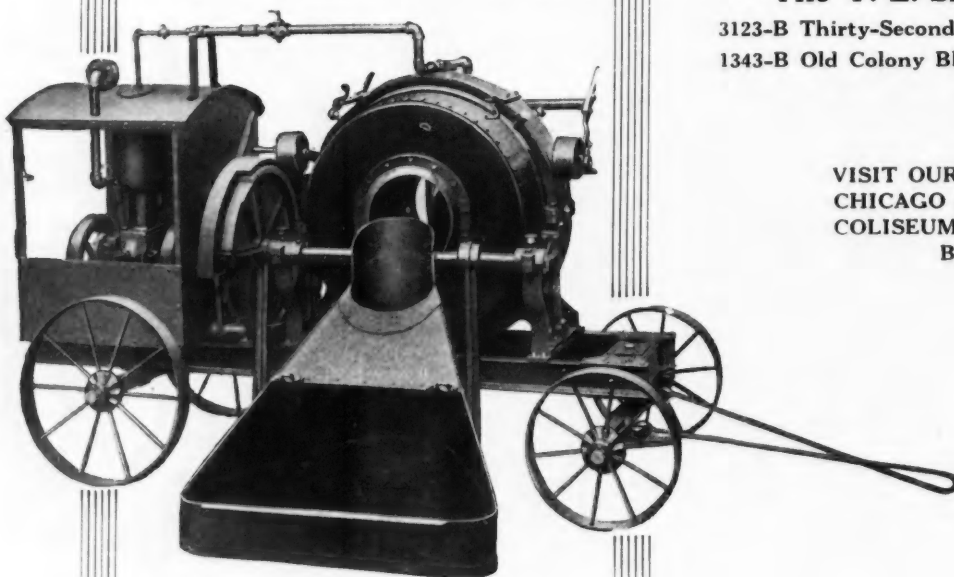


\$246.00 F. O. B. Factory

Smith Mixerette on steel truck with 2-H.P. gasoline engine, and steel house. Mixer equipped with waist-high, gated, batch-charging hopper.

Smith Mixerette with ground-level power charger. This loader is gear driven. It lifts easily and rapidly without straining the mixer.

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EFFICIENCY PLUS---and The SMITH MIXERETTE

The following partial specifications show the real efficiency of the Smith Mixerette for the small concrete job. Read them carefully. You'll realize then what a dandy little mixer this is.

Enclosed Gear Ring—Big drum ring and driving pinion enclosed and protected against dirt and dust. Ring fits snugly into casing, the machined surfaces forming a perfectly true sliding bearing. Pressure grease cups lubricate the sliding bearing. The big drum gear splashes through an oil bath on every revolution.

No Main Rollers, Shafts or Boxes—Gear casing forms pedestals which are securely fastened to truck frame.

Ropeless Power Charger—Gear-driven skip eliminates hoisting cables, sheaves and drums. Lifts easily and smoothly without the twisting, jerking motion common to pivot type loaders.

Low Feed Level Batch Hopper—This hopper is only 3 ft. 10 $\frac{1}{4}$ in. above ground. With its low flaring opening it can be loaded with ease.

Truck—4-in. steel channel sills, 2-in. square steel axles, 20-in. and 26-in. wheels.

Capacity—5 cu. ft. dry loose material, 3 cu. ft. mixed concrete per batch, 5 cu. yds. per hour.

Efficiency Plus—Back of the Smith Mixerette are 14 years of experience in building mixers for every class of work, large and small. Write for Special Proposal and Catalog No. 116-B.

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BOOTH 93

Every Contractor Can Own A Low-Charging Mixer

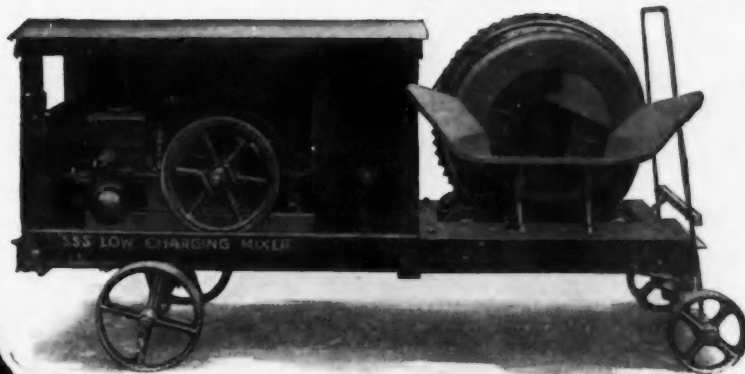
**1915
PRICES**

Notice!

The demand the past few years for medium sized concrete mixer exceeded all expectations. Increased facilities for manufacturing make it possible to offer the "SSS" and "The Standard" low-charging mixers at greatly reduced prices.

Save on the First Cost of a Mixer

Add $\frac{1}{3}$ more to your next year's profit by buying a "SSS" or "The Standard" Low-Charging Mixer. Why say save $\frac{1}{3}$ —because a low-charging mixer reduces your labor cost $\frac{1}{3}$. The drums are loaded at the base, 24" above the ground. No time wasted by loading, for the barrow-loads are charged right into the drum or the drums can be charged by shoveling directly into them.



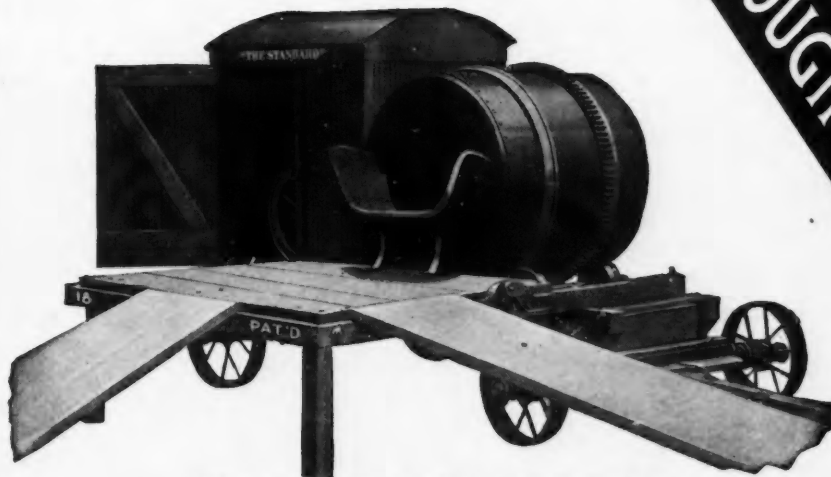
The "SSS" Capacities 4-6-9 cu. ft.

Instead of snapping and breaking skips, buy low-charging and you can count on your force being at work all the day long.

You know that you can't save much on your materials but you can save by having the right kind of machinery to do your work, Low-Charging will do it.

Remember you save $\frac{1}{3}$ on labor and you save on the cost of a mixer if you buy "The Standard" or a "SSS". Send for catalog No. 44-2 and prices.

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5-6 and at our
Store Sales
Rooms 1345-7
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**BEST POSSIBLE QUALITY
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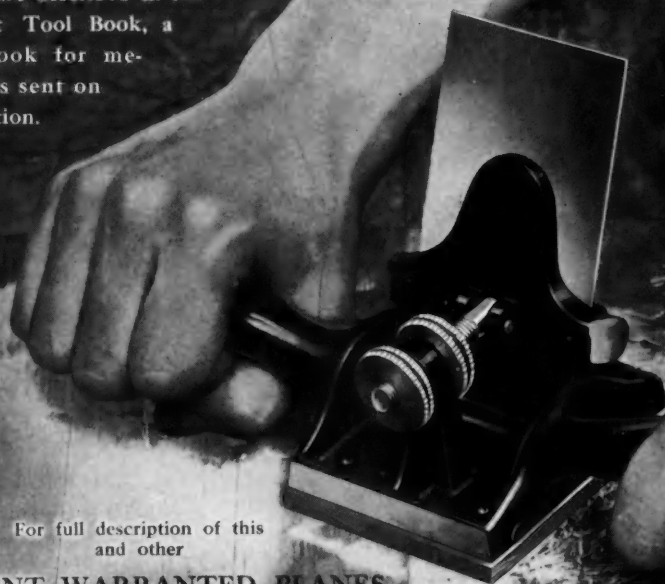
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A light floor or veneer
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Makers of Squares, Planes and Mechanics' Tools

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New York



Bright Outlook for Farm Building

A GAIN the farmer saves the day.

No matter what the big city building prospects are for this coming season, one thing is sure, country building is going to be the best in years. Farmers have been harvesting bumper crops this past year and are selling them at war-time prices. According to the U. S. Department of Agriculture, the farm crops for 1914 eclipsed all previous records, with a total value of \$10,000,000,000 (*ten billion dollars*). This is \$83,000,000 more than for 1913, the previous record year.

Some of this money will go into farm buildings—new barns and remodeled barns, and modernized farm houses—permanent improvements. Not all will be spent for Ford cars.

Just how much of the farmers' money will be diverted to building improvements will depend a good deal on the energy and persuasiveness of our readers. If the contractors and builders doing country work will get out and talk modern farm buildings to the farmers they will stir up a lot of profitable business. The farmers have the money and are very easily interested in barn plans and details, and ideas for saving time and labor. Just remember that in the last 15 years, according to government statistics, the annual value of farm crops has more than doubled. This means that bigger and newer barns are needed and can be well afforded by the farmer.

A Farm Building Text Book

WE have taken pains to get together for you in this Farm Building Number of the American Carpenter and Builder an extra large and valuable collection of farm building plans and data on barn equipment and barn building materials. This magazine is your best text book on farm building work. Study it yourself carefully and show it to your farmer customers. It will interest them and will help them to decide.

354 Ready to Serve You 354

THE most valuable part of this Farm Building text book is not our big editorial section with its special articles, up-to-date building designs and carefully drawn working details—fine and valuable though these are. The best part for you, as practical builders, is the advertising section.

In our advertising pages this month you are offered the services of 354 different business organizations. 354 responsible and reliable business concerns want to co-operate with you to make this coming building season the biggest and most profitable ever. Study their announcements. Now is the time to post up on modern farm building work. Study these advertisements carefully and write for the instructive catalogs, circular matter and hand books offered. Many of these are large, costly books; but they are offered free to our readers. These 354 business houses are friends of yours, though you may not know them. Get acquainted with them now, before the busy season is on you.

Next Month "Rural Improvements"

THE March American Carpenter and Builder will be devoted to Rural Improvements. Our aim is to surpass this present issue in interest and value to our readers. We ask the help of every one of you to accomplish this. It is a mighty high aim and we need your assistance to reach the mark. Write us a letter today about your best farm building job and send us a picture of it. We had to leave out the Correspondence Department this month but we are going to make up for it by giving double space to the Correspondence in the next issue. We want you to come in with us on this and make this March number the biggest and best ever issued.

Very cordially yours,
Editor American Carpenter and Builder.

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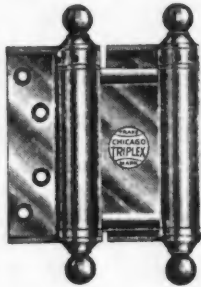
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CHICAGO

SPRING BUTTS

A SUGGESTION

Do you specify a spring hinge with distinctive features which will appeal to your client and assure satisfaction to all concerned?



Chicago "Triplex" Spring Butts

offer this advantage to you. The appearance, durability and finish of this article are unsurpassed, and in consideration of prices that are conservative in respect to value, the up-to-date builder cannot afford to risk his reputation with goods that are unsatisfactory.

Send for Catalogue C 29. It illustrates and describes the most complete line of Spring Hinges manufactured.

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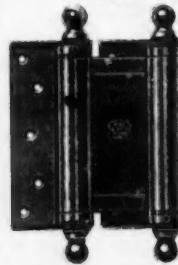
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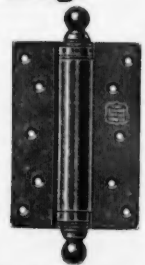
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Facts are Stubborn Things



Don't Buy
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OBSOLETE
CONSTRUCTION
ONLY



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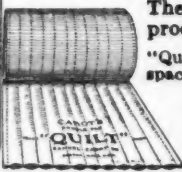
Double Acting Spring Butt Hinges

have the weight-supporting bearings correctly located to liberate the action of the springs, reducing breakage and increasing spring power, preventing unequal wear of the barrels, and giving practically unlimited durability. Bommer double-acting spring hinges open alike at both casings and both doors when both doors are opened.

The carpenter can avoid guesswork and save time when hanging double-acting doors in pairs, as he can scribe and fit both doors of a pair from the same side of the opening.

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The Standard Paint Co.

NEW YORK
BOSTON
CHICAGO

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The
**World's Greatest
Building Paper**

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**World's Greatest
Building Paper**

American Carpenter and Builder

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PROTECTION FOR OUR READERS.

The publishers of the American Carpenter and Builder will not knowingly publish any advertisement of a misleading character nor accept advertising from any individual, firm or company whose business methods are open to question.

We often receive inquiries from readers who desire information about concerns that formerly used the advertising pages of the American Carpenter and Builder, but are no longer doing so. They want to know if these former advertisers are still in business, if they can send them orders with the assurance that they will be filled, and a variety of other questions.

The American Carpenter and Builder will use every legitimate means to safeguard the interests of its readers and to protect them from fraudulent or unreliable concerns. Where the slightest doubt exists our readers should write the publishers for information. It may save them money, time and worry.

In all cases in writing to advertisers say: "I saw your advertisement in the American Carpenter and Builder."

VOL. XVIII

FEBRUARY, 1915.

No. 5

Boost for Building**TALK building improvements!**

There is power in suggestion; and there is weight in the words of the practical builder who knows. When you advise repairs or remodeling, the work is usually as good as ordered. When you urge new building projects there are always those who will listen.

This being the case, get the habit of talking building. The average person easily forgets and more easily puts off. Talk building to remind and to spur to action.

Don't be like lumber yard merchant, Binkson, that Walt Mason tells about in the last issue of "Curtis Service"—rather like Dealer Gaff. What Walt says about the lumber business applies equally as well to building and builders.

"Some merchants are so all-fired dumb, you wonder how they ever come to sell the stuff they have in store, and keep the sheriff from the door.

"Old Binkson is a lot that way; he seldom has a word to say. I ask him for a pound of lime; he wraps it up, and all the time, he wears a tragic air of doom, and sheds an atmosphere of gloom. He never chats, he never spiels, nor jumps up high and cracks his heels. He isn't grouchy or unstrung; he never learned to wag his tongue.

"Oh, silence is a golden thing, when 'tisn't worked too hard, by jing. Though none of us will stand up strong for men who gabble all day long, and elocute a thousand miles in fifty-seven varied styles. The dealer who is prone to talk until you hear him round a block, is worse than t'other kind of bird, who's never known to spring a word.

"But if you've scantling you would sell, you ought to boost it wisely well, and if a gent should buy a plank, to build himself a dipping tank, you might suggest ere home he speeds, that you have other things he needs.

"I called on Lumber Dealer Gaff, to buy a shingle and a half. He put my purchase in a sack, and wrapped a string around and back, and as he toiled, in manner gay, he talked to pass the time away.

"The farmers now, in busy troops, are building stately chicken coops; the winter soon will hit the road, and hens must have a warm abode, or they won't lay their luscious eggs, but stand around on frozen legs.'

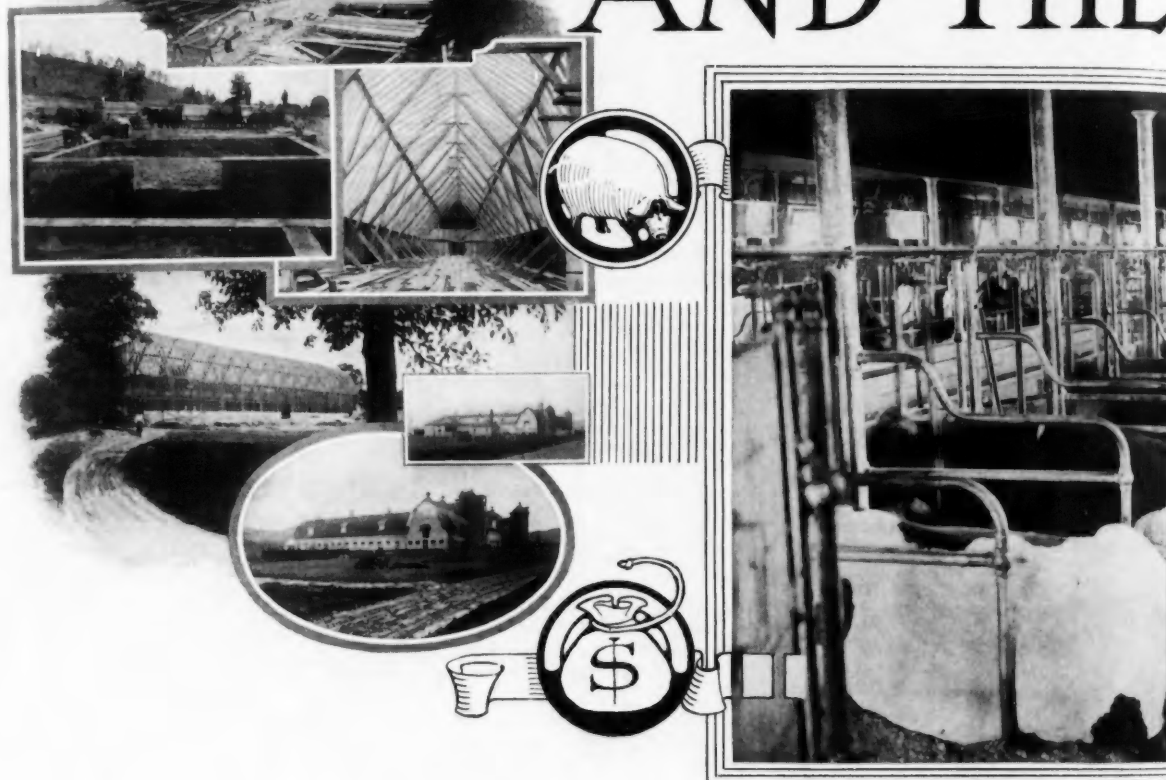
"And that recalled the fact to me that I had hens, some ninety-three, and ere I left that lumber store, I bought a wagon load or more, of stuff to build a chicken shed; it's standing now, all painted red.

"And that's the way big sales are made, and that is how men build up trade. Talk corn cribs at the proper time, or prove a silo is sublime, let it in an incidental strain, and not as though you'd gladly sprain your conscience—which I hope is hale—in eagerness to get the kale.

"Suggestion is a noble art; the wise man gets it down by heart."

Next Month, Rural Improvements. Write us your experiences for big Correspondence Departments.

MODERN BUILDING AND THE



How We Made Money By Remodeling Our Old Farm Buildings

A Successful Farmer of Wide Experience Tells All About His Farm Building Improvements,
And Explains How Every Step Has Paid For Itself

By Herbert Shearer

Well Known Farm Manager and Agricultural Authority

EDITOR'S NOTE.—This is one of the most remarkable and really helpful articles ever presented to country contractors and builders.

A successful farmer of long experience who has built up his farm through having proper barn buildings and labor-saving appliances, relates exactly *how* and *why* he remodeled, constructed, and equipped his buildings in the way he has. He talks to contractors and builders who do farm building work, telling them how farmers feel about modern building improvements.

This information, coming from a practical farmer, will prove of great assistance to our subscribers when they solicit farm building work from other farmers.

The author evidently feels grateful to his local contractor and builder for the good ideas and assistance

he has given all through the years in helping plan, build and equip the farm house, big barn and other farm buildings on the author's place. This feeling of gratitude makes him willing to go into all the details concerning his buildings, for the assistance his experience may be to other contractors and builders in handling similar work for other farmers.

This successful farmer, in writing about his farm buildings, shows that while he now has quite a show place, the envy and wonder of the neighbors for miles around, nevertheless every step in the development of his farm plant has paid for itself in labor saved or extra profits made.

For this reason *any and every* farmer, no matter what his means, can adapt to his own use some of the ideas set forth in this article.—EDITOR "A. C. & B."

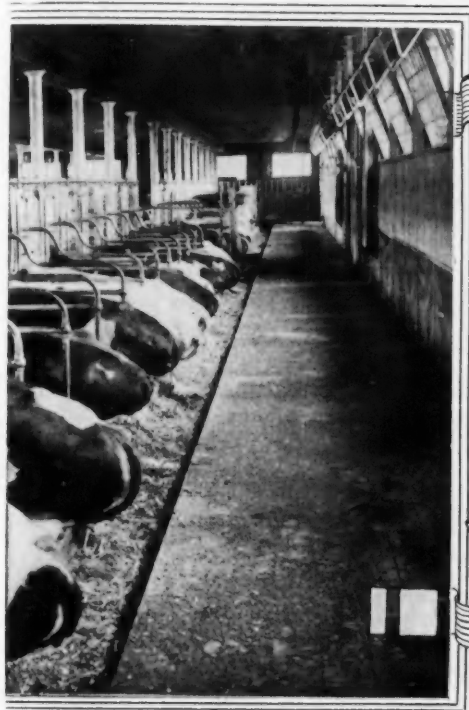
I AM counted a successful farmer. My buildings are the talk of the town. More than once my neighbors have wagged their heads skeptically and remarked, "Wa-ll now, I'm not so sure about that." But every improvement I have put in has paid for itself.

I have been criticised, but I have proved my ideas right. I have taken the modern stand for labor-saving efficiency on the farm. And that is my excuse for having the platform at this time.

I have noticed that farmers are get-

ting more interested in labor-saving improvements. The farm papers have been preaching the doctrine of it; to have better equipment on the farm. The farmer is just as good as anybody. He has more money than most, and why should he not have the things that make

IMPROVEMENTS FARMER



Photographs by courtesy of Jenningshurst Stock Farms, Towanda, Pa.

lift worth living? He should.

In addition to this missionary work on the part of the rural press, the wide-a-woke carpenters and builders have been studying up these matters and that has done more good than I can tell you. I feel grateful to my local builder and his gang for the help they have been to me; and I am glad to give these few personal experience remarks for the help they may be to other builders in talking with farmers about farm improvements.

We Make Definite Plans for Farm Buildings

To make money farming, I am obliged to specialize. I learned by degrees that our old farm buildings were of little real service except as store houses. So I commenced in a small way some years ago to reconstruct the most important ones so that we could house and care for live stock to make it profitable.

In this reconstruction work our local contractor has been of great assistance to me in a practical way. Before making any definite plans he brought me all the plan literature and barn equipment catalogs he could get his hands on.

We had considerable live stock and were making some money, but the labor of taking care of the stock in winter and the extra cost of feed and feeding in a slip-shop manner took too much of the profits. I wanted facilities for doing the work that would help me to do more business at less cost and to do it

better—and so make me more money.

But first I wanted a definite plan to keep in mind. A plan to develop one step at a time, as we could take up one improvement after another.



Farm Expert Shearer, the Author, who advises builders to study up on Modern Farm Building.

General Plan for Grouping Buildings

I invited the builder to come out and spend the day with me. We went over the proposition of remodeling every building on the farm except the house. I felt the house would have to wait until we got the farm running on a paying basis.

The result was a general farm plan, including the grouping of buildings for convenience in doing the work. The plan involved moving some of the buildings, while others were torn down, because the material seemed to be more valuable than the buildings.

The old buildings were arranged right in one respect. The house stood to the windward of the other buildings, so that the prevailing winds blew from the house to the barns. This is an advantage in case of fire, and it is a continual advantage in driving the barnyard odors in the right direction. However, if the premises are kept clean, as they should be, odors are not very objectionable.

We planned the garage and power house between the house and horse barn. The large stock barn came next and the hog houses were farthest away. The chicken house was fenced from the house garden and lawn by a high woven wire fence. Chickens like other farm stock are very valuable and interesting if kept in their proper places.

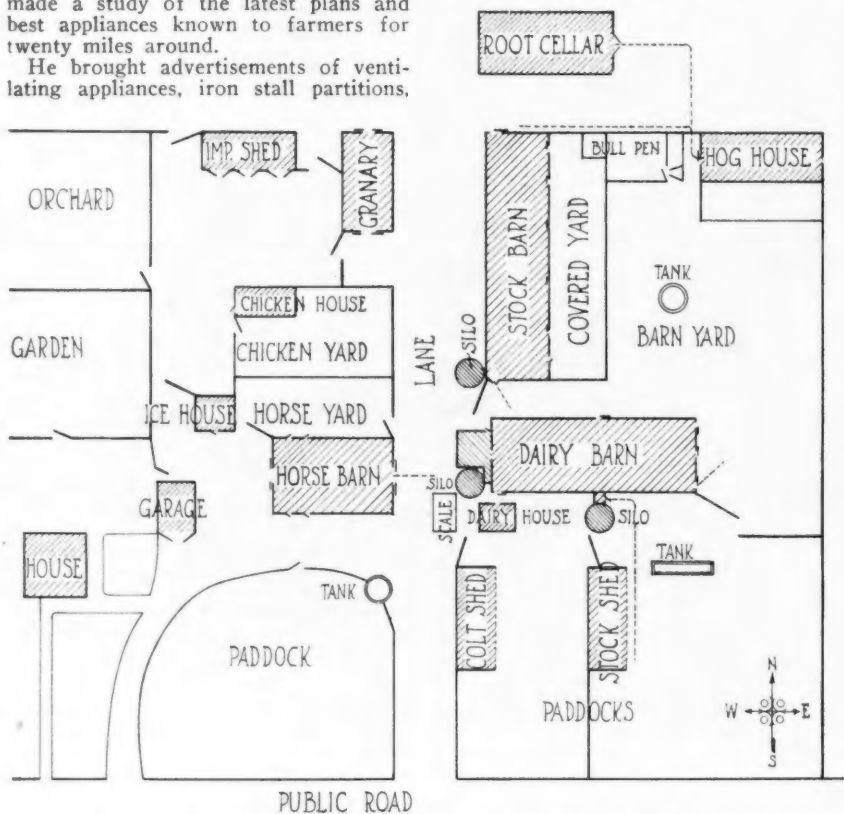
The Contractor Plans My Large Barn

THE contractor first drew up plans to remodel our largest barn. The plans looked to me rather elaborate at the time, but I knew that he had done considerable barn building and had made a study of the latest plans and best appliances known to farmers for twenty miles around.

He brought advertisements of ventilating appliances, iron stall partitions,

building construction, materials for roofs, etc.

I have always felt under obligation to the builder for the interest he took in the proposition and the assistance he



General Plot Plan of Farm Buildings Showing Convenient Arrangement.

swinging stanchions, special mangers, different kinds of stable flooring, overhead tracks for manure and feed carriers, the newest ideas in horse elevating machinery for putting feed into the big mow, and to take it out again when needed. There were advertisements of large appliances to save labor and small inventions to save annoyance, such as door hangers that would operate easily and door fasteners that could be relied upon, as well as many other ideas in

gave in getting me started in the line of improvement.

Trolley Carriers for Manure and Feed

The old barn had a good solid frame of the old-fashioned kind. We decided to raise it a few feet and dig out from under to make a good basement, building up a strong and warm basement wall of interlocking structural tiles

resting on a concrete foundation. We arranged from the beginning to install all the labor saving devices that looked sensible. So we planned 8 ft., 6 in. in the clear to give sufficient head room between the cement floor and the ceiling of the basement stable.

We wanted plenty of light, so the east, south and north walls were pretty thickly punctured with windows, and the windows are large enough to let in plenty of light and sunshine. The 8 ft., 6 in., ceiling and the slope of the barn yard, away from the barn, gave elevation sufficient to run a manure carrier out over the spreader so we could dump directly into the spreader without extra handling.

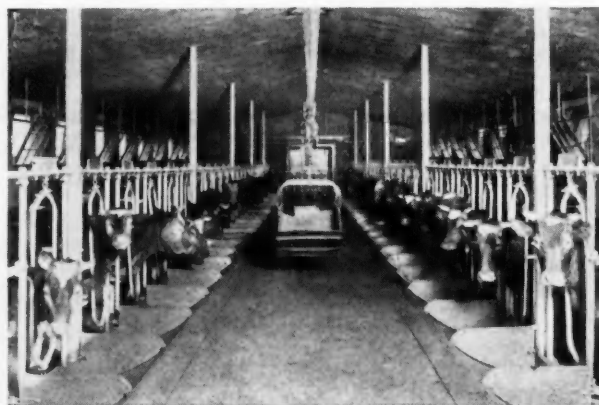
This is one of the most important labor saving propositions on a farm. It has made thousands of dollars for me. Manure is never properly taken care of until farmers have appliances to handle it by machinery. Good manure from grain-fed cattle is a very valuable product; but it is generally wasted under the old-fashioned conditions. It was my first experience in manufacturing a really valuable by-product. I have always given the contractor credit for getting me started right in that direction. It seemed quite an expense when we first talked the proposition over.

Value of Overhead Carriers

One of the most important labor-saving inventions for stable use is the manure carrier. For years, we labored with wheelbarrows to get the manure out of the old stable and away far enough to keep a clear entrance. The memory of doing this disagreeable work will remain with me as long as I live. I have a clear picture in mind now of the dirty old 2-inch planks that we used for a runway to get the wheelbarrow over the soft places.

After getting the manure out on the pile, the work was only half done. We still had to pull our arms out of the sockets to dig the manure out of the pile and load it onto wagons, and to spread it by hand in the field. We had to wear heavy, uncomfortable rubber boots and wade around in the disagreeable barnyard filth until work of stabling the cattle in the winter time became the most unsatisfactory of any job on the farm.

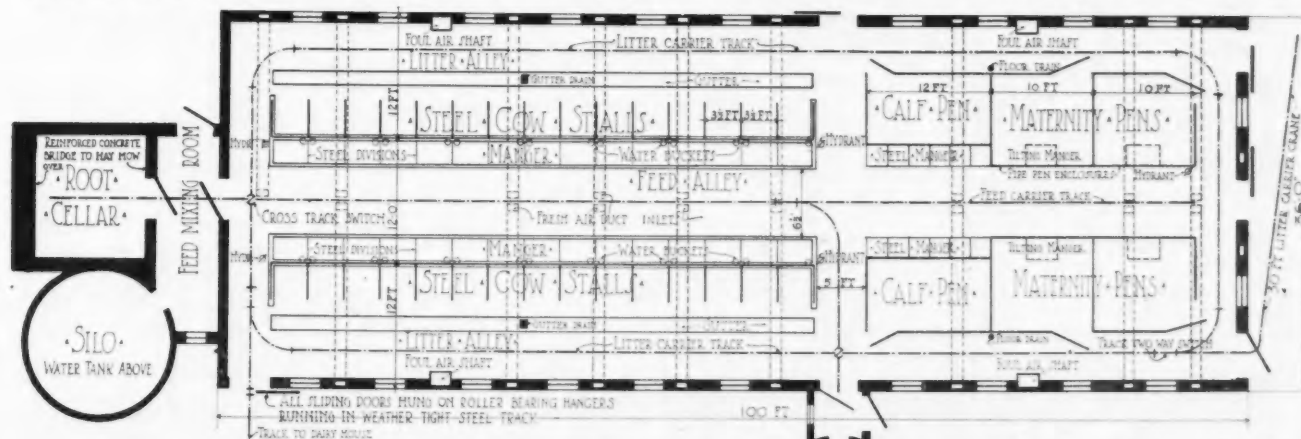
One of the first things I talked over with the builder was my determina-



For Absolute Sanitation in a Dairy Stable, Each Cow is Sponged Off in this Ante-Room Before Going to Her Stanchion to be Milked. The Cows Appreciate Their Clean, Well Ventilated Stable and Show Their Gratitude by Giving More Milk. The Trolley Track Feed Carrier Does Most of the Work of Serving the Bossies' Meals.



The Remodeled Dairy Barn. A Heavy Timber Frame Raised Up and Set on a 12-Inch Glazed Tile Wall. Size of Barn, 100 by 36 Feet. We will gladly answer all inquiries for further information about this Cow Barn.—Editor.



Stable Floor Plan of Remodeled Dairy Barn. Upper Floor is Reached by Concrete Bridge Over Root Cellar at Far End of Barn.

tion to secure some means of handling manure in a cleaner and more satisfactory manner. I think we both took a good lively interest in selecting the best overhead track and the best manure carrier on the market.

The slope of the barnyard gave us sufficient fall to dump directly into the manure spreader without the aid of a hand elevator. Then by planning our field work in such a way as to provide suitable ground to receive the stable manure, we could spread it by machinery directly in the field at once and get the full benefit of the manure in its freshest and best possible condition.

I consider manure one of the most

valuable by-products a farmer can produce. Manure carriers and manure spreaders are the most valuable help we have for taking care in the cheapest possible manner of the manure as fast as it is made.

There is another great advantage in machinery of this kind, and that is in the help problem. The best farm help objects to doing work by hand that can be done better and cheaper by machinery.

There is absolutely no argument against fitting a dairy stable with the necessary machinery to take proper care of the manure.

It pays in labor; it pays in the crop

that follows; and it pays in satisfaction.

Sanitary Stable Equipment

Our cow stable furniture consists of concrete mangers, iron stall partitions and swinging stanchions, with some extra iron feeding attachments. We use enameled milk pail benches, milking stools made of the same white material and milking machine connections to match. The ceilings and walls are white and the stall partitions and stanchions are black, which makes a contrast that is rather pleasing.

Each day when the cows are turned out, the stable is cleaned and washed down with brushes and clean water from the hose, so that once a day the stable is made as clean as scrubbing with cold water will make it. It is impossible to clean a stable

thoroughly unless inside trappings are plain and smooth.

In making the stable floor we provided drainage through an open cement drain to carry away the waste surplus water from the stable gutters. This is not a liquid manure drain, but there is some fertility in wash water, so we run it through a shallow manure pit which is more in the nature of a settling vat. This vat remains full, up to the screened outlet, except when emp-



"May Rilma," the Present World's Champion Cow. The Type of Extra Valuable Animal that Improved Farm Buildings Help to Raise. This Guernsey Cow Produced 3.68 Pounds of Butter Every Day for a Year, a Total of 1,342 Pounds of Butter Produced from 19,673 Pounds of 5.5% Milk. This Set a New World's Record for 365-Day Test.

tied for cleaning. The water drains away and leaves the particles of straw and manure in the tank.

We have a system of using liquid manure absorbents in the stable, so we do not lose much fertilizer. After the stables are washed, the absorbent is placed in the bottom of the gutter where it remains until the next stable cleaning period.

Our stable fertilizer is a valuable by-product. It is worth more per ton than some commercial fertilizers, which accounts for the careful manner in which we take care of it and apply it where it will do the most good.

If farmers understood better the value of fresh stable manure, when applied immediately to growing crops, it would be easy to induce them to buy manure spreaders and put manure carriers in their stables. Of course, a farmer must know what to do with the manure after he has it. Unfortunately, most farmers waste three-quarters of the real fertilizing value of manure before making any attempt to apply it to the land.

Modern Easy Running Barn Door Hangers

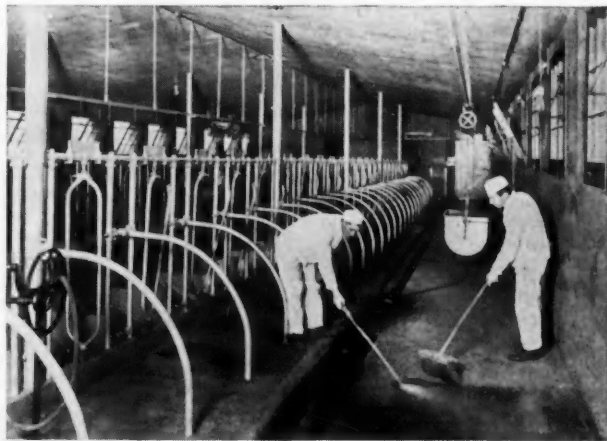
Among the modern inventions to save labor and multiply conveniences we gave an important place to the hardware attachments for barn doors and windows.

The builder called my attention to a protected steel track hanger that was guaranteed to carry heavy barn doors without causing profanity. In making our large buildings we were expanding in every direction. We were raising

into solid reinforcement timbers. This is a very necessary part of any door hanging equipment.

Another thing we discovered was several kinds of barn door fasteners that are heavy enough to hold barn doors shut regardless of the manner in which the door is built or hung.

In the matter of smaller barn equipment I want to mention a novel use we made of storm sash hangers. We put them on the *inside* of our stable windows, which permits the sash to



The Dairy Stable Gets Its Scrubbing with Clean Water.

larger horses, buying heavier wagons and building larger hay racks. Following up these changes, we were obliged to plan larger barn doors on the general principle that one good turn deserves another.

In talking over the barn door proposition, we decided that the old style sliding door is out of date in a large modern barn. My recollections of the old style sliding door and the troubles that went with it were not encouraging. But I was very pleased to investigate the new hangers.

The one we adopted has a housed-in track that is proof against snow and ice and birds' nests. It is so attached to the building as to discourage birds from roosting on it. At the same time it is difficult for even a driving rain to find an opening. My builder advised against any hanger that seemed to be a "bargain counter" proposition. Said that for anything so important and with so much work to do only the best would be good enough.

The builder was particular also to level the tracks very carefully and to see that the bolts were firmly planted

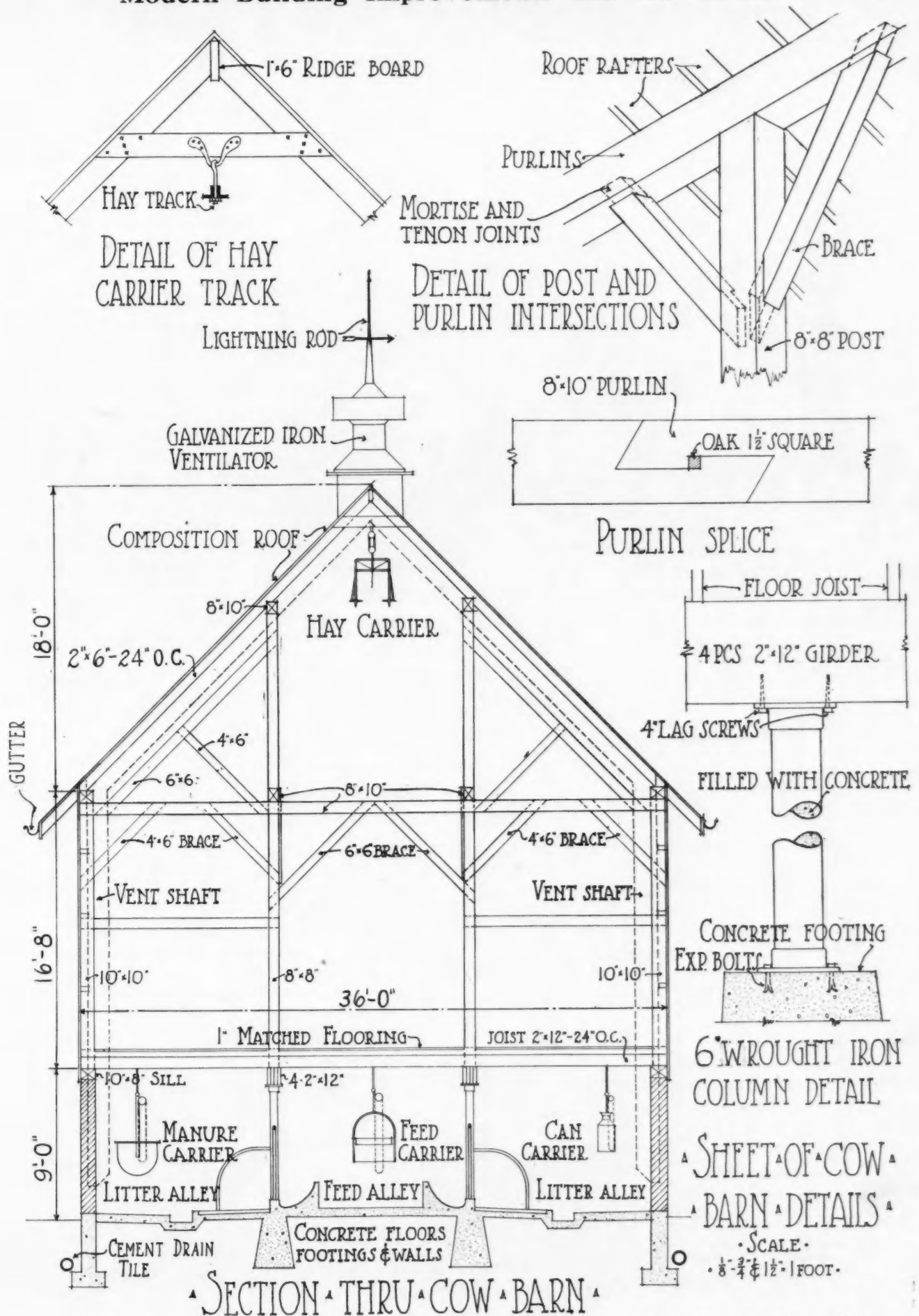
swing open at the bottom for ventilation. The sash may be fastened in any position desired, or may be removed entirely and put back again without the aid of tools. The sash shuts tight against the jamb to keep out the cold in the winter time. It is interesting and convenient to have an attachment of this kind to a barn window that needs adjustment according to the temperature and the requirements of the workmen and of the stock they are taking care of.

Money Spent for Ventilators Well Invested

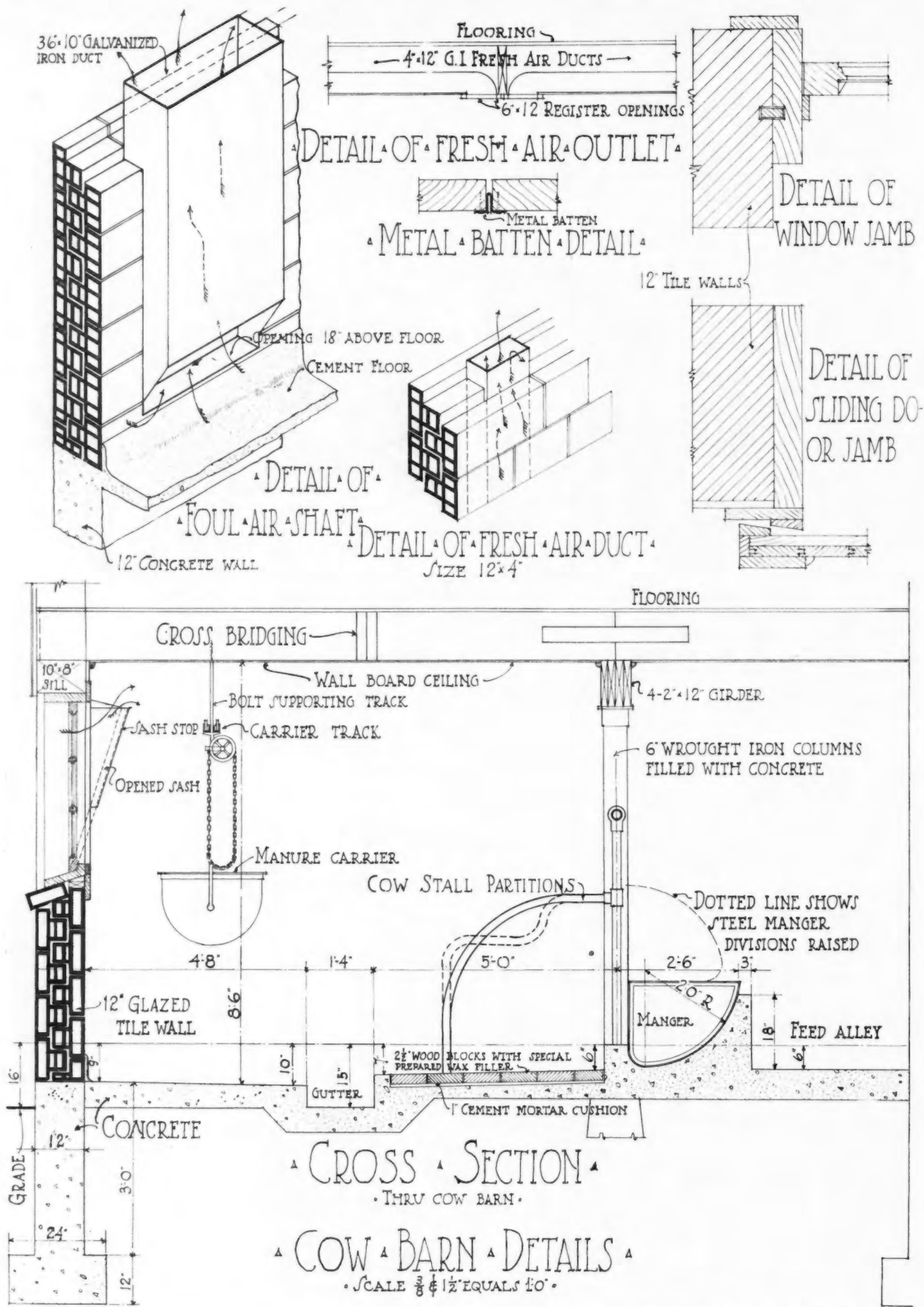
Next we decided on a modern system of ventilation. The ventilating pipes were carried up the side walls and along the slope of the rafters to the peak. To insure a good draft, we attached sheet metal ventilator hoods to the pipes, which regulate the current of air regardless of the direction of the wind. The ventilating system has done a great deal to keep our live stock healthy. Money makers, either animal or human, must first have good health.



Three Views of the Feed Room Boxes Where Individual Supplies for Certain Animals are Kept. For Scientific Feeding, the Pan Scales and the Handy Supply of Various Kinds of Food are Essential.



HEAVY TIMBER FRAMING DETAILS FOR REMODELED DAIRY BARN ILLUSTRATED ON PAGE 41.



WORKING DETAILS OF DAIRY STABLE BASEMENT FOR REMODELED COW BARN ILLUSTRATED ON PAGE 41.

We use the same style of overhead track for the feed carriers that we use for the manure carriers. The traveling wheel track trucks are the same, but the cars are different in construction.

As soon as the barn was finished and

filled with live stock, I knew we had a good proposition. I knew that the money for the alterations would soon come back with interest. And I was not mistaken for it has proved the best investment I ever made.

economical way of housing the corn crop. It is impossible for me to put all my corn through the silos because I raise so much corn. But I believe that I get 25 per cent more profit out of corn that goes through the silo than when we husk it and put the ears in the crib.

Building My Three Silos

BUILDING the large barn and filling it with live stock brought home to me the necessity of supplying large quantities of good, nutritious feeding materials that could be stored in quantities within easy reach at feeding time.

Silage seemed to offer the best solution, as it would furnish roughage in a convenient form. We find that silage is fine to feed late in the winter, "between hay and grass," a time of the year that taxes every farmer with live stock on his hands.

The contractor showed me plans of various kinds of silos. They were constructed of wood, concrete blocks, clay blocks, metal lath on frames plastered with cement stucco, and concrete silos poured in molds. He assured me that good silos are built of all of these different materials. We could build a wood silo quicker than any other, so we built our first silo of wood.

It was such a great success and helped to winter the cattle so easily and they came out in such good condition in the spring that the following year the contractor bought a set of forms for building concrete silos on the strength of my giving him an order for one. He has since used the outfit to build a good many farm silos and water tanks for other farmers in our community. The forms are made adjustable, so that different sizes of round structures can be built with the same outfit.

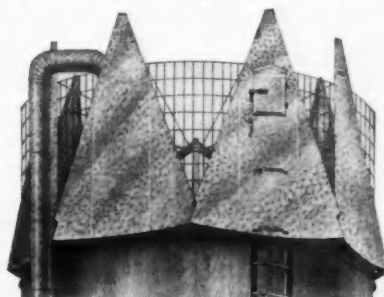
My third silo we built of hollow clay tiles. The builder said he knew them to be O. K. and he wanted to put one up as sort of an example, in order to get the other farmers interested. So he made me a close figure, and I have never been sorry I let him go ahead. All three of my silos give perfect satisfaction, and I believe the total service I will get out of each will prove to be very nearly in proportion with the original cost of construction.

We placed our first silo half way down the south side of the large dairy barn. There is a side entrance to run the feed carrier directly from the silo feed room into the middle of the stable, where it runs either way through the feed alley.

I am a crank about making silage. I make silage about as carefully as a

Dutchman makes sauerkraut. The principle is a good deal the same. If the materials are right and properly put together and kept in barrels that won't leak, the silage and sauerkraut both come out in the winter in perfect condition.

I fed about thirty pounds of silage per head to my cattle the early part of the winter, increasing it somewhat to-



Galvanized Silo Roof Raised and Wire Mesh Laid in to Retain the Silage While Settling.

wards spring. In building the silos I estimated forty pounds per head for a thousand pound cow or steer for eight months. Silage in a silo thirty-six feet deep will weigh about fifty pounds to the cubic foot, so it is easy to figure the size of silo needed. My estimate is that the first silo paid for itself the first year in the finer condition of the stock. There was also an actual saving in expense over any other system of feeding that I ever tried; but the greatest profit came through the improved condition of the animals. They came out of the stables in the spring in a more thrifty condition, ready to grow and make rapid gains on pasture.

We make a great deal of silage now. I feed it to horses, cattle, hogs and poultry. All of these animals like silage and thrive on it. It is the most

Silo Roofs

Silos often are roofed with round conical roofs, probably because silos are round and this is the natural shape for the roof. Silo roofs made in sections usually are many sided, which gives much the same appearance as a round conical roof. Sectional roofs are a little cheaper and easier to build, also opportunity is offered to hinge one of the sections so that it may be opened at silo filling time.

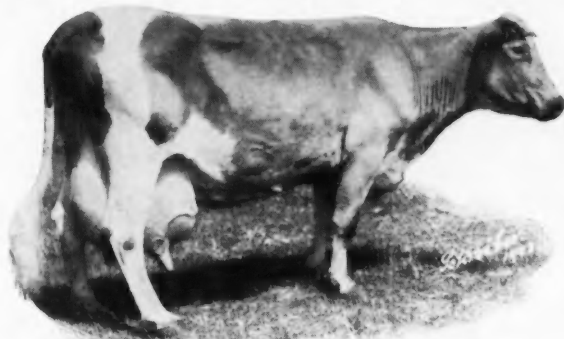
A good many silo roofs are being manufactured of metal. They are made in sizes to fit the different sized silos. These sectional roofs are shipped in the knock-down. They are quickly put on and have the advantage of carrying a neat cornice, which adds very much to the appearance of the silo.

Roofs That Add 8 Feet or More to Silo Height

There are silo roofs so constructed that each section opens out from the center. The sections are all hinged at the outside of the silo wall at the top of the plate ring. At silo filling time, these sections are all opened out and pointed straight up, thus adding several feet to the height of the silo. The silo is filled away up to the top. In a few days the silage settles, and then the roof is shut. This type of roof is making a great hit with farmers. It gives them greater silo capacity at no extra cost.



Poured Concrete Silo with Metal Roof Extension for Silo Filling. With this Type of Roof Our Silos are Brimming Full, Even After the Silage Has Settled.



Grade Holstein and Guernsey Cow—A Big Milk Producer, a Type of Stock Favored by Many Practical Farmers.

Plans for the Horse Barn

THESE improvements extended over a period of years. You see, I had to make money between times, but I think I enjoyed the work all the more on that account.

All this time we were raising better colts, and they were growing into larger horses. Almost all farmers who carry on diversified farming need a great deal of horse power at certain times of the year. Then, especially in winter, there are often times when three or four horses can do all the work.

I wanted a stable big enough to hold twelve horses during the busy season. They could feed in the stock sheds in the winter time and run the barn yard along with their rough-haired colts, but during seeding time in spring and again in the fall when we wanted to lay every able-bodied horse into the collar ten hours a day, I had to have conveniences for feeding, or else employ an extra hand to do the horse chores.

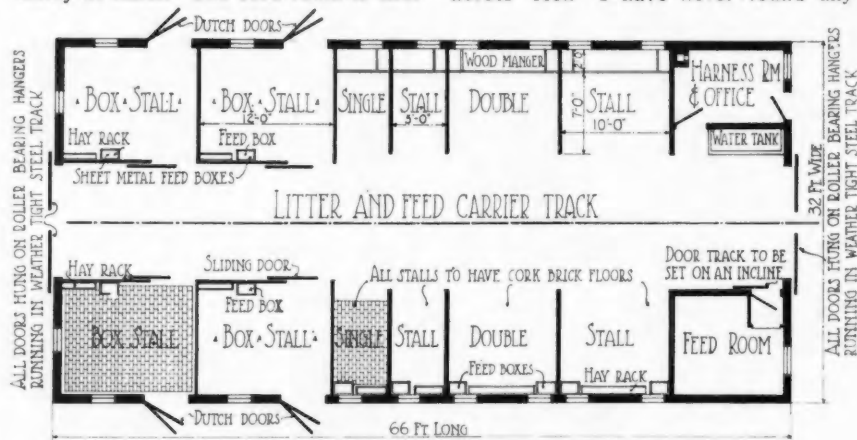
The builder understood the situation fully as well as I did, and he must have spent a good deal of time laying out the plan that we finally used. I suspect he got some of his ideas from the AMERI-

CAN CARPENTER AND BUILDER; but it was his ingenuity that selected and arranged the plans to suit my special needs.

We have what we call "working stalls" for twelve horses, and there are four box stalls, which come in mighty handy at times. The feed room is shut

away from the stable by two doors, one of which hangs on an inclined track, so that it shuts automatically. We have some valuable horses, and we want to know that they are shut away from the grain feed room at night.

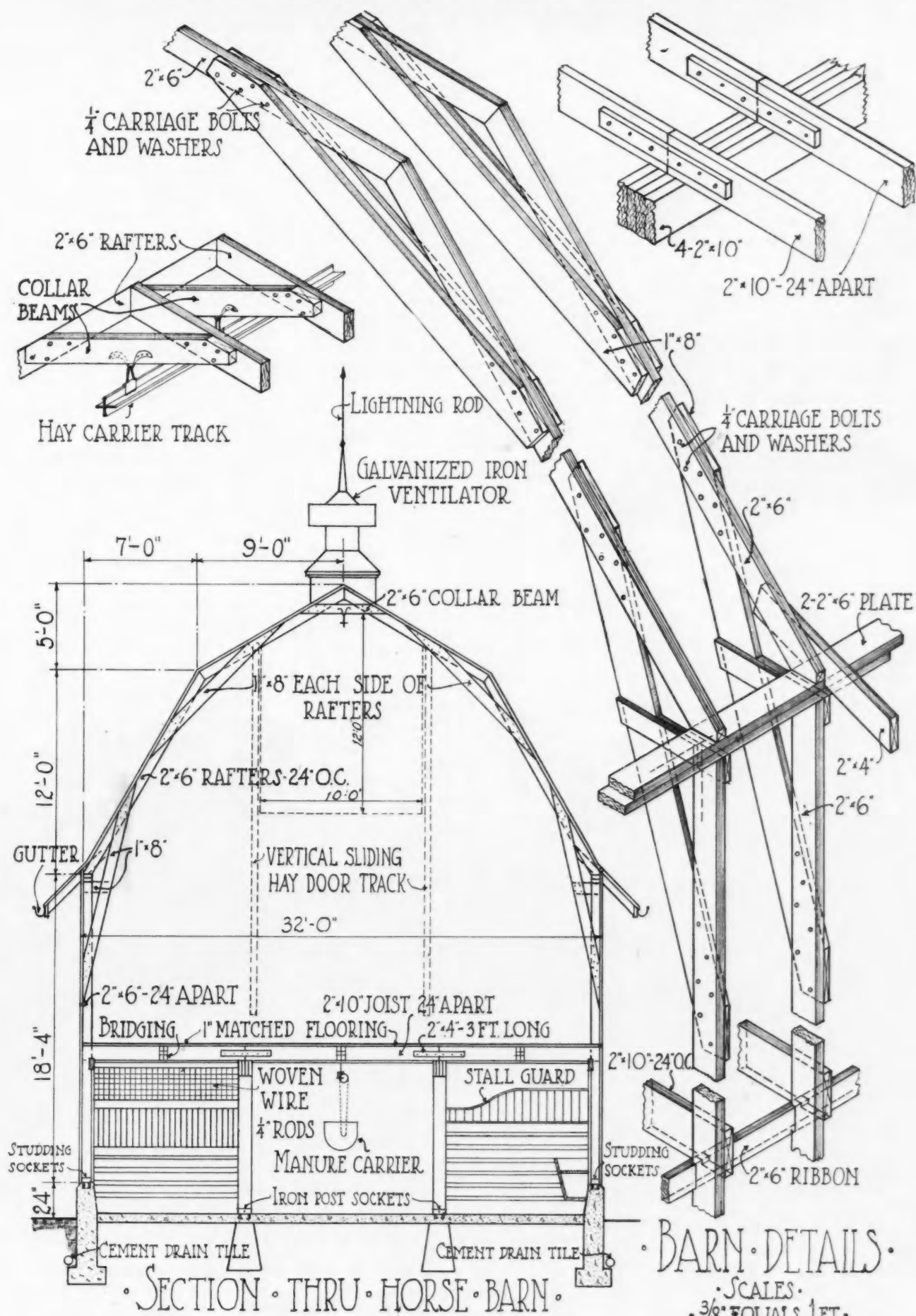
We have special flooring of cork bricks in our horse stalls—find that it wears well, is not slippery and is easy on the horses' feet. I have never found any



Ground Floor Plan of Horse Barn.



Horse Barn Design Measuring 66 by 32 Feet, 20 Feet High to Plates, with Full Self-Supporting Gambrel Roof. A Modern Horse Barn in Every Particular. Any inquiries in regard to equipment or plans for this Horse Barn will be given prompt attention.—Editor.



DETAILS OF HORSE BARN ILLUSTRATED ON OPPOSITE PAGE. ROOF IS SELF-SUPPORTING
PLANK FRAME CONSTRUCTION OF THE TYPE WHERE EVERY RAFTER FORMS A
TRUSS. RAFTERS SPACED ON 24-INCH CENTERS.

floor quite as satisfactory for horses.

We put in a good concrete foundation wall, embedding iron studding sockets along the top—one socket for each upright timber. This did away with the sill difficulty and made a non-rotting base to the barn. So we have a very substantial building. The ceiling over the horses is a little over nine feet above the floor, so that the larger horses have sufficient headroom.



Percheron Stallion, "Gier," Type of Heavy Draft Animal Being Favored by American Farmers.

Overhead is a large mow for holding straw and hay.

We put in a track and a manure carrier so the stables are easily cleaned and the manure hauled away the same as from the other stables. I never permit an accumulation of manure, except at times when the weather is very severe in winter.

One of the greatest time savers is the water tank just inside the entrance door. The horses can drink as they go in and as they come out. A float valve keeps the tank or trough nearly full of water all the time. I am careful to have it cleaned out twice a week in summer and once a week in winter, so that the water will be fresh and clean. The health of horses depends a great deal on their water supply.

Plank Frame Construction

In commencing the remodeling of my farm buildings, we had the old timber frame buildings, some of which had been standing for a good many years. Occasionally we had some difficulty in jacking them up and straightening the sides, especially where the timbers had been split through or near the heart and had bowed in seasoning, as some kinds of timber have a fashion of doing.

When we got all the old timber frames remodeled, I felt that we were up against it for framing material, because the old timbers I was accustomed to seeing were 20 or 30 feet in length, and some of them were quite heavy, up to 12 or 14 inches square. I think one barn had sills 12x16 and other timbers in proportion.

In talking about it, the builder mentioned plank frame construction, which was new to me. He described how ordinary two-inch plank that can be bought in lengths of from 12 to 30 feet in almost any lumber yard are spiked or bolted together to make any strength timber required. This method or system seemed to simplify our building proposition.

Our first plank frame structure was

the horse barn, which is not very large on the ground, but the peak of the roof reaches up pretty well to make a large storage mow for hay and straw. I am almost as particular about keeping straw bright and clean as any other farm product.

Plank framing in this barn was carried clear up to the peak. The roof is gambrel style formed on the self-supporting truss principle, as illustrated in the sketch, so there are no cross braces in the way. It was the first mow built in this way in the neighborhood. We had a good many visitors to inspect it, and they passed dire predictions about what would happen when the first wind storm came along. The winds, however, have not affected it disastrously so far. In fact, I think it is about as solid as the heavy timber frame buildings. The builder says it is stiffer, and I expect he knows.

Two advantages about it interested me. One was the saving in the first cost of material, and the second was the rapidity of construction.

Barn Eave Gutters

In remodeling our buildings, amongst other things we found it necessary to put in a drainage system. We have such a large surface of roof that even a small shower accumulates a good deal of water.

To take care of this accumulation we arranged a regular system of drainage by means of cement drain tile, which the builder makes at odd times and sells cheaply. We made a practice of running a line of tile just outside of the foundation walls of all our farm buildings. These lines of tile have a general fall of about an inch to the rod. The joints are made in the usual drain tile manner, except where the conductor pipes enter. Here the tiles are laid in cement and the fall is increased for several feet, also the conductor pipe water is admitted to the drain through a Y, which shoots it into the drain tile with force at an angle to prevent backing up.

I have never been able to keep a dry barnyard until I adopted this plan. There is mud enough around the yards at times, even after taking the best possible precautions.

Concrete Watering Troughs

The circular forms that the builder bought worked so well on the big silo and water tank at the top that we decided to make a round watering trough for the barnyard. It was a very simple proposition after building the silo, but the details for finishing the tank inside are interesting.

A round water tank is the most practical of any water tank ever invented. There are no projections for cattle to run against. The tank is only 2 feet high above the concrete barnyard, so that young stock can use it. Dogs drink out of it, putting their front feet against the top, calves can reach the water, and there is no danger of animals hooking each other into it. In case they do, the water is not deep enough to drown them. The circle offers the greatest possible area of approach.

The foundation was made of stone pounded into the ground, and the concrete was built up in the usual way to the necessary height. The outside of the watering tank is perpendicular. The

inside form was removed while the concrete was yet green. The sides were gone over with a thin rich cement plaster, carefully troweled on to make the tank water-tight. This cement surface was made very thin at the top, but about two inches thick at the bottom, to give the sides of the tank sufficient taper so that ice would not freeze fast and burst the tank. A taper of an inch to the foot is sufficient to protect the tank against bursting. When the weather is extremely cold, we make a practice of letting a stream of water run into the tank all night.

Then tank is finished smooth inside and outside, so it looks well. It is perfectly level on the top and the sides are the same height all around, except that the incline of the barnyard floor drops away about an inch.

There is an overflow from the center, which carries the surplus water away through an underground drain. A float valve shuts the water off just before it reaches the overflow to prevent unnecessary waste. The overflow is simply a precaution against the faulty working of the valve and to carry off the surplus running water to prevent freezing during especially cold snaps. During the coldest weather in winter, we have a tank heater that takes the chill off of the water when necessary.

The builder tells me that he has built a number of these tanks since and he has an idea they are going to be very popular.

Galvanized Iron Covers for Concrete Water Tanks

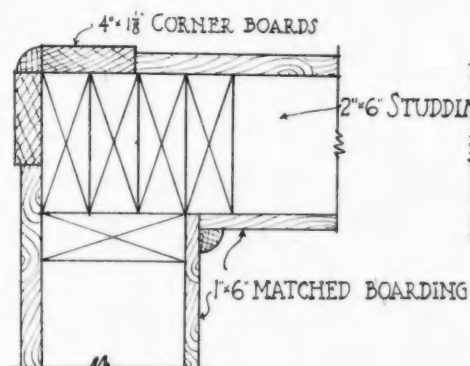
Conical covers made of galvanized iron to cover round water tanks are manufactured in different sizes. It is



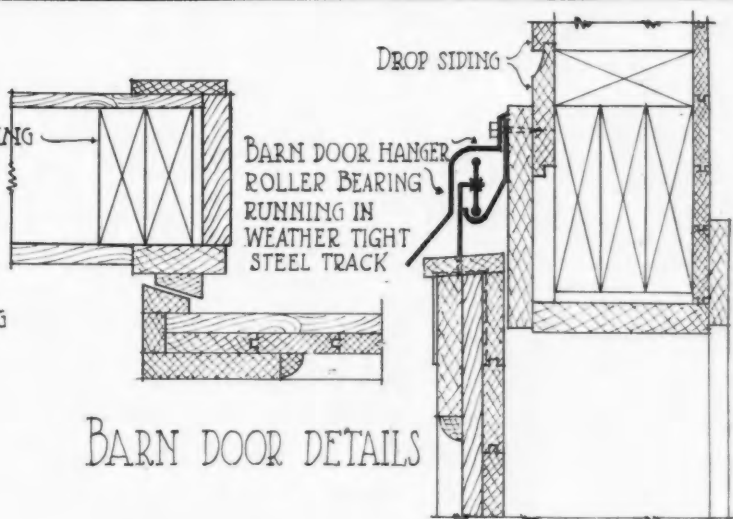
"Safety First!" Electric Light in the Barn Prevents Fires.

desirable to have a watering tank closed in with a tight cover and it is not always possible or convenient to make a cement cover. Conical covers of galvanized iron may be had to fit any size round tank at reasonable cost. Such covers add to the appearance of the tank.

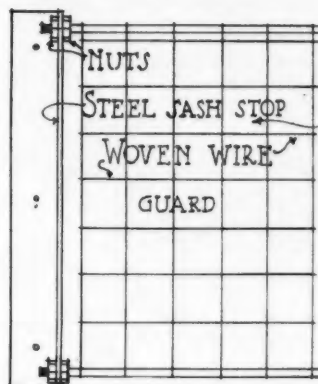
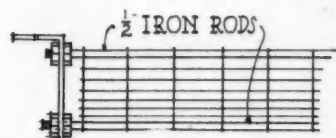
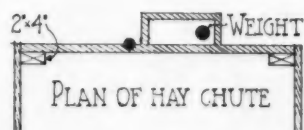
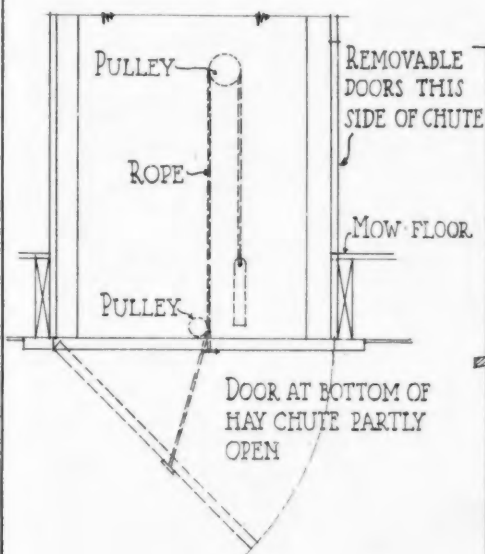
Galvanized tank covers are serviceable because they keep the water clean. They are neat in appearance and last a long time because they are rust proof.



CORNER POST DETAILS

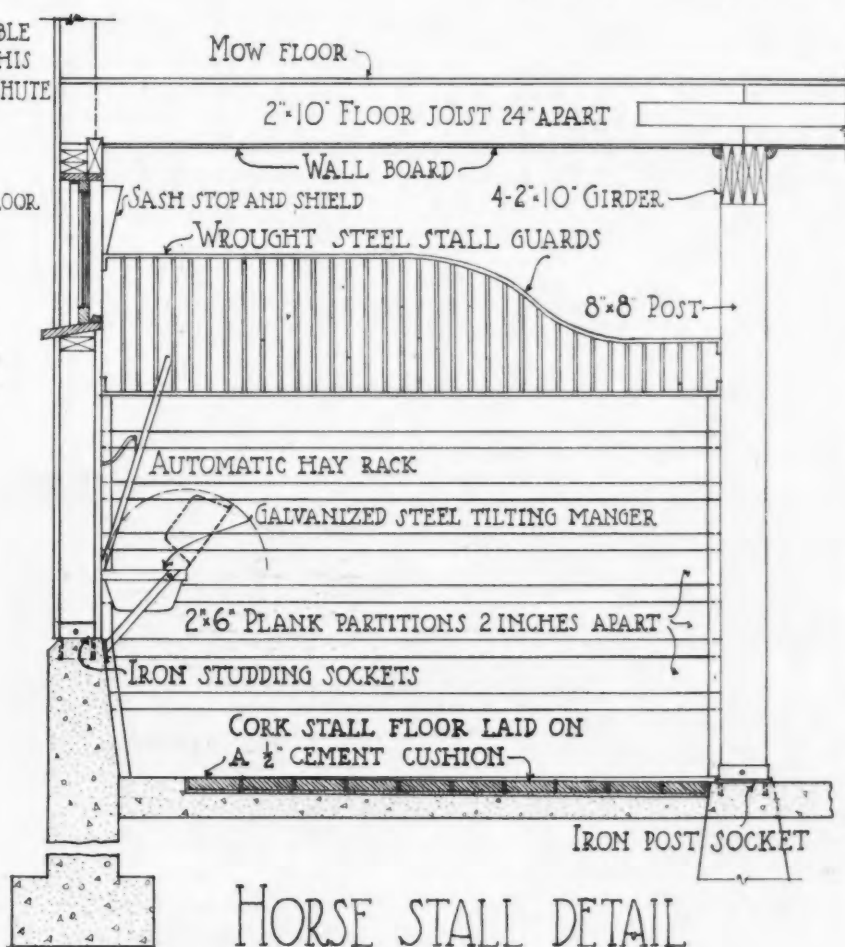


BARN DOOR DETAILS

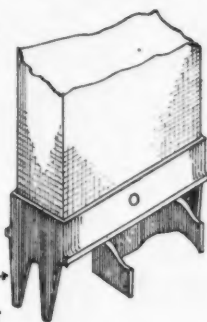


SASH STOP AND SHIELD DETAIL

STUDDING SOCKET DETAIL



HORSE STALL DETAIL



SHEET of HORSE BARN DETAILS

SCALES

1/2" & 3/8" EQUALS 1 FOOT

Building the Winter Hog House

IN the general remodeling, the next consideration was given to the hog house, because hogs were beginning to occupy a very important department in my system of farming. I wanted a hog house that would help me to winter the breeding stock economically and to bring them through in good condition.

The hog house was carefully designed to let the sunshine into the nests in winter at the time of day when the sun is best appreciated.

Part of the feeding device between the pens consists of a special hay rack feeder with hinged sides, an invention

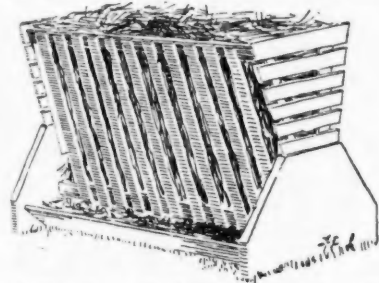
of the contractor to feed alfalfa hay to hogs.

Hogs that are well bred have short necks and short noses, so that they can not reach for hay like other stock. But they will eat a lot of alfalfa if they can get it. They push the sides of the rack in to reach the hay, which prevents the hay from binding in the rack. The motion back and forth of the hinged sides keeps working the hay down within reach.

The hog house has a comparatively even temperature, because it is well built and there are hogs enough in it to keep

it warm even in cold winter weather. I can now winter breeding sows on alfalfa hay and one ear of corn a day each; and they come through to farrowing time in splendid condition to furnish milk for the litters.

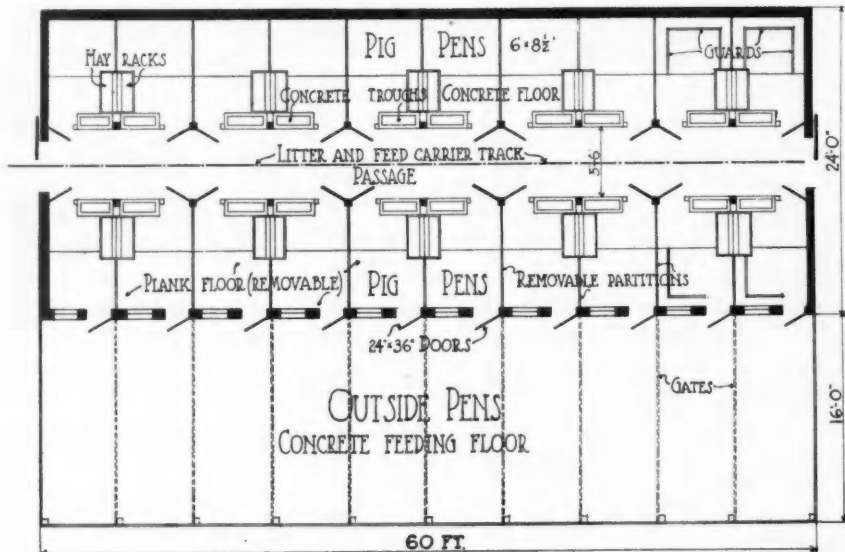
There are other advantages about the hog house, such as feed bins and swinging fronts to the pens so that the hogs



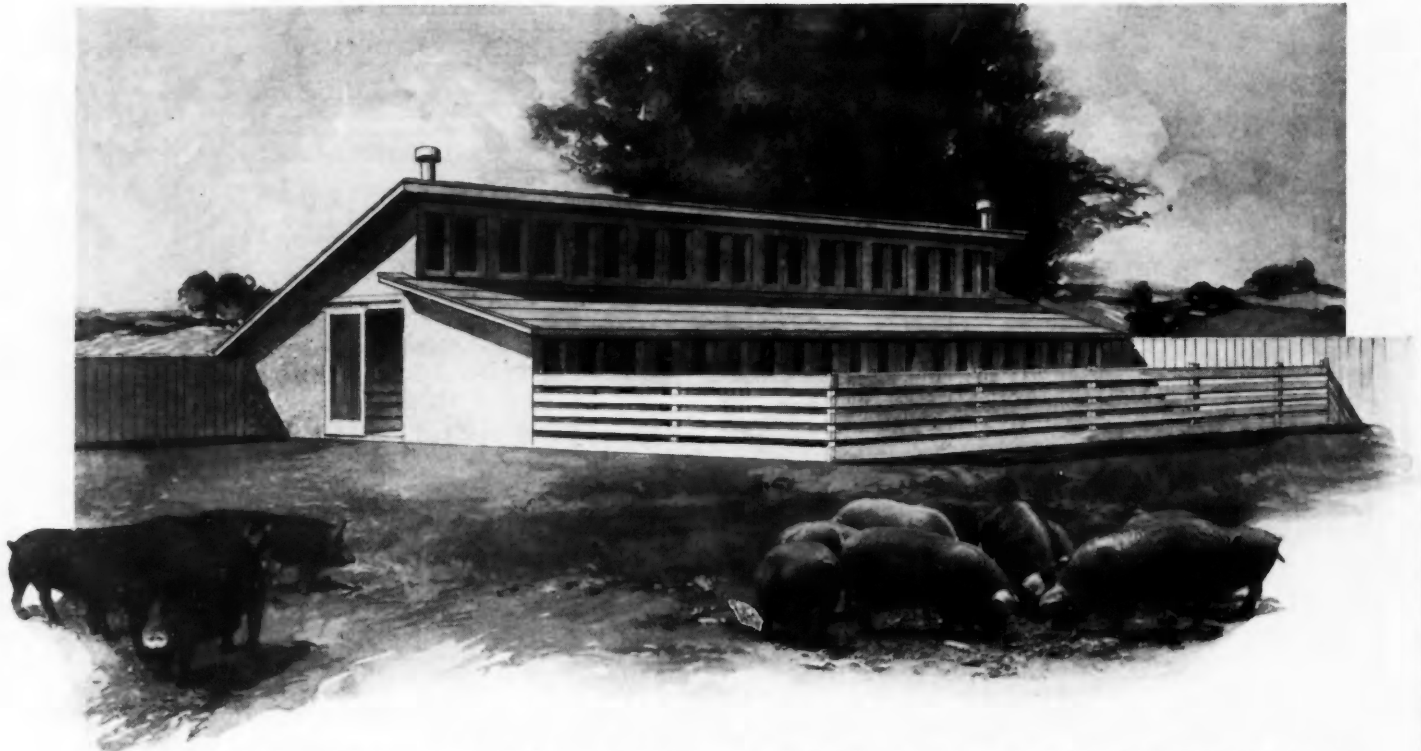
A Roughage Feed Rack for Swine—For feeding alfalfa, clover, soy bean hay or other coarse feed, a rack of this kind is handy and prevents waste. More simple racks are often constructed on the inside of a hog house by placing them against one of the sides of the building or adjoined to the pen partition.

may be easily transferred from one pen to another. The same device is bolted back of the troughs to facilitate cleaning and feeding. The small pen doors leading out into the yards shut practically airtight, but at the same time are easily opened. The litter carrier from the main storage barn passes directly through the hog house feed alley to distribute alfalfa hay directly into the feeding racks and bedding straw onto movable wooden floor frames for holding the bedding. This plan keeps the hogs up from the cement floor, which is quite an advantage for breeding stock.

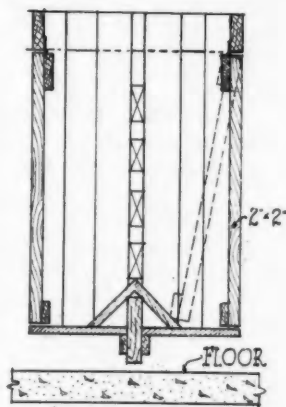
In building the exercising yards, we put down a concrete floor, and cross



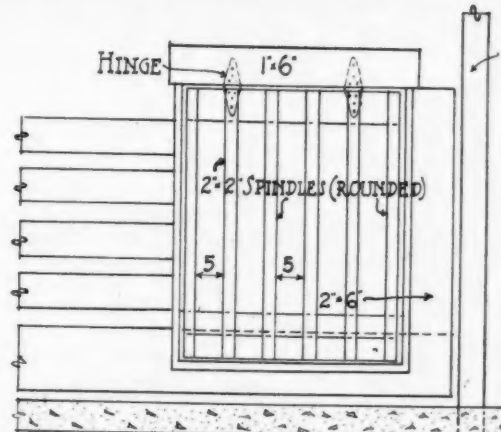
Floor Plan of Winter Hog House with Outside Pens.



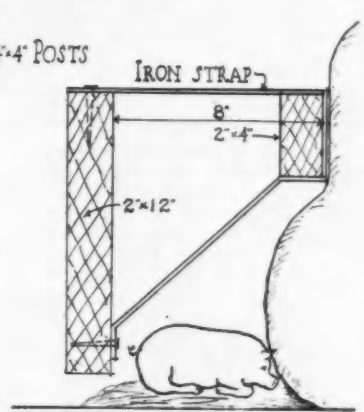
Winter Hog House Design of the Approved Saw-Tooth Roof Style. Face this Hog House Toward the South and the Upper Windows Let the Warm Sunlight Into the Far Pens. This Design Calls for a Building 24 Feet Wide and Can be Made Any Length, Depending on Number of Pigs to be Wintered. Floor Plan Shows Building 60 Feet Long. Any requests for further information about this Hog House will be answered promptly.—Editor.



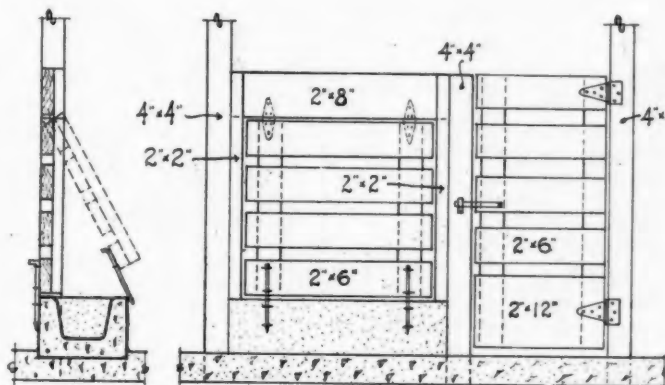
SECTION



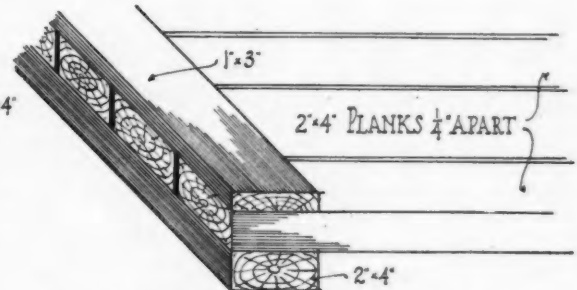
ELEVATION OF HAY FEEDER



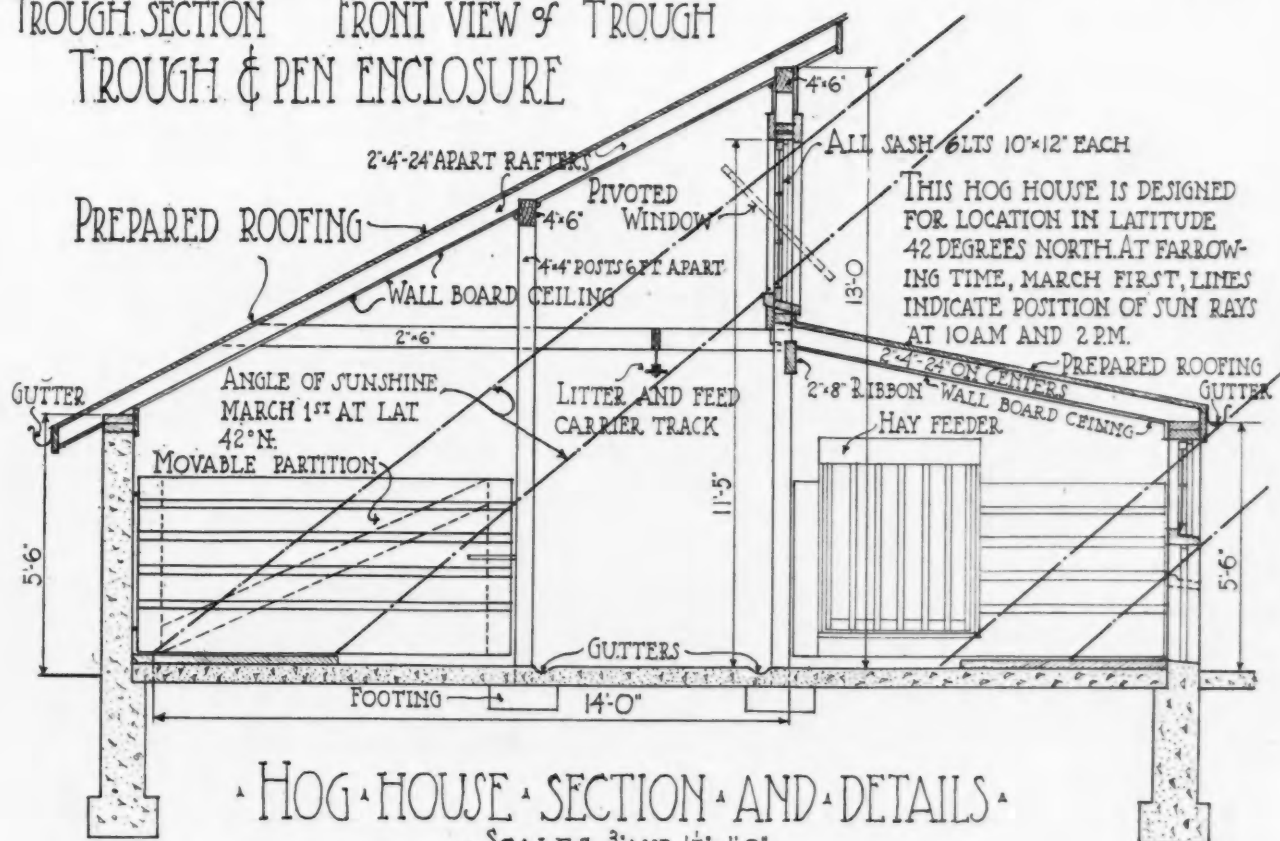
GUARD RAIL DETAIL



TROUGH SECTION FRONT VIEW OF TROUGH
TROUGH & PEN ENCLOSURE



REMOVABLE PLANK FLOORS



HOG HOUSE SECTION AND DETAILS

• SCALES $\frac{3}{8}$ " AND $\frac{1}{2}$ " = 1'-0" •

WORKING DETAILS DRAWN TO EXACT SCALE OF WINTER HOG HOUSE ILLUSTRATED ON OPPOSITE PAGE.

fences were built above the floor, leaving about two inches space under the fences for cleaning, so that the floor could be scraped towards the lower end of the yard.

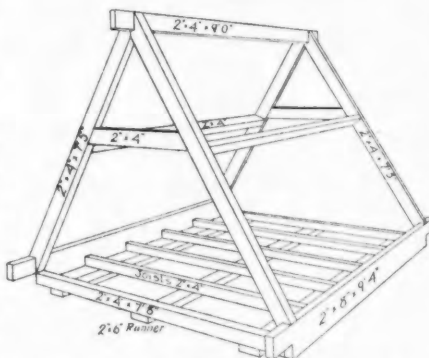
There is a place for the manure spreader to stand at one end of this concrete floor about level with the hog floor for easy loading. There is a small gate in the back fence of each pen that opens out into the stock lane, so that the hogs are let out to pasture without any fuss or noise.

The expense of the hog house and all labor saving attachments were soon paid back. There has been a very satisfactory profit from the hog end of the business every year since this convenient hog house was built.

Portable "A" Hog Cots

I might add that we have a number of individual hog houses built on the A shape plan with separate floors, so that they may be easily taken apart for cleaning. The advantage of the small individual houses is that the sow and young pigs may be moved to a field and left there with very little attention until the pigs are old enough to wean. This is an advantage at certain times of the year. Individual houses are sometimes used for the small pigs after weaning time.

Again in the fall at farrowing time, individual houses are almost indispensable



Frame Work of Another A-Shaped Portable Hog House—By using the size of lumber described and cutting it the length given the A-shaped house can be easily constructed.

one of the best I ever saw, I use it as little as possible. It is kept for rough weather in winter, making it indispensable to me about four months of the year.

Concrete Boxes for "Hog Cholera" Cure

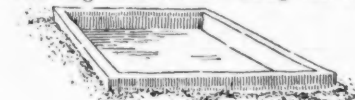
Another sanitary precaution, an invention of the builder, is a concrete box for feeding salt, charcoal, ashes and iron sulphate. These boxes have a hinged wooden cover that projects so the hogs

the lanes, and they are constantly supplied with the mixture. I have never known hogs to be bothered with worms or disease when they were kept in a cleanly way and have access to this mixture. Their constitutions seem to require it and they know that it is good for them.

Concrete Hog Wallows

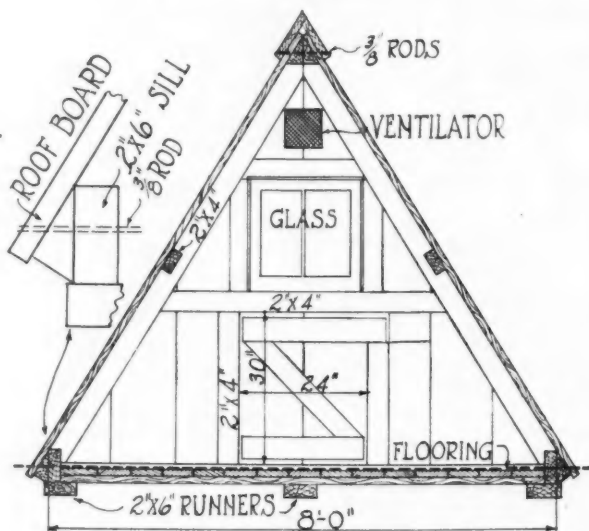
We have a number of concrete wallowing vats for hogs. They vary in length and width, but the depth is always 12 inches, so that a hog can get in and out easily. Still the depth of water is sufficient to nearly cover them when they lie down.

The hog wallows are along the farm

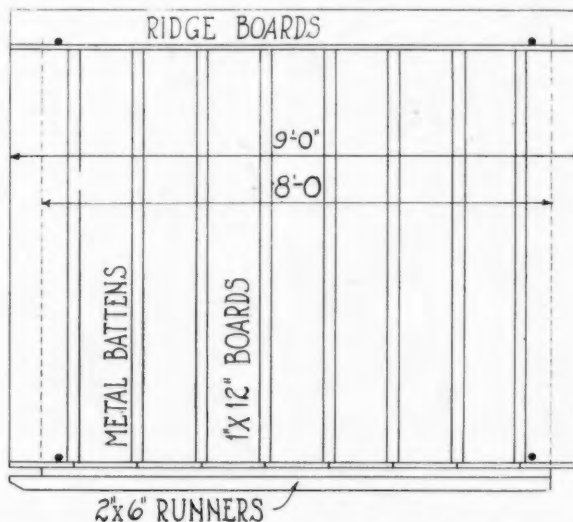


A Cement Wallow—The cement hog wallow should be located in a shady place and made so as to contain from eight to ten inches of water. Crude oil or coal tar dip, poured into the water, will help keep swine from lice and their skin in good condition.

lanes, so they may be used in connection with the different pasture fields. The hog wallows are kept two-thirds full of water and there is a thin scum of crude oil floating on the water, so when



Front Elevation and Side View of Ingenious "A" Hog Cot. This is Made in Five Sections Held Together by Four $\frac{3}{8}$ -Inch Rods. When Not Needed, This Cot is Knocked Down and Stored Away in Small Space.



ble for pure bred stock when it is not wanted around the barnyard. It often happens that the system of rotation includes certain crops that hogs can harvest for themselves, so that they can be kept in the fields a good deal of the time. But they require shelter at night and in case of cold rain storms.

Both sow and pigs are better to run out and forage for a greater part of their feed when weather conditions are favorable. The expense is very much less when hogging-off crops are grown, because the hogs help themselves and save the labor of harvesting and feeding.

Another advantage of this system is that the manure is scattered around where needed without the labor of handling it. I urge you to recommend individual hog houses to every farmer who can manage the hogging-off feeding system to advantage.

While I have a splendid hog house,

can lift it to eat the composition stuff and the cover drops back to keep out the rain and dirt.

We have a number of these concrete boxes in the different fields and along

they roll around in the water the oil gets in the hair. This is a preventive against vermin besides keeping the hogs cool and comfortable in the middle of the day.



Berkshire Pigs Starting Out to Find Something to Turn Into High-Priced Bacon.

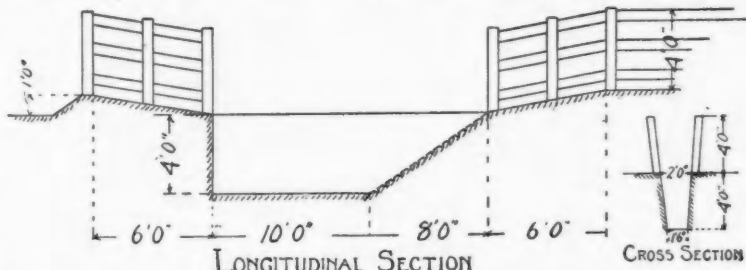
These wallowing vats are always on ground that is high enough to drain. The plugs are pulled and the vats emptied once a week or twice a week according to the weather and according to the use made of them.

Dipping Tank for Hogs

Since our herd of hogs has increased to more than two hundred head, we have adopted very rigid sanitary precautions to prevent cholera. The latest and most interesting to me is the flooring of the

from one end of the hog house to the vat. There is what the men call a toboggan slide to let the hogs down into the dipping fluid. It is a wooden slide anchored at the bottom so it cannot float. It is smooth and inclined so that when the hogs step on it they slide down.

The dipping trough is thirty feet long including the inclines. It is narrow to prevent the hogs from turning back. At the far end the incline is made in steps so that the hogs can walk out easily and

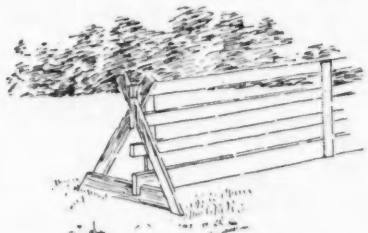


A Cement Dipping Tank—Warm weather is the best time to dip. Two or three treatments per year will usually keep the herd free from parasites.

yards back of the hog house with concrete and the building of a dipping tank or trough at the side of the yard.

The dipping trough is made solid with the yard floor and is covered with a wooden cover hinged in sections. When the different sections of the cover are open, they form a fence along the inner side of the trough. When the covers are down they reach the outer fence so the tank is protected whether the doors are open or shut.

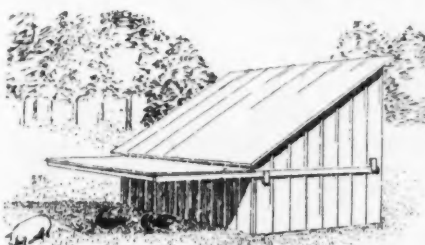
Once a month in summer the dipping



Fencing in the Feed Lot—The portable fence is made to enclose the portable house and for enclosing temporary quarters and lots. The panels are held erect by the supports which should be nailed to stakes driven into the ground.

trough is filled two-thirds full of coal tar solution, which is supposed to be not only a lice killer but a disinfectant against disease. We select nice weather for the dipping when the hogs are free from mud.

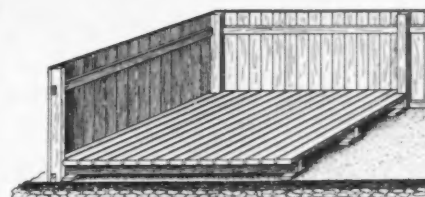
The hogs are driven into the dipping trough through a corral lane leading



Large Portable Hog House with Shade Attached—Portable houses are very warm in summer, but if no other shade is available, temporary shade can be added in the rear of the shed roof house.



Shed Roof Permanent Hog House—When only ten or twelve brood sows are kept and a central house is preferred, a building 16 by 48 feet will prove useful. Cement floors can be constructed to good advantage in front or at the rear. For farrowing 12 separate pens can be obtained by putting in a temporary partition lengthwise and dividing the space on each side equally.



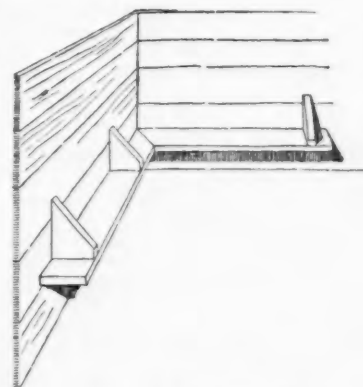
How Loose Wood Platforms May Be Built For Hogs to Sleep On.

temperature will crack concrete floors laid in solid mass. It is easier to lay floors when they are marked off into squares with half-inch boards. These dividing strips may be leveled or sloped to give the necessary grade, and the floor will have an incline fall, when the mixture is struck off even with the tops of the guide pieces.

Large Platform Farm Scales

We were in the habit of guessing weights of animals and hay, but it is not good business. A few years ago I bought a set of scales capable of weighing 6000 pounds. The builder set them carefully, resting on concrete footings, and built a house over them. In the house are fence panels made to fit onto the platform for weighing live stock.

We feed a great many head of stock. The only way of keeping track of the profit is by weighing the animals frequently to know the gain. It is a check on our feeding system and helps us to decide on the necessary changes in rations.



Corner of Farrowing Pen Equipped with Fender—The fender is a 2 by 6-inch strip placed about 8 inches above the floor and extending out into the pen 6 inches. This compels the sow to lie away from the corner of the pen and gives the little pigs a chance to get out from under her when she lies down.

Also in selling grains or hay, or in buying lime, coal or other commodities, we can check up on the other fellow's weights. But the great value of farm scales is for weighing live stock, both for feeding and for sale.

Buyers of live stock are shrewd guessers. Farmers, although weighing feeders frequently, do not weigh enough animals to compete on an even footing with a buyer who has proven his estimates by the scales every day. I think I lost enough in former years on poor guesses to have paid for several such scales.

Our Businesslike Beef Cattle Barn

OUR barn for beef cattle is a little different from anything I ever saw. I wanted considerable storage for alfalfa hay and I wanted convenient feeding arrangements for a good many cattle. The builder worked on the proposition for some time and finally drew me a plan that I thought would work out well in practice.

It provides for a basement under the whole barn with windows along four sides. A curb roof on the self-supporting plan covers the main building, with the peak of the roof pushed up high enough to make an extra large storage mow.

On the east side of the barn is a shed open at the front, but closed in at both sides. That is what the men call a covered barn yard.

The foundation under the main barn is a 12-inch concrete wall, with 24-inch footings. The wall is high enough to make a 9-foot basement. Now that the concrete floor is in, we have 8 feet 6 inches in the clear above the feed alley floors.

There are rows of mangers in this basement running crosswise, so that each alley opens into the covered barnyard. There are feed racks in the shed barnyard and a watering tank at one end, so the cattle can feed and drink at any time.

Beef cattle are not supposed to remain in the stable except for an hour or so night and morning to get their grain rations and silage.

There are chutes from the storage mow to carry alfalfa hay directly to the feed racks in the covered barn yard. These chutes may be stuffed full of hay and it will feed down automatically into the racks, feed hopper fashion. As the cattle eat the hay from below it keeps sliding down.

This arrangement is scientifically correct. The hay is not mused over until it is eaten. The chutes are full of hay, which prevents an upward current of air from carrying the breath of the animals to contaminate the hay in the chutes.

As an extra precaution I had a slide door arranged at the upper end of each chute to be closed each time after the chute is filled with hay.

This arrangement also is an invention of the builder. I never saw it in any other feed barn. It is the only automatic alfalfa hay feeder in use so far as I know.

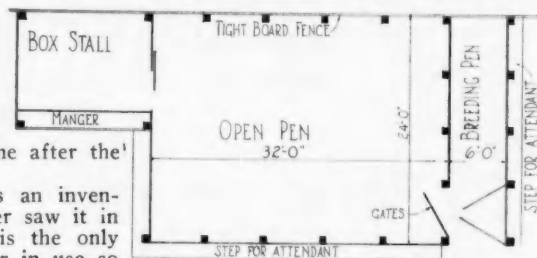
Beef cattle to grow and lay on fat in the winter time must have great quantities of fodder. Concentrates are all right in making up rations, but they must be diluted with roughage.

By keeping fresh alfalfa hay and nice bright straw before the cattle within reach all the time, and richer feeds given regularly in the stable, they will help themselves and mix up a ration that will keep them growing continually.

With this stable arrangement and the covered barn yard with its feed racks and watering trough we can keep our cattle under cover when the weather is rough and stormy. We have a system of outside yards and paddocks where the cattle are aired and exercised when the weather is fit.

Making A Bull Pen

A valuable bull, one that we prize very highly, commenced to show signs of bad temper when he was about three years



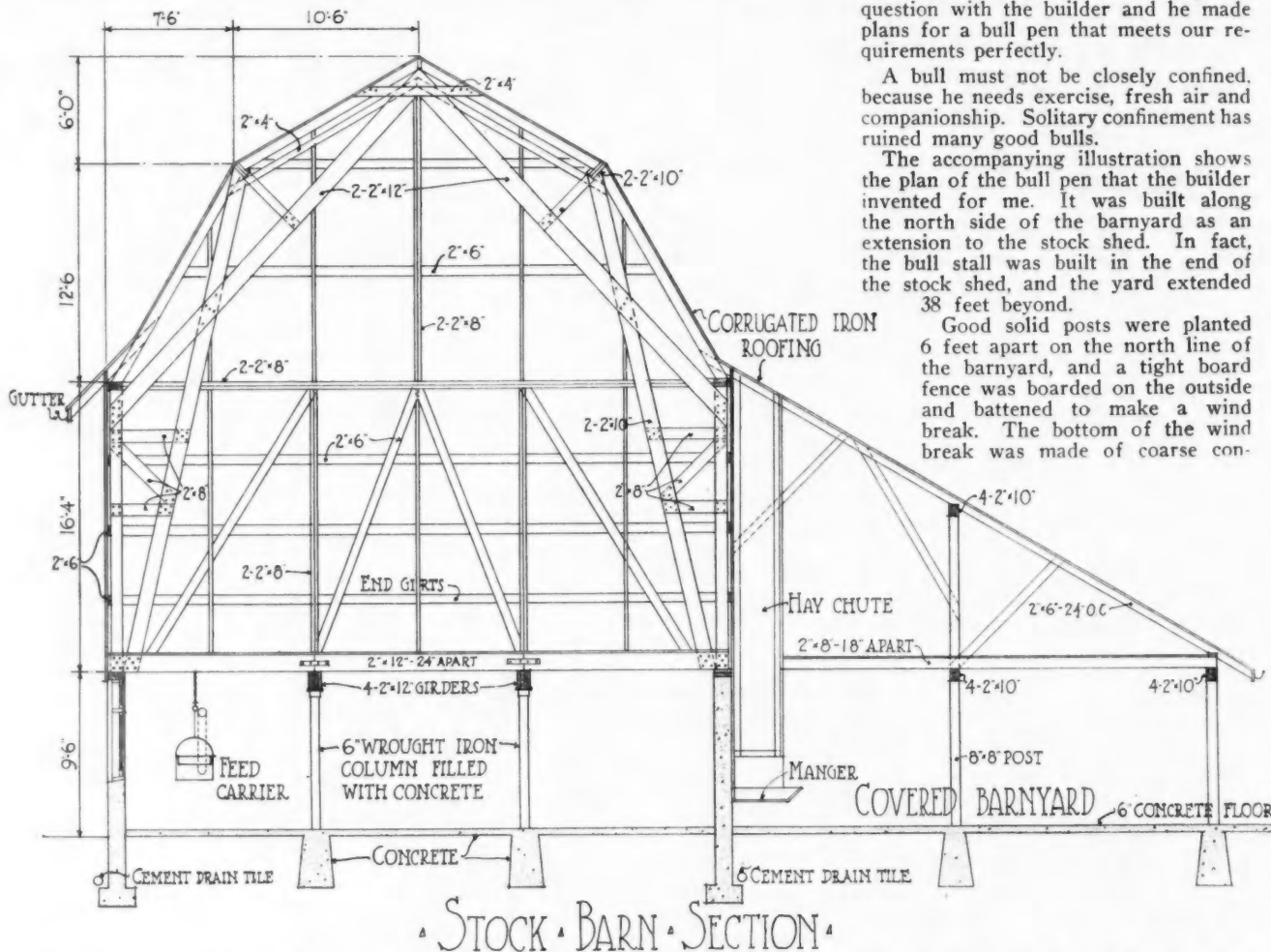
Arrangement of Bull Pen.

old. Breeders of live stock recognize that aged bulls of known prepotency are almost priceless to a breeder. Still we could not take chances on having someone killed or injured. I took up the question with the builder and he made plans for a bull pen that meets our requirements perfectly.

A bull must not be closely confined, because he needs exercise, fresh air and companionship. Solitary confinement has ruined many good bulls.

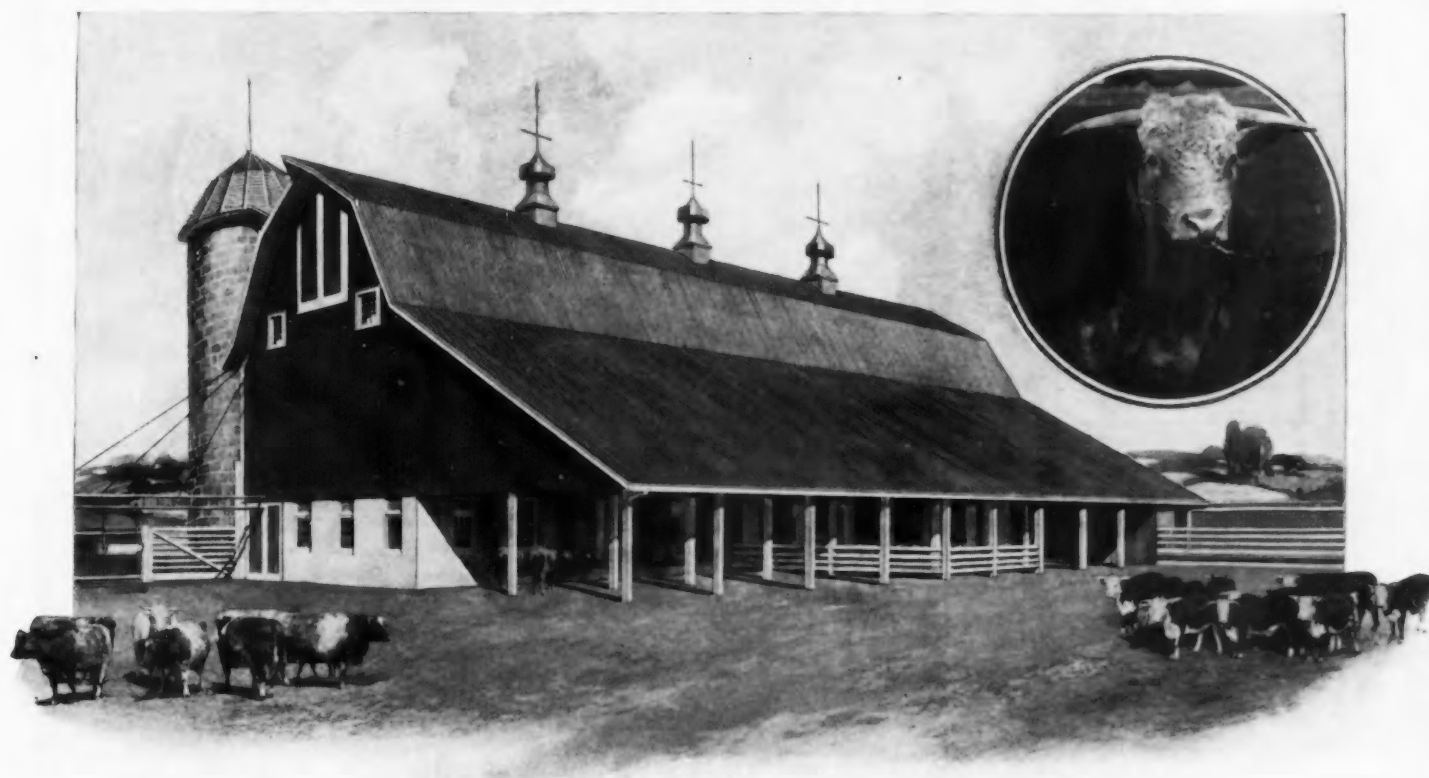
The accompanying illustration shows the plan of the bull pen that the builder invented for me. It was built along the north side of the barnyard as an extension to the stock shed. In fact, the bull stall was built in the end of the stock shed, and the yard extended 38 feet beyond.

Good solid posts were planted 6 feet apart on the north line of the barnyard, and a tight board fence was boarded on the outside and battened to make a wind break. The bottom of the wind break was made of coarse con-



STOCK BARN SECTION

Cross-Section Through Beef Cattle Barn Illustrated on Opposite Page, Showing Detail of Plank Frame Construction. Trusses Spaced 12 Feet Apart.



Design of Beef Cattle Barn with Covered Barnyard. Barn Measures 120 by 36 Feet. Has Concrete Basement Wall Full Stable Height. Additional facts concerning building materials or plans will be mailed on request.—Editor.

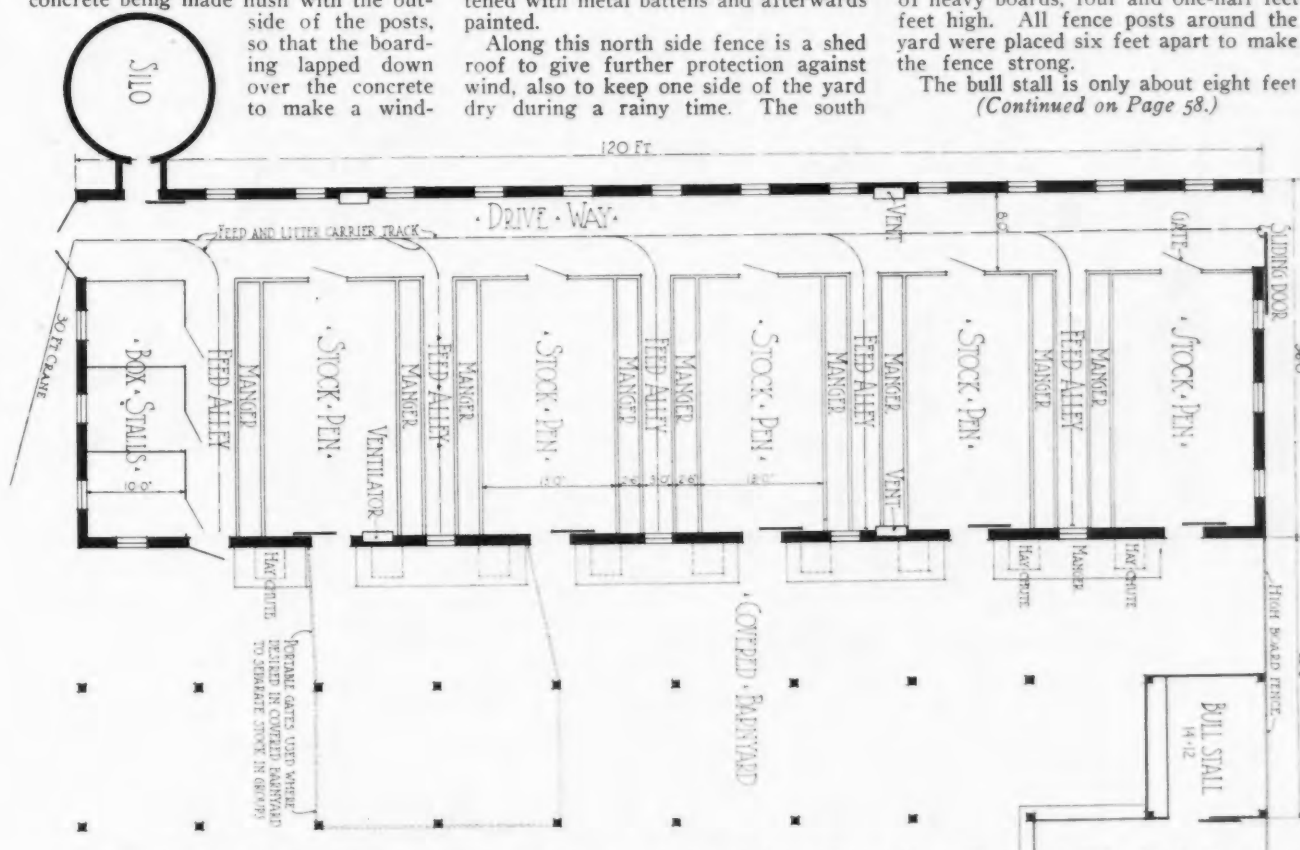
crete, extending from post to post, the concrete being made flush with the outside of the posts, so that the boarding lapped down over the concrete to make a wind-

proof joint. The boards were well batten with metal battens and afterwards painted.

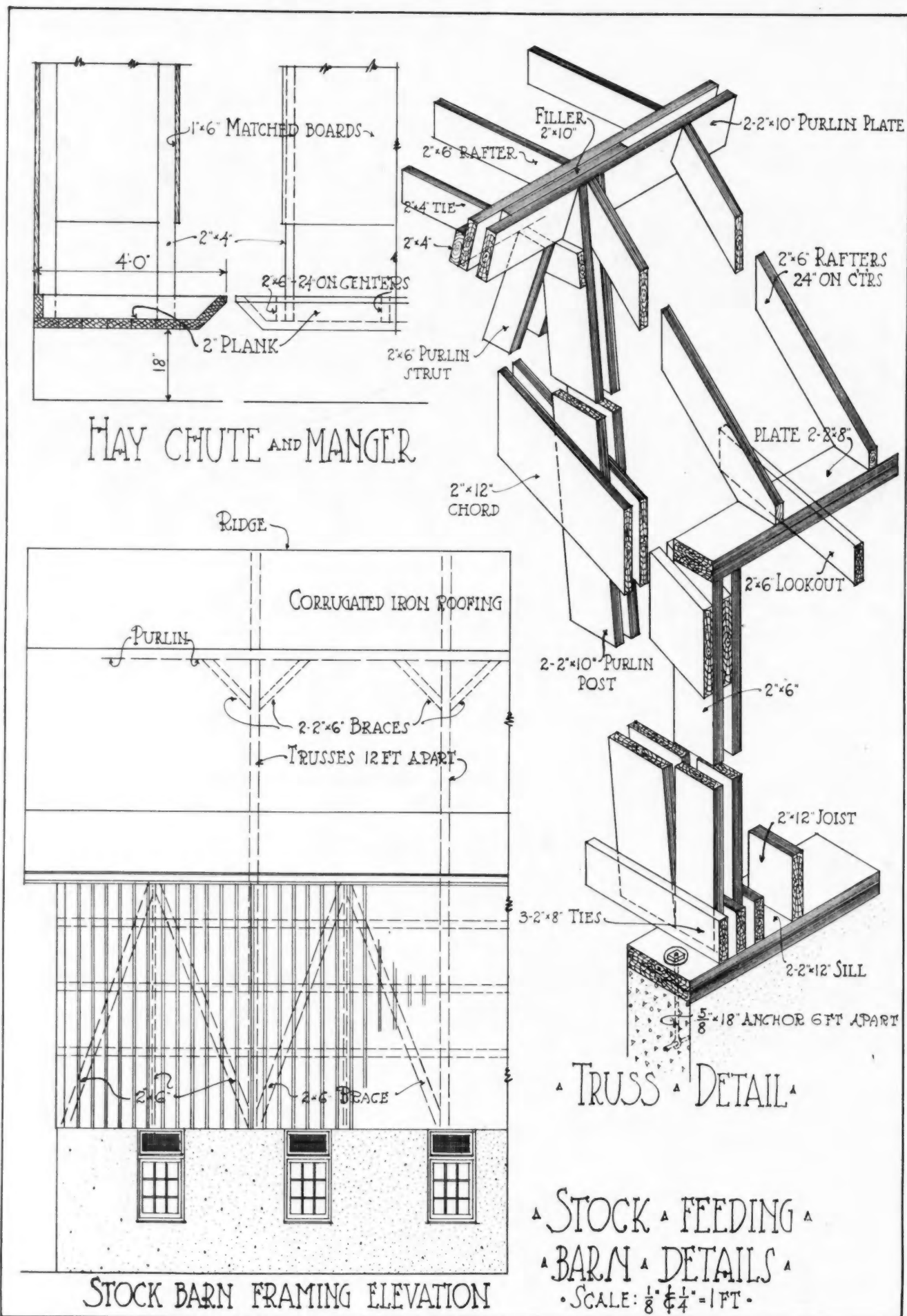
Along this north side fence is a shed roof to give further protection against wind, also to keep one side of the yard dry during a rainy time. The south

fence, on the barnyard side, was made of heavy boards, four and one-half feet high. All fence posts around the yard were placed six feet apart to make the fence strong.

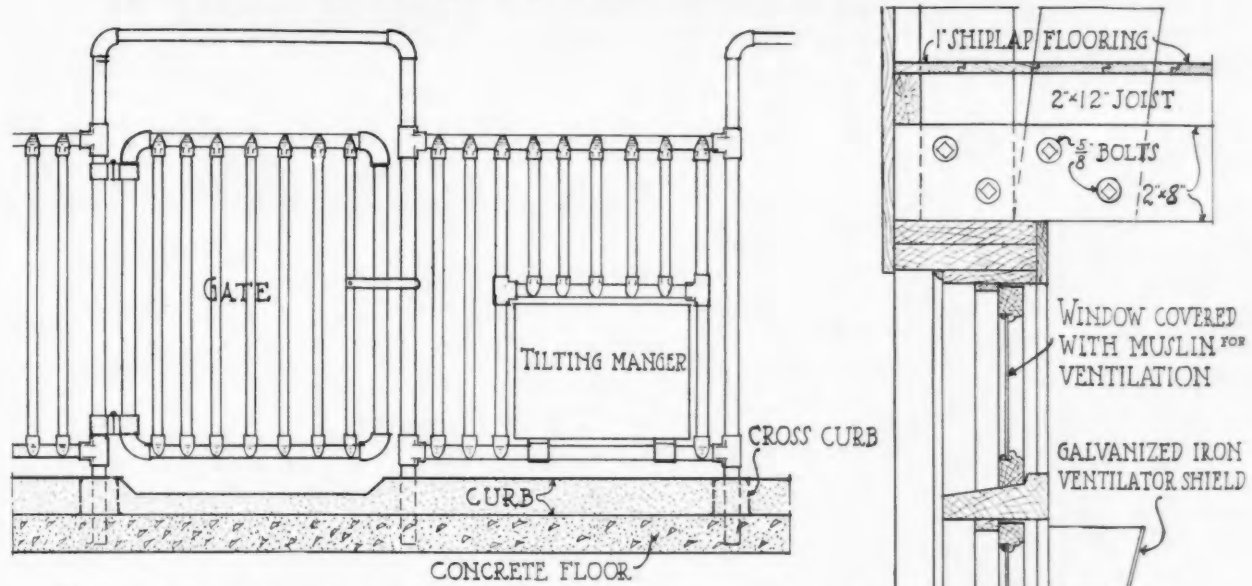
The bull stall is only about eight feet
(Continued on Page 58.)



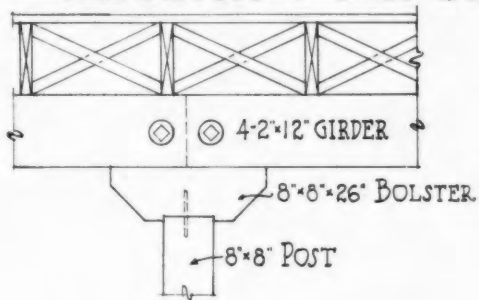
Stable Floor Plan of Beef Cattle Barn. There is a Series of Stock Pens Along Barnyard Side, Each Pen Just Large Enough to Hold a Double Row of Steers at the Feed Mangers. Overhead Feed Carrier Service Runs Along Main Driveway and Into Each Feed Alley. Portable Gates in Covered Barnyard Separate the Stock Into Groups as Desired.



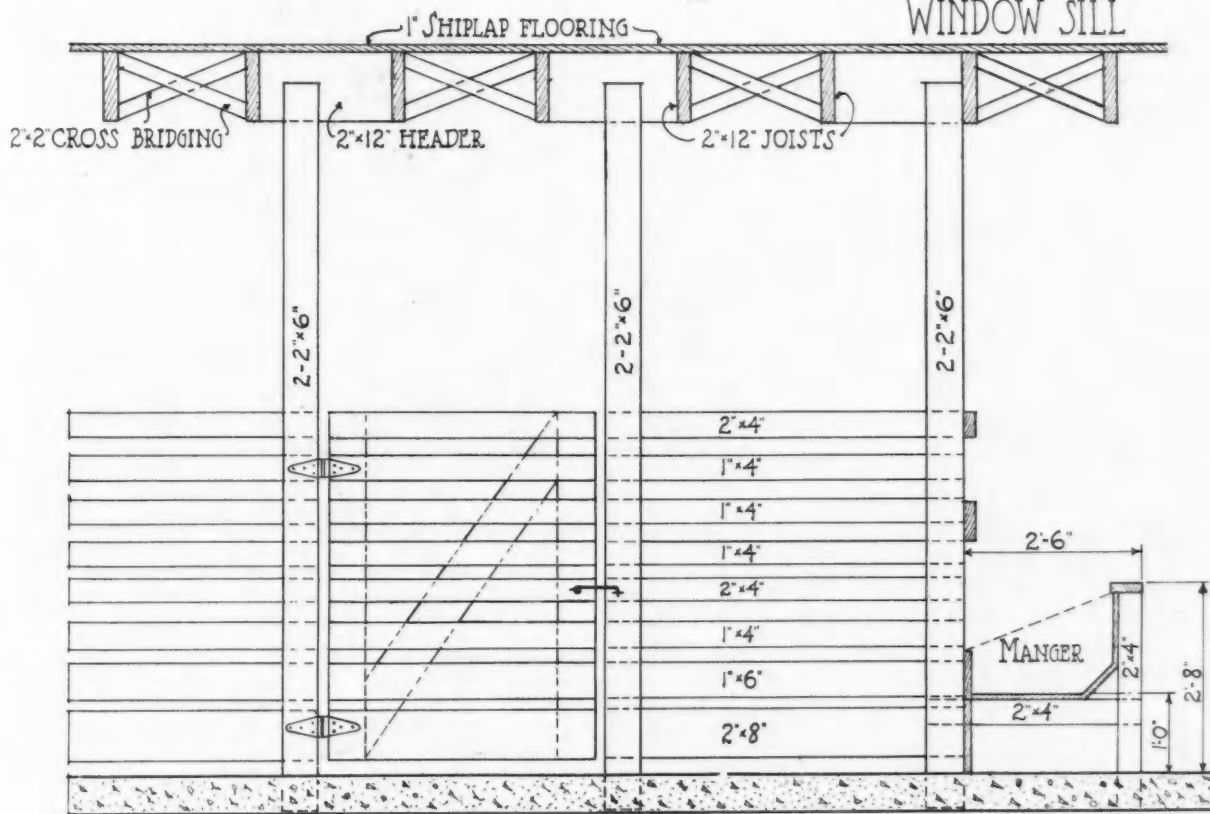
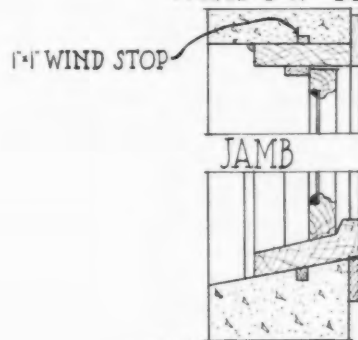
DETAILS OF PLANK FRAME CONSTRUCTION FOR BEEF CATTLE BARN ILLUSTRATED ON PAGE 55. THESE TRUSSES ARE BUILT UP OF TWO-INCH PLANKS AND ARE SPACED 12 FEET APART.



ELEVATION of BOX STALLS



WINDOW HEAD



ELEVATION of STOCK PEN AND DETAILS IN STOCK BARN

SCALE 3/16" = 1'-0"

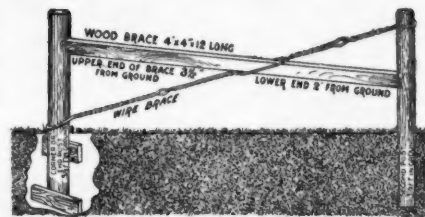
DETAILS OF STOCK PENS, ETC., FOR BEEF CATTLE BARN ILLUSTRATED ON PAGE 55.

square, made like a box stall with a manger across the front. A drop door the whole length of the manger may be opened and hooked up at feeding time or during pleasant weather. This door is also intended to reach in to snap the bull lead into the ring in his nose. There is a plank extending along the front side of the exercising yard fence, so that the attendant may lead the bull to the breeding pen without entering the yard.

The plan of arranging three gates at the far corner of the bull pen is an ingenious safety device. There are two gates between the bull and liberty, both

opening in. If by any chance the fasteners should be unhooked, the weight of the gates hold them shut as the incline of the hinges pitch towards the posts. The fasteners on all three gates are bolts that may be reached from the raised plank steps.

The exercising yard is 24 by 32 feet. This makes good quarters for the bull during the greater part of the year. The small box stall is made warm and comfortable for cold weather. A sliding door operated by a lever from the plank step opens or closes the bull stall. When it is necessary to clean the stall or the yard, the bull is fastened into the breeding pen.



Satisfactory Way to Set Corner, End, and Gate Posts.

tie can feed either inside or outside the shed.

The ground slopes away to the south in front of the shed. For this reason, it seemed necessary to put an eave trough at the back. While there was not a great deal of drip from the shed roof, it was sufficient at times to keep the ground damp and bedding wet.

Building Our Stock Feeding Shed

AS an extension to the barnyard windbreak, we built a stock shed along the west side of the barnyard. We have a good deal of young stock that we do not care to stable, but all farm stock should be housed in some way from the cold wet storms in winter.

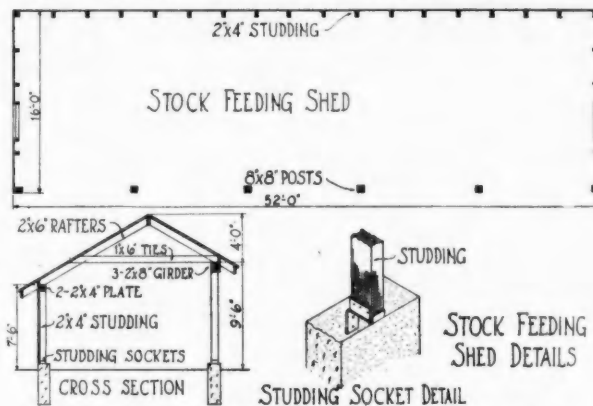
Without considering the humane sentiment, it is unprofitable to use good feed to keep up the body temperature when an animal is exposed to rough weather. Domestic live stock liberally fed will stand a lot of dry cold weather and thrive, but dampness is destructive.

A cold rain will wet and chill an animal. Evaporation is a cooling process. The heat from an animal's body evaporates moisture that passes off into the air and carries the body heat with it. The animal must eat heat-forming substances to replace the loss.

When an animal has to eat to keep itself warm it cannot add to its weight.

In fact, a great many cattle that are roughly wintered weigh less in spring than in the fall previous. They may manage to live through under difficulties, but such animals are unprofitable. For this reason, I put \$150 into a feeding shed.

The feeding rack is in front where hay and silage can be dumped into it from the carrier, which passes from the storage barn to the hog house. These feeding racks are made for feeding silage. Feeding racks may also be arranged inside the building, so that cat-



Floor Plan and Details of Stock Feeding Shed.



Design for Stock Feeding Shed Opening Toward the East. This Shed Measures 52 by 16 Feet. It is Constructed of 2 by 4 Studs Set in Wrought Iron Studding Sockets on Solid Concrete Footings. Trolley Track Feed Carrier Service Brings Silage and Other Feed to Open Feed Racks.

My Best Building Investment— A Good Implement House

ALTHOUGH I practice live stock farming, I find that on 320 acres of land it is necessary to do a great deal of ploughing and other field work to grow the necessary feed to keep so many animals. We have always tried to house our farm implements and machinery by stacking them up under the sheds, in the horse barn and anywhere else where we could find sufficient space under cover.

One day the builder said, "Why don't you build a good implement shed. I have been making an inventory of your farm machinery and other valuable implements." He said, "Do you know that in potato-growing machinery alone you have an investment of over \$400?"

I had to admit that I did not know what my potato growing machinery was worth, so he enumerated the cutter, the planter, six row sprayer, special dust mulch cultivator and digger, without taking account of the ploughs and grass-

hopper cultivators that are used at times for other farm crops. I was surprised to learn that we were actually using about \$400 worth of machinery and implements for potatoes alone.

He handed me another list that enumerated all the larger machines, such as the harvester, two mowing machines, hay tedder, horse rake, several cultivators, about \$200 worth of ploughs, manure spreader, one-half dozen farm wagons, together with smaller implements and tools "too numerous to mention."

Building to Protect Valuable Property

After going through the entire list, I began to realize that I had never yet done the square thing in taking proper care of my farm machinery equipment. The result was that we built an implement house 48 ft. by 16 ft. Thirty-two feet of the front side of the implement house was all doors, so that we could get any machine we wanted without moving out four or five others. Sixteen feet square in one end of the house was taken for shop purposes.

We put a good concrete floor in this part and partitioned it so that we could keep it warm in winter for a workroom. We built

a large chimney for forge use with an extra flue for the shop stove.

I have collected a good many tools, for working both wood and iron, by getting one or two at a time as they were needed. They are less expensive than I expected.

Since we have had the shop, it is my custom every winter to take each farm

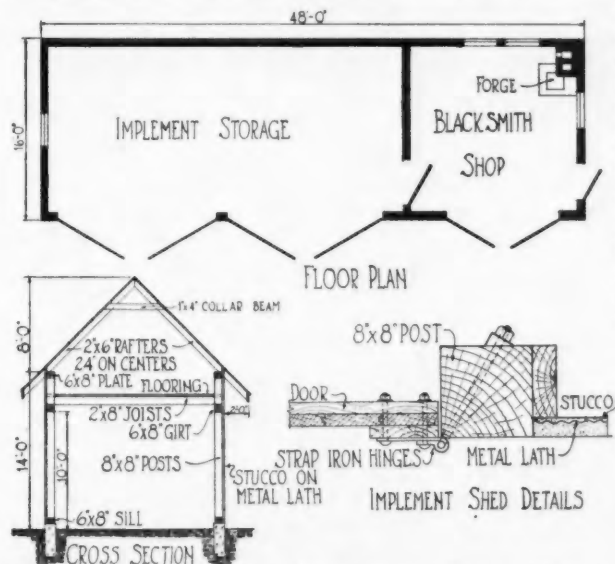


Imported Jersey Cow, "Lady Viola,"
Sold for \$7000 at 14 Years Old.

tool into the shop, pull it apart as much as necessary and examine every bolt. If parts are found worn, they are replaced with new ones.

We always have red lead and linseed oil, which, by the way, makes the best paint for implements and machinery.

Every new machine is painted with red lead and linseed oil after the first season's use. This kind of treatment adds a great deal to the life of the machine or implement, and it also adds a great deal to the looks. I notice that the men take better care of a good looking machine.



Floor Plan and Details of Implement Shed and Shop.



Design for Implement Shed and Farm Blacksmith Shop. Dimensions 48 by 16 Feet. Walls are Constructed of Cement Plaster on Metal Lath, Attached to 2 by 4 Studs, Door Posts, 8 by 8.



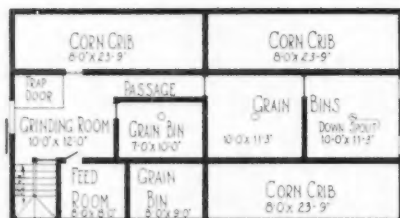
Design for 2-Story Corn Crib and Granary. A Popular Labor-Saving Grain Storage Building. Dimensions 48 by 26 Feet. If you wish further particulars concerning the plans for this building or special materials used in its construction, write to us.—Editor.

Our Farm Granary and How We Planned it

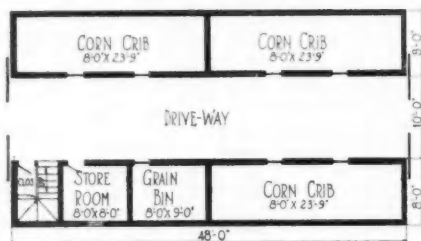
Years ago I adopted the system of feeding all the grain I could raise, with the possible exception of a field of wheat each year which we wanted in crop rotation. There was so much loss in storage, in the labor of handling and on account of rats and mice that I decided to build a two-story corn crib and granary.

Consequently the contractor made plans for a house 20 feet to the eaves and 33 feet from the floor to the peak. This called for a grain elevator, which work vertically from the driveway floor, carrying the grain up to the cupola on the peak over the center of the building. There are chutes leading from the hoppers of this cupola which carry the grain to the grain bins and the ears of corn to the corn cribs. These corn cribs occupy each side of the building and the grain bins are in the center, as the plan shows.

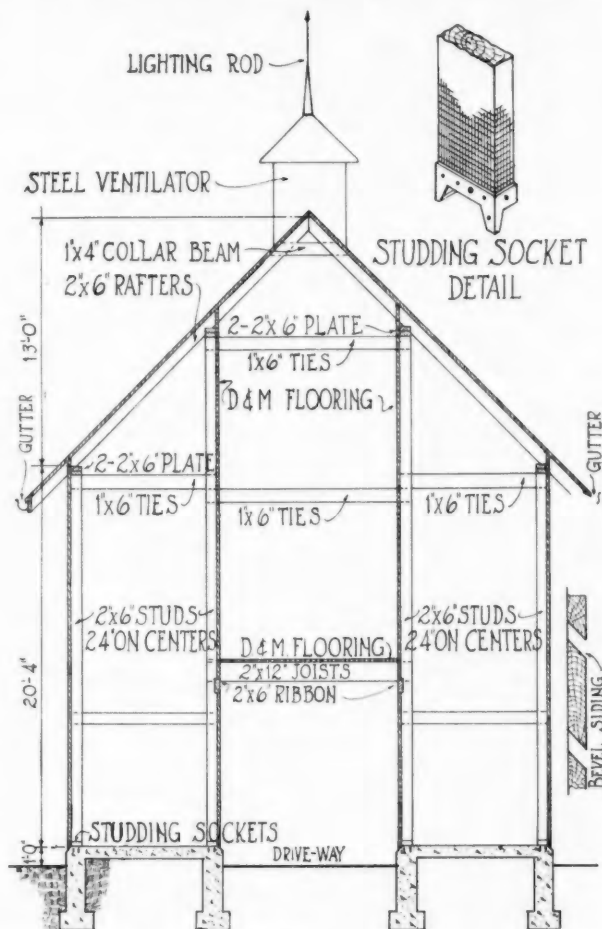
We dump the loads of small grain as they are hauled from the thrashing machine, into the floor hopper, and the elevator takes the grain from the pit and distributes it into the bins while the man and team goes for another load.



Second Floor Plan.



Ground Floor Plan.



Cross-Section Through Corn Crib, Showing Construction.

There is Money in Good Ventilation of Farm Buildings

ONE of the best tests for ventilation in stables is whether or not there is a noticeable odor when entering from the fresh air outdoors.

The most penetrating odor is ammonia. When animals are confined in a well-built stable they are constantly throwing off through the breath quantities of devitalized air. Experiments have been conducted to show that a mouse confined in a jar that is filled with the breath of an animal will die. No better argument is needed in regard to the value of ventilation in stables.

Professor F. H. King showed that a cow needs twice as much pure air by weight as the food she consumes, which means that a cow will breathe 3,500 cubic feet of air per hour.

The problem of supplying so much air to each cow in a crowded stable containing 30 or 40 head is no easy task.

The importance of pure air has only



Thoroughbred Holstein-Friesian Cow, "Valdessa Scott 2nd," Produced 695.1 Pounds of Milk in 7 Days, Which Yielded 41.8 Pounds of Butter. A Stable with Plenty of Fresh Air is Required for Such a Record.

recently begun to be thoroughly appreciated by farmers for the reason that cows until recent years have never been kept in large numbers on the farm. Formerly, a dairy farm consisted of five or ten cows that were stabled in one side of a loosely constructed barn to be fed and milked. During the greater part of the 24 hours, they were turned out into the barnyard to forage around the straw stack or under the sheds.

The increased value of live stock during recent years has resulted in the building of barns to accommodate large numbers of cattle. Likewise, horses are better stabled, because farmers have recognized the value of good buildings. Many of these buildings are equipped with thorough systems of ventilations, but, unfortunately, some have been constructed on old lines without proper consideration for the needs or requirements of large numbers of cattle in close confinement.

Professor King probably did more than any other man to call attention to the great necessity of changing the air in stables constantly day and night. His ventilating systems were constructed to admit cold, fresh air from outdoors in such a way as to spread it out over the cattle near the ceiling. This forced the cold air downward in the

stable and outward to the outlet ventilators that have their openings near the floor at the outside walls.

The natural tendency of warm air is to rise to the ceiling and spread in every direction and settle to the floor at side walls. Impure stable air is heavier than fresh pure air, because the weight of impurities carries it down. Theoretically, the out-take from near the floor at the outside of stables is correct. Sometimes other means of extracting impure air are employed, because of local conditions.

The principle of ventilating is based on the tendency of warm air to go up. A properly constructed ventilator works like a chimney. The warm air from the stable rushes up through the chimney the same as the warm air from a fire.

The size of stable ventilators regulates the amount of air to be drawn off. The intake pipe should be large enough to supply sufficient fresh air for all the cows or other live stock confined in the stable, and the ventilators or out-take pipes should conform to the same carrying capacity.

For a stable containing forty cows, two ventilators will be necessary and these ventilators should measure 2 feet square inside, figuring the movement of air in the ventilating flues at 300 feet per minute. Not every 2-foot ventilator carries air at the rate of 300 feet per minute. It depends on the height of the flue and the manner in which it is constructed. Ventilators are like chimneys—sometimes the draft is strong and sometimes it is less satisfactory.

Before building a ventilating system it is necessary to put some study on the general subject of ventilation, besides a great deal of study on the particular problem in hand.

Besides the tendency of warm air to go up, a movement of air in ventilators depends on the proportion of the ventilator to the amount of air to be carried. Also the direction of the wind is an influence. What is known as aspiration or suction induced by the wind

passing over the top of a ventilator has a good deal to do with the upward draft. Mechanical ventilator tops are manufactured to increase aspiration.

Some of these ventilators render valuable assistance in creating artificial drafts or increasing natural draft through a ventilating flue. Manufacturers have given especial attention to the building of metal ventilators from the stable up, so that the whole subject is receiving careful attention from difference sources.

I Believe in Lightning Rods

After what my builder friend and advisor told me about lightning rod protection I didn't hesitate a moment about investing. And it's really a trifling sum considering the ease of mind and the protection to my valuable buildings I have had ever since. Many farmers were bunkoed years ago by old-fashioned lightning rod salesmen. But during my recent observations I have been convinced that lightning rods properly attached to a building and well grounded are a great protection.

I have known of a great many barns that were struck by lightning, some of which had lightning rods attached, but I have never known a barn to burn that had lightning rods properly connected and carefully grounded.

There is a prevailing opinion in some parts of the country that fresh hay in a barn attracts lightning, and farmers are always nervous until the hay stops sweating. I have never paid much attention to such superstition, for the real reason is that more thunderstorms occur in the middle of summer and all barns stand a greater chance of being struck by lightning just after haying time because there are more thunder bolts turned loose at that time.

There is no data from which to form a definite conclusion, but on general principles it seems to me that a reasonable amount of money put in lightning rods is a good investment, provided, of course, that the rods are right and the price is right. My builder spoke very highly of good lightning rods and as he seemed to understand the principles of rodding I let him fix up all my buildings. I understood, too, that he always makes it a point to see that all the farm buildings he erects or repairs are properly rodded before he leaves them. He is looking for present business and satisfied customers—doesn't care to have his work struck and burned down right away.

Poultry and Poultry Houses

POULTRY on our farm has always belonged to the women. We never had a regular poultry house until lately, so we never appreciated what a good flock of laying hens really means. Usually a lot of chickens were hatched in the spring or early summer and were permitted to shift for themselves until the cockerels all found their way into the hands of the cook.

The builder suggested a small poultry house that could be kept warm in winter and a few small colony houses to drag out into the orchard for the young chickens in the spring. So we built a low-down shed roof affair with roosts over the droppings board at the back

where the roof comes down within four feet of the ground. The front, where the roof is higher, was intended for the feeding and scratching shed.

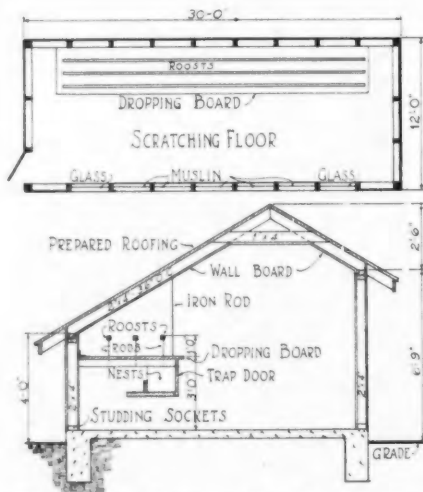
We did not put in much glass, but covered the front openings with thin five-cent cotton cloth, which lets in light and air without a draft.

Since studying poultry house ventilation, I have made up my mind that there is no other way to ventilate a poultry house in winter.

The principle we worked on is this: You cannot ventilate without heat enough to set the air in motion. Hens are so small that their body heat is not sufficient to warm much air.

My Final Word to Farm Builders

"Final" for this Month—in Our March Issue Mr. Shearer Will Tell How He Modernized His Farm Home—Editor.



Floor Plan Construction Detail of Farm Poultry House.

Poultry houses have always been built with high ceilings which the builder said is wrong in principle. So he placed the roosting poles under the low roof because hens don't need much head room. It works this way: Air enters from the front of the house and comes up around the droppings board where the body heat of the fowls warms it enough to cause it to flow upward along the slope of the roof. Fresh air is continually coming in from the front.

Formerly we had to do without eggs in winter, and in spring we had more than we could use. Now we get eggs all winter, and the hens are busy taking care of the little chicks at the time of year when eggs are cheap.

On a great many farms chickens are supposed to be too small to occupy much of the farmer's time, but a little good management and a small outlay of money will put this branch of farming on a paying basis.

The poultry can run out in the orchard and fields in the summer just the same, but like all other kinds of live stock, it is necessary to give them comfortable quarters in winter, or loose the profit

THIS story gives my experience in conducting a farm to make money. I enjoy farming, because I like it; but the returns are the supreme test. I had but small capital to begin with, so it was necessary to make every improvement pay for itself before the next was started. This plan I have carried through the whole business of farming.

I have worked with my local contractor and builder through the whole improvement plan, consulting with him about every step in all the building operations. He has taken as much interest in the improvements as I have, and I feel indebted to him for many valuable ideas and inventions.

My time has been occupied in farming operations to make money to pay for the improvements as they have been carried on. The builder was very careful and considerate in saving time and labor in laying out proposed improvements to

make them practical and business-like. I cannot recall an instance where he has taken advantage of my confidence in him to run up unnecessary expenses to augment his profits.

While the work has been extensive and has cost me a great deal of money, I feel that I have got full value for every dollar expended. My part of the work was to lay out a business proposition pertaining to a certain branch of farming and explain to the builder what I wanted to accomplish. His part of the work was to lay out the plan in such a way as to reach the object in the most direct way.

Before starting any improvements I had my plans worked out to secure the profits. Before putting any expense on a building I was particular to lay out a plan of farming that would make good use of this building. An idle building is like an idle machine. The interest on the cost goes on just the same as though the building or machine were occupied or run to its full capacity.

Cows kept in old buildings and feed carried to them by hand seldom return profits enough to pay for the feed. With up-to-date dairy stables, with a great modern mow to store clover hay, alfalfa and straw, and a silo that will properly preserve the corn for winter feeding, with facilities for weighing the milk from individual cows and to test it with a Babcock tester makes it not only possible but practical to weed out the unprofitable cows and to balance up the rations to secure maximum returns from the good cows.

My experience in farming proves that farming may be made very profitable as well as interesting by carefully and systematically developing the different branches, all the time pointing towards final profits. The only way to get returns is by providing buildings and fences and machinery to handle the business profitably.

Editor's Note—

It is certain that this farmer, the author of this article, has a well fixed up place. He tells how he worked with his local contractor and builder in making all of these improvements on his house and farm buildings. They made a point of studying up on every question in regard to every type and brand of building material and special building equipment, before deciding. The author pays a high tribute to the special knowledge possessed by his friend, the carpenter and builder, touching all of these modern building questions. His expert advice was most acceptable and proved of great practical value. The contractor's files of manufacturers' catalogs together with new catalogs, obtained at the time, descriptive pamphlets and farm building books, enabled them to investigate every point and spend the money to the best advantage.

THE GREAT RESULT we may expect from the publication of this unique and extensive article in this big special Farm Building Number will be to open the eyes of our 40,000 country builders to the great possibilities for a big country business among the farmers this year. This article gives our readers new talking points for soliciting the farmers' business. This big general article should cause this Farm Building Number to be preserved and used all through the year and in many instances for years to come, in connection with any and all farm improvement work.



Try to Persuade Your Farmer Friends to Stop Robbing the Soil. If Their Stables are Built Right They Can Handle Farm Fertilizer Easily and Raise Crops Like This.



(Photographs by courtesy of Dean Knickerbocker, manager Jenningshurst Stock Farms, Towanda, Pa.)

Another Type of Plank Frame Construction Self-Supporting Roof. A Truss is Placed Every 12 Feet, Membering at Four Points—Sill, Plate, Purlin and Ridge. Extra Bracing from the Sill out onto the Barn Floor is a Special Feature Giving Extra Strength. Notice Also How Purlin Plate is Built Up out of Two Timbers Laid Together at Right-Angles. Compare this Truss with the Types Illustrated on Pages 47 and 56.

"Your Competitor is not a Gargoyle, But a Human Just Like Yourself, That Wants to Earn a Living for Wife, and Babies and Self. Get Acquainted."

—THE MAN FROM THE LUMBER YARD

We are so impressed with the fact that many of our readers are giving away their profits, that we will be pleased to have any of our subscribers take up this subject with us.

—EDITOR.

WHEN I kept the books in my father's lumber yard, we did not have desk-lights as we do now. We used kerosene, commonly called coal-oil, lamps.

One night I was making out bills. It was very quiet. A sudden noise caused me to look up and I saw a monster animal ready to spring on me. In my consternation and haste to escape I upset the ink. As soon as I came to my senses, I saw that the terrible monster was merely the shadow of the office cat.

I have jumped at shadows many times since.

You, Mr. Contractor, need not say you don't, because you always see in front of you;—"what the other fellow will bid."

It is your business to buy at the best basis. It is the work and study of your customer to squeeze the last dollar out of your price. It is profitable for him to play every competitor against you.



What Is This Terrible Monster?—
Only the Office Cat.

Makes You Feel Like 30c

Did you ever get confidential with a competitor and find out what a monkey you had been in making an unnecessarily low price? The biggest fool in making prices is the man who is so ignorant of the game that he doesn't know what his material, his labor and his time cost. Thirty cents is a bigger price than some of our readers figure in for their own time.

Many of our readers would get hot under the collar if we offered to buy them at the price they figure their time at. Even with business people who know exact costs, there is that lack of backbone in the fixing of prices which gives away the profit every time a competitor is mentioned.

Only Skimmed Milk Left

Many a bid has had all the cream skimmed off because of the fear of what the other fellow was doing. Your competitor is not a gargoyle, but a human like yourself, that wants to earn a living for wife and babies and self. Get acquainted. Ah,—there's the rub.

Do you know that the cohesion of the hod carriers is such that their per day wage is better than the profits of many men who shoulder heavy responsibility.

I am a great admirer of William, surnamed Shakespeare. He put a truth into the mouth of Shylock, when he said:

"You take my house when you do take the prop
That doth sustain my house; You take my life
When you do take the means whereby I live."

You never find a Jew separating himself willingly or unnecessarily from his profits.

I would put into the mouth of my business man these words:

"To figure for gain, shows only I am sane.
To live alone on fame, would soon bring me to shame.
A good satisfactory profit must be had,
Or I shortly will go to the bad."*

Get to Know Your Fellow Builders

If you have an idea you are going to control all the contracts, forget it. It is a good thing to let the other fellow have an occasional bone. The first thing necessary for a friendly acquaintance with your competitor is a willingness on your part, that he, as well as you, should live. When your heart is right toward the other fellow he will naturally feel right toward you. I am acquainted with a hardware broker who recently told me that in a certain western city the competition

*Special Poetic License Applied for.



What Fiend Is This?—
A Good Fellow When You Get to Know Him.

was so severe among the various builder's hardware dealers, that all were losing money. One of their number was wise, and invited a number of his competitors to put their feet under the table with him. While they were eating good things, and drinking good coffee, etc., and smoking good cigars, all of them got real well acquainted. Before they sat together,

each one was willing to swear that the other fellow was a horse thief, and a liar. Before they separated, each man confessed to himself that the others were as fine fellows and as honest as he ever hoped to be. Today, if a keg of nails is to be delivered in a part of the city nearer a competitor, there is no hesitancy about telephoning the competitor and asking him to make the delivery. And the competitor is ready to reciprocate. When a buyer states that he can purchase white lead from X at a price which Y thinks is unreasonable, Y does not hesitate to telephone to X to find out if such is the case.

It is this, give and take, that gives a zest and pleasure to business.

I know the difficulties to be met in getting two good fellows who are competitors together, but I know it can be done because I have done it. Each case has to be diagnosed separately and prescribed for individually. A cure-all plan will not work.

I am willing to offer my services, for a short time, to any contractor who (1) believes that a friendly co-operative spirit would be mutually beneficial to him and his competitor, or competitors, and (2) is willing to go in to any conference in a reciprocal attitude.

The Net Results

You are interested in the net results to you. If you can increase your net results, why should you object to the other man also increasing his net results?

It is my judgment that a bid should be made on the basis of a proper safe profit. It should be made to cover any eventualities. When this is done, you should use good salesmanship to secure the business.

Salesmanship is one subject on which I want to write later, but I think that PROPER BANKING connections should be presented first. You will find it in the March issue.

Sincerely yours,

THE MAN FROM THE LUMBER YARD.

Chemical Closet Wins Official Approval

ENGINEERING BULLETIN JUST ISSUED BY THE MICHIGAN STATE BOARD OF HEALTH RECOMMENDS CHEMICAL CLOSETS AS BEST FOR FARM AND VILLAGE SANITATION

By Edward D. Rich, C. E.

Michigan State Sanitary Engineer

AN efficient, practical, yet inexpensive means of disposing of personal sewage has always been an annoying problem on the farm and in country towns and city suburbs far removed from municipal sewer systems. The old outhouse *must go*. As to that we are all agreed. But what is to take its place?

Chemical closets have come to the front; and it does seem that now they offer the one feasible solution. Their latest indorsement comes from the Michigan State Board of Health, part of whose report is as follows:

The State Board of Health is often asked for information and expressions of opinion on the value

and efficiency of chemical closets. The question is frequently asked, "Are they sanitary?" The word "sanitary" is defined as "relating to the conservation of health, especially to hygiene and public health." Anything, therefore, which tends to protect public or personal health, either directly or indirectly, is sanitary. Many measures designed to protect and conserve public health arrive at the desired result by way of the indirect route. That is, they act as a substitute for something which is distinctly insanitary. The chemical closet, in providing a substitute for the dangerous cesspool and the pestiferous privy, constitutes a good example of indirect sanitation.

In these days of enlightenment the privy and cess-

Chemical Closets Officially Endorsed

pool are getting more and more of their just reward of condemnation from sanitarians, health officers, tradesmen and the public generally. Public health literature is well filled with discussions on the subject, but too much can hardly be said on this important topic, for as long as humanity is careless so long shall we have the dangers of the cesspool and privy to contend with, because the easiest way is that often chosen even when one knows better.

Advantages for Farms, Villages and Suburbs

Let us consider the advantages of the sanitary chemical closet. In this connection it is well to understand at the outset that it is not intended or recommended to take the place of a modern city sewerage system, but is designed for use in the country, small villages or suburbs of the city where no sewers are available.

1. *Accessibility:* It may be set up in any convenient part of the house so as to be reached without subjecting one's self to the inclemency of the weather. This is especially important in case of invalids and elderly persons, thus encouraging regularity.

2. *Privacy:* Being inside the dwelling, the user is not exposed to public gaze while going or coming and the closet is protected from use by persons other than the owners.

3. *Comfort and Convenience:* The room in which it is established may be kept warm, well ventilated, light, neat and clean.

4. *Abolishes the Outside Privy and Cesspool with All Their Dangers and Nuisance:* It is gradually coming to the notice of the public that no cesspool or privy in the vicinity of a well can be regarded as sanitary or even decent way of disposing of sewage and that the scattering of disease from privies by means of flies and other living forms is a question of vast importance.

5. *Ventilation:* A properly constructed chemical closet provides a channel for the frequent change of air in the room where it stands, thus furnishing better air for the upbuilding of the vitality of the inmates and rendering them less liable to the attacks of disease.

6. *Germ Destruction:* A properly operated chemical closet deals death to any and all germs of disease contained in the discharges of the bowels and kidneys.

7. *Fly Prevention:* The chemical feature of this invention eliminates one of the prolific breeding and feeding places of the flies—the outdoor closet.

8. *For Schools:* All of the above advantages apply especially to schools and in addition it preserves the health of the pupils by providing them a warm place in winter and encourages them to be regular in attention to nature's demands. The location of the closet inside of the school building removes some, at least, of the dangers of immorality incidental to the common school privy.

9. *For Country Hotels:* In addition to the points enumerated above, it is a valuable business asset in attracting guests who would otherwise arrange their

business so as to reach a city hotel in preference to one in a country town.

10. *For Railroad Stations:* It eliminates the unspeakable privy which is almost invariably open to the public and consequently, by the carelessness of the traveling public and the depredations of vagrants and irresponsible persons, rendered the most insanitary spot in town. The same may be said, to some extent, at least, concerning the privies of schools and hotels.

11. *For Summer Resorts:* The summer cottage is almost invariably of very low priced construction and the toilet facilities in connection are of the same order. It is surprising to see what inconveniences of this kind are tolerated during the vacation season by persons who would not for a moment endure them in their city homes. Such toleration is all the more surprising and disgusting when we consider that by a little attention and slight additional expense, danger and nuisance can be replaced by safety, comfort and convenience. Statistics in some of our large cities, notably Chicago, show that many cases of typhoid fever may be traced to insanitary surroundings occupied by summer visitors at the various resorts. So prevalent have these examples become that "vacation typhoid" approaching almost to the proportions of an epidemic, has come to be regularly expected.

Features of Good Chemical Closets—Note These When Buying

Sanitary chemical closets are now on the market, made in several forms and manufactured by several different companies. In choosing from the variety of pattern and make, several points should be borne in mind as requisites to successful operation:

1. *Durability:* All the parts should be constructed of such materials as will withstand the action of chemical fumes and dampness without decay and corrosion.

2. *Ease of Cleaning:* All interior parts should be easily accessible for cleaning and constructed of such material as will not tend to resist the removal of filth.

3. *Proper Design:* The container should be made of such form and size that the liquid contents will not leak out or be easily spilled when being removed.

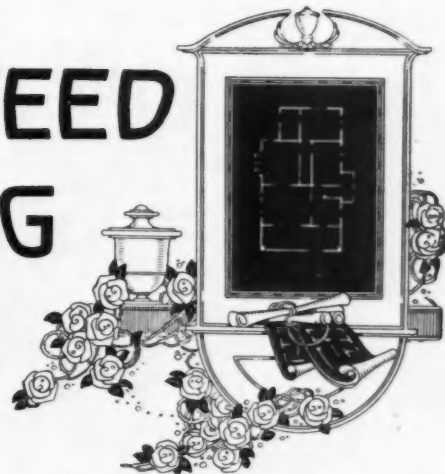
4. *Ventilation:* The storage chamber should be fitted with a vent pipe of not less than 4 inches in diameter connected to the house chimney or extending full size through the roof at least as high as the highest point of the house. Vent holes for fresh air supply should be provided between the outer part and container and so arranged as to allow a free draft of air at all times to pass from the room to the outer air through the vent pipes.

5. *Size:* The size should be convenient.

6. *Chemical Disinfectant:* This is the most important consideration of all. Without proper attention to this detail many of the advantages above mentioned are neutralized and most of the sanitary features of this valuable invention are set at naught.



GUARANTEED BUILDING PLANS



Right Angle Hipped Bungalow

A village or suburban cottage should be pretty as well as useful. Our design here proves this statement. It contains all of the modern improvements. The front is lighted with an interesting group of casement windows projecting without, and inside serving the useful purpose of providing a wide, comfortable, well-lighted seat for the big living room. This seat is more than 12 feet long and is about 3 feet in width. It taxes the ingenuity of the girls to make such a large window seat look artistically cozy, but they always manage to do so. Anyway, it always is comfortable.

A large window seat extension requires that all joints shall be well protected by building paper carefully put on. Carpenters are sometimes in a hurry when they tackle a projection and find it quicker to tear off a strip of

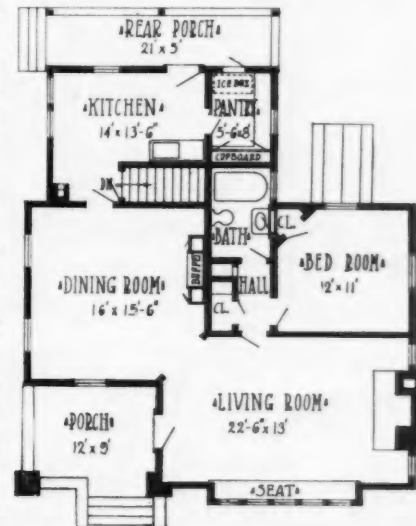
building paper than to piece it out to cover all the corners and the openings left between the sheathing boards.

There is a wing extension to the house which runs back about 18 feet to make room for a kitchen, pantry and back veranda. The bath room also takes up some room in the L, and the cellar stair goes down from the L and lands near the center of the cellar.

The foundation wall that divides the kitchen L from the front part of the house makes a fine cold cellar for keeping fruit and vegetables. For food storage, cold cellars are absolutely necessary. Without a solid partition wall it becomes a choice between a cellar and a furnace and the women have a hard time in deciding.

The landing is made into the corner of the basement that is most convenient to the outside cellar entrance. This outside stair also is intended for the

carrying out of the ashes from the laundry stove and the furnace.



Floor Plan of Bungalow,
Size 35 ft. 6 in. by 37 ft. 6 in.



A Right-Angled Hipped Roof Bungalow. Size 35 feet 6 inches by 37 feet 6 inches. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$5.00 per set. Blue-prints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6655.

Wide-Board Bungalow

A story and a half house containing eight rooms is shown on this page. It is 30 by 37 feet in size, exclusive of the porches.

This is a good house for a large family. It has a good looking, prosperous appearance, as though the family feels proud to own such a home. It is built of studding in the ordinary way, except that the outside is covered with wide boards, joints covered with battens; the gables are shingled.

The plan provides for a side hall with an open stair. To the right of the hall as you go in is the large living room 21 by 13 feet. The main decorative feature of this room is a very handsome fireplace.

The parlor and the dining room are connected by an extra wide archway, so that the two rooms may be used together when occasion requires.

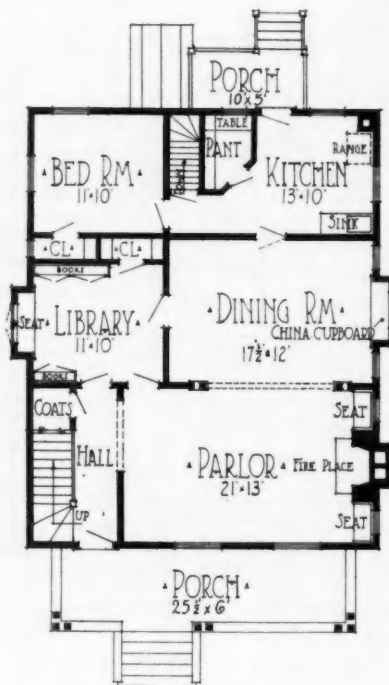
The men folks are considered as having some rights; by planning the library at the back end of the hall, this makes a very cozy sitting room that is likely to be used a good deal, especially by the men who carry their business accounts home with them to go over in the evening.

The stair leading down to the cellar is in the rear at the side of the pantry,

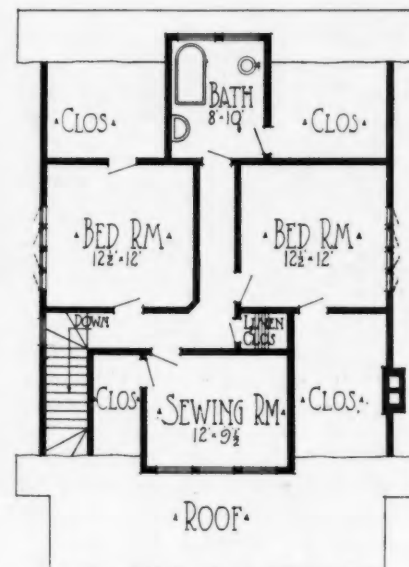
which is more convenient in this house than the usual way of going down to the cellar under the front stair. This plan gives a good cloak closet in the front hall, a convenience that is always

appreciated by all the family.

Upstairs there are three good bedrooms and any amount of closet room, because the different clothes closets are worked in under the slope of the roof.



First Floor.



Second Floor.

Arrangements of House, Size 30 by 37 feet.



A splendid 8-room, story and a half house. Size, 30 by 37 feet. We can furnish complete blue-printed working plans and typewritten specifications for only \$8.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections, and all necessary details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6657.



A two-story square built farm house. It is 37 by 32 feet 6 inches, exclusive of the front porch. We can furnish complete blue-printed working plans and typewritten specifications for only \$10.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections, and all necessary details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6654.

Square Built Farm House

Here we have a full two-story country house, 37 by 32 ft. 6 in. in size, including the projection at the back. It is square built and is covered with a hip roof. The plan is designed especially for the farm. Farm houses differ from town houses in many respects. They are built for business as well as for residence purposes, but the comforts of home are not to be sacrificed to accommodate business.

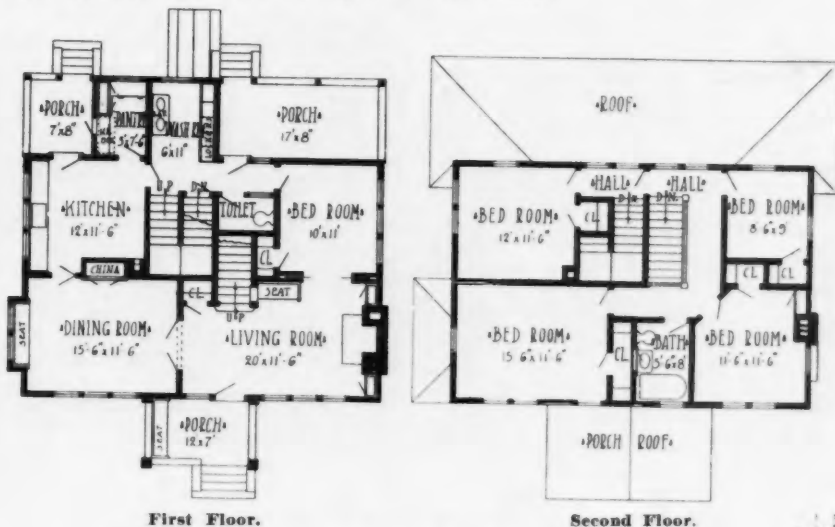
This plan is arranged to keep the farm work in the rear so far as possible, leaving the front of the house to family comfort and sociability. There is a wide rear entrance to the cellar because a farm house cellar is the most important part of the house. The cellar entrance should be wide, with easy concrete steps leading down to a 4-foot door. Household supplies in the country are provided in wholesale quantities, so that plenty of storage is required, and it should be cool, if not cold. For this reason farm cellars should be partitioned off into compartments in order to have rooms for different purposes.

The floor plans of this house show conveniences for farm help, both on the first and second floors. On the first floor is a washroom with lockers, so that

each man may have a separate cupboard for his extra clothing. All farm hands like to have a place to keep their small belongings under lock, and they like to have a comfortable place to wash. The old-fashioned plan of washing in a tin basin on a bench near the pump may never go out of fashion on farms in hot weather, but for about nine months in the year a special washroom provided with hot and cold water on tap is a

modern necessity on the farm.

The rooms upstairs intended for the family are in the front part of the house, and space for farm help in the room at the head of the back stair. In fact, there are two bedrooms upstairs that may be used for the help when necessary, leaving the downstairs bedroom and the two front bedrooms and the upstairs bath room for the farmer and his family.



Arrangement of Farm House, Size 37 ft. by 32 ft. 6 in.

Extra Ornamental Bungalow

Cobblestone trim with shingle siding gives a distinguished appearance to this nifty cottage. An interesting effect is also produced by giving different pitches to the roof, which effect is extended out over the front steps, terminating in the level top of the pergola. A cobblestone wall, porch piers and chimney all help to produce an unusual front.

The manner of shingling the sides of the house in alternate wide and narrow courses is different from the ordinary, but it helps to carry out the architectural effect as intended. This manner of siding houses uses up just about as many shingles as though they were spaced evenly, but it gets away from the ordinary way of laying shingles and it makes a distinction between the sides of the house and the roof. The joints are broken in the same way and the siding is just as thick and valuable, but it makes a difference in the appearance of the house.

The windows are built on the multiple window plan, but they are arranged to produce a casement window appearance. Woodworking factories make box frames in sizes to contain as many windows side by side as the plan calls for. There are weight boxes between each two windows, so that the sash are hung by sash weights in the usual way. There is a great deal of window surface in this little cottage.

The plan shows that the front of the house is given up entirely to comfort

There is a living room 22 by 14 feet, with a sun parlor loggia 11 by 7 ft. 6 in., which also is used as a vestibule entrance to the living room. The sliding door, which connects the dining room with the living room, rolls back into the partition entirely out of the way.

There is an extension out from the dining room to accommodate a built-in buffet or sideboard. This extension is a study, because of the manner in

which the windows are bordered by the cabinet work. Such designs show the care with which modern millwork is manufactured to fit the different styles of architecture. The several odd windows built into this extension are intended to admit plenty of light to the dining room and to merge with the built-in cabinet work in such a way as to create envy amongst the neighbors.

The two bedrooms and bathroom are connected by a short hallway with doors opening into the dining room and kitchen, which offers a good deal of convenience, considering the small amount of space.

The kitchen, pantry, cellar stair and back porch of this little cottage house are very compact and conveniently arranged for doing the housework. In a cottage more attention usually is paid to the cellar than in houses that have more storage room on the first and second floor. This is one reason for building an extra stairway to connect the kitchen with the basement. The basement in a bungalow often is used for different kinds of storage and there are a good many trips made down and up the basement stairs.

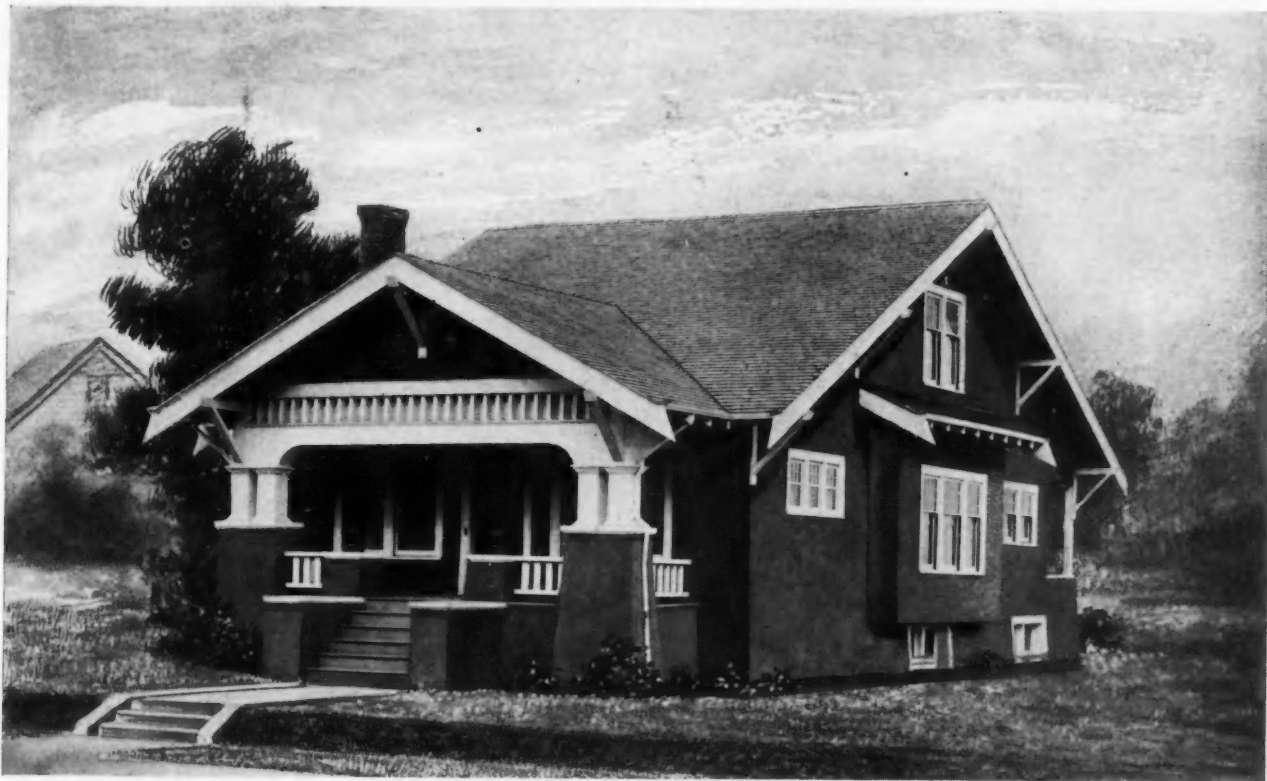
No modern house is complete without a furnace, but a furnace spoils a farm cellar unless there is a solid concrete or tile wall to shut the vegetable cellar entirely away from the furnace room. Also the coal bin should be well built to prevent dust.



Arrangement of Bungalow,
Size 28 by 44 feet.



Extra Ornamental Bungalow with a cobblestone front. It is 28 feet by 44 feet in size. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$7.00 per set. Blue-prints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6659.



An eight-room cement plaster house. Size, 27 ft. 6 in. by 40 ft. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$8.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6660.

Modern Cement Plaster House

A cement stucco finish, story and a half house, 27 ft. 6 in. by 40 ft. in size, exclusive of the front porch, is shown here. The heavy front porch gives the design a rather massive appearance as you see it from the street. The porch is 7 by 24 feet, covered by a gable end roof with considerable projection of eave that protects the porch in all kinds of weather. The two solid piers extend about six feet up from the ground with short wooden pillars to support the heavy archway that spans the porch from one pier to the other across the front entrance. These heavy looking piers help to establish a solid design that looks much more expensive than it really is.

The porch foundations are entirely separate from the cellar wall. The pier foundations reach below frost, but do not project much above the ground. The work from the foundation piers up is made of wood covered with metal lath and plastered with cement stucco. This work is made solid and strong, but is much cheaper than solid concrete or stone. The

same character of finish is used on all the exterior parts of the front porch as well as to cover the side walls of the house, including the dining room window extension.

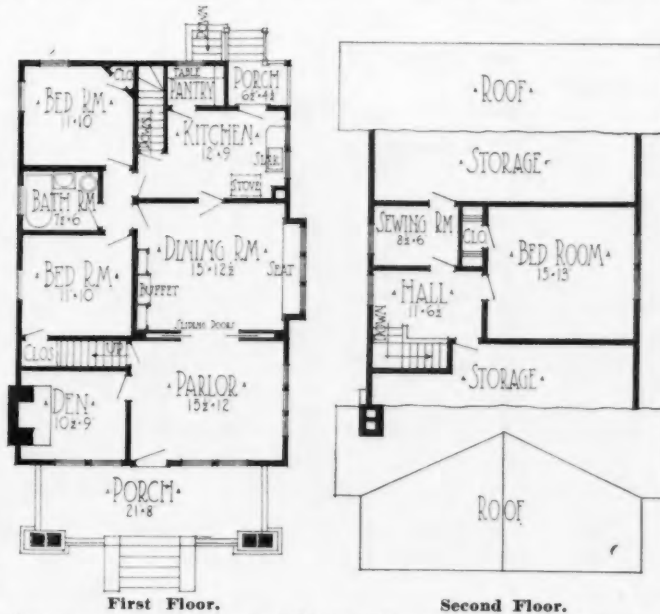
The main part of the house is plain, square in build, and covered with a gable end roof. The manner of building is to construct a stone wall up above grade line. The framework from the wall up its stud construction. To get the necessary headroom into the base-

ment the floor joists are started about three feet above the top of the wall which makes the cellar about 7½ feet in the clear. Most houses of this type are heated with a warm air furnace, so that it is necessary to have about 7½ feet of headroom to get the proper slope to the warm air pipes.

The plan of building eight rooms into a house as small as this typifies economy in construction. The two upper rooms are extra, as the space is taken entirely from under the peak of the roof. This arrangement gives three or four or five bedrooms, according to the use made of the two rooms upstairs and the den below.

The regular living rooms, parlor, dining room and kitchen, are laid out in the most approved order. The kitchen is built in such a way as to save steps in the every day work of preparing meals. There is a great deal in designing a kitchen, pantry, cellar stair and back porch in such a way as to condense the housework into small quarters.

Most families like lots of convenient storage space. This design with its two big attic store rooms will surely please.



Arrangement of Cement Plaster House, Size 27 ft. 6 in. by 40 ft. 6 in.



Six room bungalow on narrow lot. Size 27 feet 6 inches by 40 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$7.00 per set. Blue-prints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6656.

Round Gable Bungalow

Two rooms wide and three rooms long is the size of this bungalow—the front porch is extra. In carpenter's terms it is 27 feet 6 inches by 40 feet, exclusive of the front porch.

In every town there are narrow lots that require depth instead of width in planning a house. These lots often are otherwise quite desirable and it is necessary to build houses to fit them.

Also there are families that require three bedrooms at certain times during the year when relatives levy their periodical assessments. Six room bungalows increase in value on such occasions.

This bungalow has a cellar wall up to or a little above the lot level. It depends upon climate to some extent, but fashion dictates the manner in which bungalow cellar walls and windows shall be built and arranged. Ordinarily the wall is four and a half feet or five feet high. The sills are placed on top of the wall in the usual way, but the floor joists are boosted up about three feet to get sufficient cellar headroom to set a furnace.

This manner of construction leaves room for good sized cellar windows between the sills and the ribbon that supports the floor joists.

The front wall of this house is built higher to level up with the porch walls. The floor of the porch is only a few

inches lower than the main floor of the house, so it is necessary to account for the difference in the heights of the cellar walls and veranda foundation.

The space under the veranda is not excavated, so that the excavation for

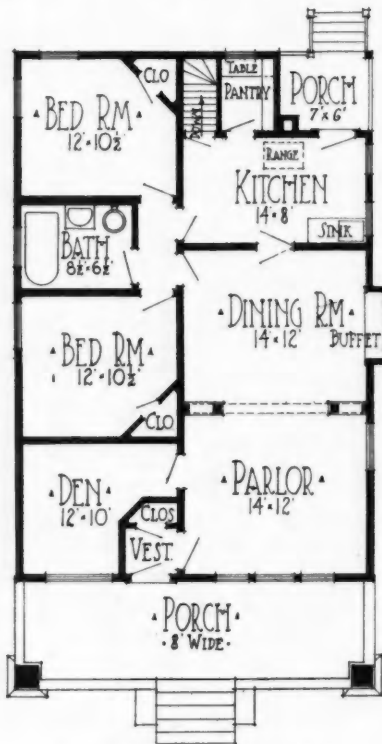
these extension walls is only sufficiently deep to reach down below frost.

The plan of this little bungalow is interesting. It is not easy to lay out a plan that will provide six rooms in the bungalow without adding a wing or building larger. In this case it was desirable to avoid this additional expense.

There is a space saver in the dining room that is somewhat unusual. A built-in buffet reaches across the window recess and comes up even with the window sill. The china cupboards are extended up each side to bring them level with the top of the window, so the casing and finish for the top of the window extends around the tops of the china cabinets. It frames the window somewhat on the usual order of framing a mirror at the back of built-in sideboards. The advantage is that a novel effect is obtained by including the window. Also the extra light is needed.

Good kitchen and pantry accommodations are laid out in a very interesting way. The back porch really is a part of the kitchen, because it is closed in with lattice work and wire fly screens, with the intention of making it a sort of summer kitchen annex, in which a good deal of the work of preparing the meals may be done in the open air.

Owners of bungalows that are built on narrow lots often make good use of the ground at the back of the house, so that the rear porch often is more attractive than the front.



Arrangement of Bungalow,
Size 27 ft. 6 in. by 40 ft.



A Saucy Bungalow of Five Rooms. Dimensions, 29 feet 6 inches by 36 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$5.00 per set. Blue-prints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6658.

A "Pug-Nose" Bungalow

Bungalows require special architectural treatment in regard to details of construction. In this design a number of special bungalow features are shown. The peaks of the gables conform to bungalow ideas by introducing an artistic effect that is thoroughly in keeping with the subject. This has been facetiously called the "pug nose" gable effect.

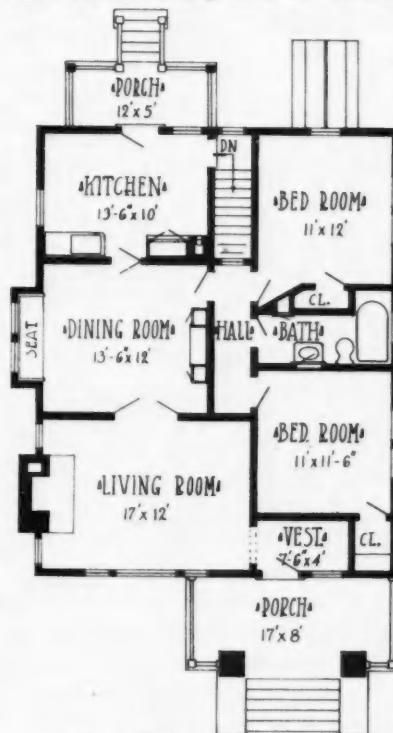
The windows and window frames also are in keeping with the oddities of bungalow building. Also the cellar windows are shaped in conformity with the larger windows, but do not follow too closely any one particular pattern. The cellar windows are set in the siding of the house the same as the larger windows that light the living rooms, which is one reason for the window family likeness.

The chimney is rough stucco finish in design similar to the heavy porch pillars. The similarity includes the caps on the porch pillars and the chimney top.

Another bungalow feature is the manner in which the timbers are reached out from the gable ends of the house to support the wide roof projection. The cornice trim at the gables is especially interesting, because of the manner in which the fascia is cut at the peak

and at the eaves.

The front porch is 17 feet by 8 feet and is so protected by the overhanging cornice that it makes a very comfortable outdoor sitting room in summer.



Floor Plan of Bungalow,
Size 29 ft. 6 in. by 36 ft.

It is a typical bungalow porch with wide steps and heavy columns and mission style of railing without spindles.

The plan of the rooms also is worked out in true bungalow fashion with the two bedrooms and a bathroom on one side of the house and the three living rooms on the other side. Whenever possible, the living rooms are laid out on the sunny side of the house, because so much more time is spent in the living rooms than in the bedrooms.

Provision is made for a stairway to the cellar, going down from the kitchen. The stair is laid out with wide treads and easy risers because the housewife makes a good many trips to the cellar during the day.

The rooms in this bungalow are all good size and carefully arranged for convenience and comfort. The living room is an elegant room, being 17 feet by 12 feet, well lighted and well ventilated, especially when the fire is burning in the fireplace.

The bathroom is very nicely arranged with a medicine cupboard over the washstand and a linen cupboard big enough to hold towels and other bathroom supplies.

Altogether it is a very neat, attractive little bungalow that is well planned and is often spoken of as being the prettiest house in the neighborhood.



Noon Hour Talks by the Boss Carpenter

Talk No. 31—Concrete Foundations for Barns

THE BOSS TELLS ABOUT THE CONSTRUCTION OF CONCRETE FOUNDATIONS FOR BARN AND FARM BUILDINGS AND SHOWS HOW TO BUILD FORMS FOR SAME

"I MET the editor of your magazine, the AMERICAN CARPENTER AND BUILDER, the other day," said the Boss, "and he showed me some fine barn plans that he was to put into the February number. Since the details of the timber work on these plans is shown in such a thorough manner, I think that an explanation of the methods used in constructing the concrete footings, foundations, and side walls of these buildings may help you when you use these plans in your work. You will find the various plans referred to on pages 43 to 56 of the magazine, but for our convenience we will make drawing of a part

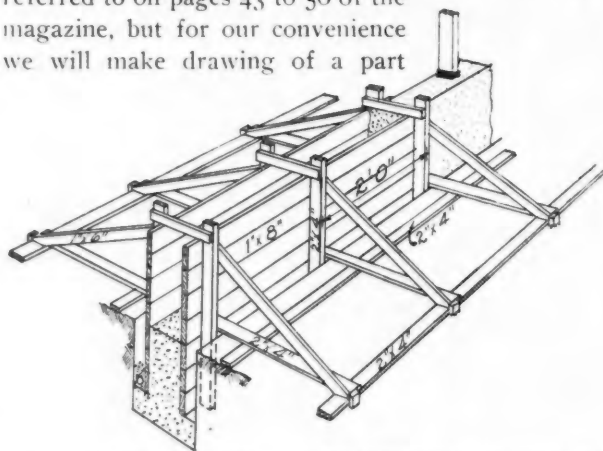


Fig. 1. A Type of Braced Form for Constructing Concrete Wall. of the concrete work and handle it separate from the other parts of the plans.

"You already know from some of our earlier talks that concrete is made up of a proper mixture of a good quality Portland cement, clean, sharp sand, clean screened gravel or crushed stone, and water. You will also remember that some kind of a form is needed to hold the soft wet mixture in place until it has hardened sufficiently to support itself together with the temporary loads which rest on it.

"The first thing to be done after the lines of the foundation have been marked out and properly staked, is to excavate a trench to receive the concrete footings. The depth of excavation will depend upon the climate and kind of soil, but should extend deep

enough to reach solid earth at all parts, far enough to avoid all danger of frost, and down to permanent moisture of the ground in climates where alternate wet and dry seasons occur. Generally the depth will lie between 3 and 5 feet. The width of the trench should be such that the forms for the concrete may be placed easily by the workmen, leaving a working space around the outside of the forms.

"In excavating for a foundation in soil which will stand in a vertical position by itself and when no basement is to be provided for, as in the case of single piers under posts and in the footings in Fig. 1, a hole or trench may be made into which it is possible to place the concrete without the use of forms. When this can be done, the width of the trench or the size of the hole for the pier should be the same as that desired for the footing or pier. The earth at the bottom of all trenches should be rammed down firmly before the concrete is placed.

"In soft soils it may be necessary to place side

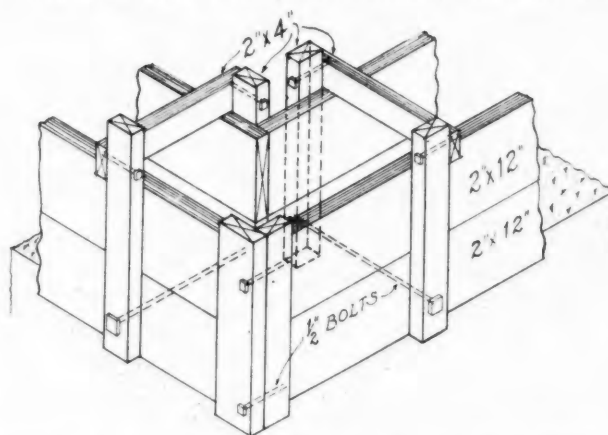


Fig. 2. A Section of Wall Form for Use on Work Where a Small Crew is Employed.

boards in the footing trenches to hold back the soil when pouring the concrete. Often a nail keg with the heads knocked out will serve as a form for a small pier.

"If the soil is wet and does not drain readily, it

may be necessary to lay a line of 4-inch drain tile just outside of the footing as shown in Fig. 1. A covering of gravel or small stones will aid this in removing water from around the foundations. This drain should lead away from the building to a sump or drainage hole at some lower position.

"The footings should consist of a mixture of 1 part by volume Portland cement, $2\frac{1}{2}$ parts of sand and 5 parts of screened gravel or small broken stone. The gravel should be screened over a $\frac{1}{4}$ -inch mesh screen, and all that passes through should be taken as sand in making up the mixture. The broken stone should be of a size which will pass through a $1\frac{1}{2}$ -inch ring, but should not contain much material smaller than $\frac{3}{4}$ inch in size. Use water enough to make a mixture which

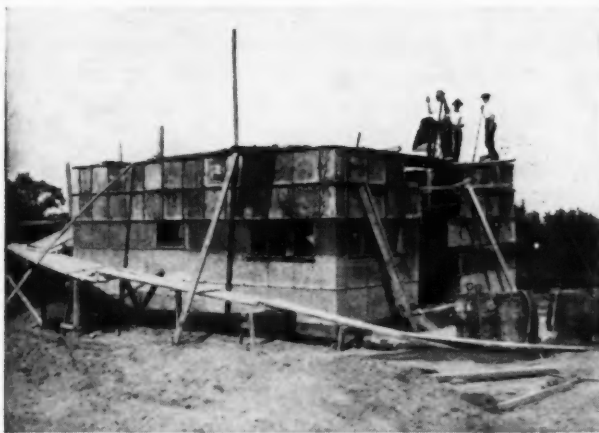


Fig. 3. A Type of Steel Form for Concrete Walls.

will slide off a clean shovel easily without sticking, but not wet enough to run or be in a "soupy" condition. Do not use a dry mixture.

"For this part of the work every builder should have one of the smaller size portable concrete mixers, either gas engine- or hand-power. Such equipment costs comparatively little and the saving on one good sized job pays back the investment.

"Thorough mixing is very necessary—you can't expect to get good concrete without it. None of you men who expect to do much at barn building or other farm building work should think of getting along with the old shovel board and shovel mixing gang.

"About seven gallons of water will be needed for a one-bag of cement batch of concrete. The concrete should be placed in the footing trench at once without allowing it to begin to harden.

"After the footings are in place, the foundation wall may be built by the use of sectional forms similar to those shown in Figs. 1 to 3. The advantage of this type of form is that a small crew of men can only handle a comparatively small part of the foundation walls for a large building in the ordinary working day. For this reason it does not pay to build forms around the entire building at one time, as might be advisable where the crew was large enough so that all of the

concrete foundation could be poured in in one day. These sectional forms are built in units so that they are easily placed as one piece and then moved along to another location as soon as the concrete in them is hard enough to resist pressure by the thumb. Over night will generally be sufficient for this degree of hardening. With five or six of these movable units, a large amount of foundation may be placed by a small crew of men with a small expense for form work.

"Steel forms made up in sections for work of this class may be obtained from many of the concerns who furnish concreting equipment and are much more durable than timber and more easily handled. If you have frequent calls for this class of work, the steel forms would be cheaper for you in the end.

"Where timber forms are to be used in sections, it is best to build them flat on the ground in units of convenient length to handle and then erect them in place if of the nature shown in Fig. 1. By having the forms built in this way they can be removed and used again with a very small amount of damage to the lumber. In building the forms flat on the ground, the stringers should be very carefully leveled and the uprights and sheathing carefully placed in their correct positions. If this care is not taken, the form will not be perfect when erected.

"Where a low wall is to be erected, the top of the sheathing in Fig. 1 may extend to the top of the wall while the bottom boards are

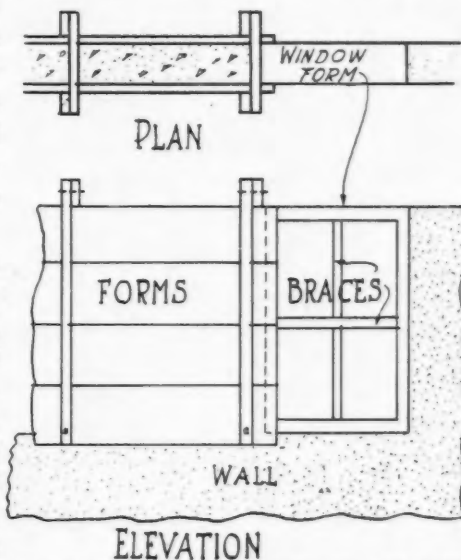


Fig. 4. Use of Sectional Forms on High Wall With Temporary Window Frame in Place.

at a level with the footing. Each section of form is attached to uprights which are held in the proper position by braces fastened to two stringers laid on the ground and held by stakes. Cleats across the top of the uprights hold the forms at the proper distance apart at the top.

"As soon as the concrete in the sections of form which are in place becomes hard, the sections are backed away from the work and moved on to the place where the wall is to be continued. A section with a right-angle turn may be made to be used at the corners when these are reached, thus preventing a break in the wall at the corners.

Concrete Foundations for Barns

"At the end of a day's work, it is well to form a square joint where the next day's work is to join, but a 2 by 4-inch timber should be set on end in the form at the joint so as to form a tongue and groove joint when the next day's concrete is placed. All old work should be wet and cleaned of any dirt or scum which may show on the surface to be joined. A coating of cement grout painted on the joint will aid in bonding new work to the old.

"Figure 2 shows another type of sectional form which is used in a similar manner, but may be made in any height desired and raised as the wall progresses as well as being moved along. A steel form which will produce the same effect is shown in Fig. 3. With this type of forms, care must be taken to see that they are moved evenly so as to keep the proper alignment of wall. All forms should be well greased with soap or mineral oil before using, and thoroughly cleaned after removing from the work and before using again.

"The dimensions given on Figs. 1 and 2 will indicate the sizes of material needed and the spacing of the uprights where used.

"The same principles already described will apply in each of the foundations shown. The difference is mainly in the height of the wall above the footing. In the case of Fig. 4 the wall may be carried up to the proper height in stages, working around the entire wall at each stage.

"Where timber framing is to be used on top of a concrete foundation, it is advisable to build the concrete wall up to a height of at least 18 inches above the ground and 12 inches above the lower floor of the building. This prevents danger from moisture rotting the bottom of the timber construction. Studs may be fastened to a plate held in place by bolts extending down into the concrete and put in place while the concrete is soft, or held in metal studding sockets set into the concrete as shown in Fig. 1.

"Tile walls or solid concrete up to the height of the first story is advisable if the owner will stand the expense. Pages 44 and 56 show these types of wall.

"Where openings for windows are to be left in the solid wall, as shown in Fig. 4, a stout frame of 2 by

6-inch timber, built to the exact outside dimensions of the window frame to be used may be supported in place when the wall has reached the proper height. This frame should be braced so that it will not sag or buckle. If it changes shape, difficulty will be met in putting the real frame in the place of this temporary frame when the concrete has hardened and the rough frame removed.

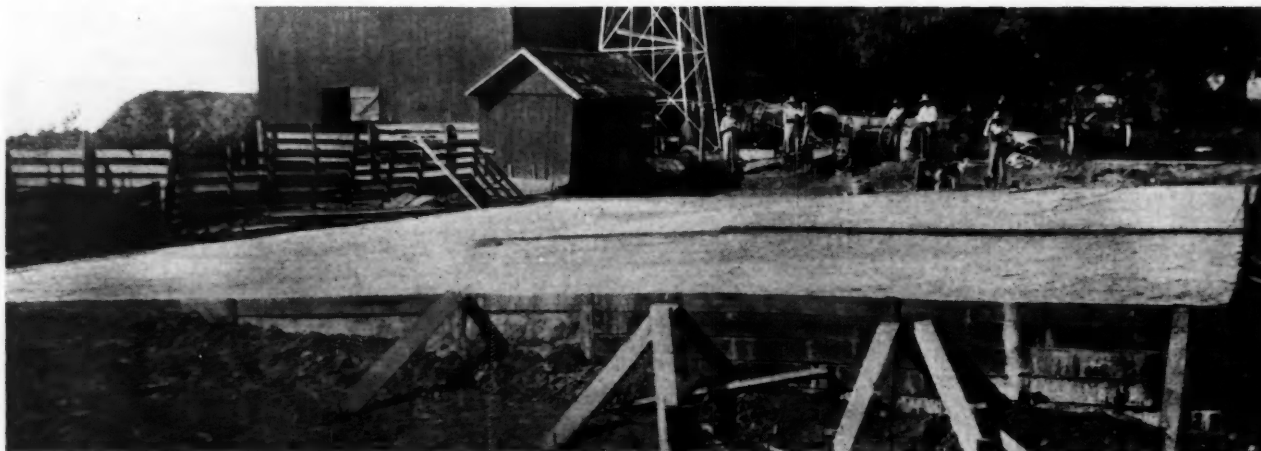
"Forms should be left in place for some time on parts of the structure which are to carry load before the concrete has thoroughly hardened. It must be remembered that concrete requires more time to harden in cold weather than in the spring or fall months. Do not attempt to put any concrete work in place during freezing weather, unless your experience has shown you how to handle concrete under such conditions. Frozen concrete will crumble later and make a weak and unsightly wall. Above all things, do not forget that it takes plenty of good cement and clean materials to make good concrete. If you think that your sand contains loam or clay, put a little in a jar of clean water and shake it up. This will give you a fair idea of its quality. If it is very dirty, wash it before using. The coarser material should be examined in a similar manner. Fine sand makes poor concrete. The grains should vary in size from small to large."

At this point one of the men asked the Boss about the concrete floors which are commonly used in modern farm buildings, but on account of the length of the discussion this matter had to be left until another time.

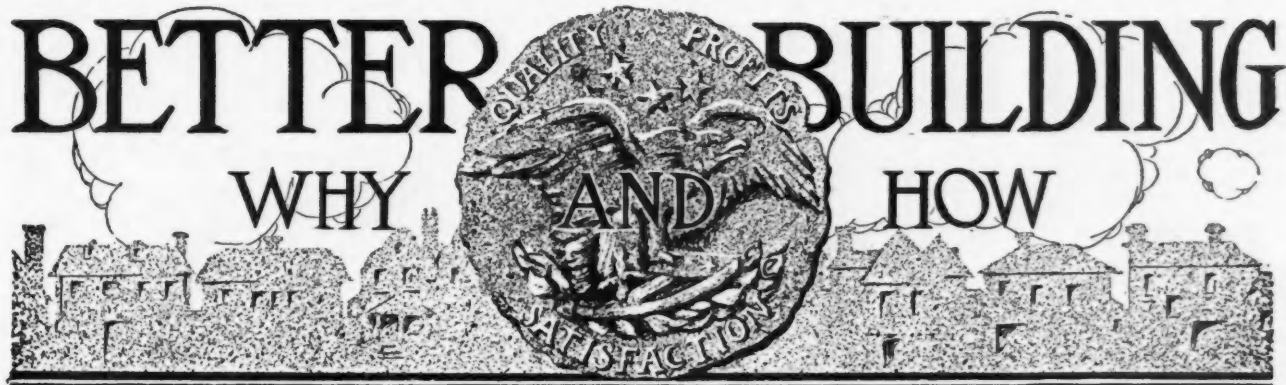


Come to the Chicago Cement Show

THE greatest of the Annual Cement Shows opens in the big Chicago Coliseum Feb. 10th and runs through the 17th. This is the BIG SHOW for carpenters and contractors—keeps them up-to-date and in line for the big profits—helps them to spend their money to the best advantage when in the market for equipment. See your machine at the Chicago Cement Show. Remember the date—Feb. 10 to 17.



Concrete Foundation and Floor Combined for a Big Iowa Barn. The Boulder and His Men, Armed with a Portable Concrete Mixer, Are in the Background.



Hydrated Lime—Its Advantages and Use

By G. D. Crain, Jr.

One of the principal uses of Hydrated Lime is for Waterproofing Concrete. We would like to hear from any of our readers who have had experience with it for waterproofing.—Editor.

IN order for lime—lump lime, as it is called before being slacked—to be used, it must be slacked. There is no use in building operations for the raw lump lime. Hydrated lime is simply lime which has been slacked and put up ready for use; that is all. The only question is, then, whether the builder wants to do his own slacking, or prefers to have it done for him. This is largely a matter of efficiency and cost.

As a general rule, the manufactured article is superior to the usually crude and more or less make-shift home-made affair, for the very reason that it is manufactured; that is, there are few instances where the use of machinery on a large scale in turning out the product would have been attempted if it were not true that the manufacturing process resulted in a better grade of output, or some superiority in some important respect. And hydrated lime is no exception to this rule. The hydrating process results in far more thorough slacking than is possible by the ordinary method; and, of course, the more thorough the slacking, the better the product is for practically every purpose.

Slacking at the Factory Brings Lime to the Front for all Mortar and Plaster Work

A consideration of the means by which the work is accomplished will show the greater efficiency of the process used in turning out the finished product over the methods of the ordinary contractor, with his usual necessity for haste, and the consequent imperfection of the action of slacking. The first necessity in slacking is to bring the water into close physical contact with the lime. Where ordinary lump lime is used, this necessary contact—necessary for rapid and complete slacking—is plainly delayed. The hydrating machinery, however, first grinds the lime to extremely small sizes, about equal to a similar quantity of wheat; and this enables the water to get in its action immediately.

When, after the slacking has been accomplished, the resulting powder is taken out, still another process

tending to its greater efficiency is added—that of bolting, in exactly the same manner in which flour is bolted; and the finished article is even finer than high-grade flour. The complete mixing of this powder with the other ingredients of mortar or plaster is obviously much more easy to accomplish than that of the coarser and more imperfectly slacked product of the man on the job, and the work of the latter is correspondingly less satisfactory.

Better than Gypsum—Ideal for Finishing Coat

While hydrated lime makes a much quicker, smoother and al-'round better mortar than the ordinary kind, requiring less working and giving better results in every way, its superiority is even more evident in plaster, and more especially in the final coat, where a smooth finish is desired for a white or tinted wall. Here, in fact, it is almost essential. There are few cases where lump lime is used, and slacked on the job for the preparation of finishing plaster, that complaint is not afterward received of the pitting of the walls here and there by the miniature explosions caused by the slow absorption of atmospheric moisture by imperfectly slacked lime incorporated in the plaster. The resulting hole in the wall is, of course, extremely unsightly, especially where the wall has already been tinted. The effect produced by white pits on a colored background, varying from a quarter of an inch to half an inch or even more in diameter, is the emphatic reverse of pleasing, and the housewife or owner who is asked to put up with this sort of thing certainly has a kick coming. And it usually comes.

Use Hydrated Lime and be Sure of Satisfaction

The desirability, if not the necessity, of satisfying the man for whom the work is done by the presentation of first-class results in every respect, can hardly be ignored by the contractor who expects to continue in business. He can ask, and usually has, no better advertisement in the world than that of a satisfied owner, to whom he can point and say, "Ask him; I built a house for him." In fact, this is usually a bit of information which the man who is contemplating building usually wants of a contractor, no matter whether he is

Hydrated Lime Best

putting up a modest bungalow to sell or rent or occupy, or a skyscraper for investment of the funds of a big life insurance company. The first and most important question always is, even before that of the amount of the bid, that of whether the contractor does and has done good work.

If, therefore, the builder can satisfy himself that hydrated lime, or any other material, will give uniformly better results than the old-fashioned article turned out by his own men right on the ground, the question of comparative costs is really a minor consideration; and yet, on a careful comparison, the manufactured article hardly suffers.

Hydrated Lime Proves Cheapest—No Slacking Cost

The initial cost is of course greater, as the necessary grinding machinery and bolting cloths, etc., are costly. The difference in carload lots usually runs to something over twenty dollars, which covers about 500 bushels of the ordinary lump lime, and about 500 50-pound sacks of the hydrated article. This is figuring an allowance of five cents each for the return of the cloth sacks in which the lime is put out, on order, in the same manner as cement sacks. The difference is greater where paper sacks are used. This narrows the excess cost to four or five cents for each fifty-pound sack of hydrated, over the cost of a similar quantity of lump lime.

But the difference is not a net loss, by any means—and even if it were the builder might still be far from considering that fact the deciding point, in view of the superior results to be accomplished by the use of the higher-priced material. The cost of slacking the lime on the job is by no means inconsiderable. It has been estimated that it takes a \$1.50 or \$2.00 laborer a day to slack forty bushels; and when this figure is applied to a carload of 500 bushels, the difference in the initial cost is at once absorbed, if not exceeded. The time consumed in the doing of the work on the ground is also an important factor. The thorough slacking of lime in any quantity takes from two or three weeks to thirty days, and the latter figure is that given by experienced men. And, this being the case, the choice in the greater number of cases lies between doing the thing right and doing it in time for the work in which the lime is to be used. It is a hard and unbusinesslike choice, and should not be necessary.

Ease of Handling Important

The greater ease of handling the sacked article is another strong point in its favor. On the small job, where only a small quantity is to be used, it is the easiest thing in the world for a sack, or two sacks, or half a sack, for the finishing plaster, if for no other purpose, to be placed on the ground when needed, and used just when it is wanted. The inconvenience attending the placing of a like quantity of lump lime on the job is obvious. And in handling larger quantities, the facility attending the work with hydrated lime is quite as pronounced. The inevitable loss occurring in

the shoveling of bulk lime from the car to the wagon, and from the wagon to the builder's warehouse, or wherever he places it, makes up a very respectable figure in the course of a year's work.

Hydrated Lime Keeps Better

The keeping qualities of the manufactured article are, of course, superior to those of the unslacked material. The latter always absorbs more or less moisture in the storage period, and comes out partly slacked and partly lump, making it still more inconvenient to handle, and causing the work of slacking to be still more unsatisfactory and incomplete, for the reason that the slacked portion has already reached the desired stage, and the tendency is to hustle through the work of bringing up the remaining lumps to the same point.

Altogether, it would seem that the day of lump lime for the use of the contractor and builder is approaching its close, especially if he lives at any distance from the quarries where it is produced. In that case the use of hydrated lime becomes almost a necessity; and its manifest advantages in other respects, and the fact that its final cost is no greater than that of the inferior material, make its ultimate universal use inevitable.



Creosote as an Important Product for the Farm

By B. Murphy, Chemist

F. J. Lewis Mfg. Co.

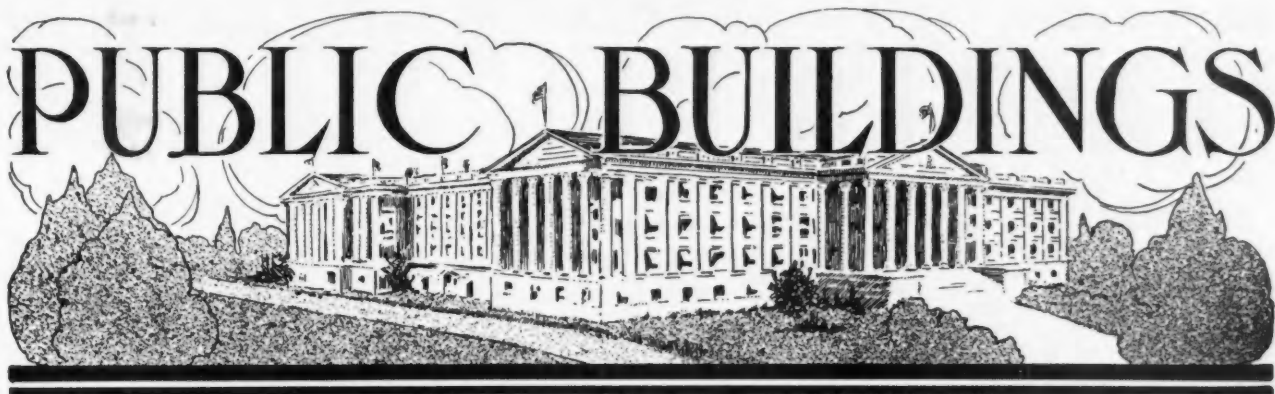
Creosote oil is a mixture of hydrocarbons produced from the distillation of tar, containing high antiseptic properties and used particularly for the preservation of timber.

Waste of timber on the farm, results from many causes such as wear, breakage, fire, etc. The greatest damage, however, is caused by decay and insects to which untreated timber is peculiarly liable. Untreated timber when used in damp places or in contact with the soil will absorb moisture and promote the formation of destructive fungi. To prevent decay and check the ravages of insects, it is necessary to treat the timber with some repelling antiseptic such as creosote that will form a protective film about the outer surface. The creosote should penetrate deep enough so as to prevent exposure of the untreated timber.

An effective and simple method of applying this preservative is to paint the timber after it has been seasoned with two or three coats of hot creosote; care being taken that the checks, knot-holes and other abrasions are well covered; a brush treatment requires but a small amount of preservative making the cost very low.

Another and more effective process is the open tank treatment. A tank of suitable capacity, equipped with steam coils for the use of steam, should be selected and charged with creosote, which is then heated to a temperature not to exceed 220° F., after which the seasoned timber should be immersed. The time for immersion will vary with the kind of timber used. Pine and hemlock require less treatment than spruce. Of course, the longer the immersion the greater the penetration and therefore the more effective the treatment.

The use of treated timber in the construction of the various coops and pens, where the stock is kept, prevents the development of germs and insects; best for timber silos also.

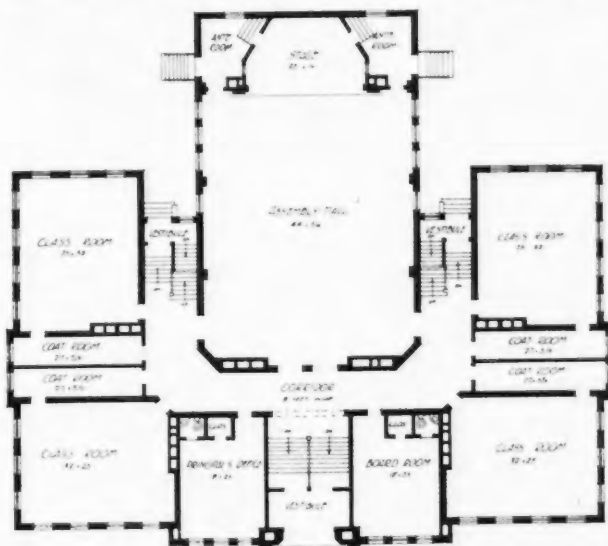


Main Floor Assembly Hall Feature of New Dolton, Ill. School

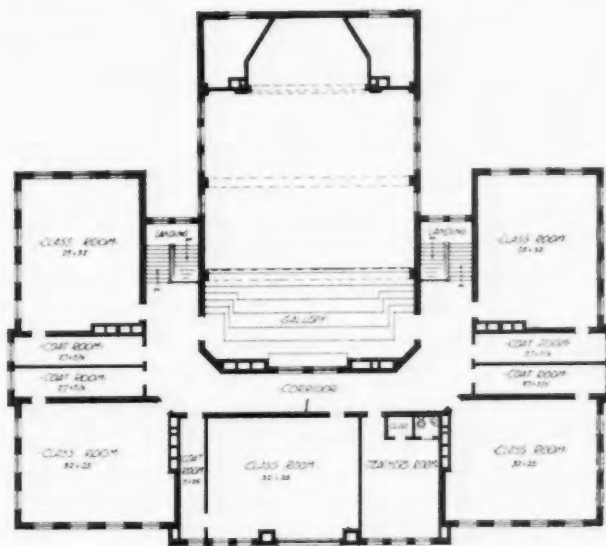
THE Lincoln Avenue School, recently completed at Dolton, Ill., contains nine standard class rooms, each with coat hall, three teachers' rooms, and a large auditorium. This is built on the "safety first" plan,

with five exits directly to the street. The auditorium ceiling is two stories high, ensuring plenty of ventilation. The gallery is entered from the second floor corridor.

The exterior of this school is dark colored brick with Indiana lime stone trim. The style is modern scholastic.



Main Floor Plan.



Second Floor Plan.



New Lincoln Avenue School at Dolton, Ill., Nearing Completion. G. W. Ashby, of Chicago, Architect.

House Moving Profitable Work for Contractors

By E. W. La Plant

(Of La Plant-Choate Mfg. Co.)

THE moving of houses from one location to another is one phase of the work which the builder is now and then called upon to do; but it is often a business liable to many annoyances and delays. Losses of time are unavoidable and conditions under which work may be performed sometimes make uncertain the best way to handle the work.

This moving business has been greatly simplified with steel house moving trucks and the three point method of loading. Buildings can now be transferred long distance without any damage at all. It is a shame to wreck a house when it can be moved to a new location at a comparatively small cost considering the original cost, making a paying investment for the house owner.

A few hundred dollars expended for steel trucks, jack screws and other equipment necessary for house moving will fit the contractor to tackle almost any job of house moving or house raising that comes along.

Good Profits to be Made

There is unquestionably a good profit in house moving, particularly as the work can be done by the contractor right along with his other work. If he is to erect a new farm house to replace the old one, he can get the job of removing the old house and building the new—thereby holding his customer, instead of subbing the work to some one poorly fitted out and thus gaining the bad feelings of the owner.

Any capable contractor who is keen on planning, and has the necessary selling ability, can close up contracts; then turning them over to his foreman and so requiring very little of his own time for superintending the job. Following is an approximate estimate of

the average time required and the profit to be made in moving an average 8-room house.

Cost of Moving an 8-Room House

We will assume that this is an 8-room frame house, two stories high and in reasonably good condition. Now we will further suppose that it must be moved

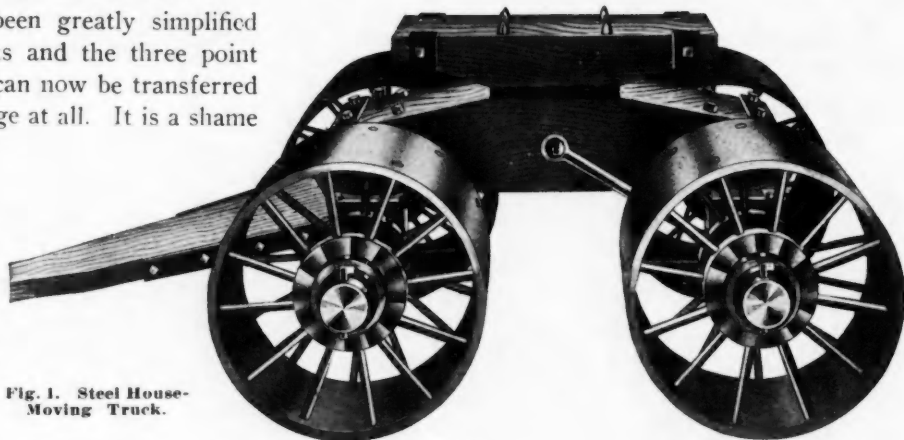


Fig. 1. Steel House-Moving Truck.

one and one-half miles, turning five corners. Wage scale set at \$2.50 per day; some contractors work nine hours and some ten hours a day.

First of all the house must be raised off of its present foundation. To admit the steel moving trucks will require a raise of 28 inches; 12 inches more for the running timbers, and 6 inches additional for the cross sills. This makes a total raise of 46 inches. The following is approximately the time, labor, and expense required:

Raising and loading, 4 men, 1½ days.....	\$15.00
Pulling, 4 men, 2 days.....	20.00
Unloading and placing ready for foundation.....	5.00
Team, 5½ days, at \$3.00 per day.....	16.50
	<hr/> \$56.50

The average contract price for a job like this is \$200.00. I always figure the approximate number of days to do the job and charge \$25.00 per day, and in this case 6 days makes \$150.00, which is minimum charge for this work; but more often the price is above \$200.00 rather than below. In some territories I have known men to get \$300.00 for a job like this. You can easily see there is \$85.00 to \$150.00 to each job you do. Besides, you get a chance to sub the digging of cellar, making foundation, and most always there is some carpenter work to be done, such as alterations, etc. Therefore the contractor has his fingers into the entire pie.

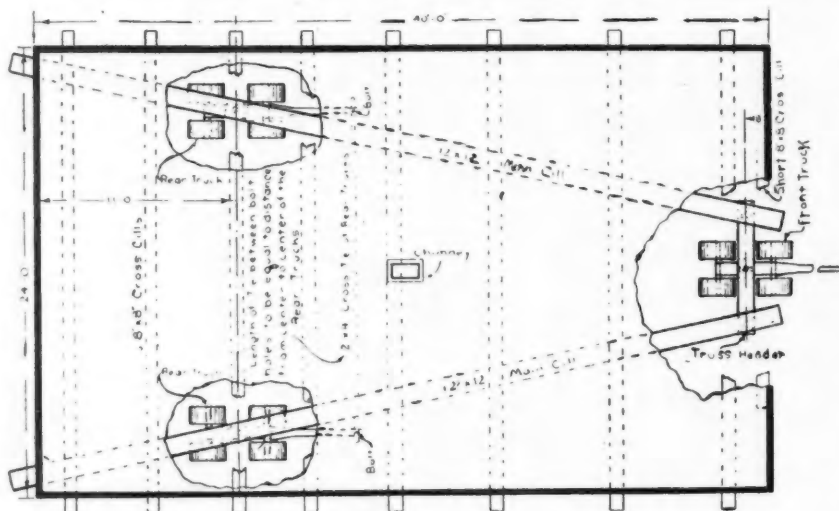


Fig. 2. Showing Three Point Method of Loading.

Equipment Required for Moving

Assuming that the reader has a few standing jacks, some blocks and a team and wagon, the additional equipment required would be:

15 crib jacks.	
15 collar blocks.	
2 pulleys.	
2 running timbers 12 x 12, 36 or 40 ft. long.	
8 cross sills, 6 x 8, 26 ft. long.	
3 steel trucks.	
1 steel cable capstan.	
600 ft. of $\frac{5}{8}$ " cable.	
Total	\$438.00

This is indeed a very small investment, considering the profit that can be made with it. Take into further consideration that all this equipment is good for from 7 to 15 years' hard usage, and you will readily see that the house moving business can be made a very profitable side line for any contractor.

Big Demand for House Moving

When you stop and consider that lumber has been going up in price for the past ten years you can readily see that it is not good business to wreck a building if it is in fairly good condition. If it is wrecked all the material in it could not be sold for more than enough

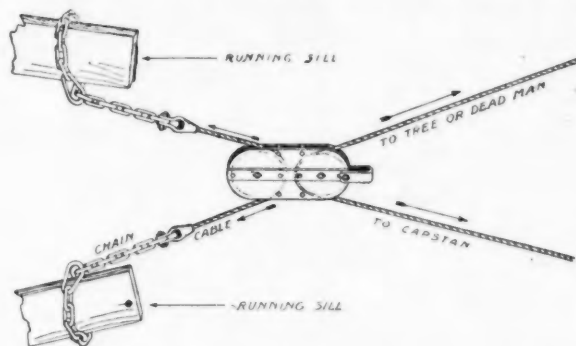


Fig. 3. Method of Hitching Cable to Running Sills.

for the moving of the building to another location.

For instance, supposing a man had a six or seven-room house and wished to put up a modern home. His logical proceeding would be to buy a cheap lot, move the house on it instead of trying to cobble up his old house and have nothing when he got through.

This makes the job for the contractor—and more profits and, besides, a satisfied customer, for not many men are often satisfied with a remodeled house; and the work is very distasteful to the builder in comparison to erecting a new house:

Lets take another instance. Supposing a man now has a six or seven room house and desired to put up a more modern home. His logical proceedings would be to buy a lot for \$100.00 or so; move the house on it; do a little repairing and fixing it up; then sell the house at a good substantial profit, or rent it, which would return mighty good interest on the investment.

A Few Practical Hints on House Moving

The work of moving houses has been greatly simplified and made more economical by the invention of



Fig. 4. House Loaded on Three Points.

steel trucks of the style shown in illustration, No. 1. These trucks will support 45 tons and are made with a ball and socket head so that the axle will oscillate up and down, thus passing over any object without throwing the house out of balance.

Three of these trucks are generally used, using the three-point method of loading, as shown in Fig. 2, placing one truck on each side well to the rear of the house and forward truck in the center front of building.

The dotted line in Fig. 2 shows the method of loading. When the house is raised off the foundation to the desired loading height, the running sills are inserted, which pass from the rear corner of the house diagonally to the truss header of the front truck. When these are in place and supported at each end by a jack screw, we are ready to run in the cross sills at the different points, as shown in Fig. 3. Then run the trucks to their proper position and take out supporting jacks for running timbers. Then release the weight of the house onto the trucks and timbers.

The next step is to fasten the block and tackle in place, as shown in illustration No. 3. It is always advisable to pull from the running timbers and never the trucks.

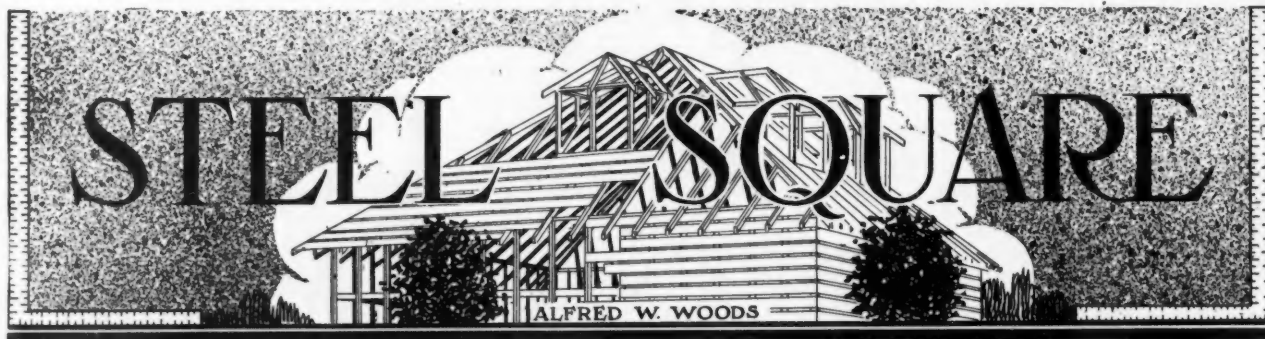
Fig. 4 gives you a good idea of the modern portable capstans now in use. Note the method of staking. Attention is called to the neat cross silling and how nice the house is carried up on three points. It is going along on its journey on an even keel without wrack or twist.

EDITOR'S NOTE—This is the first of a series of articles on house moving by a practical house mover who has been engaged in the work for many years. He is considered an authority on the subject and has tackled some of the most difficult jobs of moving ever attempted. This series of articles will be continued in future issues.

**How He Took the Pickle**

THE physician had been treating a man for dyspepsia for a long time, and, finally, wishing to know how his patient was coming on, he told him to take a dill pickle just before going to bed and see if he could hold it on his stomach over night. The next day the man called and the physician asked him the result.

"Oh, it was all right, doctor," he said, "as long as I was awake, but when I went to sleep it rolled off."



Roof Framing and Construction

SHOWING POSSIBILITIES OF THE STEEL SQUARE

By A. W. Woods

WE are going to take for our subject some roofs, not any one in particular, but a number of different kinds, as shown in the illustration. These are common types of roofs in general use throughout the civilized world, though of course, they vary in pitch or slant given the roof, running from low to very steep pitches.

In this country the prevailing pitches are below the one-half or 45 degree pitch. They are reckoned as so many inches rise to the foot run for the roof. In England and in some other European countries, they use very steep pitches, rarely dropping below

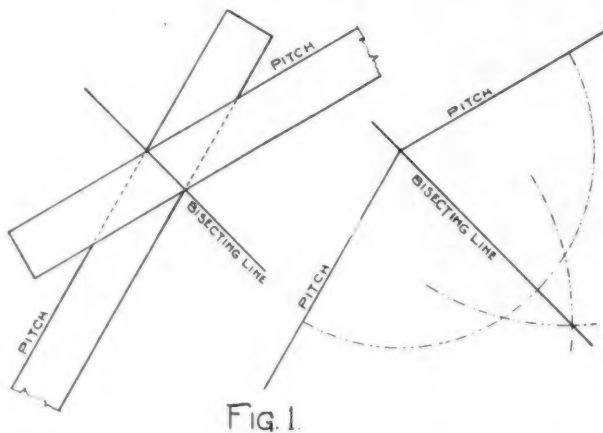
knowledge so zealously that but little of it leaks out to the benefit of his helpers.

The roofs shown here are among the simplest of their kinds. We will not attempt to enter into details of the various forms or conditions that they may take on, but more to show the developing from one form to another.

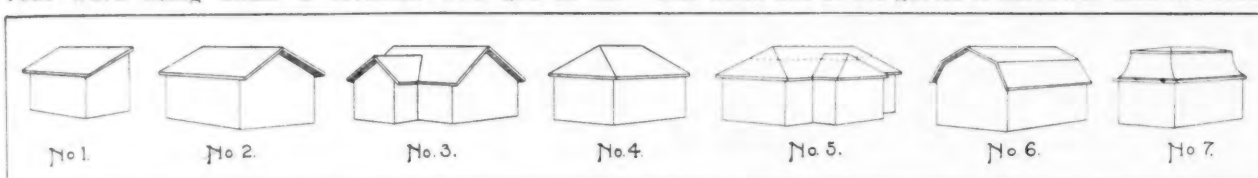
No. 1 is that used for the cheaper class of building. It is the one-sided roof, or lean-to, as it is generally called. It is the farmers' roof for cribs, granaries, stock sheds, etc. In this case, the run comprises the full width of the building; in other words, it is one-half of the common gable or saddle roof, as shown in No. 2, and looking at it in that light, the seat and plumb cuts are found in the same way.

In No. 3 is shown a gable and valley roof. It is simply the joining at right angles of one roof to another. When the gables are of even width and the pitch the same, the ridges will be of even height; but when one gable is narrower than the other and the pitch remains the same on both parts, then the ridge of the smaller gable will be proportionately lower than that of the main part, as shown in the illustration, the difference being in the rise of the two gables.

In small buildings, it is quite the custom to frame the common rafters for the main part as though there was to be no wing or addition and then frame the rafters of the smaller part on that of the main part, thus forming the valley without valley rafters at all; but in large roofs and especially where the space is wanted, it is necessary to put in valley rafters; and here is where trouble begins with many carpenters who can readily frame the preceding roofs, but when a valley is to be framed, that is another thing. They look upon it as a hard job. Where both gables are of even width and the pitch remains the same, the valleys will run to the ridge; this is the simplest form. But when one of the gables is narrower than the other,



the one-half pitch and reckon them by degrees. Then they have a way of mixing the pitches, often throwing a number of pitches in the same roof, which greatly complicates the work. The steel square is not in general use as a calculating instrument in foreign countries for framing, but they resort more to mathematics, the Protractor and wide-bladed bevel squares and they have the work more specialized, down to the last item; that is, the men are classed in groups for the different kinds of work, known as gangers. The roof work being under a foreman who guards his



then one of the valleys should extend on up to the main ridge and the other intersect this one at the point where the ridge of the lesser gable intersects the main roof.

The run of the long valley is equal to one-half the diagonal width of the wide gable and that for the short valley is found in the same way for the narrow gable. That part of the long valley that extends above the lower ridge to the main ridge is called the blind part of the valley. Its back, that is, if it is backed, rests in the same plane with the main roof; and necessarily the rafters which it crosses must be framed to it.

In case the valleys are not backed, or rather grooved out, but set so that the center will rest in the plane of the two roofs, it would be necessary to back or bevel the blind part from the center one way just the same as for a hip. On the other hand, if the valley proper is grooved out, then the back of the blind part must all be beveled one way so as to bring it in the plane of the main roof. So far, we have only touched on the regular valley, and if the carpenter experiences trouble in executing this class of work he can take it from us that his real trouble has only begun when he is called upon to frame an irregular valley; that is, where the pitches are different; but when the true principal is once understood, it makes but little difference whether the valley is regular or irregular.

It is not our purpose in this article to enter into any formulas at length, because that requires other illustrations and would make quite an article in itself.

Nos. 4 and 5 show a hip roof and hip and valley roof respectively. These are the common type of roofs to be found everywhere, and to know how to frame one applies to all alike. The deck roof is the same as a hip roof, with a portion of the top part cut off on a level, as indicated by the dotted lines in No. 5. The size of the deck is governed by the size of the building. Therefore, if the building is 22 by 26 feet and we wish to have a deck 6 feet in width, then the length will be 6 feet plus the difference in the width and length, which in this case is 4 feet, which would make the deck 10 feet in length, provided the same pitch is maintained on all sides.

The next illustration, No. 6, shows a gambrel roof, used mostly for large barns and granaries. The different ways of framing the rafters for a roof of this kind have been pretty thoroughly illustrated by many writers, as the back numbers of this journal will testify. In fact, we hardly know what more could be said, but rather than pass it by without saying anything, we will show a few simple ways of obtaining the knuckle joint cut. Probably the simplest way of all, is to lay off the full width of the two rafters at the desired pitch, then draw a line from intersection

to intersection, as shown in the left half of the illustration. Another easy way is to find the angle by bisecting with the aid of a compass. These are the common ways in general use. We were about to give another way with the aid of the steel square, but what is the use; we have given that before, but here is one of the ways we do not think has appeared recently. Here it is: Lay two squares, as shown, with their tongues on the pitch lines and with any equal amount at their intersection, then note the figures at the intersection of the blades; reverse the square, as shown by the dotted part, and the tongue will give the cut.

No. 7 shows a mansard roof. These are of different forms and each having a name. Some have concave rafters, some convex and same O.G. Anyone who is able to

frame any of the foregoing, should experience no trouble in framing these roofs,

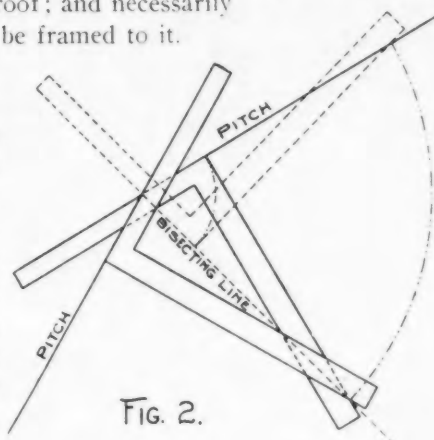


FIG. 2.

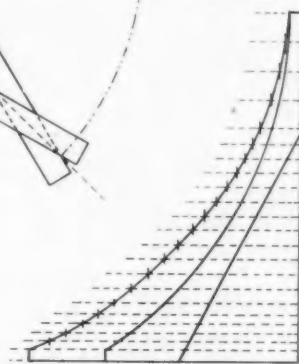
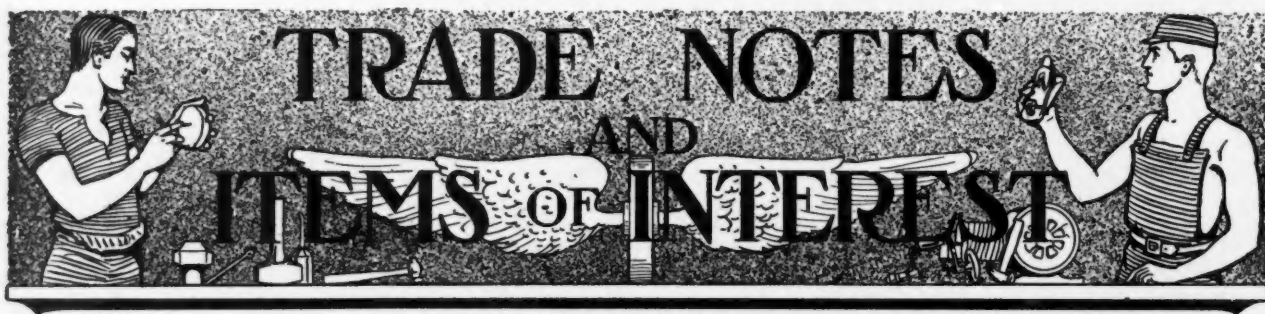


FIG. 3.

aside from shaping the hips and valleys. There are geometrical ways of arriving at this, but we are not going to enter into them here, but instead will give a simple method that anyone can use, as it is simply a question of measurement. First, lay off the full size desired, shape of the common rafter, with its run and rise; then lay off any number of parallel lines to the run, as shown; measure these lines as follows:

Take a thin board (hard wood is preferable) and cut a true right angle triangle with base and altitude exactly 12 inches and the diagonal or hypotenuse side will be found to be 17 inches (that is as near as can be arrived at by common measurement). Now, divide both the base and hypotenuse into 12 equal parts and one of these parts into a like number of parts for fractional measurements. This being done, measure the parallel lines from rise to the curve of the common rafter with the 12-inch side of the block, then with the hypotenuse side of the block measure the same line a like amount as found in the first measurement and check. After all the lines have been thus measured, run an off-hand curve through the checks, which will give the form for the corresponding hip or valley. To find the gauge line for the backing of the hip, set off one-half of its thickness (provided it is for a square corner) on the parallel lines and check; and through these run another off-hand curve.



Through this department the Editors aim to keep builders, contractors, carpenters and architects in touch with what their friends, the manufacturers, are doing for them in new or improved tools and machinery, methods and materials—pertaining to building. Items for these columns must have real news value; they are offered here as interesting information for our readers; they are not advertising. No matter will be printed here simply because some advertiser wishes it. Likewise, no matter will be excluded simply because the article described is not advertised in this magazine. Suggestions for the betterment of this department are requested of our readers.

The Menace of the Brown Rat

By Harmon H. Rice

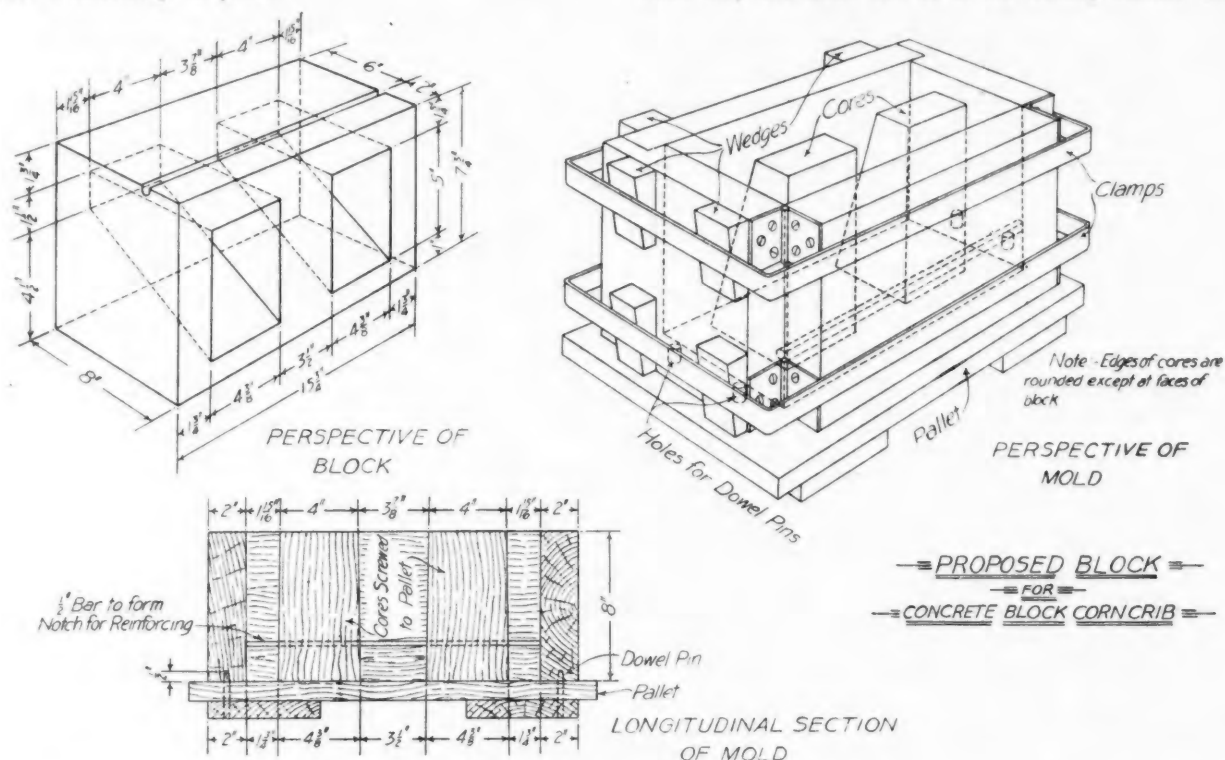
ACCORDING to investigations conducted by the United States Department of Agriculture, the brown or Norway rat, introduced into the American Colonies a year in advance of the Declaration of Independence, has become the worst mammal pest in the country. Some authorities estimate the rat population at 300,000,000, and the annual destruction of property due to their depredations at \$100,000,000.

War on rats is most effectively waged by depriving them of breeding places and food. Concrete construction offers the most effective solution of the problem. Whether located in city or country, a building constructed wholly of concrete is absolutely rat-proof.

be carefully surrounded with concrete. Walls of frame buildings may be effectively rat-proofed above ground by placing concrete to the height of a foot above the top of the foundation between sheathing and laths.

Considerable interest is being manifested just now in building corner blocks, as well as foundations and floors, wholly of concrete. Experiments prove that such cribs preserve corn in perfect condition if the roof is water-tight and suitable ventilation is provided. Concrete blocks of the design shown in the accompanying illustration will meet all requirements.

An earlier type of this corner block was shown at the Cement Show of 1913, but the first opportunity the public will have to inspect the perfected block and the molds in which they are made will be at the coming Cement Show



The Originator of this Ingenious Concrete Corn Crib Block Donates His Ideas to American Builders Without Asking for a Patent. Anyone Familiar with the Use of Tools Can Construct the Mold from this Drawing.

However, if one wishes to build of other material, concrete may be advantageously used for protection against rats by observing a few common-sense requirements. For instance, the additional expense of making dwelling-house foundations rat-proof by using concrete is slight, but the advantages are great. Cellar walls should be laid in cement mortar and footings should be of concrete. Cellar floors also should be of well-made concrete. All water and drain pipes should

in the Chicago Coliseum from February 10 to 17. Those who are responsible for the development of this concrete-corncrib-block desire that the public shall receive the fullest possible benefit, and have refused to apply for a patent upon either block or mold. Consequently any one may make a mold after the drawing we are reproducing and may manufacture block as needed.

(Trade Notes Continued to page 88)



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GEORGE DRENNER
CONTRACTOR AND BUILDER

POLO, ILL. November 10, 1914.

Gordon-Van Tine Co.,
Davenport, Iowa.

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I have bought from you in the past fourteen months a little over \$10,000.00 worth of lumber and millwork and I figure that I have saved about \$3,000.00 on this material.

Considering the big saving that I made together with the splendid service and very high grades, I cannot help but be satisfied.

You are perfectly at liberty to use these photographs and this letter in any way you desire. And I wish to add that this letter comes from me unsolicited.

Sincerely yours,

Geo Drenner

GEORGE DRENNER, the Polo, Ill. Contractor and Builder who put up these six houses and this barn, bought every stick of the material from Gordon-Van Tine. Read his letter, it contains food for thought. On \$10,000 worth of material he saved \$3,000. That is a saving of about 30%. Now, \$3,000 is a nice profit in itself. But \$3,000 **additional** profit is pure, extra velvet. That's what George Drenner made through dealing with Gordon-Van Tine—all his ordinary profit **plus a handsome \$3000 bonus**. He eliminated the middleman. He bought on our money-saving "mill-to-user" plan instead of through some local dealer. He put into his own pocket the \$3000 profit that the local dealer would ordinarily have taken.

You can do the same. You don't need to split your profits with anyone. There's no reason why you should pay a heavy tribute to your local lumber yard for doing nothing. You can deal with us just as well as George Drenner did. We ship to you anywhere, no matter where you live and guarantee safe delivery and absolute satisfaction or money back. Try us.

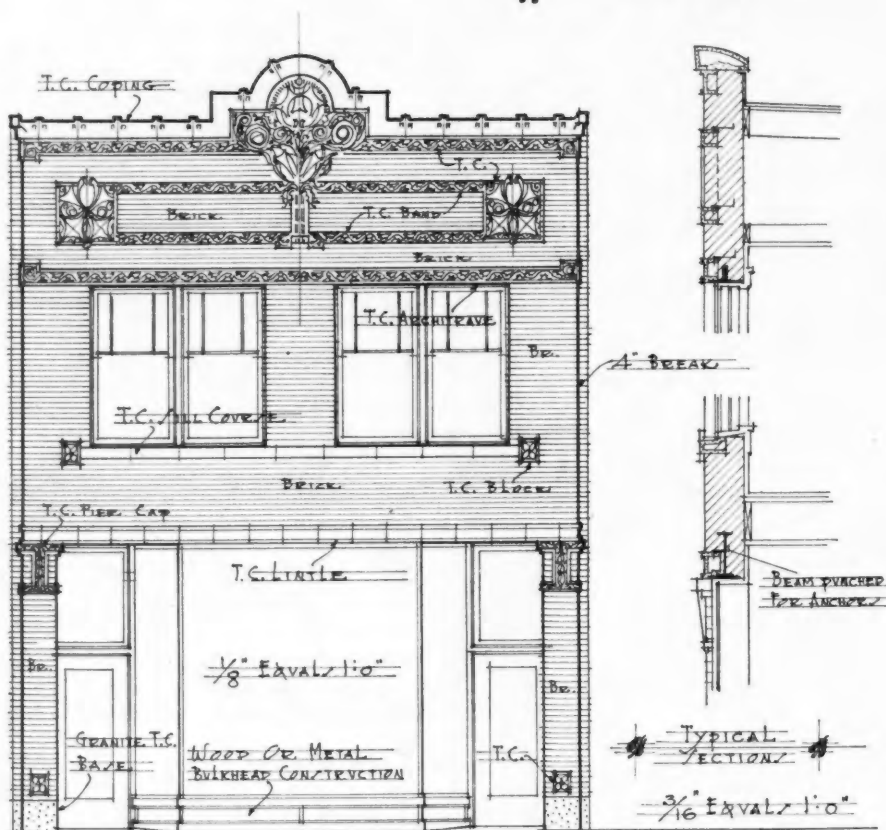
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As to Value—The cost of modeling alone exceeds the price quoted.

Our firing process assures a permanent enameled surface that will not peel or come off. The color is uniform throughout.

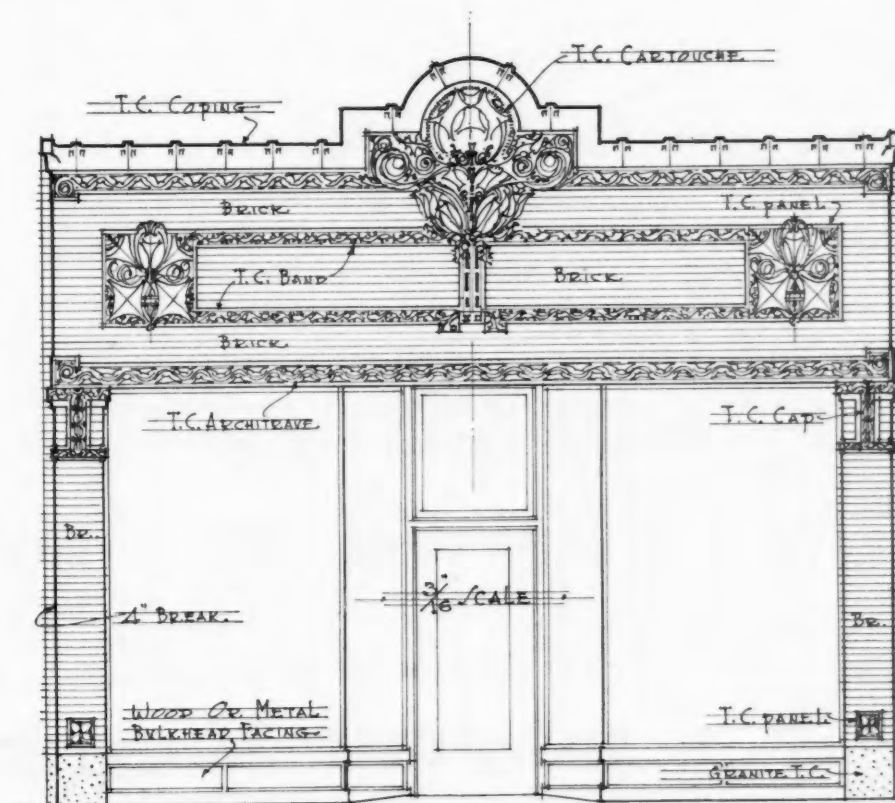
Midland Terra Cotta requires no Painting or Repairs; soap and water will remove Dirt or Soot. Your building will always be attractive and up-to-date, an advertising value that should not be overlooked.

We carry a large stock of white enameled Terra Cotta—for immediate delivery—suitable for store and shop buildings. You don't have to wait six weeks or more for the material. You can have it right away—just when you need it.

We illustrate Midland Stock Terra Cotta in a portfolio of design, issued from time to time. Your name should be on our mailing list. The next series of plates are about ready for distribution.

We operate with an efficient organization, one of the largest Terra Cotta works in the country, equipped to handle orders of any size. We invite you to visit us. We claim and can prove that we make the largest variety of Terra Cotta Finishes and colors ever produced.

By making only the highest grade material we have built up a reputation which places us foremost in our industry. Send in your plans for our estimate.



Special Offer **\$250.00** As Specified

FOR 30 DAYS ONLY

MIDLAND TERRA COTTA @

1120 CHAMBER OF COMMERCE # CHICAGO



Group of Four 4-Room Workingmen's Houses at Bodin, N. C. (Southern Aluminum Co.) Constructed Largely of Carey "Ceil Board."

Whole Town Built of "Ceil Board"

What is said to be the largest order ever placed for wall-board by any individual consumer was an order for twenty cars of Carey Ceil Board, placed about a year ago with The Philip Carey Company of Cincinnati, Ohio, by Mr. T. H. Pierson, Architect and Engineer for the Badin, North Carolina, operation of the Southern Aluminum Company.

This operation consists of the building of a complete manufacturing town and includes the enormous factory buildings of this Company and the dwellings of its officers and workmen. Some four hundred dwellings have already been erected and all of them are lined throughout with Carey Ceil Board.

Under date of December 14th, Mr. T. H. Pierson, the engineer in charge of this work, wrote The Philip Carey Company as follows:

"I am sending photographs of workmen houses and street views of the town of Badin, N. C., which we are constructing for The Southern Aluminum Company.

"The workmen's houses are built in groups of four, with

light and air entering from the unobstructed front and rear. They are four, five and six room dwellings, consisting of living room, kitchen, and bath room on the ground floor, and two, three and four bed rooms on the second floor respectively.

"All the houses are built with storm sheathing, with heavy waterproof paper back of the siding, and are lined with Ceil Board throughout, which has proved satisfactory to date. Ceil Board is painted with a washable flat coat paint, and makes a very attractive interior finish."

Carey Ceil Board used in these houses was applied about a year ago and had a thorough test before the architect volunteered his opinion regarding it. These tests proved it to be positively moisture proof, highly effective as an insulator and of good fire retarding properties.

The illustration shows one of the four family houses and indicates the substantial character of these buildings. Numerous different types of these four unit dwellings are put up throughout this new town so as to avoid the monotony of a constant repetition of the same style of building.

Metal Columns Will Not Split

The checking, splitting, rotting and warping or opening of joints which sooner or later mars or destroys all wood columns can be avoided and the permanent beauty of the building insured by using

UNION METAL COLUMNS

"THE ONES THAT LAST A LIFETIME"

The shafts of these columns are built up of open hearth steel specially galvanized and so shaped by patented machinery that they are architecturally correct in every detail.

Entasis

The curving taper characteristic of classical design.

Stopped Flutes

Another detail which makes the column architecturally correct.

They are used for porches, pergolas, interiors and thousands of them have been installed on residences, hotels, apartments, schools, churches, and nearly every class of building. Write for book of illustrations and detailed information.

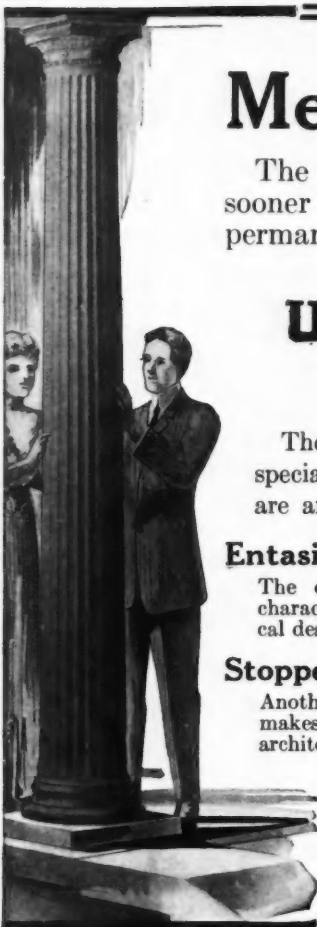
See catalogue in Sweet's.

THE UNION METAL MFG. CO.

Canton, Ohio



An unsightly wood column.



Get after Spring jobs

It's time, right now, to get good and busy with the people you are going to build for in the spring. Time to arrange the details of the buildings you are going to put up in the spring. You can give the builder better service in every way if your plans are all worked out early.

Send lumber bills for H-L-F price

The price you get from H-L-F will be way under that you can get locally—and the quality of the lumber far higher than any local dealer handles.

Owning and controlling the forests—producing the lumber ourselves—and selling direct to the lumber user—we effect a tremendous saving—\$75 to \$500 on a building job, according to the size of the bill—a nice tidy sum to add to your profits.

Estimates by experienced men

Our estimating department is on its toes, in great shape to give you quick service. Our estimators are experienced men. They know their business.

We guarantee grades and guarantee satisfaction or money refunded.

Have your lumber ready when spring opens

Saved \$300 — full count

I have saved good three hundred dollars. The Hewitt-Lea-Funk Company didn't miss an inch of lumber. Andrew Tatarek, Wells, Minn.

Is pleased— saved \$200

I am well pleased with the lumber, and it saved me good \$200. Matt. Schaaf, R. F. D. No. 2, Sparta, Wisconsin.

Saved \$175—Quality O. K.

Saved about \$175 on car of lumber, and quality is O. K. Better than we could have purchased here at local yard. F. F. Stuart, Gillette, Wyo.

Saved \$250 and no waits for materials

Received the carload of material O. K. It came sooner than I expected by about four days. I am saving about \$250 on lumber by ordering from you, and furthermore, I will not have to wait for material, as these local lumber yards do not have the lumber on hand and they hold up the jobs. A. W. Prust, Wilton, N. Dak.

Saved 30% on \$600 bill

The car of lumber and shingles for Mr. M. L. Townsend was all O. K. "Checked up to a foot." This is as good a car of lumber as I ever saw, and I have seen and worked a great many carloads of lumber. Saved 30% at least by buying from you. James A. Roach, Contractor and Builder, Grand Rapids, Wis.

Saved \$260. Will buy all H-L-F lumber in future

The two carloads of lumber arrived Nov. 14, which you shipped me. It came sooner than we expected. I could not have gotten a better grade here and I saved \$260. My acquaintances who saw the lumber say it is far ahead of what the dealers have here. In the future, I shall buy my lumber and building material from you. John Loritz, Hebron, N. Dak.

*Send along your material lists soon as you can
for quick price and send the coupon now*

Hewitt-Lea-Funk Co., 608 Crary Bldg., Seattle, Wash.

Capital \$1,000,000

Not in any trust or combine



HEWITT-LEA-FUNK CO., 608 Crary Bldg., Seattle, Wash.

Gentlemen:—Please send me the following:

- () Delivered, freight-paid price on enclosed list of materials (no charge).
- () H-L-F House Pricer (free). () Plan Sheet (free).
- () Information on H-L-F Stud and Wall Board Construction.
- () Prize Plan Book (send 10 cents). () Barn Builder's Guide (send 4 cents).
- () Millwork Catalogue (free).

Name _____

Street or R. F. D. No. _____

Post Office _____

State _____ Business _____

I will send list about _____

The Finishing Touch



The Finishing Touch to Your Buildings

is the painting. It is the paint that shows up your work to advantage or mars its appearance according to the value of that paint. A suitable color scheme combined with pure paint determines to a large degree whether the building is to be considered a distinguished success or merely a mediocre success. You do not want to detract from a building that represents your best efforts in architecture and construction by coating it with paint that is dull and lifeless in color and that will be free from cracks and scales perhaps only long enough for you to get your money on the contract. Your reputation for having given the owner in each case an eminently satisfactory job or only an ordinary job lives in a community a long time. Why not make it a five-year rather than a one-year advertisement?

CARTER

**Strictly Pure
White Lead**

produces delicate tints and clear colors that are exceptional. They will give your work an individual artistic appearance. If the building upon which you may now be working happens to be one of those that by their very architectural design ought to be painted white, by all means specify **Carter Lead** for it. A white building cannot be too white and **Carter Lead**, being many degrees whiter than others, will give the building a beauty of finish that is all its own.

Carter White Lead Co.



West Pullman Sta. "A"
Chicago, Illinois

If you are interested in knowing the details of painting, "The Carter Paint Calculator" will interest you. The price is 25c, but it will be sent to any architect or contractor with our compliments upon request.

Program American Concrete Institute

The eleventh annual convention of the Institute will be held at the Auditorium Hotel, Chicago, February 9 to 12, 1915. The convention will mark the completion of the tenth year of the existence of the Institute, and an especially interesting and profitable program has been arranged, as follows:

Concrete Roads and Bridges

10:00 O'CLOCK A. M., FEB. 9.

Opening Address of Welcome.

Review of Present Practice in Concrete Road Construction.

Percy H. Wilson, Secretary, Assn. of American P. C. Mfrs.
The Experimental Concrete Road in Philadelphia.

William H. Connell, Chief, Bureau of Highways, Philadelphia.
Reinforcing Narrow Concrete Roads.

John Mueller, Civil Engineer, New Castle, Ind.

Report of Comm. on Concrete Roads. A. N. Johnson, Chairman.

3:00 O'CLOCK P. M., FEB. 9.

Comparative Cost of Concrete Roads.

Percy H. Wilson.

Cost of Construction and Maintenance of Concrete Roads.

H. J. Kuelling, County Highway Commissioner Milwaukee, Wis.

The Construction of Integral Curbs.

Charles E. Russell, City Engineer, Highland Park, Ill.

Organization and Methods of Constructing Concrete Roads.

William Acheson, Division Eng. N. Y. State Highway Comm., Buffalo.

8:00 O'CLOCK P. M., FEB. 9.

Test of a Reinforced Concrete Slab Bridge.

E. B. McCormick, M. E. Office of Public Roads, Washington, D. C.
Standard Designs for Concrete Highway Bridges and Culverts.

C. B. McCullough, Designing Eng. Iowa S. H. Com., Ames, Ia.
Report of Committee on Standard Specifications for Concrete Highway Bridges and Culverts, Willis Whited, Chairman.

Concrete and Reinforced Concrete Tests and Design

10:00 O'CLOCK A. M., FEB. 10.

Report of Committee on Concrete and Reinforced Concrete.

A. E. Lindau, Chairman.

Report of Committee on Nomenclature. F. C. Wight, Chairman.

Report of Committee on Insurance. J. P. H. Perry, Chairman.

The Design of Wall Columns and Wall Beams.

Sanford E. Thompson, Consulting Eng., Newton Highlands, Mass.

A New-Old Theory for Reinforced Concrete in Bending.

L. J. Mensch, Contracting Engineer, Chicago, Ill.

3:00 O'CLOCK P. M., FEB. 10.

Reinforced Concrete Stands, Stadiums and Bowls.

Charles W. Leavitt, Jr., C. E. New York, N. Y.

The Design of Concrete Bins for the Storage of Cement.

Leonard Wesson, Universal P. C. Co., Chicago, Ill.

Tests on Egg-Shape and Circular Reinforced Concrete Sewer Pipe.

Albert Goldbeck, Engineer Bureau of Surveys, Philadelphia.

8:00 O'CLOCK P. M. FEB. 10.

Annual Address of President.

A Critical Review of Current Practice in Reinforced Concrete as Embodied in Building Regulations and the Joint Committee Report.

Edward Godfrey, Consulting Engineer, Pittsburgh.

Basis of Current Practice in Design of Reinforced Concrete Structures.

C. A. P. Turner, Consulting Eng., Minneapolis.

Concrete in Art and Architecture

9:00 O'CLOCK A. M., FEB. 11.

Annual Report of Board of Direction.

Report of Tellers.

10:00 O'CLOCK A. M., FEB. 11.

Report of Committee on Edison Fire, Cass Gilbert, Chairman.

Concrete: A Medium of Esthetic Expression.

Irving K. Pond, Architect, Chicago, Ill.

Report of Committee on Cement Products, C. K. Arp, Chairman.

Cement Tile.

J. S. Freund, Am. Cement Tile Manufacturing Co., Pittsburgh.

3:00 O'CLOCK P. M., FEB. 11.

The Fireproof Home.

R. P. Stoddard, Executive Secretary, S. A. F. E., Cleveland.

Report of Committee on Treatment of Concrete Surfaces.

L. C. Wason, Chairman.

A New and Simple Method for Securing Dustless Concrete Floors.

P. M. Bruner, P. M. Bruner Granotoid Company, St. Louis, Mo.

8:00 O'CLOCK P. M., FEB. 11.

ANNUAL BANQUET in celebration of Tenth Anniversary.

Plant Management and Cost

10:00 O'CLOCK A. M., FEB. 12.

Contractor's Equipment, Austin-Nichols Warehouse.

T. A. Smith, General Superintendent, Turner Construction Co.

Mechanical Plant for Handling Concrete.

Wm. P. Anderson, Ferro Concrete Con. Co., Cincinnati.

The Strength of Concrete Forms.

Harrison B. Taft, Contracting Engineer, Seattle, Wash.

Concrete Forms for the Catskill Aqueduct.

Alfred D. Flinn, Deputy Chief Eng. N. Y. B. of Water Supply.

3:00 O'CLOCK P. M., FEB. 12.

Design and Construction of the Massachusetts Institute of Technology Buildings.

Sanford E. Thompson, Consulting Engineer, Newton Highlands.

Report of Committee on Methods of Tests and Standard Specifications for Concrete Materials. Sanford E. Thompson, Chairman.

Placing Concrete with High Pressure Steam.

Harold P. Brown, New York, N. Y.

Some Further Properties of Portland Cement Having a High Percentage of Magnesia.

P. H. Bates, Chemist, Bureau of Standards, Pittsburgh, Pa.

Banner Building Year Predicted

That is the opinion of authorities on building. All the more reason, Mr. Contractor, while winter lingers, for you to give your men

Thirty days solid work putting in Maple, Beech and Birch Floors.

Spring work soon will begin to come in with a rush. Contractors will receive telephone orders to take down storm windows and store them, to repair screens and install them, to make repairs and improvements, and always there is the new building to be figured.

Why not get a lot of the spring work out of the way during February and March, and

Get the Jump on Spring Job Work. Start Now

by making contracts for hardwood floors. Laying them is inside work and may be done any time.

You will interest every customer to whom you talk Maple, Beech and Birch Floors. Your first appeal may not bring the order. There may be a desire to "talk it over," BUT you will have placed yourself before your customers in the right way, and if the time is not ripe to put in Maple, Beech or Birch floors your call may result in orders for other work and the hardwood floor will come later.

"Your Flooring Problem Solved" will interest every one of your customers. We shall be glad to send you a supply to "go around." How many Can You Use?



Maple Flooring Manufacturers' Association

Stock Exchange Building

::

CHICAGO, ILLINOIS

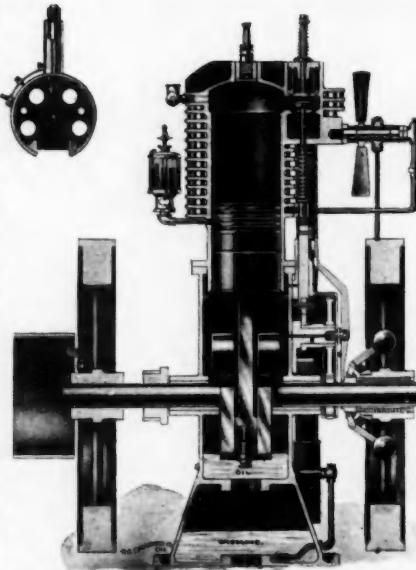
Engine with Direct Air-Cooling

The contractor's engine goes through the most grueling kinds of conditions, the hottest and coldest of weather, the long, steady, racking work, the lack of attention, and oftentimes abuse. Consequently, in order to deliver perfect service, the engine must be practically fool-proof—not subject to the weather, and well built of high-class material.

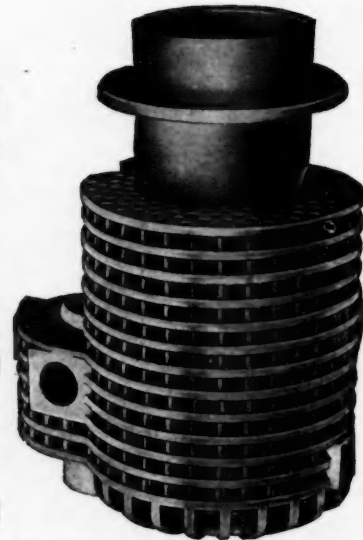
We have in mind an engine that has stood the strongest kinds of endurance tests for the past ten years, and is ever ready, ever willing to start out with the contractor and stick with him to the finish with the minimum amount of attention, upkeep, and fuel—the "New Way, Direct Air-Cooled Engine, manufactured by The "New Way" Motor Co., of Lansing, Mich., whose engines of from 1 to 12 h.p. are adapted to every purpose in any climate under the sun.

Elaborate illustrative booklets and folders cover the complete line, and will be gladly mailed to interested contractors who will tell the company something of their engine needs.

One of the strongest points in the "New Way" engine is its direct cooling by air, which eliminates the use of water for this purpose, with the troubles often attendant on the latter, such as freezing up, running dry, overheating and scoring of cylinders and pistons, leaks, rusting, etc. Exceptional economy is claimed in the amount of fuel required for running, thus reducing operating expenses. Delays for emptying and filling tanks and jackets are obviated. The "New Way" engine, it is claimed, can be left for hours at a time without



Sectional View of Standard Type 4-Cycle "New Way" Air-Cooled Engine.



Cylinder of "New-Way" Air-Cooled Engine.

attention, and will run perfectly in the cold of the arctic or the heat of the tropics.

One of the accompanying illustrations, showing the cylinder, will give some idea of how the cooling is effected.

There are many other points of special interest about these engines which have now been on the market for ten years, giving perfect satisfaction. The Company's literature will tell you all about them. Ask for Catalog "Y," their valuable book on gas engines.



No. M-815 Flush Sanitary Morgan Door
Plain Red Oak and Birch Veneer
one-quarter inch thick. 3 sizes
carried in stock in Oak and Birch,
for immediate shipment. One of
the most popular and original de-
signs we ever put out.
See Morgan Millwork Handbook

Our Advertising Creates Business For You

We have just decided on our national advertising of MORGAN DOORS for 1915 and have selected a list of magazines which will reach 2,500,000 subscribers (about 10 million readers) each month throughout the United States—a big percentage of these readers will be *builders this year*. They will know about

MORGAN DOORS


Get your share of this business by *boosting* MORGAN DOORS to every builder in your vicinity—every builder of a modest home or a mansion is a possible customer. *Make him your customer and sell him MORGAN DOORS.*

Your dealer can supply MORGAN DOORS without delay from our immense stock.

Morgan Sash & Door Company Department A-23, CHICAGO

FACTORY: Morgan Co., Oshkosh, Wis.
Eastern Warehouse and Display:
Morgan Millwork Co., Baltimore

DISPLAYS: 6 E. 39th Street, New York
309 Palmer Building, Detroit
Bldg. Ex., Insurance Exch., Chicago



Arkansas Soft Pine Trim

A wood that meets your needs,
one that gives the owner the
harmonious interiors he wants.

It is worth much to you for your
customers to declare: "Our house is
trimmed with Arkansas Soft Pine,
the doors do not stick, drawers do
not bind, we have no white streaks."

You **get the results you want,**
the effects your customers crave
when you use Arkansas Soft Pine.

Here is Something for the Contractor

Ready for distribution, the first
lot of **Arkansas Soft Pine Fin-**
ished Samples. With your set of
five you can show the builders of
your town the wonderful wood
effects within their reach.

Samples will be sent free on request.

Arkansas Soft Pine Bureau

608 South Dearborn Street CHICAGO, ILL.



Warehouse built on filled ground, mostly sand and gravel, with a boat slip on both sides. Basement is about three feet below water level and subject to heavy hydrostatic pressure and was effectively waterproofed by using CERESIT in top finish of floor and in a cement mortar coating applied to the inside of the walls.

RESULT—A permanently DUST-DRY basement affording valuable storage space at a small additional expenditure.

CERESIT will enable you to give your clients **MORE** floor-space in present or prospective buildings by making the basements **PERMANENTLY DUST-DRY**.

Cement is the best possible insurance against loss by fire—CERESIT WATERPROOFING COMPOUND effectively insures against loss from dampness or seepage of ground water.

Basements, stucco walls, tunnels, coal pits, boiler pits, and conduits are made **DUST-DRY**—water towers, swimming pools and aqueducts are made permanently **WATER-TIGHT**—dams are made **SAFER**.

CERESIT WATERPROOFING COMPOUND is a plastic paste which readily dissolves in the water used for tempering the cement or concrete mixture, thus is **UNIFORMLY** distributed throughout the mass and absolutely eliminates **ALL** dampness or seepage.

Do not risk cheap substitutes — CERESIT always proves to be the most economical in the end.

Our knowledge, gained by years of experience in solving waterproofing problems, is at your disposal.

Any questions you ask will be answered fully—write today.

Ceresit Waterproofing Co.

910 Westminster Bldg., CHICAGO

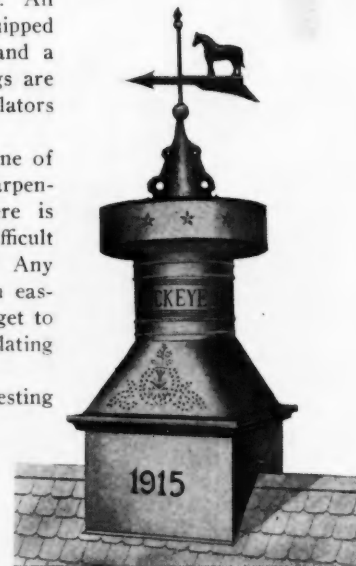
MADE IN U. S. A.

Ventilation of Modern Farm Buildings

The farm and dairy experts have been talking ventilation until most dairy farmers are now converted to the Fresh-Air-for-Cattle policy and so are requiring modern ventilators on their barns and stables. All new barns are being equipped with cupola ventilators and a good many older buildings are being remodeled and ventilators put on.

This opens up a nice line of business for country carpenters and builders. There is nothing mysterious or difficult about barn ventilators. Any carpenter and builder can easily read up about it and get to be quite a barn ventilating "authority."

There is a very interesting and valuable little book on this subject, entitled "Ventilation of Modern Farm Buildings," by the Thomas & Armstrong Company, of London, Ohio. If our readers will write them, addressing Dept. A., they will send copies of this book free of charge. They make the "Buckeye" all-metal cupola ventilator, and this book not only explains thoroughly the general principles of modern barn ventilation, but also shows just what these Buckeye ventilators are and how they are made and erected. We understand the Thomas & Armstrong Company are offering a special proposition to carpenters and builders to look after this ventilator business for them.

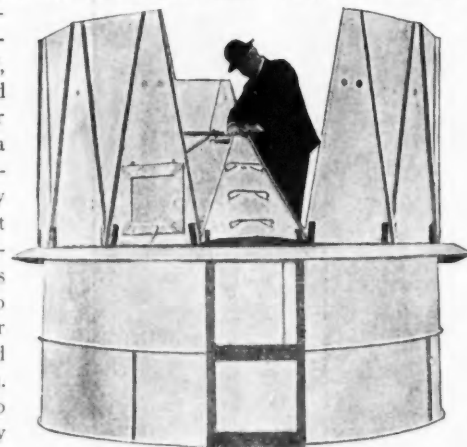


"Buckeye" Cupola Ventilator.

Hoosier Silo Extension Roof

A big opportunity for country builders is offered by the Sheet Metal Specialty Co., Goshen, Ind. They are manufacturing the

Hoosier Silo Extension and Roof, a galvanized metal roof for any kind of a silo—wood, cement, or clay tile. They want country builders to act as their agents to take orders for these roofs and put them on. There are silo roofs in every locality that need renewing.

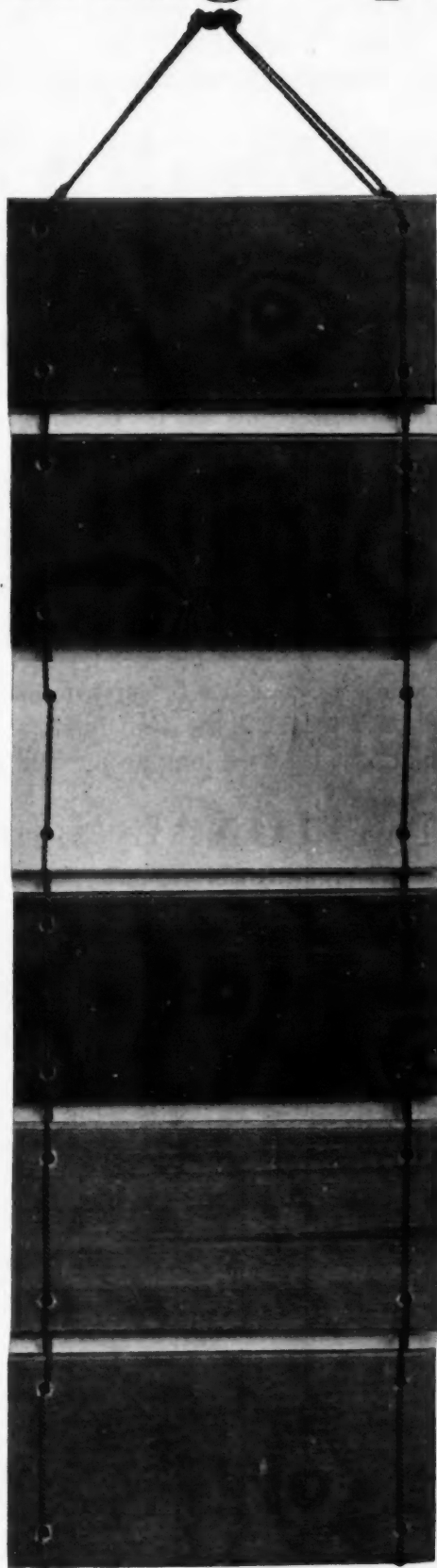


Raising the Roof Sections Before Filling.

The best part of this Hoosier Roof is that the segments work on hinges, and when raised straight up add to the effective height of the silo an amount equal to one-half the diameter of the silo. The farmer raises these sections at silo filling time and piles in the silage clear to the tip top. Within a few days the silage settles and the roof sections are let down. This roof gives the farmer increased silo capacity.

(Trade Notes Continued to page 98.)

Hang Up In Your Shop



THE set of six Birch Panels here illustrated. Each Panel is 3x5 inches in size, and carries a stain of proven reliability on Birch. Full directions for the application of the stains are printed on the back of the Panels, and the whole set is substantially strung on heavy cord ready to hang up.

The set will make an attractive display in your shop and at the same time help your clients in the selection of color schemes and styles of finish.

YOU will also find our Birch book helpful. It describes and illustrates in detail the many uses of Birch for interior trim, doors, floors and built-in work, and is a source of reliable information upon Birch.

Write today for the Panels and Birch Book "C." Sent Postpaid.

**The Northern Hemlock &
Hardwood Manufacturers
Association**

Dept. C

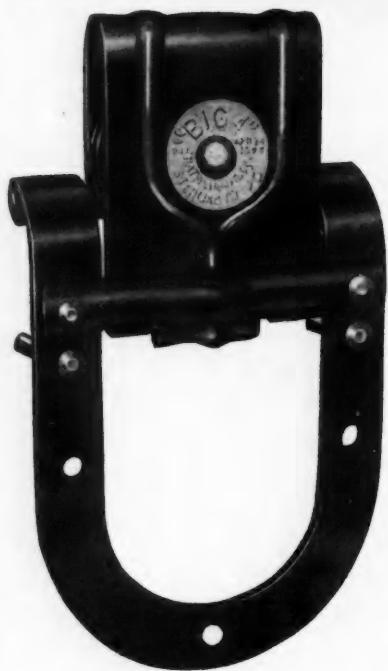
Wausau, Wisconsin

NATIONAL

FOR FARM

The Importance of Good Hardware

YOU Carpenters and Builders are well aware of the fact that the hardware on a barn or farm building is subjected to the most severe usage, because it is the working part of the building. No matter how good a building you put up if poor hardware is used the whole building suffers. Doors sag, hinges break and it reflects on the whole building. The builder's reputation suffers too because he usually specifies and puts on the hardware. National Hardware makes for good building. Improved design and best materials stand back of every piece. Specify and put National Hardware on your Farm Buildings. It will be the finishing touch to your good building and will last as long as the building itself.



Front View
"Big 4" Hanger



View of "Big 4" Hanger
Showing Flexible Feature

THE NATIONAL LINE

of Farm Building Hardware is most complete. It includes several models of Door Hangers, Hinges, Latches, Safety Hasps and Hooks, Staples, Hinge Hasp Staples, Barn Door Bumpers, Special Attachments, etc. We call special attention to our line of Door Hangers, two models of which are shown on this page and next.

"Big 4" Flexible Door Hanger

A well made, sturdy Door Hanger with many desirable features. Cannot jump the track and can be removed only from end of rail. It has a hinged joint, permitting the door to swing out when anything bumps against it, but when hanging straight down it is rigid and will not swing in the wind. It has roller bearings and is a very satisfactory Hanger.



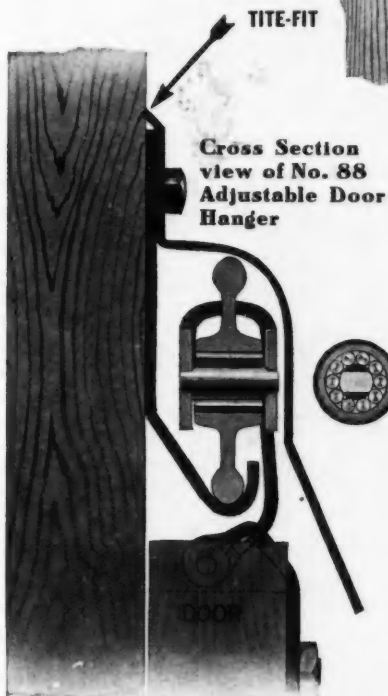
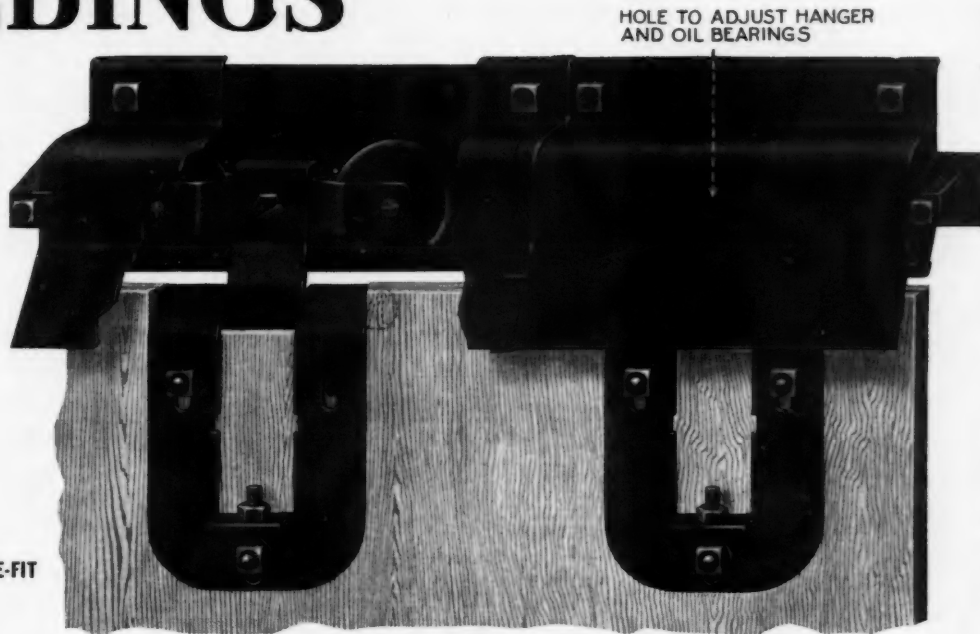
NATIONAL STERLING

HARDWARE

BUILDINGS

**The Finest
Door Hanger
Made**

**The No. 88
Adjustable Door
Hanger**



DOOR HANGERS

The No. 88 Adjustable

Better Sliding Barn Door Equipment cannot be produced. This Door Hanger is absolutely storm-proof, dust and bird-proof. Each wheel is equipped with roller bearings and runs in a perfect tread. Its adjustability and other superior features appeal to every Builder and Farmer.

No. 77 Storm-proof Hanger

is also flexible, and has the storm-proof rail. A picture of this hanger and a cross-section view of the storm-proof rail is shown in our Large Catalogue.

Our Large Illustrated Catalogue showing the Complete National Line will be sent to all Carpenters and Builders FREE of Charge, if you send us your Dealer's name.

MFG. CO.

ILLINOIS





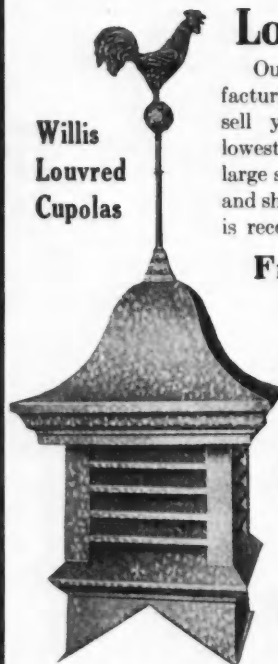
WILLIS

VENTILATORS

We manufacture the most complete assortment of Barn Ventilators on the market. All styles, all sizes. But only one quality—the best.

No matter what type of Barn you build, **Willis Ventilators** will ventilate it most efficiently. Willis Ventilators are not experiments, but have twenty-three years of good Ventilating experience back of them. Made of best grades of Sheet Metal, scientifically constructed—they represent the best obtainable in Ventilators.

Willis
Louvre
Cupolas



Lowest in Cost

Our large buying and manufacturing facilities enable us to sell you good Ventilators at lowest possible prices. We carry large stocks on hand at all times and ship the same day your order is received.

Free 180 Page Catalogue

This large illustrated Catalogue shows our complete line of Sheet Metal Goods. We are pioneers in the Sheet Metal Field and our line includes Ventilators, Ornaments, Metal Skylights, Store Fronts, Gable Ornaments, Cornices, etc. Every Builder should have a copy of this book—Write today for it.

**WILLIS
MFG. CO.**
Galesburg, Ill.

"Perfect" Block Machine

About two years ago C. S. Wert, of Kendallville, Ind., added the "Perfect" Block Machine to his popular line of "Perfect" brick machines and power tampers. This block machine is extremely simple in operation—is a face down machine using a horizontal core. It is strongly built, and easy and rapid of operation.

Mr. Wert has prepared a hand-book and catalog featuring his cement machinery and molds and giving many helpful suggestions concerning the manufacture of cement products. He will mail copies of this book free of charge to any of our readers interested.



"Perfect" Block Machine.

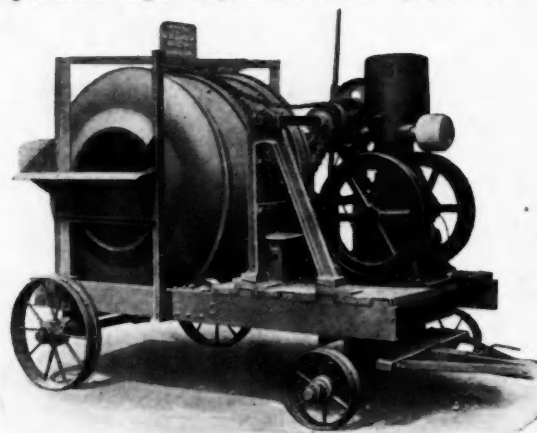


Cincinnati No. 7 and No. 12 Batch Mixers

The Ideal Concrete Machinery Co. line of Cincinnati batch mixers is manufactured in two sizes only—7 and 12-foot capacities, loose materials.

In building these two mixers, they have directed their energies towards producing an equipment that would answer the requirements of the general contractor. They have specialized in manufacturing portable compact outfits that are easy to handle, that are durable and dependable.

They claim for the No. 7 equipment that it will turn out from 50 to 60 cubic yards of thoroughly mixed concrete in a ten-hour day. Many users of Cincinnati mixers say that they get much larger outputs from their equipments.

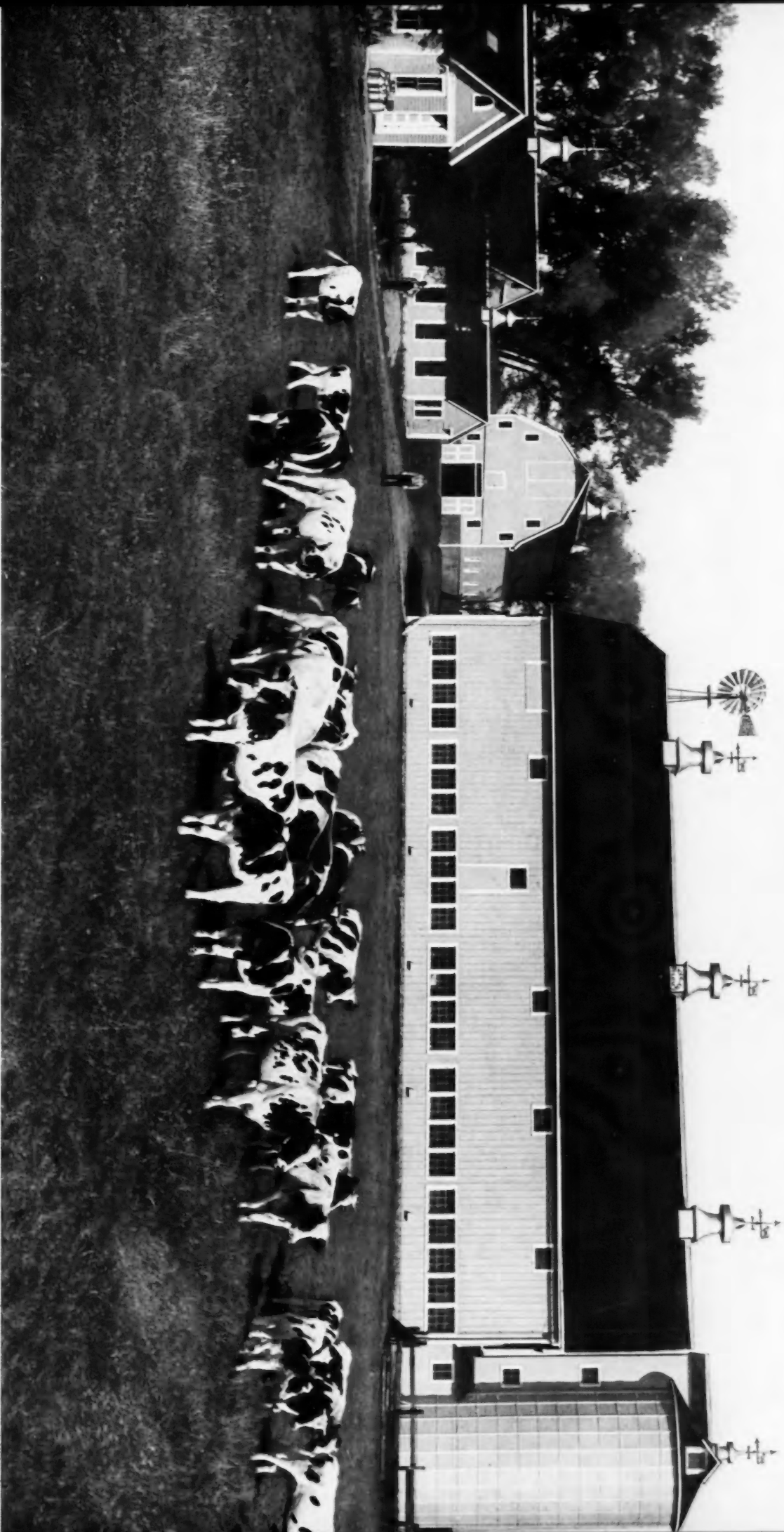


The Ideal Cincinnati Mixer.

Each size of Cincinnati mixers is equipped in four types—regular with wheelbarrow hopper—regular with batch hopper—regular with power loader—and as a rear discharge paver. Therefore, we take special pleasure in bringing their line of mixers to your attention as they have been designed and constructed to answer your particular requirements.

We won't go into detail regarding the construction, although there are many exclusive and important points that should be mentioned. However, if you are interested, a post-card directed to the Ideal Concrete Machinery Co., 1308 Monmouth Ave., Cincinnati, Ohio, will bring complete specifications as well as list and net prices on the above mentioned equipments.

(Trade Notes Continued to page 102.)



FARM BUILDINGS ON THE WOODLAWN FARM, MEDFORD, MINNESOTA, G. M. FLINN, PROPRIETOR
All Ventilated with the King Ventilating Systems and King Aerators. See advertisement on following pages.



THE KING AERATOR

Made of the very best quality of galvanized steel. It is bird, rain and snow proof; lighter on the building than a wooden cupola and much more durable.

Look for the trade mark  It is on every genuine.

Accept no substitute.



Save a Big Job
 and Please Your Customer More by Recommending
King Aerators
 and Sanitary Ventilating System
 It Means More Money for You

A good carpenter and a helper can put a **King Aerator** on a building in almost the same time that it takes the rest of the crew to pick up tools and get ready to leave the job. Wooden ventilators cost you the time of a good man for at least two or three days. And the hard work in making them shows but little in the eyes of the owner. In the busy season here is a saving that runs big.

King Aerators and Sanitary Ventilating Systems keep the building dry and in sanitary condition. They

please the owner—save him money—increase his profits. Your work has a better chance to be of credit to you. It helps your reputation as a good builder. And it brings more good business to you in larger and better contracts.

King Aerators are well known among stock and dairy men. They are widely advertised. In recommending them you connect yourself with a product of known quality. You take advantage of their prestige gained by many years of superior service.

Write for Our Co-operative Plan

You will find on the two preceding pages illustrations that show the beauty and architecture of the **King Aerator**. Show them to every man who is going to build farm buildings. He will appreciate your suggestion.

Write for Catalog---It's Free

You will find it an excellent help in recommending **King Aerators**.

King Ventilating Co.

1120 Cedar St., Owatonna, Minn.

Formerly Galvanized Steel
Cupola Co.

Special Offer to Introduce High Grade Terra Cotta

In another part of this issue the Midland Terra Cotta Company are offering highest grade white enamel terra cotta for a modern store building front at a price never before dreamed of in the terra cotta trade. Their purpose in making such a low price offer is to introduce Midland Terra Cotta into every town in the United States. They will be able to book only one order in any community at the price quoted, and the proposition is "first come first served." The directors of the company are taking this means of advertising their goods, as they know that just as soon as one white enamel terra cotta store front is put up a dozen other merchants along the same street will want one just like it. We look to see a big building boom in architectural terra cotta construction this year.

In the announcement of the Midland Terra Cotta Co. two classy little business buildings are detailed, one of them a two-story and the other a one-story building. Some of the handsomest terra cotta pieces we have ever seen are specified for these store fronts. The central portion of the principal decorative piece is illustrated in the accompanying photograph. The cost of modeling alone of this one piece exceeded the introductory price quoted on the entire store front. It is designed in the Sullivanesque style, a beautiful showy piece, that will have an advertising value on any business street.

The Midland Terra Cotta Co. are the pioneers in the stock terra cotta business. They carry a large stock of highest grade terra cotta for immediate delivery. They have spread the cost of designing and modeling over hundreds of pieces, and that is the secret of the low price they are able to quote.

If you want to get quick action on some of your local merchants, drop in and show them these modern store front



Central Portion of Main Terra Cotta Ornamental Piece in the Introductory Store Front Offer of Midland Terra Cotta Co.

designs. Show them how cheaply this high-grade terra cotta can be purchased and the work done.

The Midland Terra Cotta Co. offices are in the Chamber of Commerce Bldg., Chicago. Their plant is one of the largest in the country, equipped to handle orders of any size. Write them for additional information if you need more

**STANDARD
VARNISH
WORKS**
STANDARDIZED FINISHES
OF THE WORLD

Reliable, Durable
—AND—
Lasting Products

**STANDARD
VARNISH
WORKS**
STANDARDIZED FINISHES
OF THE WORLD

There's a great feeling of satisfaction in specifying products that are known the world over, because you take no chances. Standardized products have given satisfaction for more than forty years, and are manufactured and guaranteed by the largest Varnish works in the world. They are made by men of experience who cater to men who know.

Elastica Floor Finish, made to meet and resist the severe wear that floors are subjected to. **Satinette White Enamel**, a beautiful, sanitary white enamel finish for exterior and interior decoration. **Kleartone Stains**, all up-to-date shades, enhancing the natural beauty of the grain of the wood over which they are applied.

Manufactured by

STANDARD VARNISH WORKS

New York Chicago San Francisco London Berlin Melbourne
International Varnish Co., Limited, Toronto, Canada.



EXPANDED CUP SELF FURRING METAL LATH

SAVES 3 TO 5¢ A SQ. YD.

THIS is certain to be a big year for metal lath. People everywhere are alive to the fact that metal lath gives *protection* and *better service* and in the end *saves the owner money*. Last year we doubled our sales of the year before. Do you know the important facts about metal lath? One big fact is that

Sykes Expanded Cup Lath

requires no furring strips; and so saves 3 cents to 5 cents a square yard

This Expanded Cup Lath is crimped so as to provide a perfect key for the mortar. It becomes firmly embedded in the stucco or plaster.

Another important fact—Sykes Self-Furring Metal Lath is cut with a wider strand than other makes so that, when cut from the same gauge of metal, Sykes is *Heavier* and *Stronger*. Don't judge metal lath by gauge alone; but by *gauge* and *weight*.

Sykes Expanded Cup Lath (Self-Furring) is best for Stucco Work, for Overcoating and for Plaster Work. It can't be applied wrong.

Indorsed by architects; approved by U. S. Government for Post Office work.

Write today for Free Sample and Free Book which gives complete specifications for Stucco Work on Metal Lath. This book will save money for you.



**Sykes Metal Lath &
Roofing Co.**

504 RIVER ROAD, - - - WARREN, OHIO



One Pound JOHNSON'S Paste Wood Filler Free and Postpaid



FILL out and mail the coupon and receive in return a 1 lb. can of Johnson's Paste Wood Filler. There are no strings tied to this offer—all we ask is that you use the material we send you on a piece of work—a pound is sufficient for filling 40 sq. ft.

Johnson's Paste Wood Filler is made from pure linseed oil, the best Japan Dryer and finely ground Metronite-Quartz from our own mine. It is put up in cans ready for use in the following shades:

Natural No. 10	Antwerp Oak No. 40
Golden Oak No. 20	Green Antwerp No. 50
Dark Oak No. 30	Mahogany No. 70

When jobs are to be finished in colored effects you can save the cost of the stain coat by using one of the colored shades of Johnson's Paste Wood Filler. It stains and fills in one operation.

Johnson's Paste Wood Filler does not become hard in cans—will remain usable indefinitely after thinning, and may be wiped with ease in from fifteen minutes to six hours after application. These three advantages over other brands, together with its absolute filling quality, forming a perfect oval pore, make Johnson's Paste Wood Filler popular with the artisan.

Hundreds of barrels of Johnson's Paste Wood Filler are sold every year to fine furniture manufacturers who demand the best materials for finishing the beautiful furniture and pianos they put on the market.

INSTRUCTION BOOK

We will also send you free a copy of our 25c color Instruction Book. This is the work of famous experts. It gives full information on the proper method of finishing all wood. It will prove good, profitable reading for every progressive painter and decorator.

Please send me free and postpaid a 1-lb. can of Johnson's Paste Wood Filler No. . . . , also booklet "The Proper Treatment for Floors, Woodwork and Furniture."

Name

Address

City & State.....

Fill out and mail to
S. C. JOHNSON & SON
"The Wood Finishing Authorities"
RACINE, WIS.

than is given in their two-page announcement in another part of this issue. They will gladly send you their portfolio of designs, will figure your blue prints for the terra cotta work, or furnish any other information desired.



Henry Disston & Sons, Inc. Round Out 75th Year

"Good steel and honest work," Henry Disston's own explanation of his success, have brought the enterprise founded by him three-quarters of a century ago to a magnitude probably undreamed of by him in his most optimistic visions of the future.

It would have been difficult for him to see in the crude little shop of 1840, with its home-made furnace and meagre tools, the nucleus of a plant equipped with every refinement of the saw-maker's art, having 58 buildings, covering 50 acres of ground, and employing 3600 men.

"Good steel and honest work"; he had no other assets. A thorough knowledge of saw making, a little steel and few tools, given him in lieu of salary when his employers failed, were his entire stock in trade. Obscurity and a strong prejudice against tools of domestic manufacture had to be overcome, but *quality* did it—and opened the way not only to recognition but to leadership for American manufacturers of tools of every kind. "Good steel and honest work," that was all he needed. Capital would come when he had his market.

With a product unquestionably superior to any other of his time, Henry Disston soon gained recognition as the leader in his field.

From this time on development was rapid; simply keeping pace with the growing demand. His efforts to improve the quality of his saws were unceasing. To get a steel exactly suited to his needs he built a plant for melting steel himself (1854—the first crucible saw-steel plant in this country).

Twelve years later a file works followed, to supply the immense quantities of files used in the saw plant (35000 dozen a year are now used). Gradually the manufacture of a wide variety of tools was undertaken.

When Henry Disston died in 1878, his sons succeeded him, and his descendants are today at the head of the business. Development has been steady and great, but always with the founder's simple motto of "Good steel and honest work" as a guiding policy. "Three-quarters of a century's reputation for quality is too valuable an asset to be jeopardized by inferior products," is the way the present heads express it.

Three generations of Disstons have administered the company's affairs since its establishment. And as a side light on the respective attitudes of employers and employed, it is interesting to note that a score of men have been with the company over fifty years, and in several instances three generations of the same family work side by side.



Diamond Edge Combination Try Square

The Shapleigh Hardware Company of St. Louis call our attention to their late improvement in their "Diamond Edge" combination try square.

It consists of three tools in one—a square, a level and a marking gauge with the scribing feature, which is very practical and indispensable to carpenters in their work.

This tool is made of cold rolled steel; highly polished and oxidized with figures and lines graduated in $\frac{1}{8}$ inches. This tool should become very popular among all mechanics.



Examine this Building Closely



It is only one of
many pleasing
finishes obtained
with

KELLASTONE

IMPERISHABLE STUCCO

But a KELLASTONE Finish is not only architecturally beautiful, but Durable—Lasting. But before going further, don't confuse KELLASTONE with ordinary Cement Stucco, because they are as different as day and night. The very nature of KELLASTONE makes it waterproof and unaffected by climatic conditions.

For New Effects in Building Material

use KELLASTONE. Put new life and character in your work. The soft, natural colorings, the contrasts obtained with KELLASTONE will make your jobs the pride of the town. Besides making a nice appearing building, KELLASTONE makes any structure more sanitary—cooler in summer and warmer in winter. The reason for this is because it is a non-conductor of heat, cold or moisture.

KELLASTONE possesses great tensile strength, adhesiveness and elasticity. This makes a coat that resists cracking, because it adapts itself to a great degree of settling, expansion and contraction. KELLASTONE is without a doubt the greatest material there is for Remodeling Work and Overcoating. It transforms old structures into modern, up-to-date buildings that will be hard to recognize as the same.

KELLASTONE Composition Flooring

is the ideal material for Schools, Office Buildings, Hospitals, Hotels and service parts of Residences (kitchens, bathrooms, etc.). It is fireproof and easily kept clean. It is very sanitary and makes a well appearing floor. Not slippery and very durable. Made in several colors. KELLASTONE Flooring is one of the modern touches that adds so much to the value of a building.

To further acquaint you with the individual merits of KELLASTONE and KELLASTONE Composition Flooring, we have prepared a booklet on each. These booklets are well illustrated and will be sent to you without cost. Send us your name and address today.

NATIONAL KELLASTONE COMPANY
Room 504 Association Building CHICAGO, ILLINOIS

Cut to Fit or Fit to Cut

"Only thirty-five per cent of the original tree emerges in the form of a building."—Saturday Evening Post.

Special investigation of waste in the construction of dwellings resulted in the following statement by a writer in the *Retail Lumberman*:—"A safe estimate of good lumber wasted in course of construction is twenty-five per cent."

These two bare statements are quoted from such unquestionable sources to give especial weight to the very conservative statement:

"You will pay for 18% waste when you build the old way. Eighteen dollars of your money will pay for material you don't get—eighteen dollars out of every hundred spent on your home—wasted."

When this statement was first made by the North American Construction Co. it was ridiculed by the lumbermen. The passing years have wrought changes in their ideas until now, when pinned down, they will admit that it is conservative.

This company's Aladdin Read-Cut system has reduced the item of waste to less than 2%.

The architect in designing a house seldom considers the subject of cutting material to waste. He lays out the dimensions of the house, places windows, doors, etc., without any thought of how the material will cut. The contractor orders so many thousand feet of siding, of flooring, of 2 x 4, of 2 x 6, etc., without any thought as to the utilization of mill-run lengths. You, of course, know that sawmills cut logs in certain lengths, 12 feet, 16 feet, 20 feet, and it comes through the planing mill in those same lengths. It also comes to the contractor in the same lengths. When the carpenter cuts the siding to fit between two windows, the windows may be 10 feet 1 inch apart. He has to take 14 pieces of siding each 12 feet long and cut each one of them 10 feet 1 inch, wasting 1 foot 11 inches, of about 18% of good lumber wasted.

This waste is eliminated by the Aladdin designers and the Aladdin Read-Cut system. For full particulars, including free book of plans, address the North American Construction Co., 795 Aladdin Avenue, Bay City, Mich.



Bench Drill Press No. 208

An attractive bench drill press of very moderate cost and known as No. 208, has just been put on the market by the Millers Falls Company, of Millers Falls, Mass. It is made



Millers Falls Drill Press.

in accordance with the usual standards of these well-known manufacturers. The illustration herewith will show its general lines and character. The finish of the standard is gray with red edging, and such parts as chuck and crank are nicked. The chuck has a capacity of 0 to 3/4 inch for round shank drills and is of the popular Star pattern with three jaws operated by springs that are protected from injury, and guaranteed not to get out of order. The small gear is of steel

and the tool is equipped with ball bearings. The chuck is held rigidly close to the main frame and feed is obtained by raising the table with a ratchet lever. The table is provided with holes for the insertion of pins or screws to act as stops or rests for the work. The height over all is 18 inches; maximum distance from chuck to table, 4 1/2 inches; speed of gears, 3 1/2 to 1; weight, 7 1/2 lbs. Each bench drill is packed in a separate wooden box.

(Trade Notes Continued to Page 119.)

White-Leaded Nearly Two Centuries

The Ladies' Mount Vernon Association holds in trust the home of Washington as a place of interest to our nation. It bids fair to stand an imperishable shrine for all lovers of freedom. Mere years do not age it.

Mount Vernon, now 174 years old, is remarkably well preserved. It is protected against moisture and decay by a weatherproof coat of paint mixed from



Dutch Boy White Lead

and pure linseed oil—that well-known, reliable and lasting paint.

Give the homes you plan the same protection. Dutch Boy white lead and Dutch Boy linseed oil can be mixed on the job to suit surface and weather conditions.

The paint does not have to be white. Any tint or shade can be secured by the addition of coloring matter.

If you would like to see some of the color combinations obtainable, ask our nearest branch to mail folders "B." They also include mixing directions and complete specifications for all kinds of painting, inside and outside.

NATIONAL LEAD COMPANY

New York
Cincinnati

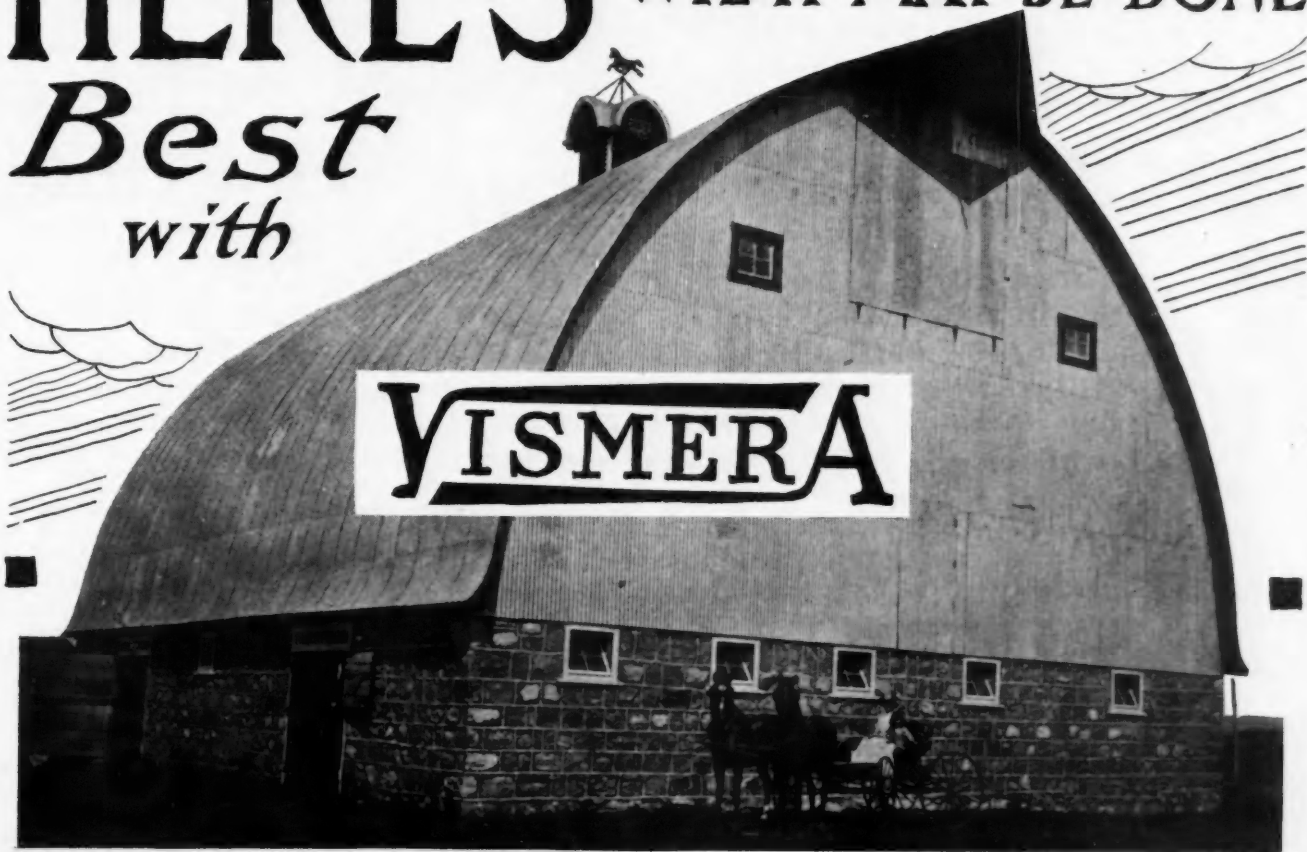
Boston
Cleveland

Buffalo
St. Louis

Chicago
San Francisco

(John T. Lewis & Bros. Co., Philadelphia.) (National Lead & Oil Co., Pittsburgh)

HERE'S AN EXAMPLE OF *Best* WHAT MAY BE DONE *with*



VISMERA PURE IRON SHEETS PURE IRON ROOFING

Resist Rust—Defy Corrosion

THE first cost of Vismera Pure Iron is a little greater than for ordinary Galvanized or Painted Sheet Iron or Steel—but Vismera Pure Iron resists rust and defies corrosion to such an extent that it will last many times as long.

This resistance to rust and corrosion is due to its purity. Vismera Pure Iron is *guaranteed* to be 99.86% pure iron—the highest degree of iron

purity thus far achieved in any commercial product.

Vismera Pure Iron offers a great opportunity to every live contractor who will make a canvass of the farmers and show them how he can put up fireproof, lightning-proof, weather-proof, time-resisting structures from this pure iron at a relatively low cost.

Our New "Vismera" Book will be ready about March 1st

It tells how the sheets are made, from the ore to the finished product. It is a liberal education to every worker in sheets, and will help you mightily in securing business.

Send for the book now. Your name will be put on our mailing list, and you will receive at once some smaller circulars giving sizes, gauges, tests, etc.

We ship direct from mill in any quantity:

Vismera Pure Iron Sheets, corrugated or plain, painted or galvanized.

Vismera Pure Iron Roofing and Siding, all standard sizes, gauges and patterns, painted or galvanized.

INLAND STEEL COMPANY

First National Bank Bldg., Chicago
, Works Indiana Harbor, Ind. and Chicago Heights, Ill.
Branch Offices—ST. LOUIS—ST. PAUL—MILWAUKEE—DENVER—DALLAS

No. 1 "Glide"

The Original Water Shed Track and Flexible Easy-Running Door Hanger

Strongest and Easiest Running Hanger and Track ever produced. Gives perfect storm protection over doors without sacrificing flexibility. Furnished with *Vertical* Adjustment if desired—no Lateral Adjustment necessary. Being simple it is very easy to erect. Combination Track and Cover in one piece.

Indorsed by 57 Brands of Imitators

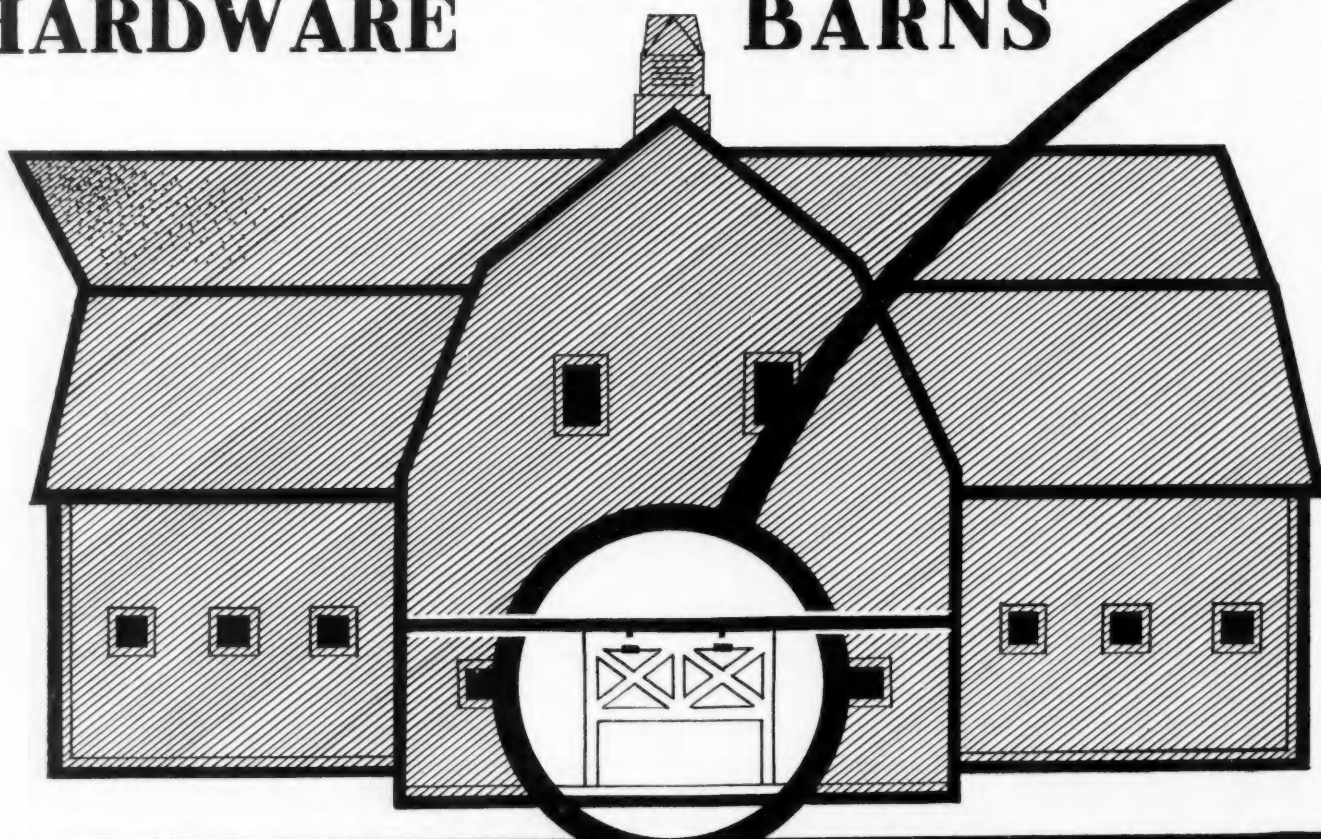
The No. 1 GLIDE embodies all desirable features and has never failed to make good and please both carpenter and owner.

FRANTZ MFG. CO., Sterling, Ill.

**GOOD
HARDWARE**

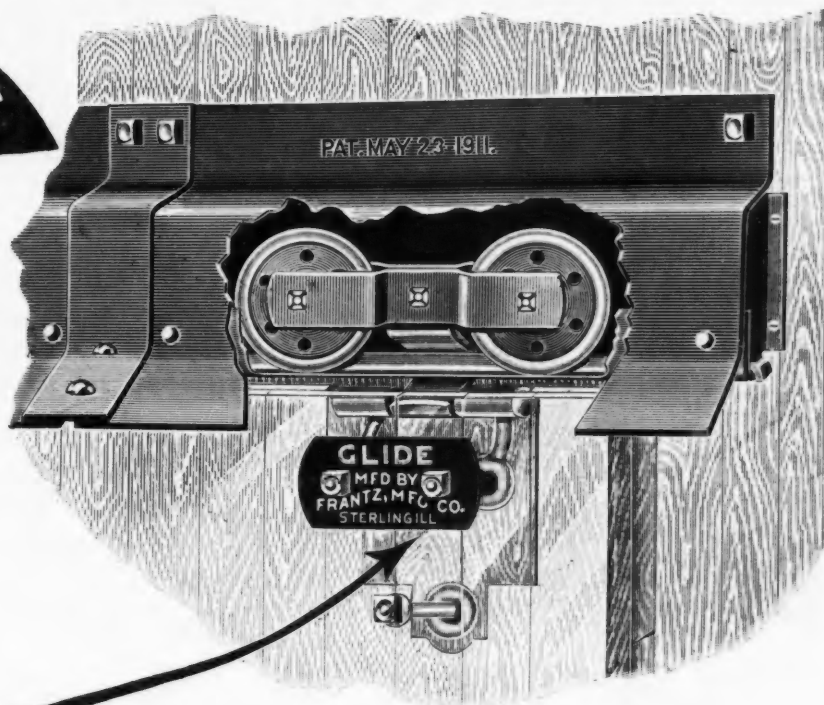
for

**GOOD
BARNs**



Combined Track and Cover in One Piece

Impossible
to Deraill
Hanger



Notice Wide Free Runway for Wheels

This makes a free, easy-running door because it does away with friction and prevents wheels binding in track. The No. 1 Glide is storm-proof and bird-proof. When door is hanging straight down it is rigid and vibrationless, but will easily swing out if anything bumps against the door. "GLIDE" Track is all one piece—easy to put up and more efficient.



Note Flexible
Feature

Frantz Hardware Pleases Owners

The owners are the users, they're the parties that can tell you how their door hangers work, how they last and whether they are satisfactory. FRANTZ barn equipment always makes good, because the design is right and cannot be improved. It's easy for you to put up too — no complicated parts, and once up, stays up. Remember pleased customers are the best boosters you can possibly have.

Our Full Line

of Barn Hardware includes several models of Door Hangers, Latches, Hinges, Hasps, Staples, Door Stops, Window Ventilators, Door Catches, etc.

Fill Out the Coupon

and we will send our nicely illustrated catalogue. This booklet is fully illustrated and will convince you of the superiority of the FRANTZ LINE. Fill it out today.

**FRANTZ
MFG. CO.**

**Sterling,
Ill.**

**FRANTZ
MFG. CO.,
Sterling, - Ill.**

Kindly send me free of charge your Catalogue showing the complete "FRANTZ" LINE of Hardware for Farm buildings.

Name _____

Town _____

State _____

"Star" Barn Equipment

It is surprising what a quantity of first-class assistance a builder can get these days by simply writing and asking for it. The design, construction and equipment of modern dairy barns may seem to present some tough problems, but in reality they fade away into nothingness after consulting the instruction books prepared by the leading barn equipment manufacturers.

Their information can be had simply for the asking. They want to see every farm building, that is built new or remodeled, made just as sanitary and sensible, just as labor-saving and convenient as possible. They know that a certain amount of their special goods will naturally be used where farm buildings are economically planned. And for this reason—with this little "axe to grind"—they have undertaken not only to work with the country contractors and builders to help them plan and build their farm structures, but also are educating the farmers, interesting them in better farm buildings and stirring up the country building business generally.

Both sides of this effort, of course, work directly to the benefit of the small town and country carpenters and builders. It brings them work, then helps them to handle it to the best advantage.

Hunt-Helm-Ferris & Co., of Harvard, Ill., manufacturers of the well-known "Star" line of modern barn equipment and barn hardware, have been in the vanguard in this work. They offer our readers some very valuable and interesting hand books. These are free of charge and are worth asking for. One is known as the "How?" Book for Contractors." It is a pocket size book of 126 pages, in durable binding, and full of authoritative building data. All you have to do to get a free copy of this book, is to write the company

the names of those in your neighborhood who are figuring on building new barns or remodeling.

They also have several valuable catalogs. One is devoted to their feed and litter carriers. This illustrates three types of litter carriers, first those to run on rigid track inside and outside of barn; second, those to run on rod track inside and outside of barn; and third, those to run on a combination of rigid track inside the barn and rod track outside. Another catalog features their "Cannon Ball" and other barn door hangers. A big new catalog now on the press features their line of sanitary stalls and stanchions.

We would like to suggest that all of our readers, who are interested in any way in farm building work, write Hunt-Helm-Ferris & Co., addressing them at 304 Hunt St., Harvard, Ill.



"Back to the Farm"

Mighty good advice, but it meant inconvenience, discomfort, and danger to health in days gone by. Now country folk can have the health protecting conveniences of the city folks. An indoor closet is one of the most important of these; and, as a rule, this will mean a chemical closet.

A water closet in the farm home means considerable expense, due to the necessity for water works, sewerage, septic tank and considerable plumbing.

A chemical closet will cost but a fraction of the expense of a water closet installation, because it will require no plumbing, sewerage or cesspool, and it can be easily installed.

Carpenters and builders who build or remodel farm homes will do well to inquire into the merits of the Hypco Aseptic Closet which is manufactured by the Hygienic Promotion Company, of Detroit, Mich., and advertised elsewhere in this issue.

USE METALLIC BATTEN STRIPS

*for Vertical Barn Siding and other Buildings
where Vertical Siding is used*

Far superior to wooden battens. They'll make your barns wind, rain and snow-proof. You'll notice the difference. Metallic Battens will keep your barns warmer and will last indefinitely. They also make a building much more attractive looking.

Always Tight

Metallic Batten Strips are always tight. They expand and contract with the siding. No Warping, Splitting or Drawing off. Metallic Batten Strips always lay flat and do not interfere with sliding doors. Put Metallic Battens on all your vertical siding buildings—Time will Tell.

Also used successfully on Garages, Chicken Houses, Hog Houses, and makes Granary and Corn Crib Floors rat-proof.

Metallic Batten Co.
Owensville, Ind.

Please send me absolutely
Free a sample of Metallic Batten
Strip and full information.

Name

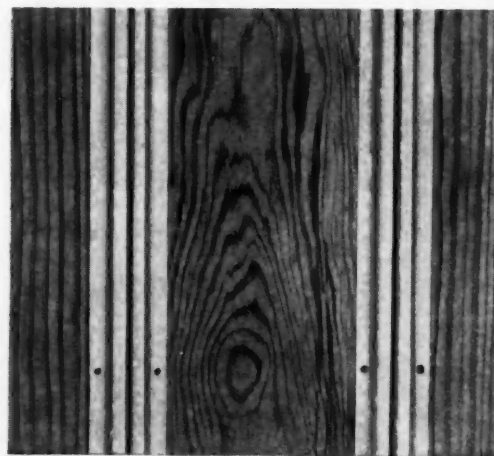
Address

FREE SAMPLE COUPON

Let us send you a FREE sample of this
Metallic Batten Strip. No obligations—
just send the coupon.

Metallic Batten Co.
Owensville - Ind.

Canadian Representative
Taylor Mfg. Co.,
Hamilton, Ont.



End View Showing Batten Closed



End View Showing Batten Open
with Seasoning of Timber



Make Barn Building A More Profitable Part of Your Work

Builders in all parts of the country have *made more money* after taking advantage of JAMES Barn-Building Service. Many of them have developed their business with dairy farmers until it has become the biggest part of their work.

The barn shown at the top of this page is a typical JAMES barn—one that any builder could be proud of, and the kind that makes every dairy farmer who sees it wish for one just as good. We have often told builders that one JAMES barn—built by the local man with the advice and assistance of JAMES experts—leads to many more good jobs in the same neighborhood, and this holds true in

every locality where builders have taken advantage of JAMES service.

It pays any builder to study up on the latest sanitary and economical methods of barn construction. We work with the builder, helping him in every possible way, and he gets credit for a fine, satisfactory job after it is finished.

Why not join us in getting more barn-building business in your neighborhood? Why not enjoy the bigger profits that are absolutely sure to come from this kind of co-operation with men who have devoted their lives to barn-building and barn-equiping problems? Why not avail yourself of this helpful

Free Service for Builders

This service tells all about the proved principles that have made the JAMES organization undisputed leaders in this line. It describes the plank-frame construction—describes proper ventilation principles, location of barn, lighting, size and arrangement, construction of floors, position of posts, drainage, equipment, etc.

We help you get the business. Just answer the questions indicated in the coupon—give us the names of dairy farmers in your section who expect to build or remodel their barns—and we will work with you in landing some good jobs and putting them through so they will be right. We have complete blueprints, specifications, floor plans and lumber bills for many different types and sizes of modern dairy barns. Ask about them—ask about our *Special Blueprint Offer* and learn how to get the free assistance of our Architectural Department.

JAMES MFG. CO.

C. Z. 75 Cane Street

FT. ATKINSON, WIS.

This Coupon Brings It

James Mfg. Co.,

C. Z. 75 Cane St., Ft. Atkinson, Wis.

I would like to have the benefit of your **free service for Builders**, including information regarding blueprints of dairy barns, etc., and your **free book**, "Building the Dairy Barn," by W. D. James. I am enclosing a list of those in my neighborhood who expect to build or remodel dairy barns, and number of cows to be accommodated in each barn.

Name

Postoffice

State



Dairy Barn, Illinois State Hospital, Kankakee, Ill.

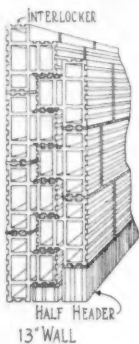
A NEW Construction for Dairy Barns and Farm Buildings Interlocking Bearing Wall Tile

Interlocking Tile gives *permanency* and *durability*, and increases the value.

And it is FIREPROOF—a big feature.

Insurance is less, *Safety* for live stock.

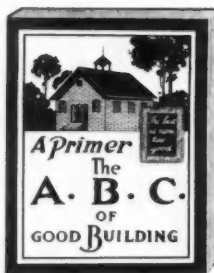
Sanitary—easy to ventilate, walls always dry, the cellar is as dry as the loft.



You will find the farmer and dairyman ready to build with fireproof material. The cost is low, not much greater than frame. You save time and labor.

Interlocking Tile is made from selected shale clay, hard burned, low absorption moisture. Also furnished with salt glazed surface.

We ask you to send us the names of dairy farmers in your vicinity who expect to build. We'll convince them of the superiority of the construction.

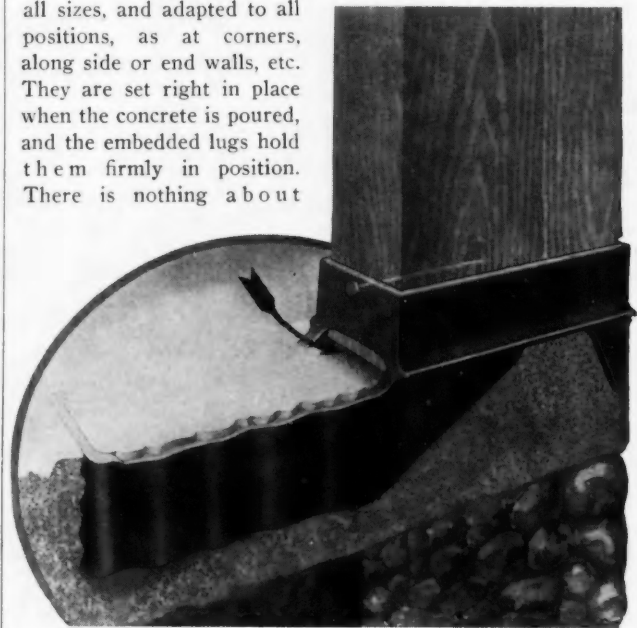


"A Primer; the A. B. C. of Good Building" tells why **Interlocking Tile** is best for all buildings. Sent to anyone interested in Good Building.

The Clay Product Co.
911 Stock Exchange Bldg.
CHICAGO

Metal Sockets for Wood Studding

Every builder knows how hard it is to connect wood studding, posts, or other upright framing members strongly and securely onto concrete floors or foundations. Ross metal sockets or supports will "do the trick." They are made in all sizes, and adapted to all positions, as at corners, along side or end walls, etc. They are set right in place when the concrete is poured, and the embedded lugs hold them firmly in position. There is nothing about



Detail of Ross Socket.

them to rot or disintegrate. The studding, posts, etc., set right down into these sockets and are perfectly solid without any need for the old-fashioned, bothersome toe-nailing that in time rusts away.

G. M. Ross & Co. publish an extremely interesting little booklet that contractors and builders value very highly. This booklet will tell you more than we can here. It contains directions for estimating quantities of materials needed, placing temporary wood forms for floors or foundations, mixing the concrete, placing the sockets, and setting the uprights. The suggestions will prove very helpful to any builder. Write for a copy to G. M. Ross & Co., 244 Broad St., Grinnell, Iowa.



Knickerbocker Equipment for 1915

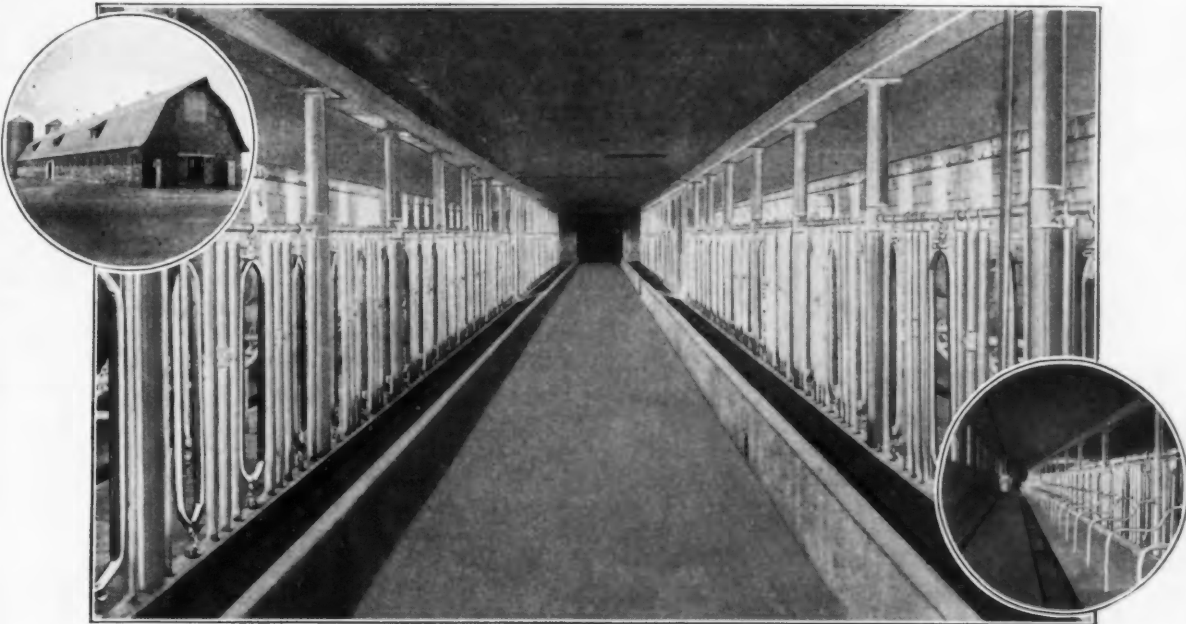
The time is passing when contractors confine their purchases to large sized concrete mixers which may be operated only on the largest jobs. They are realizing that in many cases concrete can be mixed more cheaply and placed more advantageously and with less labor when produced in smaller units, even on very large jobs; while still greater efficiency is secured by the use of a small machine on the average contract. Contractors are coming to realize that the size of the mixer should be such as to admit of its being operated continuously at maximum capacity to obtain maximum efficiency. Hence the remarkable increase in the demand for six and ten-foot machines. Many other contractors prefer the continuous type of machine, and demand such from up-to-date manufacturers.

In order that the concrete workers may see the late models in both the batch and continuous type of machine, the Knickerbocker Co., Jackson, Mich., have combined in their 1915 catalog the late models of both the Knickerbocker Batch Mixers and the Coltrin Continuous Mixers. This catalog shows each type of machine in detail, and describes many of the working parts.

It will pay you to send for this catalog and study the many points of advantage which have been considered in the make-up of this complete line of concrete mixers.

Porter Perfect Barn Equipment

The World's Standard Line



Dairy Barn at Kankakee State Hospital, Kankakee, Ill., fitted with Porter Equipment throughout.
James B. Dibelka, State Architect.

THE farmers demand the best in barn construction and have the money to pay for it.

They were never so prosperous as today—have just marketed crops worth \$83,000,000 more than last year. Thousands of modern barns will be built, or old ones remodeled, this spring and summer. We can help you get your share of this profitable business and you can help us.

For nearly fifty years we have specialized in barn building equipment. Our entire drafting department we will gladly place at your service, furnish blue prints upon receipt of sketches for any barn you plan to build or remodel, with

estimate of cost, and give you valuable suggestions on the latest barn construction FREE.



Write for Free Copy of This Modern Barn Equipment Book!

Simply send us the names of prospective barn builders you know, and ask for our Catalog, "Perfect Barn Equipment." We will show you where the profit comes in.

J. E. PORTER COMPANY

Department AC.

Ottawa, Illinois

Cement Drain Tile on Farms

One of the uses of concrete by farmers is evidenced by the increase in the manufacture of cement drain tile. While cement tile has been in use in this country for at least 50 years, it was not until about 1905 that farmers began to use them in the smaller sizes on their farms. After they were tested out thoroughly in some of the central states and were proven to be of great service, the demand for cement tile became enormous in almost every state of the Union.

This demand places in the hands of every contractor or builder the opportunity for filling in spare time during the winter and spring months when business is slack, by manufacturing the small size cement drain tile to be sold to the farmers. In order to make the best quality of cement drain tile cheaply and efficiently, a small outlay is necessary for a proper type of plant.

Information concerning the cement drain tile business is given by W. E. Dunn Mfg. Co., 4132 Fillmore St., Chicago, Ill., in a carefully prepared book, which they will gladly send to any of our readers interested. One valuable feature of their instruction circular is a blue print of a cement drain tile plant showing the equipment necessary for making this product. The book discusses the cost of cement drain tile and the profits to be obtained with the different sizes of tile. No part of the information furnished is theoretical, since it is the result of study and knowledge of conditions existing in many parts of the country.

Carpenters and building contractors doing country work are in the best possible position to interest the farmers in cement drain tile. Make them up during slack seasons and dispose of them later. Write W. E. Dunn for full particulars in regard to the opportunities offered by this business.

Insulated Construction for Farm Ice House and Dairy

A great many articles have been written on the subject of insulation. Practically all writers agree that shavings and sawdust should not be used for insulating purposes. Their decisions are based as a result of tests and watching the large cold storage plants go to the enormous expense of correcting the ways of their past by tearing out sawdust lined walls, placing instead a board insulation which remains there doing its work during the life of the building.

These people figure cost on the *efficiency* basis, and the experience of the large will be the experience of the small cold storage plants. The providing of suitable rooms for the storage of ice and then for all perishable articles, is changing. The large cold storage plants in the cities are being followed by similar storages in the smaller communities and the movement is now going to the men who grow the products, namely the farmer.

Efficiency tests have been made between a cream cooler insulated with two-inch waterproof "Lith" board, and one lined with a like thickness of shavings. The boxes were small, the size of tanks being 4'6"x2'2"x2' deep. The original cost of Lith lined box was \$23.07 as against \$13.38 for the shavings lined box. Lith lined box held 200 pounds of ice eleven days at an average temperature of 39°, and the shavings lined box held 200 pounds of ice at 53°. Ice saved alone made up for the original difference in cost every 108 days.

We are showing on page 116 an ice and milk house, showing proper insulation to use. Ice house is of about 70 tons capacity. The milk house is built to the south, which protects the south side of the ice house from the sun.

In this plan the milk house is a small one-story building,

Guaranteed Lightning Protection

Every building—from the modest barn to the finest residence—is not completed until it's provided with an adequate protection against lightning. You realize that, and it's your duty to make the owner realize it.

The most adequate protection possible is furnished by Barnett Lightning Rods, made of pure Copper, of high conductivity, and constructed without joints. No other rods are of such good construction and no other system is so practical and thorough in installation. Remember this when you recommend the Barnett system to your customers.

Easily Installed By Any Carpenter and Builder

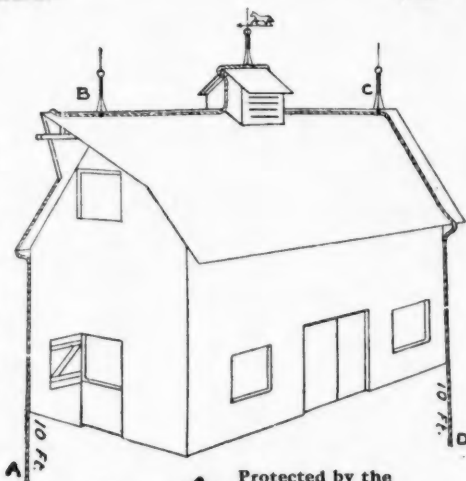


As a matter of convenience to your customers—and as a matter of profit to yourself—you should be in a position to equip every building you erect with the Barnett Lightning Rods. You built the house or barn, you have the owner's confidence, your argument carries weight. You are the logical man to do the work.

Our great trade proposition makes this one of the most profitable side-lines open to the carpenter and builder. We furnish the cable in many different styles and sizes—supply all necessary equipment and send full instructions for doing the work. Don't hesitate about writing—only one Carpenter and Builder in a town has the opportunity to be our agent. A binding guarantee issued to every purchaser of our rods.

Send a Post Card Today for FREE Samples and Catalog

Jos. L. A. Barnett & Co., Riverside, Iowa



Protected by the





Barn Plans

Louden Barn Plans Will Enable You to Secure More Barn Contracts. Let Us Co-operate With You---

The Louden Architectural Department

We maintain a corps of skilled draftsmen and architects who for years have been exclusively engaged in the study of barn architecture. Every man on the staff is a specialist. That's why they are better fitted than even the most skilled general practicing architects to give you expert advice and assistance on barn construction problems.

These men are prepared to furnish estimates, bills of material, working plans, and specifications for any barn or group of farm buildings. Each set of plans or specifications is prepared under the personal supervision of an expert.

This department is maintained by the Louden Machinery Company to promote the building of BETTER BARNS, and indirectly—since better barns demand better fixtures—to promote the sale of Louden barn equipment.

The Service We Offer You

Our barn plan service will help you land the desirable barn contracts in your territory by enabling you to approach the prospective builder with a set of plans designed to meet his individual needs.

Louden barn plans enable you to build better barns. They show you how to build more economically, and so enable you to underbid your competitors without sacrificing your profits.

We make no charge for preliminary plans and suggestions, or for advisory service. Should you desire complete working plans and specifications, a nominal charge will be made to cover actual cost of production.

**Write today for further information
about Louden Barn Plan Service.**

Our Book of Barn Plans

LOUDEN BARN PLANS, compiled and published by the Louden Machinery Company, contains the most valuable collection of practical barn plans ever assembled in book form. Its 194 drawings, plans, and photographs illustrate practically every phase of modern barn construction. It treats thoroughly the subjects of drainage, concrete work, strength of materials, lighting, ventilation, and the various other important problems which confront every barn builder.

The publisher's price of LOUDEN BARN PLANS is \$1.00. It's free to you if you are interested in barn construction.

You need this valuable book. It is stored with practical money saving information every barn builder needs.

Fill out the coupon or mail us a post card today.

Louden Modern Barn Equipment

If you build barns you will be interested in Louden barn equipment, the largest and most complete line of modern, sanitary, time and labor-saving barn furniture made. The Louden line includes the following products:

Tubular steel cow stalls,	Horse stalls,
Steel and wood-lined stanchions,	Hay unloading tools,
Water bowls,	Barn door hangers,
Feed and litter carriers,	Barn specialties.

The use of our free barn plan service in no way obligates you to specify or recommend Louden equipment. We simply want you to get acquainted with the line. The attached coupon will bring you, not only our book of barn plans, but also a complete set of catalogs. You'll find them useful for reference.

**Don't fail to mail the coupon today;
you might forget it tomorrow.**

----- Mail This Coupon Today -----

THE LOUDEN MACHINERY CO., (EST. 1867)

5503 Fourth Street, FAIRFIELD, IOWA.

Gentlemen: Please send me, free of charge, a copy of your book, LOUDEN BARN PLANS; also complete set of your barn equipment catalogs. The following named persons expect to build or remodel barns. Please send them catalogs and plans:

Name..... Address.....

Name..... Address.....

Name..... Address.....

Signed

Town..... State.....



LOUDEN
BARN
PLANS

LOUDEN MACHINERY COMPANY
FAIRFIELD, IOWA



**SURE—
It's Self
Cleaning**

The shape of the track, the style of the hanger makes it so.

No. 421

R-W CORN BELT TROLLEY BARN DOOR HANGER Using No. 35 Track

Hinged pendant, extra strong, permits door to swing out at bottom. For doors 1½ to 2 inches thick, weighing approximately 400 pounds.

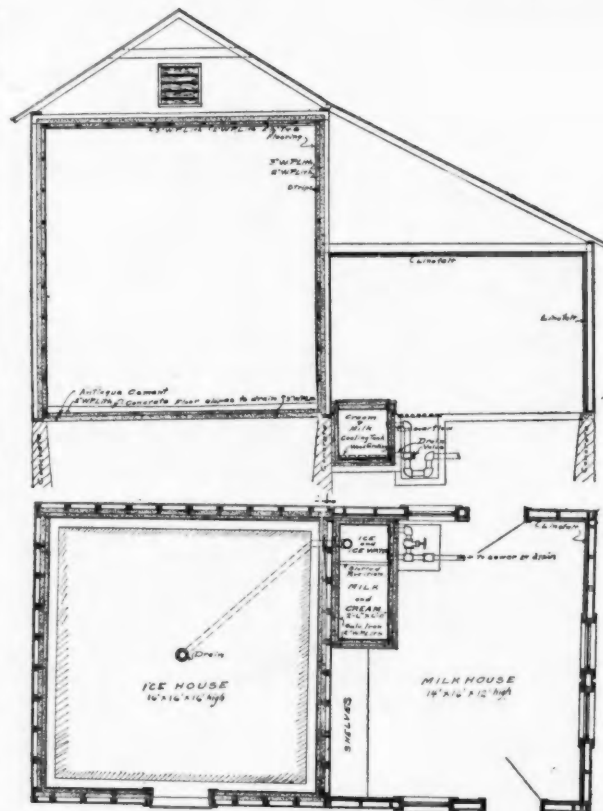
Has lateral adjustment.

Use this hanger—you'll like it.

Richards-Wilcox



MANUFACTURING CO.
AURORA, ILL. U.S.A.



Floor Plan and Cross-Section of Farm Ice House and Cooling Room, Insulated with "Lith" and "Linofelt," Two Products of the Union Fibre Co., 118 Main St., Winona, Minn.

but it is well built for handling milk and cream. The floor is concrete, and in one corner next to the ice house there is a cold water pit or tank to hold cans of milk or cream for cooling. The water in this tank is kept cold by the drip from the melting ice in the ice house and by placing ice in the tank, if lower temperatures are desired. This tank is well insulated with "Lith," which keeps the water from getting warm quickly.

The milk house is made cool in summer and warm in winter by using the building felt, "Linofelt," in the walls and ceiling in place of the ordinary building paper.

The ice house plan shows the modern way of insulating a building of this kind. The ice can be stored without any covering of sawdust or straw, with very small percentage of meltage. The advantage of this method of storing ice are many. The expense of the sawdust and the handling of it when ice is packed is saved. The ice can be taken out nice and clean with much less expense.

The floor of this ice house is insulated, and the insulation covered with concrete floor, sloped to drain. This does away with the necessity for placing cinders, sawdust or straw under the ice, the ice being piled directly on concrete floor. The drip from ice packed in this way will be perfectly clean and there will be no danger of clogging of the drain pipes.



Honeycomb Gives Satisfaction

The Rockford Mitre Box Co., of Rockford, Ill., recently received the following letter from a user of their well known "Honeycomb" mitre boxes: "The mitre box I purchased of you in October has given very much pleasure to me and all who used it. Whenever a very accurate cut was to be made, the 'Honeycomb' was the box chosen for this work in our gang, with six other boxes on the job. I will say for your box it is the best on the market, or best by test they lead the rest." This is but one of numerous letters received from actual users of the Honeycomb mitre boxes.

HOW TO MAKE MORE MONEY BUILDING BARNES!



FREE! The "HOW" Book for Contractors and Details of Our Co-operation

Description of the "HOW" Book:

126 pages. Pocket size. Bound in durable Keratol leather. Packed from cover to cover with information that saves the contractor time and money.

Pocket Size Encyclopedia

It tells how to figure life, strength and quantities on all kinds of building material. Safe loads—bending stresses—crushing strength—timberweight—waste—shrinkage—roof pitches—labor costs in roofing, carpentry and masonry work, etc. Ready reckoner, too—all compiled from authoritative sources. A wealth of practical, usable every-day information that you as a carpenter and contractor can't afford to be without.

Free to our
friends for
the asking.

Hunt, Helm, Ferris & Company

304 Hunt Street, - - HARVARD, ILL.

Write us today—send us the names of folks in your section who are going to build new barns—remodel old ones or install concrete floors and we'll send you by return mail free of all cost our 126-page, Keratol Leather Bound, Pocket Size "How" Book for Carpenters and Contractors (detailed description in left hand column) and full details of how our Architectural Department co-operates and helps you make more money building barns.

We are the largest firm in America engaged in the manufacture of modern barn equipment and our thousands of dealers, innumerable satisfied barn owners, big and aggressive sales force, Drafting Department, in fact, our entire organization, get back of you the minute you ask us to Co-operate.

And our services are free to you—don't cost one penny but are worth big money.

Write for the "How" Book and details of our Co-operation.

Free
"How
Book"
and Blue
Print Offer

HUNT, HELM,
FERRIS & CO.,
Harvard, - Ill.

Send me free of all charges, the 126-page, Keratol Leather Bound, Pocket Size "HOW BOOK" and details of your FREE BLUE PRINT SERVICE and co-operation. Enclosed find a list of folks in my vicinity who expect to build new barns, remodel old ones or put in concrete floors this spring.

Name

Post Office

R. F. D. State

Mayes Bros.' Aluminum Tools

After many years' experience making high grade levels, the Mayes Brothers, of Detroit, are now manufacturing a full line of carpenters', plasterers', and bricklayers' tools. They say that these are the finest levels it is possible to make.

Aluminum is the ideal material for levels, and has been in use long enough for this proposition to be no longer an experiment.



The Mayes Aluminum Hawk.

Thousands of the best mechanics in the United States and Canada have given the Mayes aluminum level and other Mayes tools enthusiastic endorsement. Not being made of wood, it cannot warp; also not being of iron, it cannot rust. Mayes aluminum level is light in weight, yet

strong and durable. It is a rust-proof metal.

In the event you are unable to obtain the level or any other of the Mayes tools from your hardware dealer, write for catalog. You will be well taken care of. They pay all transportation charges on all their tools.

Another popular new item of the Mayes Bros.' line is their aluminum hawk, as illustrated. It is made in two sizes— $13\frac{1}{2} \times 13\frac{1}{2}$ " and 13×13 ". First, being made out of best aluminum, it is light; and second, it is claimed to be the best handling design hawk. It will not warp or rust. It is made only by Mayes Bros.

For catalog address Mayes Bros., 692 Medbury Avenue, Detroit, Mich.

Standard Varnish Data

A few of the helps offered builders by the Standard Varnish Works of Chicago are the following: A book, "How to Finish Floors," descriptive of Elastica floor finish; paper samples finished with Elastica floor finish, so that you can test these out and satisfy yourself as to the water-proof and elastic qualities of this durable floor varnish; literature descriptive of Satinette white enamel, which is a strictly high grade enamel, manufactured exclusively in this country by them, the Standard Company being the sole licensees of Pinchin-Johnson Co., London, Eng., the original manufacturers; and views of representative homes on which Standard products have been used. On the reverse of these, a complete description of their various finishes.

Also the Standard Varnish Works maintain a consulting department which will be pleased to answer any technical questions in regard to finishing all kinds of interior and exterior wood trim and floors, or furnish any samples which our subscribers may desire. This department is for the express purpose of assisting our dealers and users in the use of Standard architectural finishes.



Watch the Quality as Auto Prices Come Down

The most vital development of the last year in the automobile industry, so far as the public is concerned, is the very material reduction in prices.

The reason for these reductions is in large part due to the decreased cost of material and the introduction of improved and labor-saving machinery, together with more compact and less expensive organization. In brief, the automobile industry, still in its infancy, is showing the beneficial effects of experience to a very marked degree.

However, the transition to lower prices has, in the minds

Why-



CORNELL BOARD

FROM LOG TO BOARD IN ONE PLANT



—is Best for Your Customers

Cornell board is guaranteed pure wood fibre, no unsanitary waste paper or cheap filler being used.

—it is **made right** and **stays right**. Will not crack, split, warp or peel in any climate or under any weather conditions.

—it retards heat, cold and sound, making buildings cool in summer and warm in winter.

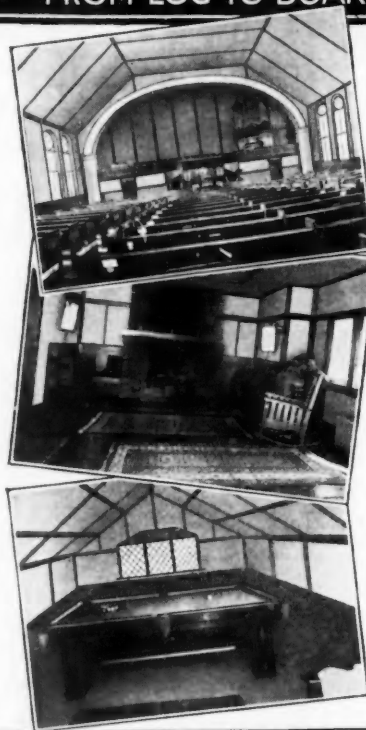
—careful processing protects it against dampness; heavy sizing makes the painting cost lower than for any other wall board.

—it can be easily applied, and without the muss and litter inseparable from plastering.

—it is sanitary, vermin proof, and is the most advanced wall construction.

—it costs less than lath and plaster, and less than any other wood fibre board on the market.

CORNELL
WOOD PRODUCTS CO.
125 W. Madison Street
CHICAGO



—is Most Profitable for YOU

Cornell Board will give the greatest possible satisfaction to your customers.

—it can be used for the walls, ceilings and partitions in all buildings.

—it is applied by carpenters, eliminating expensive sub-contracting.

—it saws like lumber, and is applied with hammer and nails.

—it is the most convenient material for partitions, show window backgrounds and general repair work.

—it is stocked 32 and 48 in. widths, and in even foot lengths from 6 to 16 feet.

—the enormous capacity (300,000 sq. ft. daily) of our \$3,500,000 mill, and our widely extended distributing system, enables us to quote low prices, low freight rates, and make quick deliveries.

—Write us today for samples, prices and complete information.

Warehouses at all Important Shipping Points

Dealers in Every City in the U. S.



This entire Town Lined with **CAREY CEIL-BOARD**

The pictures show several different views of the new town of Badin, North Carolina. This operation for the Southern Aluminium Company was planned and the execution of it supervised by Pierson & Goodrich, the well known Architects and Engineers, New York City.

Four hundred very attractive and substantial dwellings were erected. All of them are lined throughout with Carey Ceil-Board. Twenty carloads of Ceil-Board were used—more than one million square feet. This is the largest single order for wallboard ever placed. These walls and ceilings were put in place about a year ago and Mr. T. H. Pierson, the architect, now writes us as follows:—"All the houses are lined with your Ceil-Board throughout, which has proved very satisfactory to date."

Before specifying Ceil-Board, Mr. Pierson made careful investigation and practical tests as to the character of the material.

Now, Mr. Builder, why not use Ceil-Board throughout in that next house you erect? It will give your client a better home and will be an advertisement that will get more business for you in the future. It can be applied at any season of the year. There is no waiting for the drying of plastered walls and you eliminate the muss and dirt that the plasterers leave behind.

Ceil-Board is furnished in five finishes—Gray, Tan, Mission Oak, Golden Oak and Circassian Walnut, one for every room. It takes the place of lath, plaster and wooden paneling. We are anxious to demonstrate to every carpenter and building contractor in the country the superior merits of Ceil-Board in comparison with any other wall material made. We will gladly send samples for test purposes.

Ceil-Board is stocked at most of our branch warehouses shown below and is for sale by thousands of the best class of dealers.

The Philip Carey Company General Offices: 1001 Wayne Avenue,
LOCKLAND, CINCINNATI, OHIO

ATLANTA
BALTIMORE
BIRMINGHAM
BOSTON
BUFFALO
CHARLOTTE

CHATTANOOGA
CHICAGO
CINCINNATI
CLEVELAND
DALLAS
DENVER

DETROIT
JACKSONVILLE
KANSAS CITY
KNOXVILLE
LITTLE ROCK
LOS ANGELES
WASHINGTON

MEMPHIS
MINNEAPOLIS
MONTREAL
NASHVILLE
NEW ORLEANS
NEW YORK

PHILADELPHIA
PITTSBURGH
PORTLAND
RICHMOND
SAN FRANCISCO
SEATTLE

SPOKANE
ST. LOUIS
TOLEDO
TORONTO
WHEELING
WINNIPEG



This Book Is As Necessary As Your Saw



Do you know how to apply wall board correctly? Can you give an estimate without figuring? Do you know how it should be decorated?

IT ANSWERS THESE QUESTIONS AND HUNDREDS OF OTHERS

The photographs in it, which cover practically every use of wall board, will give your customers an exact idea of the results to be obtained with

PLASTERGON WALL BOARD

If the photographs do not carry the idea, there are suggestive designs for walls and ceilings that are bound to please.

A complete table of sizes with the area of each panel, number of panels to the bundle, square feet per bundle and the total weight, is also shown.

The Most Complete and Unbiased Treatise on Wall Board Published

Every one interested in wall board—contractors particularly—should have this new book. You can get a copy by sending your name with that of your lumber or builders supply dealer, or both, to

The PLASTERGON WALL BOARD CO.

101 Fillmore Ave.
TONAWANDA, NEW YORK

Nail This Fact Down Tight

There is, and there can be only one genuine



Trademark Reg. No. 94745.

because it is made with a center core of kiln-dried wood slats, and that is our patented feature.

It makes Compo-Board the most desirable material of its kind from these standpoints:—stiffness, durability, non-warping and non-shrinking strength, resistance to air moisture, cold, heat and fire, ease of handling, sawing clean and smooth,—wide range of uses and adaptability to different methods of decoration. (It's the only wall board that can be successfully papered.)

Be sure you get genuine Compo-Board and nothing else; look for the wood core. The border illustration of this ad gives you a fair idea of what it looks like.

We are forced to issue this warning because "Compo-Board" has become so well known that some folks have the impression it is a generic name for "Wall Board." It isn't. It's the trade-marked name of our own individual patented product.

Sold by dealers everywhere in strips four feet wide and in lengths of one to 18 feet, as desired.

Write for interesting book and sample piece.

**Northwestern Compo-
Board Company**
5777 Lyndale Ave., No.
MINNEAPOLIS, MINN.

of some, raised a danger signal that the buyer should not fail to heed alertly. "There is danger," says John R. Buck, of the KisselKar, "in the tendency on the part of some manufacturers to cheapen their product in order to list it at a figure below those of competitors who have gone as far as safe business methods and maintenance of quality will allow. Names mean less this year than ever before and it behooves the prudent purchaser to examine closely the mechanical merits of a car, regardless of its name and previous reputation.

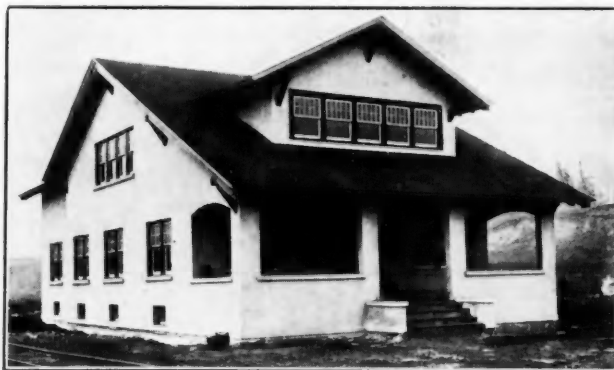
"We are quite willing that this test be applied to the Kissel-Kar models," continues Mr. Buck. "Although selling for much less than in previous years, the new KisselKar are in many respects better cars than their predecessors. They are built of just as good material and according to just as high and rigid standards. Stock parts can be purchased cheaper than Kissel can build them, but the latest models are as completely manufactured in Kissel's own factories as formerly. The Kissels feel that no outsider can build them as well for KisselKars."



Reynolds Shingle Business Forces Expansion

The growing business of the H. M. Reynolds Company, Grand Rapids, Mich., has compelled several additions to their manufacturing plant, not the least of which is a new administration building.

The feature of this building is its architectural style. In exterior arrangement it resembles a residence. Its home-like atmosphere inside carries the resemblance further.



New "Bungalow" Office of the H. M. Reynolds Co.

It has been the Reynolds idea that congenial environments are essential for efficient service, and everything which would add to the convenience and comfort of the employees has been given careful consideration.

On the first floor are all the executive offices, rest rooms and reception hall. Above the offices of the engineering and drafting departments, superintendent's laboratory, and general conference room.

The construction is of hollow tile, cement plaster, and, as the advertising man would say, "it has a Reynolds shingle roof."

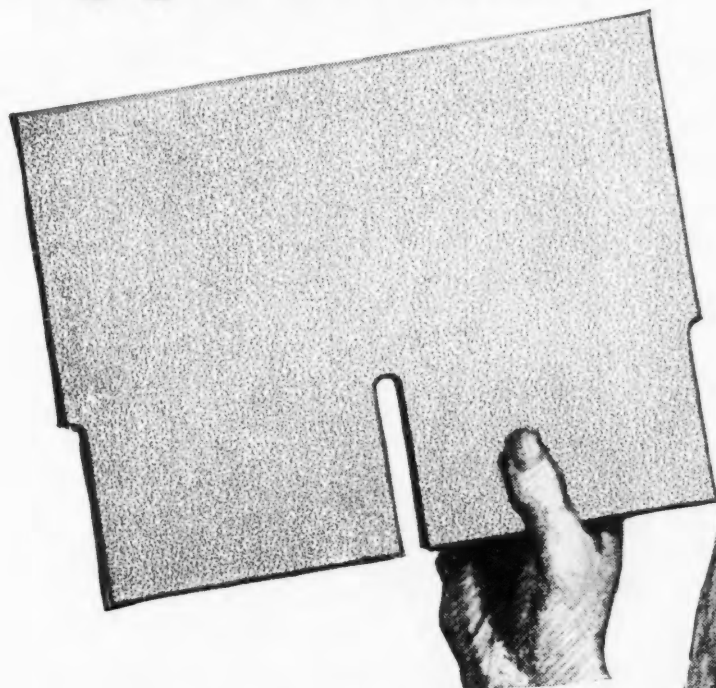


35,000 Dealers Made Happy

The 1915 Myers poster calendar is by far the most striking and effective calendar they have sent out for some time. It has an artistic head that will wear, and the additional advantage of being clear and visible at some distance and yet bearing close inspection.

They are sending these out to 35,000 of their dealers and would be glad to mail them on request to any other dealers wishing them. They have followed their regular method of illustrating types of their complete line of well and cistern pumps, spray pumps, power pumps, hay loading tools, barn

"An architect tipped *me* off"



"Before I saw it, I thought, just as a great many others have thought, that the

Neponset Shingle

was a composition shingle, cut or stamped from rolls of ready roofing.

"One day an architect tipped me off—said he considered the shingle made a better looking roof than slate. I got a sample—*saw* that heavy butt and special construction and got in line.

"I've got nothing against wooden shingles but I can make more money on these and every roof is an *advertisement*."

"Every progressive carpenter should look into this very carefully—doesn't cost anything to find out."

Bird & Son, East Walpole, Mass.

I am "from Missouri." I want you to *prove* to me that the NEPONSET Shingle is really all they say of it. This doesn't obligate me in *any way whatever*.

Name.....

Address.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

door hangers, etc. They have been sending these out in this form for nearly 30 years, and have become so well identified with it that many dealers have used the same throughout the entire year as a selling medium because of the cuts being so clear that many of their customers are able to select from it the style of pumps they have or desire.

The "Best" is Made Better

The Sterling Foundry Co., Sterling, Ill., have just brought out an improvement on their "Best" fuel chute. Manager Fred W. Honens realizes that the trade name selected for



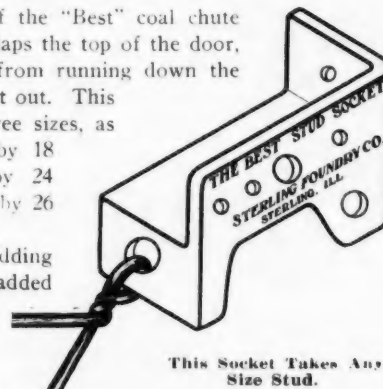
"Best" Coal Chute with Wire Protected Window.

their line of goods imposes a real obligation, and he is wide awake to improve the product wherever possible. He says, "The 'Best' now is the *best*."

The new feature consists of a glass front, wire protected, so that this coal chute also serves as a window to light the coal bin. The design is extremely neat, making a nice appearance from the outside. The chute is heavy and strong, locks securely from the inside, making it burglar-proof. If desired, the glass can be removed and a screen inserted in its place, making the coal chute serve the purpose of a ventilator for the cellar, and still remain practically burglar-proof.

A special feature of the "Best" coal chute is the flange that overlaps the top of the door, thus preventing rain from running down the chute and rusting it out. This chute is offered in three sizes, as follows: No. 1, 18 by 18 inches; No. 2, 18 by 24 inches, and No. 3, 20 by 26 inches.

A new cast-iron studding socket has just been added to the "Best" line manufactured by the Sterling Foundry Co., and is offered builders



This Socket Takes Any Size Stud.

in this issue for the first time. It is of a very simple pattern, and the interesting thing about it is, that it does not require any fitting of the studding to the sides of the socket. Having the flange or fence along only one side and one end, this socket may be used for timbers 2 or 3 inches thick and ranging from 4 to 8 inches wide. Ample nail and bolt holes are provided for nailing in the studs. There is a hole in the back of the lower flange, through which extra reinforcement can be run back into the body of the concrete, if desired. The design assures great holding power. These sockets weigh about 2 pounds each.

Our readers will be interested in the announcement of the Sterling Foundry Co. in another part of this issue, and further information can be obtained by writing the company at 8 Avenue A, Sterling, Ill.



Packard Mixers

The catalogs that the Contractors Machinery Co., of Keokuk, Iowa, are mailing out show a very neatly designed.

BETTER WALLS

at a Lower Cost if

National Brand Plaster Board

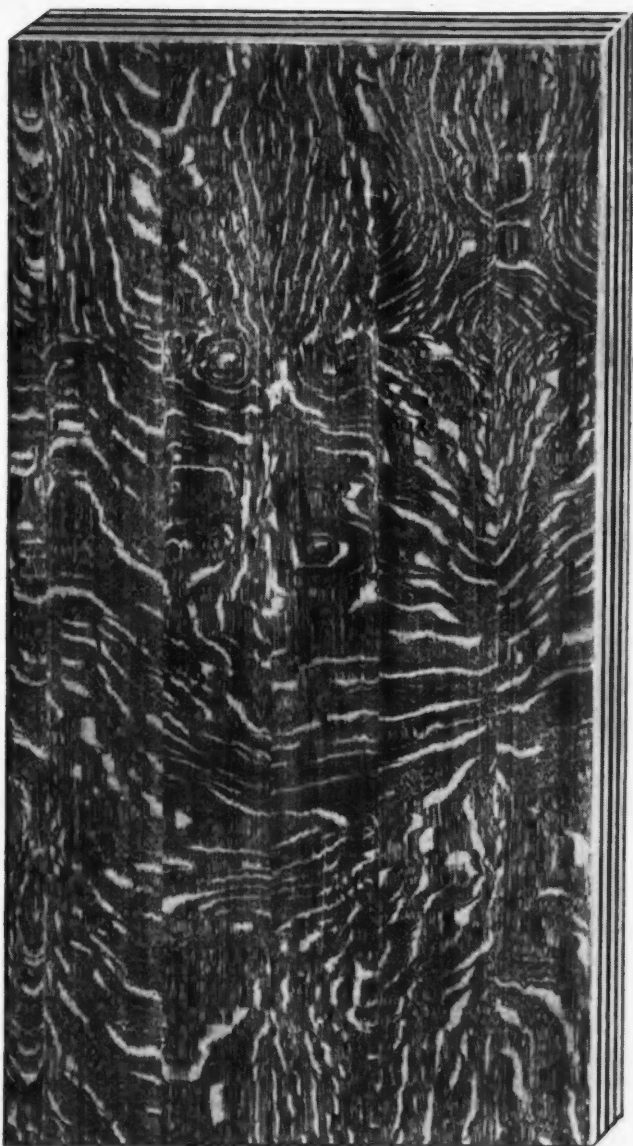
is used

National Brand Plaster Board possesses many advantages over the common wood pulp boards. It is a great deal stronger, it is positively fire-resisting and a non-conductor of heat and cold. Because of its insulating properties it keeps a building warmer in winter and cooler in Summer.

NATIONAL PLASTER BOARD does not contract or expand. It will not warp when exposed to moisture—always dry. It is easiest to paper on and makes the finest appearing wall you ever saw. The fact that it is more reasonable in price than other wall boards should also appeal to you.

IF YOUR DEALER DOES NOT CARRY "NATIONAL BRAND PLASTER BOARD," WRITE US FOR SAMPLE AND FULL INFORMATION

NATIONAL PLASTER BOARD COMPANY
CLEVELAND, OHIO



More Business AND Better Business FOR YOU

The up-to-date, progressive carpenter and builder in any community is the one that gets the bulk of the business. If you are awake to your opportunities, Mr. Contractor, you will take advantage of this chance and let us help you to show your townspeople and business men how they can make their homes and offices more attractive, more sanitary, warmer in winter, and cooler in summer, at less cost, by using—

ROBERDS'



WALL-BOARD

Builders everywhere are now using Ideal Wall-board because it is far superior in every way to the old style plastered walls and ceilings. It is absolutely waterproof, will resist heat and cold, is fire retarding, will not check nor crack, will not mar nor crumble, and can be kalsomined, painted or papered.

ROBERDS' IDEAL WALL-BOARD is made of four sheets of macerated wood fibre cemented together with asphalt cement under hydraulic pressure. It is not only superior to plaster, but is the heaviest, toughest and most durable wall-board made, being the only brand which is composed of seven distinct layers, making it 7 ply.

Read these two letters, which show that **ROBERDS' IDEAL WALL-BOARD** is a business getter for any carpenter or builder:

Hayti, Mo.
"Sometime ago I was instrumental in Mr. E. S. Fuller buying some of your Ideal board. Enclosed find order for 5,500 feet more. Your board did so well that I believe there can be a demand made for it here. I am in the building and contracting business here and will consider an exclusive agency. Make me an offer."
W. W. SPAIN.

Fair Oaks, Ind.
"I am well pleased with your IDEAL Wall-Board. Have a seven-room house of my own finished with it, and am recommending it to whomever I do building work for. I think it the best wall-board I ever used on any building, and I am at present figuring on an eight-room farm house for a gentleman here and will advise him to use it."
IRA SIMMONS,
Carpenter and Builder.

ROBERDS' IDEAL OAK WALL-BOARD

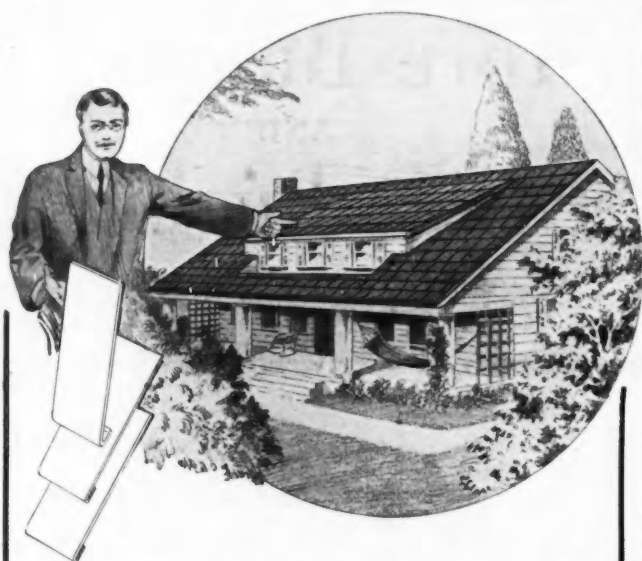
Our IDEAL Quarter-Sawed OAK Wall-Board, shown here, is the only genuine design of Oak Board ever placed on the market. It is made exactly as our other styles, except that it is finished in a perfect reproduction of genuine Oak and is not a mechanical or imitation design. This Oak Wall-Board will help any dealer or contractor to procure better business and more of it in his community. There are a thousand uses for it. Let us tell you about them.

Finishes:
Gray, Tan,
Quarter-
Sawed Oak

Write for Free Samples and Catalog

Roberds Manufacturing Company
100 RAILROAD AVENUE, MARION, INDIANA

Finishes:
Gray, Tan,
Quarter-
Sawed Oak



A Roof to Be Proud Of

A Rex-tile roof means satisfaction—for the carpenter and builder because it is easy to lay and will never cause complaints—for the house-owner because of its distinctive appearance and durability.

Rex-tile Shingles are handsomer than wooden shingles, slate or tile, economical and will wear indefinitely.

Absolutely water and wind-proof—fastened at the butt-end, and folded back over the nails—can't curl, warp, nor leak.

Rex-tile

TRADE MARK

"The Scientific Shingle"

are fire-resisting and color-fast—no painting or staining necessary—the color is a part of the material. Easy and convenient to handle; a smooth, clean surface and light in weight.

No price-cutting competition if you use Rex-tile on your roofing jobs. An exclusive material, because the turn-under fold for nailing—at bottom—no flapping or warping—nails perfectly covered—is patented, therefore sold for only one price.

These shingles are being extensively advertised. Will you write for sample shingle, prices and full information?

Flintkote Manufacturing Co.

90 Pearl Street, Boston, Mass.

67 Beaver St., New York

659 Peoples' Gas Bldg., Chicago, Ill.

Also manufacturers of Paradux—a waterproof canvas covering for all surfaces on which walking will be done—such as sleeping porches, piazza roofs, roof gardens, balcony roofs, boat decks, etc. Easier to lay than tin or metal—far more durable—requires no special preparation of the surface to be covered. Can be painted any color desired.

sturdy, compact, 5 cu. ft. capacity mixer at surprisingly low prices.

The Packard Mixers seem to be about the same design as the popular and successful paving mixers—and one of the interesting features is that the mixing action of this Packard mixer is the re-mix mixing action usually shown on larger mixers.

The catalog shows a hand mixer also, which is designed with the same mixing action; and this mixer really is a fine thing as it gives a man the same mixer as the power mixers only without power.

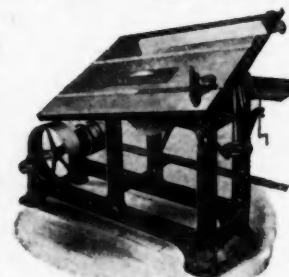
The fact is any man interested in mixers ought to get their catalog. We notice that the Contractors Machinery Co., at Keokuk, Iowa, have a very liberal trial proposition.



Kansas Builder Indorses Standard Woodworker

The combination saw table now being offered at a very low price by the Standard Machine Tool & Supply Co., First and Main Sts., Kansas City, Mo., is winning out for the builders using it.

J. C. MacInerney, architect and builder, of Larned, Kan., writes that he has used this saw table for some time and has found it a very satisfactory machine in every way. He says, "Since using it and knowing the value of it, I don't know how I ever got along without it."



"Makes Money for Me."

This speaks well for the labor-saving advantages of power machines, which should encourage other builders to investigate equipment of this kind.



New Plastergon Book

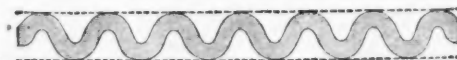
A very attractive little book containing full information for handling wall board work to the best advantage has just been issued by the Plastergon Wall Board Co., 101 Fillmore Ave., Tonawanda, N. Y. It is entitled "Plastergon Wall Board, Its Application and Decoration." Numerous beautiful photographs are reproduced showing how Plastergon is being used in private residences, stores, office buildings, and in miscellaneous ways. Attractive paneling suggestions are also presented, and there are some interesting tables of costs for the estimator. The different ways of finishing Plastergon wall board are fully presented, specifications being given for all of the leading types of wall paints.

Readers of the AMERICAN CARPENTER AND BUILDER are requested to write to the company for free copies of this book.



Stanley's Corrugated Strap and T-Hinge

By using a well known principle of engineering design, the Stanley Works have produced a line of extra strong strap and T-hinges of comparatively light weight. A piece of steel formed as shown by the shaded portion of the accompanying diagrams has very nearly the same strength as a piece



of the full area between the dotted lines. This is the corrugating principle that has been used in designing Stanley's corrugated hinges. For swinging heavy barn doors and for general farm building use, these hinges are worth investigating. Write the Stanley Works, New Britain, Conn., for descriptive circulars.

BEAVER BOARD

WALLS & CEILINGS

"It's Great Stuff, Boys"

"You fellows who don't know about BEAVER BOARD are overlooking a good bet. Just take a tip from me and look around a bit. There's any number of people waiting to be shown, and that's easy."

"Take Bill Swanson over here in Brownsville, for instance. He found a lot of folks in town who wanted to remodel their houses. Some of 'em had rooms they didn't like because the plaster was all shot to pieces—any place from the attic to the living room. So Bill got busy and showed them how easy it is to put BEAVER BOARD over old plaster and make a dandy looking job. After he'd made a few rooms look like new, people began to sit up and take notice. The result is that Bill has got all kinds of BEAVER BOARD jobs, lots of 'em in new houses, too, instead of lath and plaster."

"And, by the way, don't get the notion that every wall-board is BEAVER BOARD. It was the first thing of the sort ever made and has everything else beat to a standstill. Pure-wood-fibre all through and sized on both sides so's to stand any changes in climate or temperature. It's extra well protected in the back where it can't be painted."

"Ask the Companies' Builders' Service Department to put you on their mailing list for all their literature."



TRADE MARK

The Beaver Board Companies

United States: 217 Beaver Road, Buffalo, N. Y.
 Canada: 417 Wall St., Beaverdale, Ottawa.
 Great Britain: 4 Southampton Row, London, W. C.

Branch Offices in Baltimore, Boston, Chicago, Cleveland, Detroit, Indianapolis, Kansas City, Mo., Minneapolis, New York City, Omaha, Philadelphia, San Francisco.

A cordial invitation is extended to builders, contractors and carpenters to visit any of the above offices.



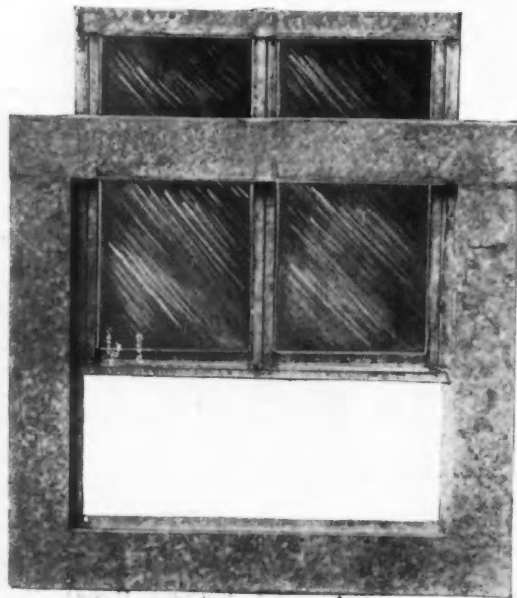
This is a reproduction from an actual photograph of a Long Island home, where BEAVER BOARD has been used to good advantage.



Galvanized Window Frame and Sash

A novelty in window sash and frame construction has recently come into use out in Iowa, for farm buildings. It is known as the "Chief" side wall sliding window and casing. It is made of galvanized iron, which is as cheap as wood, while easier to install, lasts longer, and gives less trouble.

These windows are being manufactured by Shrauger & Johnson, 430 Johnson St., Atlantic, Iowa. They are coming into use so fast that already the best dealers everywhere are carrying them in stock; or inquiries may be sent direct to the manufacturers. These are known as everlasting win-



"Chief" Galvanized Metal Frame and Sash.

dows. They go equally well in new buildings or in old. For lighting an old building, all you have to do is to saw out a hole of the proper size, put the combined frame and sash into place, and nail to the wall. Every detail of construction has been worked out, even to making them leak-proof. For poultry houses, hog houses, garages, implement sheds, barns, etc., these galvanized windows are very satisfactory.

Shrauger & Johnson have a number of other new things in sheet metal for country builders. Write for their big illustrated circular.



H. B. McMaster Joins Berger Organization

H. B. McMaster, Commissioner for the Associated Metal Lath Manufacturers, who has been directing the co-operative work of the metal lath industry since 1910, has resigned to become Manager of Branches for The Berger Mfg. Company of Canton, Ohio. This concern is one of the large independent producers of sheets and sheet metal products.

Mr. McMaster came to Youngstown at the time of the organization of The General Fireproofing Company, of which company he was secretary when he resigned in 1908 to become Manager of Sales for the Rod and Wire Department of The Youngstown Sheet & Tube Company.

He left that concern in 1910 and, aside from his work with the Metal Lath Association, was manager of the Ward Nail Company, in the reorganization of which he took part, and during the year 1914 had charge of a Bureau of Development organized by the Association of Sheet & Tin Plate Manufacturers, primarily for the purpose of launching a national campaign of concerted promotion in the interest of the sheet metal industry.

His connection with the Canton concern will begin on the first of February and his successor will not be chosen until the next meeting of the Metal Lath Association.

PEARL Screens Are Still New When Others Are Gone—

Does that sound like a pretty strong statement? Let us prove it. First of all, genuine Gilbert & Bennett PEARL Wire Cloth derives its rust-resisting qualities from the coating. This metallic protection is a secret composition, owned and controlled by Gilbert & Bennett. It will not crack, chip or peel off under any conditions whatsoever.

GILBERT & BENNETT
PEARL
WIRE CLOTH

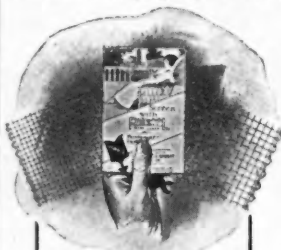
For Screening Doors,
Windows and Porches—

Made in Two Weights
Regular and Extra Heavy

PEARL is handsome—its original bright metallic lustre with a short exposure to the weather turns a permanent "invisible gray" and stays that way.

The thing that's making PEARL sales bigger every year is the fact that it requires no paint or repairs—it represents true screen economy.

Don't be deceived. There can not be a "just the same as PEARL." The manufacture and application of the non-crack, no chip coating from which it derives its wonderful rust-resisting qualities is a secret process; the exclusive property of this company.



FREE Sample and
Booklet
Write our nearest office.

But to be sure of PEARL wear you must get genuine PEARL Wire Cloth two Copper Wires in the Selvage and the Round Tag bearing the Gilbert & Bennett name on each roll.

Write our nearest office for samples of both Regular and Extra Heavy PEARL, full details regarding same, and the name of the nearest dealer.

The Gilbert & Bennett Mfg. Co.

(Established 1818)

Dept. A31 277 Broadway, New York
Dept. A31 38 S. Dearborn St., Chicago
Georgetown, Conn.
Kansas City, Mo.



The Best Hardware Dealer in Your City
Sells "PEARL"

Sample of solid zinc,
pure copper and
zinc coated shingle
nails—Test them
for yourself.



Free for Asking

We will send postpaid a Generous Sample of three kinds of

DURABLE SHINGLE NAILS

Solid Zinc---Pure Copper---Zinc Coated

Try them yourself, thoroughly test them, your own tests will prove that they are absolutely rust and corrosion-proof.

Wood Shingles Make the Best Roof --- If Durable Nails are Used

The life of a shingle roof depends on the nails. Poor nails soon rust—decay sets in and the innocent shingle receives the blame. Examine a shingle that has blown off, you will find it sound except around the nail hole.

Solid Zinc, Solid Copper or Zinc Coated Nails

cannot rust—they hold the shingles tight and make a roof that gives satisfaction for fifty years and even longer.

Write for the FREE Sample Box Today

Show them to owners, specify and buy them. If you cannot get them at your dealers order direct from us. Send for free sample box now. Address Dept. A.

W. H. MAZE COMPANY, Dept. A.

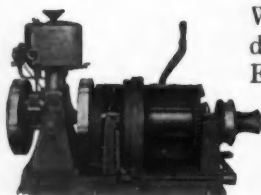
PERU, ILLINOIS



Extra Power Service for the Builder

Mr. Carpenter and Builder, we want you to know more about the real Constant Service of Ideal Engines.

We want to send you data showing why Ideal Engines have excelled and proven themselves, real economical power producers.



A Very Useful
Reversing Hoist
of Large Capacity

Ideal Engines embody the most modern of efficient improvements.

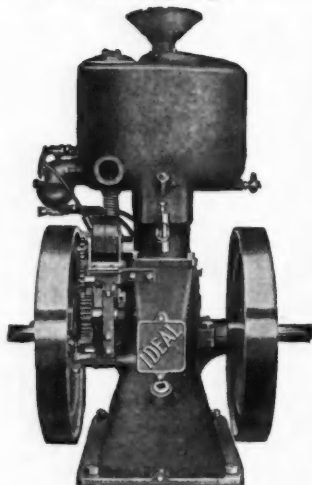
Frost—Fool—Dirt Proof, Large Valves, Large Cooling Tank, Enclosed Crank Case, Self-Oiling Boxes, No Vibration, Steady Power, Operation requires no skilled labor.

IDEAL TYPE M ENGINES

In our new catalog we illustrate besides our full line of engines, Ideal Pumping, Outfits, Ideal Hoisting Rigs.

You can't afford to pass up Constant Service, neither can you afford to lay aside this advertisement without first writing us for our book No. 315.

Be sure you
see us at the
Cement Show,
Booth 190.



Equipped with
National Magneto
and Ignition

Original Gas Engine Co.

R. E. OLDS, Chairman

630 Kalamazoo St., E. LANSING, MICH.

Shingle Nails are to Blame

A good house, a good barn, or a good building of any kind is not good unless it has a good roof. Without a good roof the whole building will become faulty and run down in value. Of late there has come from several sources a concerted attack on shingle roofs. The daily and weekly newspapers, the magazines and publications of national circulation have been filled with attacks on wood shingles and warnings about their short life, fire menace, and goodness knows what else. Friends and users of wood shingles have been considerably worried.

Now let us consider a moment. What is the matter with the old time-tried wooden shingles? Nothing. The trouble is not with the shingle, but with the short-lived, wire shingle nails. The fact is, you can buy a better wood shingle today than ever before. A good grade of these shingles will never rot. They will wear out in time if they can be kept on the roof long enough, and this is the only trouble with the shingle roofs of today. Since the retirement of the old-time iron cut nail we have not had a nail on the market whose life is equal to the life of a good shingle. Hence, much dissatisfaction with shingles because the nails will not hold them in place.

The above facts have been worked out by J. R. Moorehead, a retail lumberman at Lexington, Mo., secretary of the Southwestern Lumber Dealers' Association. He goes on to say that this problem has been absolutely solved by the use of solid zinc nails. Solid zinc nails will not rust and are therefore indestructible; they will hold the shingle on the roof until the shingle wears out. This, he says, will not happen in less than from 25 to 30 years, a generation.

There is, therefore, by the light of this endorsement by this well-informed builders' supply man, no reason why the time-tried wood shingle should be discarded, since it is possible now to obtain solid zinc nails at a very reasonable price. "Zinc City" nails, made by the W. H. Maze Co., Peru, Ill., are solid zinc, perfectly formed, indestructible.

To meet the demand for a zinc coated iron nail, the W. H. Maze Co. are now offering a high-grade coated nail. These are slightly less expensive than the solid zinc, and for many uses give ample protection. A solid pure copper nail is also a feature of the Maze Company line. They will send a generous sample of each kind of nail to any one of our readers writing them. Their sample package is a winner—has three compartments with solid zinc nails in one, solid copper nails in another and zinc coated nails in a third. It will come to you by parcel post if you will write for it, addressing Dept. A, and will give you a chance to test these nails thoroughly.



Free Sample of W. H. Maze Co.
Solid Zinc, Pure Copper and
Zinc Coated Nails. Try Them.

Ask for your sample package today and test these zinc nails. Make all of your shingle roofs permanent, long-life roofs. Your customers will gladly pay the small extra cost.

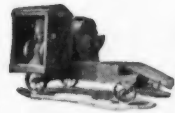


Sell Folding Bath Tubs

Many of our readers will be interested in the advertisement of the Robinson Folding Bath Tub in this issue, especially

The Greatest Endorsement Ever Given Any Gas Engine

These Concrete Mixers are all Run by Novo Engines



"The STANDARD"
Manufactured by The
Standard Scale & Supply
Co., Pittsburgh, Pa.



"Coltrin Concrete"
Manufactured by
Knickerbocker Co.
Jackson, Mich.



"Cabe," Manufactured by
Municipal Engineering &
Contracting Co.
Chicago, Ill.



"Milwaukee"
Manufactured by
Milwaukee Concrete Mixer
Co., Milwaukee, Wis.



"Sterling"
Manufactured by
Sterling Machinery Co.,
Inc., LaCrescent, Minn.



"Ransome's Bantam"
Manufactured by Ransome
Concrete Machinery Co.
Dunellen, N. J.



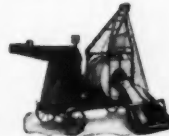
"Anderson Rotary"
Manufactured by W. H.
Anderson Tool & Supply
Co., Detroit, Mich.



"Low Down"
Manufactured by
Elite Manufacturing Co.
Ashland, Ohio



"Smith Chicago"
Manufactured by
The T. L. Smith Company
Milwaukee, Wisconsin



"Chain Belt"
"The Mixer with the Bulge"
Manufactured by Chain Belt Co.
Milwaukee, Wis.



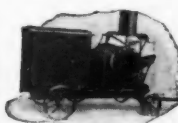
"The New Way"
Manufactured by E. Wege
Concrete Machinery Co.
LaCrosse, Wis.



"Blystone"
Manufactured by
Blystone Manufacturing Co.
Cambridge Springs, Pa.



"Wonder Ten" Paver
Manufactured by
Waterloo Cement Machin-
ery Corp., Waterloo, Iowa



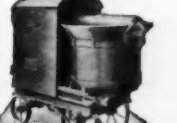
"Northwestern," Manu-
factured by Northwestern
Steel & Iron Works
Eau Claire, Wis.



"U. S. Standard, Jr., Porta-
ble," Manufactured by U. S.
Standard Manufacturing Co.
Ashland, U. S. A.



"The Kent"
Manufactured by
The Kent Machine Co.
Kent, Ohio



"Mandt Mortar-Plaster"
"Light Weight—BOSS—Steel King"
Manufactured by The American Cement
Machine Co., Inc., Keokuk, Iowa



"Ideal
Cincinnati
Batch"
Manufactured by
Ideal Concrete
Machinery
Company
Cincinnati,
Ohio



"Oshkosh"
Manufactured by
Oshkosh Mfg. Co.
Oshkosh, Wis.

NOVO

REG. U.S. PAT. OFF.

ENGINES and OUTFITS

The Engine that Runs 80% of the Concrete Mixers is the Engine for You

Above are shown twenty different concrete mixers.
Each run by a Novo Engine.

Nor are these all. Over 80% of the concrete mixers in this country are run by Novo Engines.

It takes a real engine to stand up under the gruelling work of delivering a steady stream of concrete.

Theories—promises—price inducements—have no place in the selection of the NOVO. RESULTS alone won the day for NOVO. TRIAL proved the superiority of NOVO. PERFORMANCE proved that the NOVO *would* stand up under work when other engines would *not*.

"Reliable Power" is an eye-opener concerning power economy. It shows contractors, manufacturers and employers many ways to cut manufacturing costs. This book justifies our slogan, "Bid Low, and put Novo on the Payroll." The book is free to anyone who is interested. Please write on your business letterhead.

Final simplicity! These two words best describe the working parts of a Novo Engine. One reason why the Novo delivers such *reliable* power is because there is practically nothing in a Novo to get out of order.

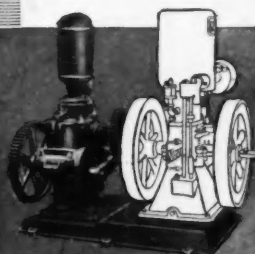
If you are a user of power, you owe it to yourself to investigate the *facts* about the Novo.

Novo Outfits include every kind of a Power Pump, Hoists, Air Compressors, Spraying Outfits, Engines for Vacuum Cleaners, Saw Rigs—over seventy-five different outfits in all—all of them portable. A new outfit is our Estate and Village Fire Pump. A small air compressor for garages is also new.

NOVO ENGINE CO., 446 Willow Street, Lansing, Mich.

CLARENCE E. BEMENT, Secretary and Manager

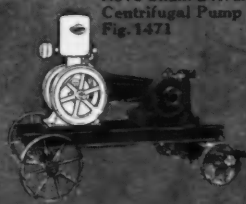
Novo Engines can be furnished to operate on kerosene, gasoline, alcohol or distillate.



Novo Suction and
Force Pump
Fig. 1401



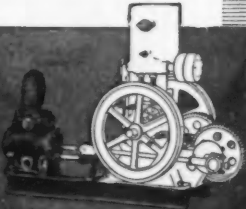
Novo Reversible
Hoist, Fig. 1453



Novo Chain-Driven
Centrifugal Pump
Fig. 1471



Novo Trench Pump
Outfit, Fig. 1457



Type "U" Pump
Fig. 14139

Five of the Seventy-five Varieties of Novo Outfits

such carpenters as may desire to put their time to profitable use during the winter season. The Robinson Cabinet Mfg. Co., 467 Factories Bldg., Toledo, Ohio, offer big commissions to sales agents to handle the sale of their Folding Bath Tub in unoccupied territory; and the article is certainly a meritorious one. The Company state that fully 70 per cent of the people in the United States have no bath rooms in their homes—which makes a big sale for the Folding Bath Tub. When not in use it can be folded and laid away just as handily as an ironing board.

The tub is only 5½ ft. long and weighs only 15 lbs. It is absolutely guaranteed for 10 years.



Free Tool Offer Brings Huge Crowd to Chicago Hardware Show

The annual meeting of the Illinois Hardware Retail Dealers Association was held in Chicago, January 12, 13, 14 and 15.

There was a display of the best in the way of tools and other hardware equipments that are on the market.

Geo. H. Bishop & Co., makers of hand saws; the Germantown Tool Works, makers of hammers and hatchets; and the Delta File Works, makers of files, pulled off a little stunt that was worthy of special attention.

The different distributors of these goods about the City of Chicago gave out to their customers who were interested in tools, invitations which entitled the tool user presenting same to the best 10c file made. This file was presented by the Delta File Works. It entitled the tool user also to participate in the distribution of \$100.00 worth of hand saws, on the part of Geo. H. Bishop & Co., and 100 hammers and hatchets on the part of Germantown Tool Works.

It is needless to state that a large number of tool users were very much interested in this proposition and also were very much interested in the showing of new goods that was made by these three different factories.

Let Your Specifications Read WRIGHT WIRE LATHING

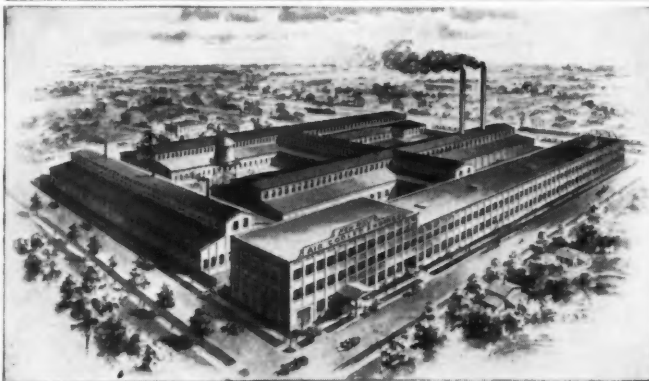
Many of the country's foremost architects specify Wright Wire Lathing. It was used in the Woolworth Building, the Municipal Building, the Grand Central Station and many other famous structures, as well as costly residences, because it resists the ravages of time and fire as no other lath can.

Wright Wire Lath is made in three finishes—Plain, Japanned and Galvanized. The illustration at the left shows Wright Galvanized Lath.

Our Catalogue W, describing Wright Wire Lathing in detail, is an intelligent guide for architects and builders. Send for a copy of this book today. Free on request.

WRIGHT WIRE COMPANY

WORCESTER, MASS.



It Starts Here

With the practical design—then the careful selection of material—the hiring of skilled workmen—the finest of workmanship in the machining and building of the engine.

Giving to the buyer a durable and economical engine that will give years of reliable service—and at prices as low as ordinary engine prices.

THE "New-Way" Direct Cooled Engine Efficiency

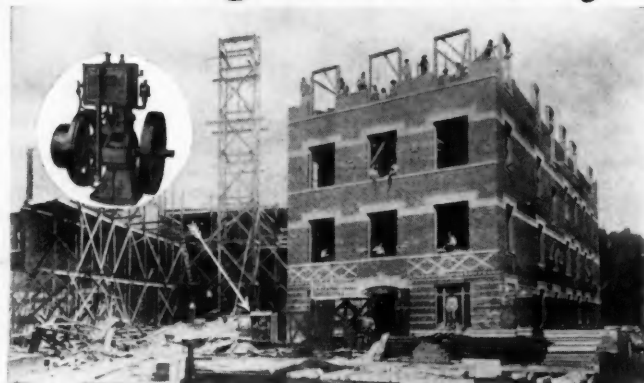
DON'T FAIL TO SEE US AT THE CHICAGO CEMENT SHOW

The Contractor's Engine. No breakdowns—no water—no freezing—no attention—no regrets—no falling down on contracts because of inefficient power on equipment.

Send for Catalog X.

THE "New-Way" MOTOR COMPANY
LANSING, MICHIGAN, U.S.A.

But Never Ends

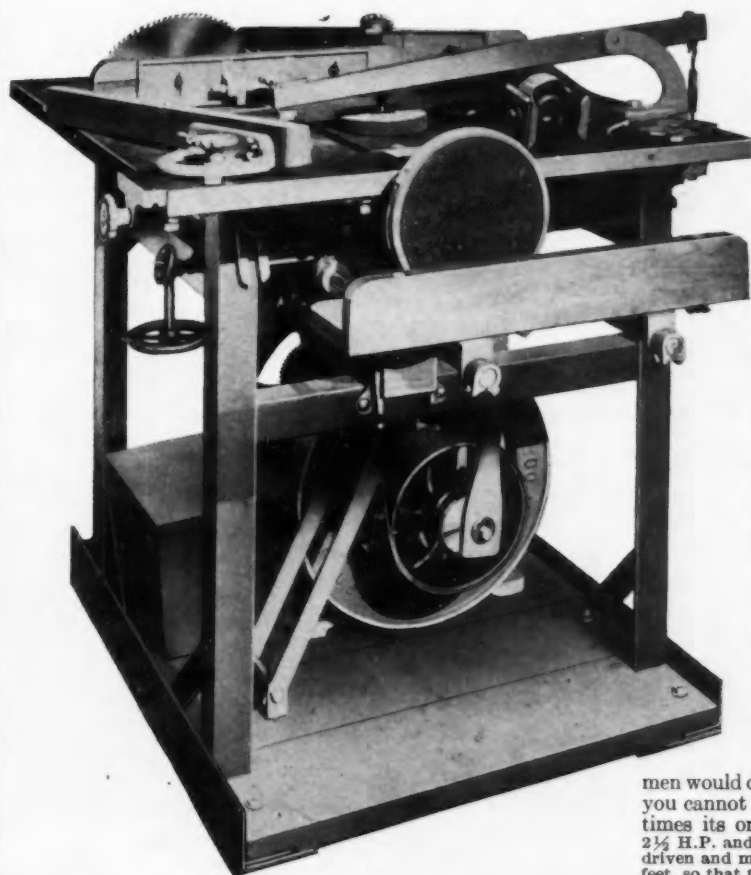


THE SULTAN SAW RIG

Powered with the Famous
SULTAN ENGINE

Every Part Guaranteed for Two Years

Take Note of These Special Features



A woodworker for use on the job or in the shop. Frame made of light weight angle steel, hot riveted under great pressure, insuring rigidity and years of the hardest service. Powered with our special high speed 5 H. P. throttle governing automatic four cycle engine. Every part of this engine is easily accessible but closed against dust or dirt. Equipped with gravity blower to carry away all dust and dirt from engine. Table is cast in one piece of fine gray iron and face is machined smooth and perfect. The tools on the Sultan are made by Diss-ton in accordance with our policy of everything the best. The Sultan Portable Saw Rig is very reasonable in price and will easily do the sawing of six men. A reliable machine, economical in operation and with plenty of reserve power.

THE SULTAN Portable Drag Cross Cut Saw

Here at last is a portable machine that will saw big timbers for heavy construction work. An engine driven Steel Frame Drag Saw, that will saw from three to five times the number of logs or timbers that eight to ten men would do in a day. If you do heavy construction work you cannot afford to be without it. It will save you many times its original cost. It is driven by a Sultan Engine of 2½ H.P. and will run a whole day for only 45 cents. It is gear-driven and mounted on a portable truck. Saw has a swing of five feet, so that timbers can be cut in any position within its range. Timbers or logs can be brought to machine or machine can be hauled to them. The price of this machine is very reasonable and will soon pay for itself.

We are the Largest Manufacturers of Contractors Equipment in the World

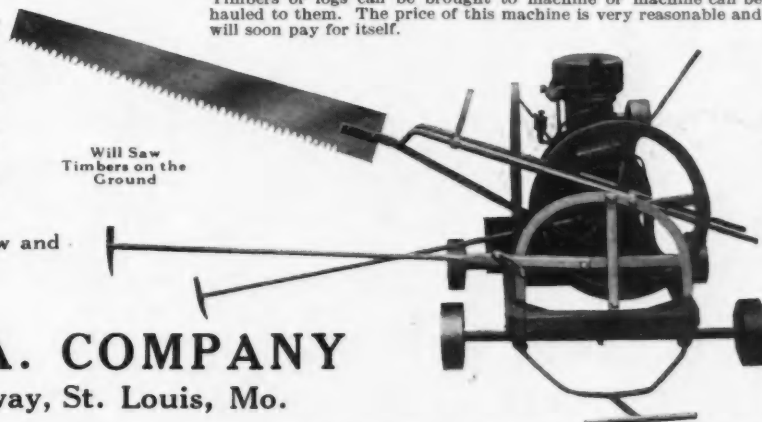
If you appreciate high grade equipment and remarkable prices you should have our large new 72-page catalogue. It takes every machine in detail from the raw material to the finished product. Your copy is waiting for you—send us your name.

Come to the Chicago Cement Show and Visit Our Large Exhibit

Spaces 145-156

WHITMAN A. COMPANY

7003 South Broadway, St. Louis, Mo.



Concrete Fence Posts for the Modern Farm

A representative of AMERICAN CARPENTER AND BUILDER had an interview with G. H. Dougherty, of the D. & A. Post Mould Company in regard to the manufacture of concrete posts by country builders for use on farms. Mr. Dougherty is one of our best authorities on the manufacture of concrete posts and he gave up the following pointers:

"Few farms are well fenced. Good buildings call for good fences. Wire has supplanted all other kinds of material for farm fencing. Wire fences are temporary unless properly hung on concrete posts.

"Farmers will buy concrete posts if local contractors will



Concrete Posts Will Stand Hard Usage Without Injury.

supply them at a slight advance above the cost of wooden posts. With cheap sand and gravel, concrete posts may be manufactured by the local contractor and sold at a profit in competition with wooden posts.

"Country contractors have an opportunity to make and sell a great many concrete posts and thereby make profitable use of the time between building contracts. Also, the work brings them in close touch with the farmers and their needs in the regular farm building line. The fence post molds and other equipment needed cost less than \$25.00, so it is easy to get in line for this business.

"The first consideration for materials is good clean, sharp sand and gravel. Concrete of a wet consistency about like mortar for wall plastering is used, mixed usually in the proportions of one part cement, two parts of sand and three parts of gravel. Sometimes one part of cement to four parts of bank run gravel and sand are used. The proportions are determined by experiment. To make strong posts, the cement, sand and gravel should be proportioned to close up all the voids.

"Experiments by prominent Agricultural Colleges have



A Typical Small Fence Post Plant.

brought out the facts that round posts, rectangular posts or rectangular posts rounded at the corners are the best; but round posts are inconvenient to make on account of the necessity of filling the forms upon end from a raised platform. Also, it is difficult to hold the reinforcement in the correct position, so that practically the rectangular horizontal forms are used in gangs so that several forms are filled at once.

"Steel molds made of sheet metal are superior to wooden molds and cost less, taking into consideration the lasting qualities. Steel molds also provide better quality of post with less cost of labor. For convenience and speed in molding, commercial forms are used in gangs side by side. They are made with projecting flanges overlapping, so that there may be no loss of material in vacancies between molds. Each mold is separate and complete in itself. For convenience in handling, these steel forms are rigid, so that they may be handled without cracking the green posts. In using steel molds a brushing of oil is applied to the inside of the mold before filling to prevent the concrete from sticking.

"Reinforcement of concrete posts is absolutely and positively necessary. Straight rods or bars of steel cut about two inches shorter than the length of the post make good reinforcement.

"Concrete posts require careful handling while green, but they are very tough and strong when thoroughly cured. Steam curing is best and quickest.

Size and Shape of Posts

"Line posts are made tapering for economy of labor. Also, the large bottom holds the post firmly in the ground. Anchor or end posts are the same size at the top and bottom when horizontal braces are used, because as much strength is required where the brace meets the post as at the ground line.



"D & A" Concrete Posts on Farm of J. P. Crozer, Upland, Pa.

or nearly so. Some prefer the large tapering anchor post with diagonal bracing, but the tendency of this style of construction is to heave the end posts, which tendency is overcome by using a horizontal brace. Anchor or end posts are made from six to ten inches square and 8 feet to 10 feet long, according to the height of fencing.

"There are many special uses for concrete posts, such as poultry yards, clothes line posts, hitching posts, telephone and telegraph poles, and lighting standards for street lamps. Railways are using great quantities of concrete posts for fencing their right of way. Local contractors have a good opportunity to furnish all these different kinds of posts, because they are cheaper made locally. Even the railway companies prefer to buy their posts near the place of fence construction. This is one line of manufacture in which the small local contractor has the advantage."

Mr. Dougherty will gladly furnish further particulars to anyone interested. Address him care D. & A. Post Mold Co., 405-9 Third Ave., Three Rivers, Mich.



This man, Rev. Otto Schulze, of Missouri, says:
"Sales increasing. Made 7 sales in 8 calls. Sent
4th order yesterday for 50 Tubs." SALES \$1600
TO DATE. Minister of the Gospel, without previous ex-
perience, makes this record.

\$1000=A MONTH

Ambitious, Honest Men Wanted

At Once. I Need 500 Sales Agents Who Want to
Make From \$50 to \$250 a Week. Experience not Necessary—

I want square men to act as my Special Sales Representatives in every county. I want hustling, energetic, ambitious fellows, anxious to make big money, who are willing to work with me. I want to show YOU how to MAKE BIG PROFITS EVERY MONTH. I want to show YOU how to make more money, easier, quicker, more sure and certain than you ever did before in all your life. I want you to advertise, sell and appoint local agents for the most sensational seller in 50 years—the startling invention that has set the entire country agog—THE ROBINSON FOLDING BATH TUB—I want you to handle your County. I'll furnish demonstrating tub on a liberal basis. I'm positive, yes, I'm absolutely certain that you can make bigger money in a week with me than you ever made in a month before. Hustlers, east, west, north, south, are simply coming money. Orders, orders everywhere. For, remember, fully 70 per cent of the people have no bathrooms. You can take the orders right and left. Quick sales and immense profits. Stop and Realize the tremendous possibilities. Look around you. Be amazed. Your neighbors, friends, relatives, have no bathrooms. They are eager for one; never had the opportunity to install one. You step in; show the tub. Sales made, profit sure.

No Experience Needed—Why, I don't care if you never sold anything before in all your life, you can make good big money with me. You're honest! You're square! Of course you are. You've got grit, ginger, gumption! Of course you have. You want to make good! You want to make big money! Sure you do. Well, that's all I ask. If you are willing to do your best, backed by my co-operation and help, you can blast out the biggest financial success of your career. I grant credit, you know, so money can't hold you back. I furnish sample on liberal plan. I help you out and back you up. So don't let doubt drag you back. You have nothing to lose. My other men are building homes, starting bank accounts, so can you.

Sensational Sales Success!—What others are doing YOU can do. Read these records. N. T. Smith, Ohio, \$90 weekly profit. Meyers, Wis., \$650 first month. Beasley, Nebr., \$35 profit first 4 hours. Newton, Calif., \$60 in 3 days. Mathias, Fla., \$190 in 2 days. Corrigan, N. Y., \$114 in 60 hours. C. H. Tremour, Ind., \$35 profit first 6 hours. W. F. Hincard, New Mexico, \$35 in 2 days. Average men, average sales, average towns. Undeniable Proof of the Big Money to be made by the hustlers everywhere. The Robinson Tub is badly wanted and eagerly bought.

A Folding Bath Tub For Every Home

No home barred—for the rich and poor; for all homes without modern bathing facilities—Here is an absolutely new invention. Nothing else like it. Has taken the entire country by storm. Solves the bathing problem. Gives every home a modern, up-to-date bathroom in any part of the house. No plumbing, no waterworks needed. Take full length baths in any room; up stairs, down stair, bed-room, sick-room, parlor, kitchen, any room in the house. The Robinson Tub folds in small roll, handy as an umbrella. Rivals expensive bathroom. Constructed of the wonderful "Steelene" material. I tell you, it's Great! Remember it is needed in every home. Means modern bathing facilities for all the people. A godsend to humanity.

Guaranteed for 10 Years

(Manufactured by old established concern in business 22 years.)



This is the Robinson Folding Bath Tub that is bringing Cleanliness, Health and Happiness to thousands of homes—and thousands of dollars in profits to the lucky men who control exclusive territory. Write for your county TO-DAY.

You Make
100%
Profit

Demonstration
Tub Furnished Workers

SEE how it folds in a roll. Takes up less space than an ironing board.

Orders \$1072.00 worth in 17 days. WHAT BURK-
HOLDER IS DOING YOU CAN DO!

Dan Burkholder of Montana, says:

"Was out 4 1/2 days this week and sold \$393.50 worth. Sold 3 this afternoon. Enclosed find check for 48 tubs. Ship 50 more next week."

Tear Off This Coupon and Mail Now

Yes, sign this coupon right now. Don't send me a single penny. Don't send me any return postage. If you want this money-making job, just sign and mail the coupon. That is all I ask. By sending the coupon you give me the chance to prove every word I have said. Let me prove every statement. Let me tell you the whole enthralling, ambition-awakening story of a tremendous world-wide success. Will you do this? Of course you will. Sign and mail the coupon NOW!

FREE Information Coupon

H. S. ROBINSON, Pres't
Robinson Cabinet Mfg. Co., 750 Factories Bldg., Toledo, Ohio.

Write me and tell me all about your special plan and how I can make big money acting as your representative. This obligates me in no way.

Name.....

St. and No. County.....

Town..... State.....

This is Chancy—A Hustler. Sold \$4,000.00 worth of our goods in 5 weeks. No, he's not a genius, not a wizard-worker, not a "miracle-man." Just an everyday American like you and me—but a hustler from his head to his toes. He started just as you will start. What he has done you can do.

Join Robinson's Army of Money-Making Agents—Get Exclusive Sales Rights on the Famous Folding Bath Tub—

Yes, join the many agents who are making bigger money than they ever did before. You don't need to quit your regular job right now. Try the business out evenings, Saturday afternoons, whenever you have a little spare time. See that all I tell you is so. Then quit your job. Say good-bye to the time-clock; say good-bye to grinding work and meagre pay. I know after one week of spare time effort, you will be eager to devote all your time to my splendid proposition. You will be enthused, positively amazed at your wonderful success.

A Sure Chance for Ambitious Hustlers

If I could only see you and tell you all the facts about this wonderful business; if I could only lay before you undeniable proof—stacks of letters and orders on my desk; if I could personally show you enthusiastic letters from Robinson Representatives—Hesitate! Why, man, you wouldn't hesitate for the thousandth part of a second. You would drop everything, your job, your other business like a "hot potato" and say "Robinson, I'm with you." If you really want to get into a big money-making business, get into communication with me at once.

WRITE TO-DAY

H. S. Robinson, Pres't., The Robinson Cabinet Mfg. Co.
750 Factories Bldg. Toledo, Ohio

Send No Money
Just Sign
the Coupon

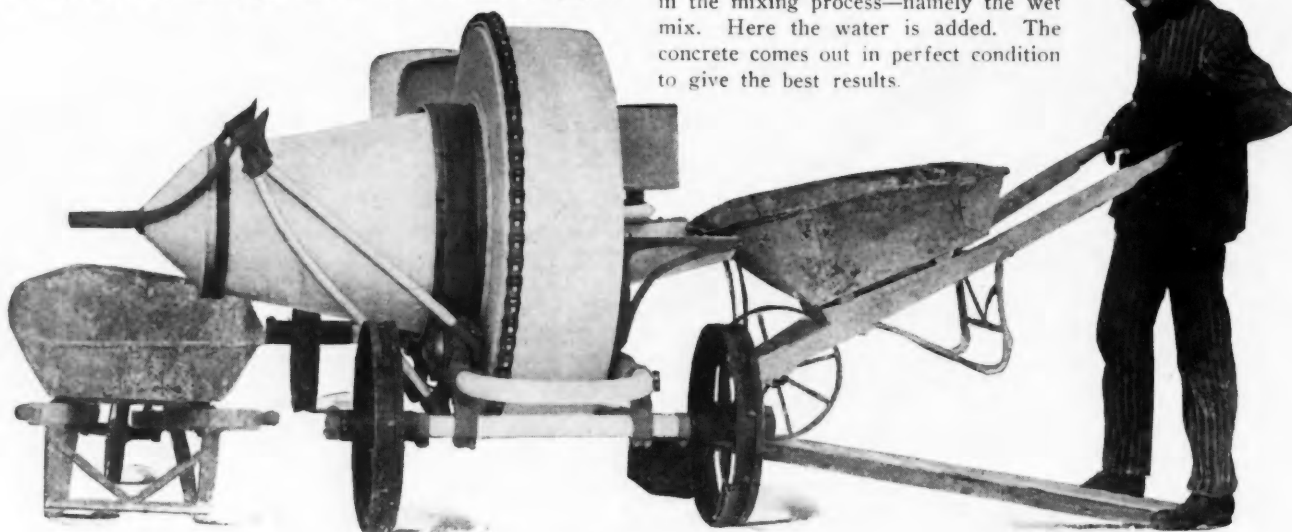
Olsen Double-Drum Mixer

Few incidents in the cement field in recent years have aroused deeper interest than the placing on the market of the Olsen double-drum batch mixer, made by the Olsen Concrete Mixer Co., 301 Olsen St., Elkhorn, Wis. The machine will be on exhibition in Booth 113 at this year's Chicago Cement Show. Do not fail to see it.

The design of the Olsen double-drum batch mixer is based on a careful analysis of the processes involved in thoroughly scientific mixing. Every cement man knows that no mere partial coating of the aggregate with cement is sufficient for a thorough mix. Every portion of the surface of every part-

icle of sand and coarse aggregate must be completely covered. He knows, too, how hard it is to do this if the cement is at all dampened before the mixing is started. In the Olsen mixer, accordingly, provision is made, first, for thorough dry mixing of the materials; and a special drum is provided for this first step in the process—the narrow cylindrical drum of large diameter, shown in the picture. Here the cement and aggregates are thoroughly amalgamated before a particle of water touches them.

From this drum, the material is admitted to the conical-shaped drum, where it goes through the second step in the mixing process—namely the wet mix. Here the water is added. The concrete comes out in perfect condition to give the best results.



Olsen Double-Drum Batch Mixer.



Notice These Points About the HERO FURNACE

All Cast Iron, because—Cast Iron is more durable than steel and carries an even heat owing to heavy body.

Direct heating surfaces are corrugated. Corrugation increases heat surfaces and also takes care of expansion and contraction.

Modern in Every Respect

The Hero has large feed doors, large roomy ash-pit, get-at-able in every way. Notice the straight fire pot giving maximum amount of grate area.

Hero furnaces give the maximum amount of heat with the minimum of fuel making them the most economical.

Specify and Install the Hero

Choosing a heating plant is very important. The Hero is high-grade in every detail. Your customers will like them and you'll profit by installing them. We would like good, reliable contractors and builders to act as our agents. **Write for our special proposition today.**

CHARLES SMITH CO., 57 W. Lake Street, CHICAGO, ILLINOIS

Some country homes modernized
by the installation of William-
son Underfeed Furnaces.



Plan to Save $\frac{1}{2}$ to $\frac{2}{3}$ Heating Cost

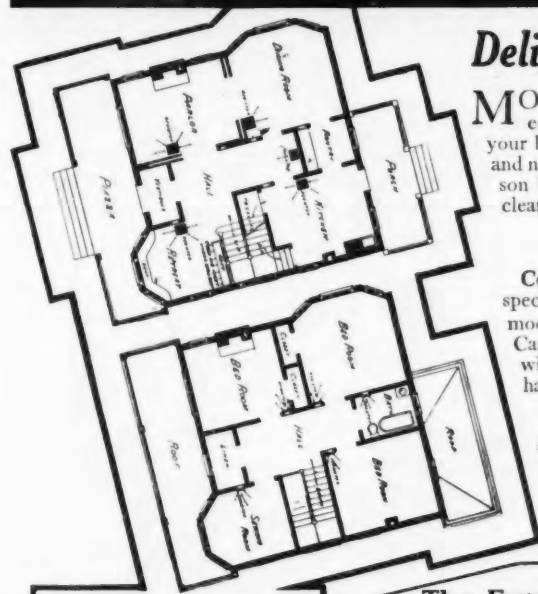
Delighted Clients Mean Increased Business

MODERNIZE that country home by seeing that it is comfortably and economically heated. It will add to the selling or renting value. It will enhance your best work. It will bring untold satisfaction to the occupants, and, in turn, big credit and new business to you. Read the following extracts from letters received from Williamson Underfeed Furnace users. We can show you thousands more telling of more heat, cleaner heat, more uniform heat, and *fuel bills reduced one-half to two-thirds*.

Save Clients Heavy Fuel Bills

Country contractors everywhere are building big, profitable, permanent business by specifying the Williamson New-Feed UNDERFEED Furnace—the greatest advance in modern heating science. Burns cheaper grades of coal than wasteful "over-fed" furnaces. Can be operated by a boy of twelve on two firing every twenty-four hours in ordinary winter weather. And, *mind you, the saving in fuel bills is guaranteed*—fully one-half saved where the New-Feed is properly installed and regulated.

With the Underfeed, coal is fed from below. All the fire is on top. Smoke and gases are all transformed into clean, live, usable heat. No smoke, smell or clinkers.



The Farmer's Favorite Furnace

Ashes clean and white—and few of them. Cheap, slack, soft, coal or pea or buckwheat sizes give same heat as more expensive coal used in other heaters. The Underfeed is used in over twenty-five thousand homes, stores, churches and other buildings. Soon pays for itself. Adapted to warm air, steam and hot water.

FREE PLANS

Wherever there is an intricate heating problem, our engineers will solve it and will furnish complete heating plans to the last detail of installation. Such service elsewhere would cost you good money. But we furnish it free. You simply can't go wrong when you specify the New-Feed UNDERFEED. There will be no after regrets—no come-backs on the part of your clients. A New-Feed stays sold because it affords greatest comfort and saves money.

Free Book for Builders and Owners

If you are an architect, contractor, builder or house owner; if you want to equip a new building with the most efficient, most economical heating apparatus yet devised; or if you want to get rid of the drudgery and expense of obsolete stoves or grates, or top-feed furnaces; no matter what heating problem confronts you, you will find a wealth of money-saving information in our great free book, "From Overfed to Underfeed." This book also describes in simple detail just how the New-Feed is operated, and how it saves you from one-half to two-thirds of your fuel expense—*guaranteed*.

Write for this book today. You will be glad you did. It sheds new light on the time-worn mystery of how to get the most and best heat for the least money. Send the attached coupon. Do it NOW.

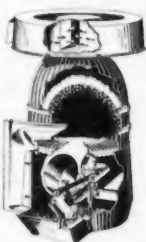
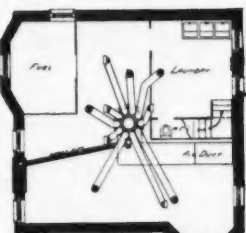
The Williamson Heater Co.
(Formerly Peck-Williamson Co.)
147 Fifth Ave., Cincinnati, Ohio

WILLIAMSON NEW-FEED UNDERFEED Furnaces and Boilers

Cut Coal Bills $\frac{1}{2}$ to $\frac{2}{3}$

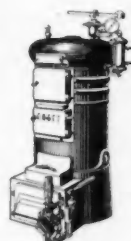
Some Instances of UNDERFEED Saving

- "Saved \$40 on our coal bill last winter."
- "Cut coal bills from \$125 to \$43."
- "Saved \$51.60 over coal bill of previous year."
- "Our coal bills are just about one-half what they were when using stoves."
- "Heated fourteen rooms for \$30."
- "I kept nine-room house warm last winter with about \$8 worth of coal."
- "Heated ten rooms for \$20."
- "We have an eight-room house. Coal bill this winter \$10."
- "Have used your UNDERFEED these seasons at an average cost of \$9.20 each. It has sold a number for you already."
- "It heats the whole house for the same or even less than the cost of stove which only heated two rooms."
- "No more top-feeds for me. Saved about \$30 last year."
- "Am using siftings at \$3 a ton and am heating a twelve-room house on at an average of one ton a month."



Cut-Out View
of New-Feed
UNDERFEED
Furnace

Underfeed
Boiler



Heating Equipment Facts

THE WILLIAMSON HEATER CO.
147 Fifth Ave., Cincinnati, O.

Send me full particulars of the Williamson New-Feed UNDERFEED, and how it reduces coal bills $\frac{1}{2}$ to $\frac{2}{3}$.

Warm Air..... Steam or Hot Water.....
(Mark an X after System interested in.)

NAME

ADDRESS

My Dealer's Name is

DEALERS! Let us tell you about the New-Feed UNDERFEED and our 1915 Proposition. Both are winners.

OUR AGENCIES ARE ALWAYS BUSY

Diamond Flexible All Metal Weather Strip

Has built up a permanent, profitable business for Contractors and Carpenters in all parts of the country. If you have not secured an agency get busy at once. Some fine territory still open. The thousands of satisfied users testify to the superiority of our strip.

Diamond Flexible Metal Weather Strips

are easier to sell than the old style rigid strip because they are so much better in use—and it doesn't take much argument to convince owners why they're so much better. Carpenters and Builders can develop a big business selling these. \$3,000 to \$5,000 a year is quite possible, because every purchaser of Diamond Strips will be so satisfied that he will gladly boost them to other owners and tenants.

Diamond Weather Strips mean so much more added comfort that no prospective purchaser will begrudge their small price.

Every Door and Window Needs a Diamond

Where Diamond Strips are used the windows don't stick or bind, and the sash can be removed when necessary without displacing the Flexible Weather Strip. Another thing is that all openings are made air tight and wind, dust moisture and noise haven't a chance to get in. They have been known to effect an economy of from 20% to 40% in fuel alone, because less heat is required in rooms protected by Diamond Weather Strips.

And it's not only residences that use them. Large public buildings—schools, churches, hospitals, etc., are always in the market for these products. We make all kinds, suitable for all styles of windows and doors.

Being made of zinc and highest grade spring bronze, they never rust, and last for years. Can be put in old buildings as well as new ones.

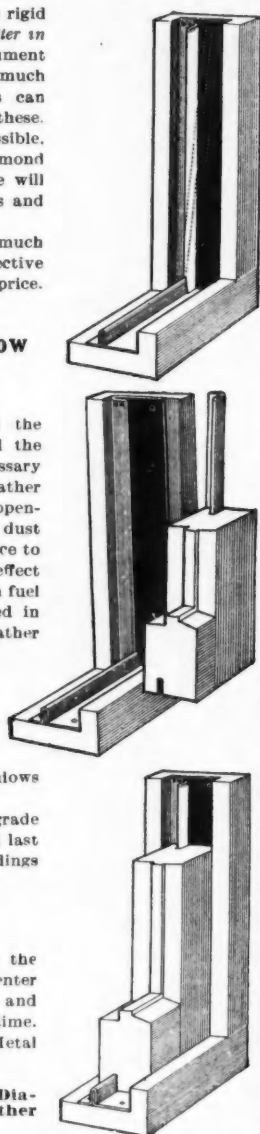
Description of Cuts

Top cut—The dotted lines show the flexible and adjustable features. Center cut—This section shows how sash and strip can be removed at the same time. Lower cut shows the Diamond Metal Weather Strip in place.

Write today for our Booklet Diamond Way of Practical Weather Stripping.

It's of Interest to Everyone Who Owns a Building.

The Diamond Metal Stamping Co.
626 Kerr Street . Columbus, Ohio



Other essential details of efficient mixing and operating service are also provided for with equal care in the mechanism of the Olsen mixer, and the entire machine is well worthy of most careful study.

Do not fail to see this machine at Booth 113 at the Cement Show, and in the meantime get the company's literature and read up about it so that everything will be perfectly clear to you. Address the Olsen Concrete Mixer Co., 301 Olsen St., Elkhorn, Wis.



Uses of Interlocking Tile

Interlocking bearing wall tile is finding a novel application in dairy barns, as exemplified by the walls of the new dairy barn at the State Hospital at Kankakee, Ill., as well as many buildings of similar type throughout the country.

This tile is manufactured in two styles, one being a salt glazed fire clay block with smooth surfaces, suitable for use where sanitary surroundings are demanded—as in the Kankakee barn, or in buildings



They Lay Up Rapidly.

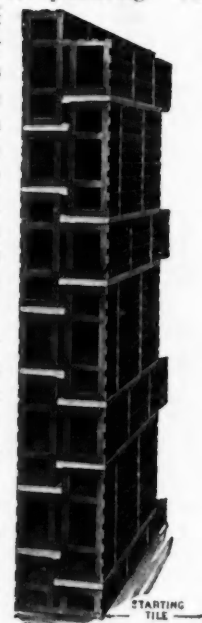
where it is desired to have an exposed tile, either inside or out. For example, commercial and private garages, laundries, factories, gymnasiums, etc. One of the attractive features of this type is that the glazed surface may perform the same function as a mosaic finish tile, and at the same time the block serves as a bearing wall.

The other style is manufactured from selected shale clay and has a grooved dovetailed surface for plastering. This is called the standard Interlocker. It is most popularly used as a backing for buildings veneered with brick, such as schools, churches, clubs, motion picture theaters, hospitals and residences. In all buildings where this tile is used the same strength is provided as if they were built of brick. For stucco finished walls it is ideal, inasmuch as the hard burned tile with its dovetailed grooves provides a substantial bond for the plaster.

The experienced contractor has learned that interlocking tile walls can be laid up cheaper than brick walls, that furring and lathing is unnecessary and that tile construction can compete very favorably with frame.

It is a good investment for a property owner to build with Interlocking tile, as the advantages it provides—such as fire protection, insulation from heat and cold (saving in fuel), and improved sanitation—increase the value of the building and give to the property attractions which cannot be provided by other materials.

The detailed wall section shows the method by which these tile interlock, and it will be observed that the supporting webs all lie directly over each other, that the mortar beds are flat and horizontal and that no single mortar joint extends through the wall. The Clay Product Company, 911 Stock Exchange Building, Chicago, are exclusive manufacturers of this Interlocking block, and by referring to them, catalogs and information can be secured. Write today for their hand book of Interlocking tile construction.



8-inch Interlocking Wall.

Make More Money On Your 1915 Contracts

Give Your Patrons Better Quality

**-Cut the
Cost**

Let them see exactly what kind of roofing you are going to put on—show them the wall board, metal roofing, or ceiling—try the paint—demonstrate its quality before you pay one penny. But first learn how and why The United Factories Co. can save you money. Let me send you

This Big Catalog FREE—Postpaid

Then select some of the building material we offer. Simply give the name of your bank, and we will ship on 30 days' approval—if satisfactory, use what you have ordered and pay us anytime within the 30 days. In this way you may not have a penny invested until you collect for your work—Best of all, you can

GEO. A. BOTTGER,

President of the United Factories Co. and originator of the plan to let you SEE and TRY the goods BEFORE YOU PAY.

See The Goods Before You Pay— Try Them 30 Days Before You Pay

Here are a few "sample" offerings from our large catalog. On our guarantee of quality and favorable buying plan, you need not hesitate in ordering what you want direct from this advertisement.



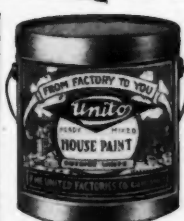
**THE UNITED FACTORIES CO.
CLEVELAND, O.**



**Two-In-One
Roofing
78c Per Roll**

Rubber and Sand-Coated. Lay either side up. Made of best wool felt. Write us for samples of weight roofing you want. Every roll guaranteed.

Contains no straw, tar or other cheap filler. 10 different kinds to select from, including Star point and Granite surfaced.

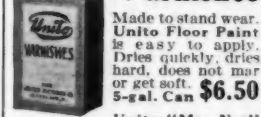


House Paint \$1.20 a Gal.

Paint First— Then Pay

Use one-fifth of your order—if it don't give you paint satisfaction in every particular—send back the unused portion at our expense—Try Our Challenge Brand at 98c per Gallon if you have a tight-fitting contract. Color Samples FREE!

Floor Paint and Varnishes



Made to stand wear. Unito Floor Paint is easy to apply. Dries quickly, dries hard, does not mar or get soft. 5-gal. Can \$6.50

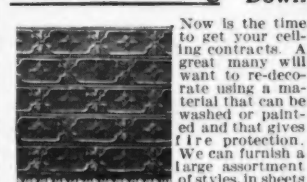
Unito "Mar-Not" Floor Varnish is equal to any varnish sold at \$3 to \$4 a gallon. Our price \$2.05 per gal. Can be used on natural wood, painted, or linoleum.

\$27.75 Gas Engine and UP



If you need a reliable, powerful Engine to run concrete mixer, saws, planers, or any kind of machinery, be sure to try a "Unito." Run it 30 days before you pay. Prove its H. P. Write for Special Gas Engine Folder.

Metal Ceiling Prices Down



Now is the time to get your ceiling contracts. A great many will want to re-decorate using a material that can be washed or painted and that gives fire protection. We can furnish a large assortment of styles, in sheets 27x96 in. Write dimensions when you order and we will furnish blue prints for any size room showing where each piece of material goes. Prices are especially attractive.

Metal Roofing

This is first quality—galvanized after sheets are squared. No "wrecked" or damaged stock. Every sheet full weight, free from pits or flaws, and guaranteed even gauge.

FREE ESTIMATES
Write us your needs—giving size of roof or siding to be covered and we will send you free estimate. Don't take chances on unknown metal roofing, but order direct on our "See Before You Pay Plan." Prices are amazingly low on all kinds of V-crimp or other Metal Roofing. Be Sure to Get Our Prices Before You Order.

Wall Board



The only kind of wall board that is absolutely moisture-proof—cold-proof—sound-proof—rat-proof and fire-retarding.

\$2.15 Per Square
In lots of 25 squares or over

Gray Wall Board for interior work, can be papered or decorated. In lots of 25 squares, per square \$2.15

Grained Wall Board, Oak Finish. In lots of 25 squares, per square \$2.50

Waterproof Wall Board, for outdoor use. Per square \$2.75

Patch-a-Leak—A Quick Money-Maker.

Just the thing to repair broken slate, concrete or brick. Stops leaks around chimneys or leaky roofs and gutters. Comes in black, slate or green. Put it on with a trowel—no rags or patches. Ready to use—saves new roof. **IT STICKS GOOD**

Electric Lighting Plants—For Town or Country Homes. Each complete in itself. Get our articles for which you desire special information. Address

GEO. A. BOTTGER, President

THE UNITED FACTORIES CO. (26)

22-26 Factories Bldg.

CLEVELAND, OHIO

THE UNITED FACTORIES CO., 22-26 Factories Bldg., Cleveland, O.

GENTLEMEN—Send me your latest Catalog.

☐ Ready Roofing. ☐ Metal Roofing. ☐ Metal Ceiling. ☐ Paint.

☐ Gasoline Engines. ☐ Incubators. ☐ Cream Separators. ☐ Harness.

☐ Outfits. ☐ Stoves and Ranges. ☐ Fencing. ☐ Electric Light.

NAME _____ P. O. _____ State _____ R. F. D. or St. No. _____

Half Million Addition Made to Big Sykes Plant

The tendency of the times to discard wood and to use metal wherever possible is emphasized by the report of the Sykes Metal Lath & Roofing Company, Warren, Ohio, which shows that this one company made and sold more than twice as much metal lath during 1914 as was made by them dur-

demonstrated. One contractor used this lath in the erection of 140 houses recently. It has been approved by architects and by the U. S. Government for Post Office construction. The saving it effects on construction costs is an item well worth considering.

The Sykes company do not merely predict a big year for metal lath and roofing; they have prepared to meet the demand. This company employs more than 500 men. Their free sample of lath (or roofing) and their free Specification Book on Metal Lath are worth writing for.

The new address of the Sykes Metal Lath & Roofing Company is Warren, Ohio, they having removed their offices to the new plant on January 1st, from their old location at Niles, Ohio.



Recently Completed Plant of the Sykes Metal Lath & Roofing Co., Warren, Ohio.

ing 1913.

This tremendous increase made a larger plant necessary; and so the Sykes company built a new \$500,000 factory at Warren, Ohio, which is devoted exclusively to sheet metal products.

The self-furring lath of this company has made a great hit with contractors and builders. Its practical success in doing away with the necessity of furring strips has been amply

demonstrated. You can figure that every cow uses 100 cubic feet of air per hour, and the health of the animals absolutely depends on fresh, pure air. Animals keep healthier, produce more milk, and show greater gains where they are housed in well ventilated stables.

The Iona Ventilator Company, 2317 N. Laura St., Philadelphia, want to send their ventilator catalog to our readers who will write for it.

Profitable Ventilation

The law makers of many States have passed compulsory ventilation laws effecting public auditoriums, theatres, etc. Unfortunately for the dairy cows and other farm live stock, there is no one to legislate for them; but nevertheless, the wise farmer and the country builder will provide ample stock barn ventila-

V. & B. ALL STEEL PRYING WOOD CHISEL

EXTRA REFINED STEEL—KNURLED HANDLE—OIL TEMPERED



A "ROUGH AND READY" EFFICIENT TOOL

Should be in Every Tool Chest

V. & B. Prying Wood Chisels are an absolute necessity for every carpenter. They are NOT designed to take the place of the ordinary Wood Chisel. They ARE designed to save the ordinary Wood Chisel. They do the heavy, rough work that ruins ordinary tools. They are sturdy. They will not bend or take a set under heavy strain. For prying they are invincible. For cutting into old work—where nails may be hidden—they cannot be equaled. They do the work a flexible chisel cannot do.

One V. & B. Knurled-Handle Chisel Saves You the Price of Three or Four Wood-Handle Chisels

IT'S ALL IN THE TAPER

THIS AD IS WORTH 10 CENTS IN CASH

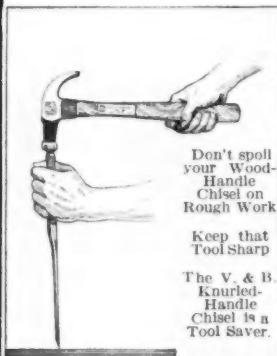
on any of the sizes listed below, when presented to your dealer. If he can't supply you, write us direct.

1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"
.50	.55	.60	.70	.80	.90

VAUGHAN & BUSHNELL MFG. CO.

2130 Carroll Ave., CHICAGO, ILL.

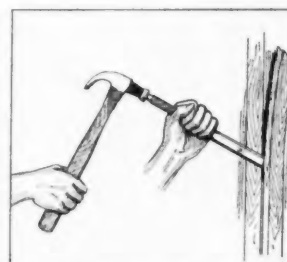
NOTICE TO DEALERS.—We will redeem all ad's honored by you at 10 cents each. If not carried in stock, **write us.**



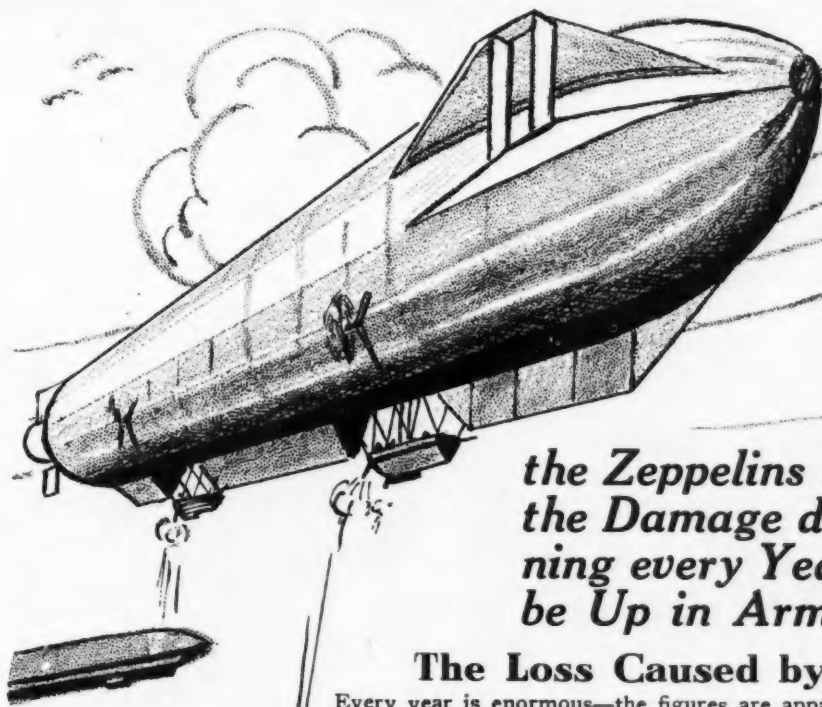
Don't spoil your Wood-Handle Chisel on Rough Work

Keep that Tool Sharp

The V. & B. Knurled-Handle Chisel is a Tool Saver.



Don't Break Your Wood-Handle Chisel Prying Off Trim, etc. Use the V. & B. Knurled-Handle Chisel with Heavier Taper. There is no Spring to Blade.



If

*the Zeppelins did one-tenth
the Damage done by Light-
ning every Year—We'd All
be Up in Arms!*

The Loss Caused by Lightning

Every year is enormous—the figures are appalling and the bulk of this loss is in the Rural districts. Places where fire-fighting equipment amounts to practically nothing—Places where if a building is struck nothing can save it and it burns to the ground.

Nothing can stop lightning, but by means of Conductors properly put up you can make it spend its force in the ground instead of firing buildings and killing people and live stock.

Positive Protection Against Lightning

Positive protection against lightning can be secured by installing the Reyburn-Hunter Lightning Conductors or lightning rods. But they must be installed correctly—that's why we are addressing this to you, Carpenters and Builders. You put up the buildings, you finish them. Why not make a big extra profit by suggesting lightning protection. You will find your Customer only too willing to protect his fine new buildings that he is so proud of. We will make you our local Representative and we want you to install our equipment. You will find that it will pay you well.

The Reyburn-Hunter System

of Lightning Protection has been thoroughly tested by the U. S. Government and has been fully approved. We are the Largest Manufacturers of Scientific Lightning Conductors and equipment in the World. For over half a century we have maintained the position as the leading and most reliable manufacturers of practical lightning Conductors. We manufacture several styles of Conductors and equipment at different prices, but all practical and all made to protect buildings absolutely against Lightning.

An Opportunity for Live, Reputable Contractors

We have an exceptionally good proposition to offer one Reputable Contractor in every locality. The business is there and he will get it. We will give you the backing of our large organization and fit you to make big money. Remember, only one Contractor to each locality—if you think you are the man to handle it, get in touch with us today. Address Chicago office.

Reyburn, Hunter & Co. 412-432 **Chicago**
CINCINNATI PHILADELPHIA KANSAS CITY PITTSBURG



Typewriter Sensation

2 Dollars a Month

Buys a Genuine Standard No. 2

Smith Premier Typewriter

and at \$71.20 less than
the Manufacturer's Price



Never before has anything like this been attempted. Dealers get \$3.00 a month rent for this make of machine, not nearly as perfect as the one we will send you, and you pay only TWO DOLLARS A MONTH AND OWN IT.

A - GUARANTEED - TYPEWRITER - \$28.80

High-grade machines only, complete outfit, nothing extra to buy, no strings of any kind to this offer. Just think of buying such a typewriter for \$8.80 down and \$2.00 a month. Cash price \$27.40. Thousands of people have paid \$100.00 cash for Smith-Premiers. It's standard, by many considered the best typewriter ever built. A key for each character, so each character printed is always the same; a brush for cleaning the type built into the machine; the tilting carriage instantly throws all the writing in plain sight. Comes to you with complete operating instructions, tools, waterproof cover, practice paper, everything ready. It runs beautifully. Writes as perfect and clean cut a letter as quickly and as easily as any machine bought for \$100. It's wonderfully simple, a child can operate it with half an hour's practice and rapidly attain speed. It's strongly built and will give you years and years of honest service and complete satisfaction.

SEND THE COUPON AND WE WILL SHIP YOU THIS SMITH-PREMIER TYPEWRITER

When the typewriter arrives, deposit with the express agent \$8.80 and take the typewriter three days and try it. If you find it to be the best typewriter you ever saw, satisfactory in every respect, keep it and send me \$2.00 each month, until our special price of \$28.80 is paid. If you don't want to keep it, return it to the express agent, and he will give you back your \$8.80, and return the typewriter to us. I will pay the return express charges.

You won't want to send this machine back after you have seen it and tried it. You can't imagine the perfection of these machines till you see one, and the price is \$71.20 less than the catalogue price, and it is guaranteed just as if you paid \$100.00.

The supply at this price is very limited, the price will probably be raised when next advertisement appears, so don't delay. There is no red tape. I employ no solicitors—no collectors—no chattel mortgage. It is simply understood that I retain title to the machine until the full \$28.80 is paid. Without sending any money write me now to ship you this typewriter for free trial.

This coupon states the terms. Fill it out and send it now, today. You can't lose, and it's the greatest economical typewriter opportunity you will ever have.

COUPON

HARRY A. SMITH,
905-231 N. Fifth Ave., CHICAGO, ILL.

Ship me a No. 2 Smith-Premier f. o. b. Chicago as described in this advertisement. I will pay you the \$20.00 balance of the SPECIAL \$28.80 purchase price, at the rate of \$2.00 per month. The title to remain in you until fully paid for. It is understood that I have three days in which to examine and try the typewriter. If I choose not to keep it I will carefully repack it and return it to the express agent. It is understood that you give the standard guarantee for one year.

Name.....

Address.....

Shipping Point.....

Amer. Carp. & Bldr., Feb.

"Fox" Scrapes 450% More

Popular demand is rapidly changing the aspect of our homes. Quite unconscious perhaps that they are adopting sanitary measures, people are discarding the dusty carpet and the rough floors. Rugs and hard wood floors have replaced them.

Hardwood floors are now demanded in every home. Old pine floors are being replaced by maple or oak. The floors necessarily must be smooth—some say the smoother the better, for then they are more beautiful. Smoothing those floors



J. H. Bohn, of Elmira, N. Y., Thinks Well of the
"Fox." This Is Some of His Work in
Floor Laying.

was a long and tiresome process—as every carpenter knows who has got down on his hands and knees using the plane, sandpaper and glass.

Now builders have the modern floor scraper which does the work quickly, and perfectly, and at a great saving in labor to the carpenter or contractor.

To demonstrate this point conclusively, F. W. Campion, manager of the Fox Supply Company, Brooklyn, Wis., manufacturers of the "Fox" floor scrapers, compiled estimates received from fifty contractors located in different sections of the country as to the relative cost of scraping floors by hand, compared with the cost when done with a "Fox" floor scraper. By averaging the figures submitted, it was found that 146 square feet is the average space covered by a man in nine hours with a hand scraper; while 662 square feet represents the average area which the "Fox" floor scraper will surface in the same number of hours, or four and one-half times as much.

It was also found that the average wages paid is \$3.16 for a nine-hour day. In other words, the cost of scraping 662 square feet of average flooring by hand is \$14.22; when a "Fox" floor scraper is used the cost is \$3.16—a difference of \$11.06.

The Fox Supply Co. manufacture their scraper in five sizes as well as manufacture scraper blades for any make of scraper.

Scaffolds That Are an Investment---

Not an Expense

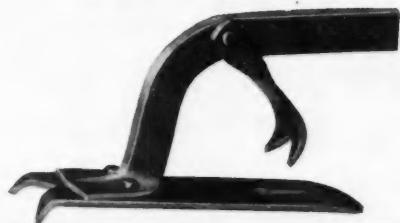
"Trouble-Savers"



Why not give us the privilege of LENDING YOU THESE SCAFFOLDS FOR THIRTY DAYS? They will be sent to you freight prepaid. Don't waste your time and temper patching up your old scaffolds. Send for these ever ready TROUBLE-SAVERS. When they have worked for you for thirty days, let us hear from you.

They are all ready to be put right to work on the job. Your men will do better work on them for they will feel safe. When through with that job, they are all ready for the next job and the next. Your scaffold worries will be over, not only for this season, but as long as you are in the contracting business.

The "Snapping-Turtle" Shingler



We have hundreds of these testimonials from contractors all over the country.

Ours is a NO-MONEY-UNLESS-THOROUGHLY-SATISFIED PROPOSITION. We are willing to take all the risk, and if you do not want to keep the scaffolds, you will not be out one cent. If you do keep them, we KNOW you will be ahead many dollars by the time you have used them on one or two jobs.

You don't have to pay any jobber's profit on them. We ship them direct to you from our Factory. We will be pleased to give you further particulars about these Steel Scaffolds upon your request. Write today.

The Steel Scaffolding Co.

EVANSVILLE, INDIANA

READ THESE

Buffalo, N. Y., Jan. 4th, 1915.

The Steel Scaffolding Co.,
Evansville, Ind.

Gentlemen:

The builder who is without these "TROUBLE-SAVER" Scaffolds will not be in the race in the future, as they are safe and great time-savers.

Yours very truly,

FRANK P. SPORMAN,
884 Sycamore St.

Ft. Wayne, Ind., Jan. 7th, 1915.

The Steel Scaffolding Co.,
Evansville, Ind.

Dear Sirs,

If I knew I could not replace your "Trouble-Saver" Steel Scaffold Brackets with new ones, I would not part with them for any price.

Yours very truly,

J. C. SMITH,
1702 E. Wayne St.

Toledo, Ohio, Jan. 6th, 1915.

The Steel Scaffolding Co.,
Evansville, Ind.

Gentlemen:

I would consider it a great loss to be without these "Snapping-Turtle" Shinglers.

Yours truly,

R. G. BURNOR,
628 Nichols Bldg.

"Conservo" Wood Preservative

Samuel Cabot, Inc., manufacturing chemists of 15 Oliver St., Boston, Mass., are offering a special creosote preservative stain for farm use. While costing about half as much as paint, Cabot's stains preserve the wood, destroy germs, parasites and vermin, and present a handsome appearance all the time. There is nothing hard about putting these stains on. A wide brush wielded by any workman does the trick; or, a spraying machine can be used—this will cover the work very rapidly.

Cabot's "Conservo" is one of the most useful of the Cabot preparations for farm use. For preserving fence posts, sills,

for spraying fruit trees, being wonderfully effective against San Jose scale and other tree parasites.

Country builders and their farmer patrons should write Samuel Cabot, Inc., 15 Oliver St., Boston, Mass., for further particulars.



Just Like Finding \$10

Suburbanites and farmers would like to have all the improvements, and are quite easily persuaded to include in their building plans all those that seem reasonable in price. Of all modern improvements electric lighting is perhaps the most desired. Recent improvements, too, have brought this down within the reach of the average farmer or suburban home builder.

The Kise Electric Co., Inc., Peoria, Ill., have developed a small, compact electric lighting and power plant for isolated residence use. Prosperous farmers are having these plants installed; and they are also being ordered for small town churches and public buildings, country clubs, resort hotels, etc. This line offers some good business for contractors and builders in many localities, especially so since the Kise Electric Co., Inc., are making our readers a special proposition to assist in lining up prospective customers. They ask builders to send them the names of those building new homes who might

be interested in an electric light and power plant, and for every plant that is sold, a \$10.00 check goes out to the builder who furnished the name.

Ask the company for their bulletin No. 22, and accept this help toward making all of your buildings modern, electrically.



Mr. A. Treadwell's farm buildings, Strawberry Point, Iowa. Stained with Cabot's Creosote Stains. Roofs, moss-green; walls, dark-brown and red. The job cost only half as much as paint, and the colors are handsome and the wood is thoroughly preserved.

silos, planking and all other woodwork, it is unsurpassed. Apply it with a brush or by dipping or soaking. The manufacturers recommend it also for making the inside of poultry houses, stables, hog pens, etc., thoroughly sanitary. "Conservo" not only preserves the wood but instantly kills all lice, mites and other insects and vermin. It is also recommended

This Movable Bar

shifts, giving you all desired angles for Rafter Work, Mitre Work, Many-Sided Figure Work, Bay Windows, Interior Work, etc. Simply spring pin into desired hole and tighten thumb screws; Bar is shifted by spring from one hole to another in every scale; Pin loosened only to change scales.



FREE
Instruction
Booklet sent
with each Tool

TRY
IDEAL RAFTER SQUARE
MITRE

Hurry Up—Before It's Too Late

You can still

GET AN IDEAL

Rafter Square, Mitre Square and Try Square

For \$1.00. But the 200 Introductory Squares will soon be distributed in each state and you will have to pay \$2.00, the regular price, for one of these time-saving tools. So don't delay. Send the Coupon Now.

THE IDEAL Three-in-One Square

will accurately lay out all Rafter cuts, Mitre work, Angle work in a jiffy—no figuring—no time lost. With this tool any man can lay out cuts for any style Rafter, Common, Hip, Valley, Jack or Cripple. Everything all figured out for you and marked in scales on the square. The Ideal makes all angle cuts for Bay Windows and Training Work. It also makes all backing cuts, Hip, Valley, etc. Will cut 81 different angles—made of superior tool steel and when folded fits into a space 8 inches square.

IDEAL TOOL WORKS, MIDDLETOWN, NEW YORK

Don't Wait---Be sure to get in on this

SPECIAL INTRODUCTORY OFFER

IDEAL TOOL WORKS, Middletown, N. Y.

Gentlemen:—I wish to take advantage of your special advertising offer and am enclosing \$1.00, for which I am to receive, prepaid, your regular \$2.00 Ideal Rafter Square, Try Square and Mitre Square.

Name.....

Address.....

Town.....State.....

**You Push
He Twists**

Zip! and the drill bites through hardest oak in a few seconds.

Here's a tool you will use a hundred times a day. Weighs only half a pound—you can carry it in your pocket if you like—and in ten seconds you can insert any size drill from 1-16 to 11-64 of an inch. Best and most convenient small drill ever made.

Mr. Punch

Mr. Punch is known to mechanics all over the world as Goodell-Pratt Automatic Drill No. 185. It works by a spiral twist and automatically rebounds after each stroke.

You simply place the drill point and push.

There are eight tool-steel drill points in the handle, each showing through a numbered hole of same gauge as the drill. By turning the top the right size drill is released. Mr. Punch is solidly made of brass and is heavily nickel-plated. The center nut is made of a very hard grade of brass and will give lasting service. The chuck has two hardened-steel jaws and holds the drill firmly. Handle and chuck are machine knurled. Mr. Punch is the handiest tool in the tool box.

Don't Mar Walls

Mr. Punch makes a neat job on bath-room or curtain fixtures.

Mr. Punch is known to mechanics all over the world as Goodell-Pratt Automatic Drill No. 185. It works by a spiral twist and automatically rebounds after each stroke.

You simply place the drill point and push.

There are eight tool-steel drill points in the handle, each showing through a numbered hole of same gauge as the drill. By turning the top the right size drill is released. Mr. Punch is solidly made of brass and is heavily nickel-plated. The center nut is made of a very hard grade of brass and will give lasting service. The chuck has two hardened-steel jaws and holds the drill firmly. Handle and chuck are machine knurled. Mr. Punch is the handiest tool in the tool box.

"The Goodell-Pratt 1500 Tools" are used by good mechanics everywhere. They are guaranteed. A useful book on tools, together with pocket catalog, sent on request.

Send for illustrated book about tools that are useful to everybody. Buy Mr. Punch at any hardware store---\$1.50. If your dealer cannot supply you, order from us.

GOODELL-PRATT COMPANY
Greenfield, Mass.

Toolsmiths

Hack-saws
Micrometers
Saw Sets
Gauges
Grinders
Screw-drivers
Punches
Drills
Lathes
Levels
Vises
Bit Braces
Calipers
Squares

\$25.00 PAID FOR ONE DAY'S WORK



Price
\$1.00
That's All!

NEW MIGHTY MONEY MAKER

Over
One
Million
in
Use

Millions
to be
Sold

The Million Dollar Hit!

New, wonderful home invention, just introduced, yet million sales already recorded. Tremendous, rapid sale staggers country. Agents happy—banking enormous profits daily. Mighty opportunity for you to get the mighty dollar. Failure impossible. **Experience unnecessary.** Money rolls in first hour—\$10.00 to \$30.00 daily. Amazing cash records made. Walters made \$25.00 first day; never sold goods before. Arnold, N. Dak., Carpenter, orders one, then 2 gross; sold 160 in 2 days.

Cleared \$80.00 in Two Days

Hagen, Texas, sold 100 in two days. Webb, Pennsylvania, Contractor, averaged 10 sales per hour. O'Connell, Montana, 25 first day. Mike Bock, Minn., writes: "They are fine sellers; worked one day and sold 30 (profit \$15.00)." Harry Gassmann, Illinois: "Can sell scrapers as fast as I can get them. Overwhelmed with orders. Everybody wants scrapers; 100 already sold." Roy Burningham, Mass.: "Send 10 dozen. One week's work." Hundreds like these. You, too, can have money in abundance.

Grab's Scientific Shoe Cleaner

Sells itself—you take orders—that's all. Every family wants one on their doorstep. Replaces unsightly, unsanitary, crude door mat. **Automatically** removes mud, dirt, snow from shoe in one operation. Cleans sole, sides, heel. Works like magic—sells like "sixty." Saves drudgery, time, money, shoes—saves carpets, floors. Mechanical wonder. Has 7 new patented features not found in any other scraper—10 steel blades—10 dirt outlets—twin adjustable and removable brushes—compound springs. Rotates for sweeping. Can't clog—practically self-cleaning. Handsomely enamelled. Nothing else like it. Nothing so popular—so easy to sell. **Selling price only \$1.00. You make half—100%.** Satisfaction guaranteed. Write quick for free catalog—exclusive agency. Better still, send order, naming territory. Investigate anyhow.

Security Mfg. Co. Toledo, O.

Dept. 72

Fight Foot and Mouth Disease with Concrete

Stock raisers, dairy farmers, in fact all who are engaged in the stock raising business are among the first to appreciate the smooth surface made possible by concrete.

At this time the country is hearing and reading much on the subject of the foot and mouth epidemic. There are several causes of this disease. It has been discovered that the germ will live at a depth of 8 to 12 inches, and since the hoof of the cloven foot animal is just as susceptible to the transmission of the disease as the mouth, great care should be taken to keep all places of shelter or housing free from litter. Scientific research has found that the germ does not live longer than 24 hours when subjected to the air and dry surfaces.

Concrete construction of floors is the best means to prevent the

germs from entering the soil, and it is the best safeguard to check the spread of the disease because concrete floors can be successfully disinfected. Loss by death of the cattle and loss caused by the germ



"Standard" Low-Charging Mixer at Work on Large Pasteurization Plant for the Borden Condensed Milk Co., New York.

sapping away the flesh should hasten all stock raisers to take steps to insure the most careful protection.

It is certain that the laying of concrete floors is a difficult task when the materials for the concrete must be turned and mixed by hand; so to meet this difficulty small machines have been built to do this work. One of the most popular types on the market is illustrated.

This little inexpensive mixer is designed to meet the requirements of the farmer and small contractors. It may be mounted on trucks or on skids, and equipped with engine or hand power, or it may be supplied so that parties already having power can readily apply it.

This is the day when a contractor needs not wait until business comes to him. Sales methods applied to his lines can bring him the work just the same as in any other line. The only recommendation—be properly equipped in order to go after this class of work. The Standard Scale & Supply Co., of Pittsburgh, Chicago, New York, Philadelphia, and Cleveland, have a large line of small portable machines known as the "SSS" Mixers, which are very adaptable to use in construction of foundations, floors, walks, etc. If you are interested in concrete mixers, it is advisable to get into communication with them.



R. M. Nicholson with Berger Co.

Arrangements have been completed with Mr. R. M. Nicholson, formerly Advertising Manager for the Kimberly-Clark Paper Co., Neenah, Wis., also former Space Buyer for the Cramer-Krasselt Co., Milwaukee, to take charge of the advertising department of the Berger Mfg. Co., Canton, Ohio, which was handled by Mr. G. P. Blackiston prior to December 1.

Mr. R. L. Kreighbaum, who has handled the advertising temporarily, will continue his work as Promotor of Sales.



VIXEN

A CONTRACTOR'S CAR

Haven't you as a Contractor and Builder often wished that you could get a car for your own individual needs? Not a big, heavy car that consumes large quantities of gasoline and oil and costs quite a sum to keep up. You want a car to get around the different jobs with and one that will carry a man or two besides. Well, we have designed just the car you want. A sturdy, rugged, light car that is a wonder for low cost of operation and up-keep. A car built of best materials, high grade and up-to-date in every detail.

Only One Cent Per Mile

Speedy and convenient transportation for only one cent per mile. At such a low cost you'll agree with us that the Vixen Light Car is especially adaptable for Contractors and Builders. Think how you could get about with a Vixen. The jobs away out in the country would be only a few minutes away. Think how easy it would be to take men out to the job, to shift them around without loss of time. With the Vixen selling at such a low price and operating cost reduced to the minimum you cannot afford to be without this car.

Specifications

Power Plant—This is our pride. Four-cylinder, four-cycle. Thermo Syphon Water Cooled. Cylinders Cast en Bloc. All valves enclosed. Rated at 12 H. P., but easily develops 16 H. P.
 Ignition—Atwater Kent, separate battery.
 Tires—28 x 3 Clincher. (No large tire expense with a Vixen.)
 Springs—Front, double semi-elliptic. Rear, coiled-radious cantilever. Very easy riding, absolutely no rebound.
 Seating Capacity—Three persons (two in rear seat). Plenty of room.
 Lamps—Electric, front and rear, storage battery.
 Equipment—All cars are shipped complete with electric lamps and horn, tools, pump, top, envelope and glass windshield.

Earn Your Own Car

You Contractors and Builders go about communities probably more than anybody else. Why not be our rider agent? When your neighbors see you driving this silent-running, nice-looking car day after day they will want one and you can be the one to take their order. There will be a handsome profit in it for you and absolutely no trouble or inconvenience. These cars become very popular wherever introduced. Every car sold in your locality will be sold through you and you will reap the benefit of the Vixen popularity. Send us the coupon for full particulars about this wonderful car.

DAVIS MFG. CO.

15th and Park Avenues

MILWAUKEE,

WISCONSIN

COUPON

DAVIS MFG. CO. 15th and Park Aves.
 Milwaukee, Wisconsin
 Gentlemen—Please send me booklet fully illustrating and giving complete specifications of the Vixen Light Car. Also tell me how I can earn my own Vixen.

Name

Address

The Modern Lightning Rod Opportunity for Carpenters and Builders

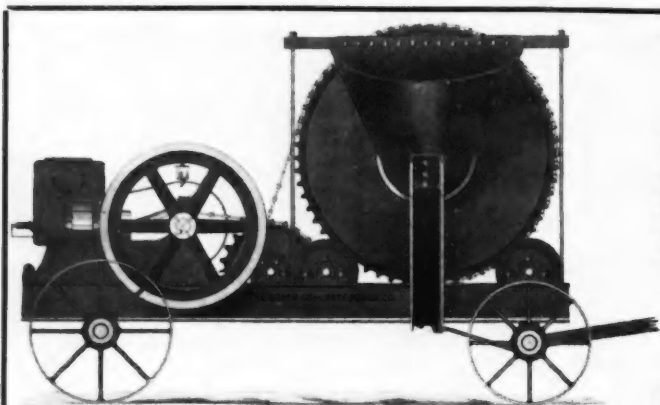
By Jos. L. A. Barnett

I have been a journeyman carpenter myself, and know from experience that the carpenter is the logical man to install lightning rods, and I want to give you a few reasons why it's not only to your own interests, but also to the owner's to be in a position to undertake the work.

In the first place, the owner knows you and your business integrity. He has watched you erect the buildings, he knows you have worked for his interests, he has confidence in your knowledge of what is good for himself. Your recommendation will certainly carry considerable weight.

The owner wants to keep his property intact, even if it is insured. Insurance may cover his monetary loss in case

Barn Well
Protected with
Barnett Rods.



The GREEN Interchangeable CONCRETE MIXER

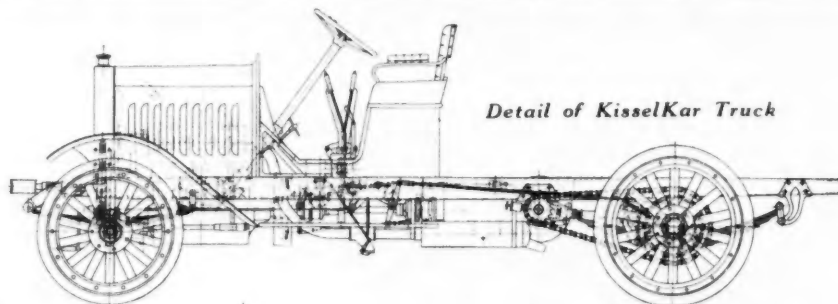
Portable Power Equipment with interchangeable parts to fit, which will make any of the following machines, electric, steam or gasoline:

Green Saw Tables
Green Mortar Mixers
Green Centrifugal Pumps
Green Power Hoists
Green Circular Saw Rigs
Green Bulldozer Pumps
Green Portable Electric Light-
ing Plants

Green Concrete Mixers
Green Single or Double Dia-
phragm Pumps
Green Rock Crushers
Green Drag Saws
Green Spray Rigs
Green Feed Grinders
Green Air Compressors

Write for prices on our combination machines. We have the greatest value for the least investment offered by any manufacturer.

THE GREEN CONCRETE MIXER CO.
Eastern Office, Box 127, Dayton, Ohio
Western Office, Box 395, Salt Lake City, Utah



Detail of KisselKar Truck

Let KisselKar Truck Owners Tell You Their Story

If you are going to buy a truck, the place to look for information *is among present owners.*

Find out what KisselKar Trucks have done for men in *your line of business.* The Kissel Motor Car Company will be glad to give you the names.

See them or, if at a distance, write them. They will tell you just how sturdy and dependable KisselKar Trucks are and what you can expect them to accomplish.

KisselKar Trucks are used to advantage in 200 lines of business. In many cases they have *paid for themselves the first year.*

KISSELKAR TRUCKS

There are six sizes of KisselKar Trucks—1500 lbs., 1, 1½, 2½, 3½ and 6 tons carrying capacity. Special bodies can be built for any requirement.

Send for illustrated truck portfolio — tersely in words, graphically in pictures.

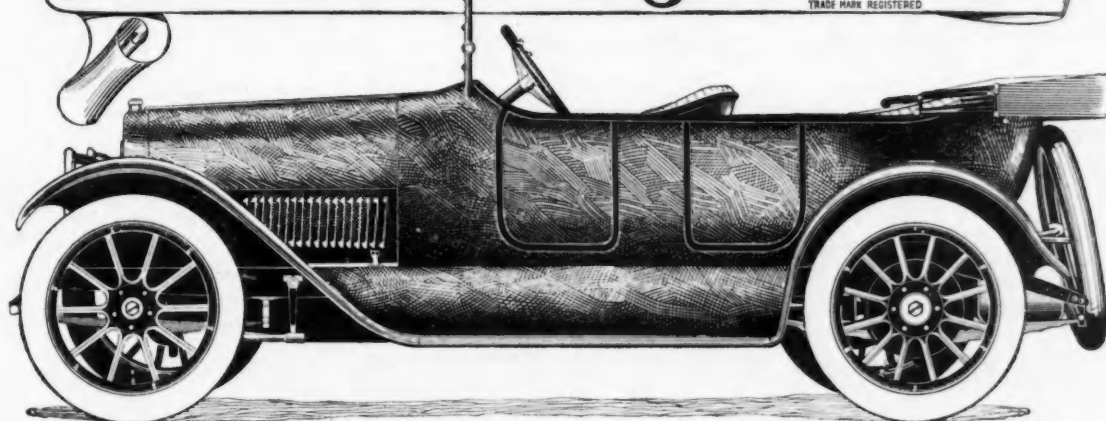
KISSEL MOTOR CAR COMPANY
546 Kissel Avenue HARTFORD, WISCONSIN

New York, Chicago, Boston, Philadelphia, St. Louis, Milwaukee, St. Paul, Omaha, Minneapolis, Baltimore, Pittsburgh, Cleveland, San Francisco, Detroit, Los Angeles, Seattle, Buffalo, Rochester, Columbus, and 300 other principal points.

*The result of
22 years' successful
experience in
building motor cars*



America's Greatest "Light Six" \$1485



Riding Comfort at Any Speed

Whether you drive America's Greatest "Light Six" at one mile or at 60 miles per hour you will experience a new comfort in riding.

The "arch" frame construction over the rear axle, together with the 54-inch chrome vanadium, elliptic springs, makes riding in the tonneau as comfortable as in the driver's seat. The "arch" frame which is exclusive on

THE
HAYNES
America's Greatest "Light Six"

Is conceded the most advanced type of construction, and produces easier riding than any other type. The lengthy springs permit the axle to be mounted the least bit back of the center of springs, so that the periods of excessive vibration are broken up and the maximum efficiency of springs secured. While the springs are pivoted at front end, "length-wise" motion is taken care of by shackles at rear end. Rolling or side sway is entirely overcome.

Two Models---Three Body Styles

Model 30—America's Greatest "Light Six"—5-passenger touring car, 121-inch wheelbase, weight 2950 lbs.,	\$1485
Model 30—The Prettiest Roadster in America.....	1485
Model 30—The Haynes "All-Weather" Cabriolet.....	1750
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WRITE NOW TO

THE HAYNES AUTOMOBILE COMPANY, 14 So. Main St., Kokomo, Ind.

Please send me your 1915 catalog with full particulars in regard to America's Greatest "Light Six."

Name..... Address.....

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The Ideal Level

IS THE

Aluminum Level

The Best Level to use in dark places. Easily handled. Use it in any position. Spirit glasses protected, dust and waterproof. So many good practical features about this level contained in no other that it is worth your having our big circular describing it. Just fill in coupon below and mail at once.

Direct from factory. Save retailer's profit. We pay all transportation charges.

CADILLAC TOOL & SALES CO.
DETROIT, MICH.

Name.....
Street and No.....
City.....State.....

The Cadillac Aluminum Level is the most accurate and durable level made.

That's what you want in a level.

Then it is light—your tool chest is heavy enough without carrying in it a big heavy wood level.

Is this true ?



of fire, but it wouldn't recompense him for his loss of time and business. And it never could recompense him for the loss of life that may occur. Ask him.

He realizes that fire from lightning is a daily occurrence. No doubt he has figured on having lightning rods installed and has wondered who to give the work to. Even if he hasn't thought of it, he has no real arguments against it—you have dozens of real arguments why he should have the protection that good lightning rods afford.

Put the proposition up to him in this way: "Mr. Smith," or whatever the name happens to be, "I have nearly completed the job, but before putting on the finishing touches I should like to make a suggestion in your interest—that you have the buildings fitted with lightning rods. I am well equipped to do the work, and the best time to do it is *now*. I am living right here and can be relied upon to give you a reliable job. It is in your own interest I am making this suggestion, because I have erected your building and take sufficient interest in seeing that it is properly protected from lightning. Give the work to somebody else, if you like, but don't hold me responsible if the roof leaks or needs repairing when they've finished. The cost of lightning rods is very small compared with the protection they afford; besides that, they effect a lower rate of fire insurance. I will gladly give you an estimate for this work and show you the samples of Barnett's lightning rods, which I have erected on numerous buildings."

The owner will actually be glad you made the offer, because he knows you are responsible and have a reputation to uphold. Cost will be a secondary consideration.

Another thing: It's not fair to yourself, after you have done the hard work, to let another man come along and make the easy money, putting up the lightning rods, when you can easily do it yourself. You have first claim, because the owner is somewhat under obligation to you, and consequently he'll take your word, and you may just as well put this profit in your own pocket.

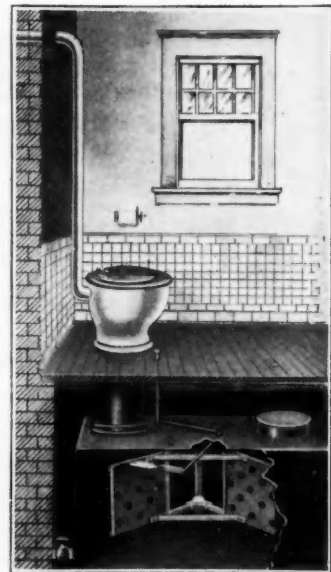
I know there is a big opportunity for business here for hundreds of the readers of this journal. I will gladly send special information to all those addressing Jos. L. A. Barnett & Company, Riverside, Ia., and mentioning this paper.



Chemical Closets Great Assistance to Contractors

The first question asked by the average farmer or village resident who contemplates building a home is: "How can I have an indoor closet, without having a lot of expensive plumbing and water works?" The chemical closet, properly constructed, is now recognized by health authorities as just as safe in disposing of sewage as a water closet and sewer system.

The closet system shown is practically automatic in operation and requires no more attention than a w. c., and can be operated at just as small expense. By means of a strong chemical placed in the tank the excretions, paper and entire contents are liquified so the tank can be emptied just as though it contained water. When the tank is full it is run off into a tile drain or hole dug in the ground, where it seeps away as readily as



**Permanent Installation of
Dall Closet.**



BOYS

I'm going to give you all a
FREE SAMPLE
of **PULL-EASY**
TRADE MARK

Nail Collars

Then you will see how they save dollars

What They Are For

PULL-EASY Nail Collars are slipped on common wire nails for temporary work, such as Scaffolds, Forms, False Work, etc. These **Nail Collars** come in different sizes. Simply slip one of these Collars on the nail and drive it in. This **Nail Collar** keeps the head of the nail projecting far enough out of the wood so that when the time comes to dismantle or take down the work a good firm grip is secured by the claws of the hammer or nail-puller.

What They Save

You know what a time-consuming job it is to take down temporary work because of prying out nails. You know how much lumber is ruined because of this prying—**PULL-EASY Nail Collars** do away with all this by making it easy to draw out the nails. **PULL-EASY Nail Collars** are made in three sizes to fit all common wire nails.

Sizes

No. 1 fits 4d, 5d, 6d, 8d and 10d wire nails.
No. 2 fits 10d, 12d, 16d and 20d wire nails.
No. 3 fits 30d, 40d, 50d and 60d common wire nails.

Your FREE Sample is Waiting

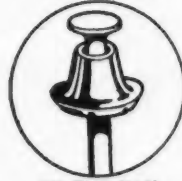
Try them now while you're not so busy, so when the building season opens you can have a supply on hand. We know you'll like them—that's why we are going to send you a **Free Sample**. Write today and ask for **Free Sample No. 12**.

PULL-EASY Nail Collars Are for Sale by the Following:

Nebraska Material Company . . .	1124 P St., Lincoln, Neb.
Bruce, John W.	St. Joseph, Mo.
Shapleigh Hardware Co.	St. Louis, Mo.
United Fuel and Supply Co. . . .	Detroit, Mich.
Railway Contractors Supply Co. .	Toronto, Ont.
W. H. Anderson Tool & Supply Co.,	Detroit, Mich.
Franklin Builders' Supply & Coal Co.,	Columbus, Ohio
Geo. B. Carpenter & Co.	Chicago, Ill.
Marshall-Wells Hardware Co. . .	Duluth, Minn.
Janney, Semple, Hill & Co. . . .	Minneapolis, Minn.
Warner Hardware Co.	Minneapolis, Minn.
Belt Line Brick Co.	St. Paul, Minn.
Louis Hanssen's Sons	Davenport, Iowa
Tenk Hardware Co.	Quincy, Ill.
Terre Haute Coal & Lime Co. . .	Terra Haute, Ind.
The Toledo Builders Supply Co. .	Toledo, Ohio
The Pickering Hardware Co. . . .	Cincinnati, Ohio
Evans Brothers	Cincinnati, Ohio
Bunting-Stone Hardware Co. . . .	Kansas City, Mo.
McCaffrey Bros. Co.	Omaha, Neb.



THE COLLAR



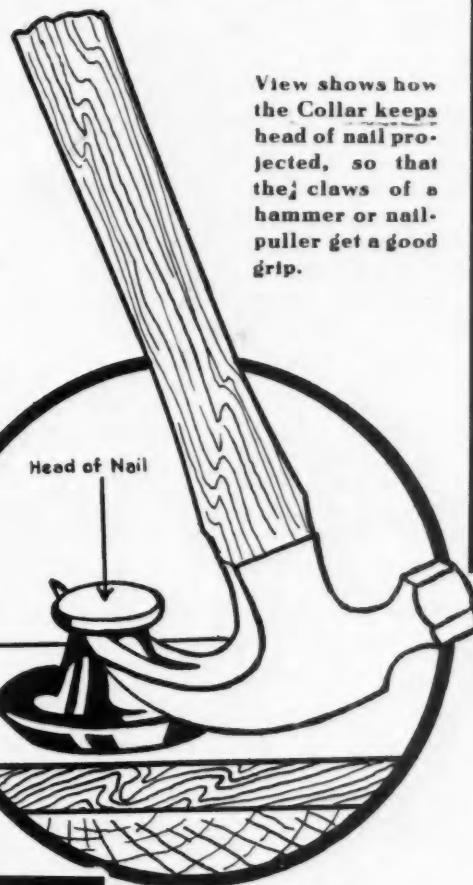
ON THE NAIL



IN PLACE



IN THE CLAW



WAGNER-BEAM COMPANY

Room 1201--20 East Jackson Boul.

Chicago, Ill.

water, and as the chemical has sterilized the entire contents it is said to be absolutely harmless.

Another type, has a large pail container inside, which is carried out when filled. This type is especially adaptable to summer resort cottages and homes of a more temporary nature, as this closet is portable. It is also splendidly adapted for use of contractors' gangs on new buildings and where plumbing has not yet been installed. It is easily seen that the chemical closet will greatly assist the home owner in planning a new home,



The Dail Steel Products Co. Closet.

and as the contractor is in close touch he is in position to recommend and take many orders for these chemical systems.

The manufacturers of the two closets shown sell their outfit on a guarantee to give satisfaction or money is refunded, and they state that out of several hundreds that have been sold, not a single one has ever been returned.

Territory is being rapidly assigned and those who are interested in securing the agency for this excellent line should write the manufacturers at once. Address the Dail Steel Products Company, Lansing, Mich.

Security Window Guards

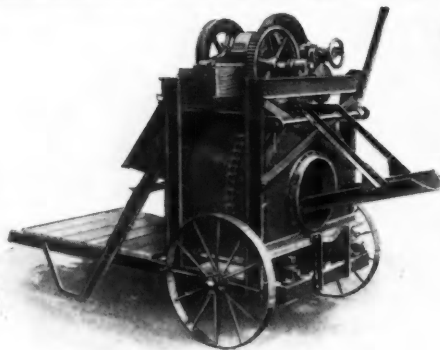
Were you ever awakened in the dead of night with the feeling that someone was in the house who did not belong there? Sooner or later everyone has this trying ordeal to go through and no one knows beforehand what the outcome will be.

But now it is not necessary for you to run this risk of bodily harm and nervous shock to your family; for, at less than the cost of burglar insurance, you can prevent the loss of your property by theft and also prevent the visit of the burglar, by installing "Security Window Guards" on those windows easily reached from outside the building.

Here at last is a real dependable protection for every home at a price within the reach of all. A protection which you pay for but once, but which lasts year in and year out, for the reason that the guards are made entirely of steel and cannot wear out.

This guard is simple and practical. It slips on or off the inside of the window instantly, but under no conditions can it be removed from outside the window. Unsightly, expensive outside prison bars are no longer necessary. You can have the "Security Window Guard" on the window at night and off during the day, if you wish. Think how simple and convenient this is. When washing the window the guard is entirely removed and out of the way, and when it is slipped on again the window is locked automatically. When the guard is on the window you can raise or lower the window all the way up and down without removing the guard.

Security Window Guard Company, 30 E. Randolph Street, Chicago, are offering a very attractive proposition to carpenters and builders, and we suggest that you get in touch with them without delay, as the field is very large and there is no limit to the amount of business which can be done with this very useful invention.



You Can Bid Low



on that contract and Make Good on your Bid
by using a

SACKETT "LOW CHARGE" BATCH MIXER

For FOUNDATION WORK
SIDEWALK LAYING
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Price with New-Way 3½ H. P. Motor . . . \$275.00

LET THIS BE YOUR PURCHASE GUIDE

Sackett Equipment

Saves You Money on Every Job

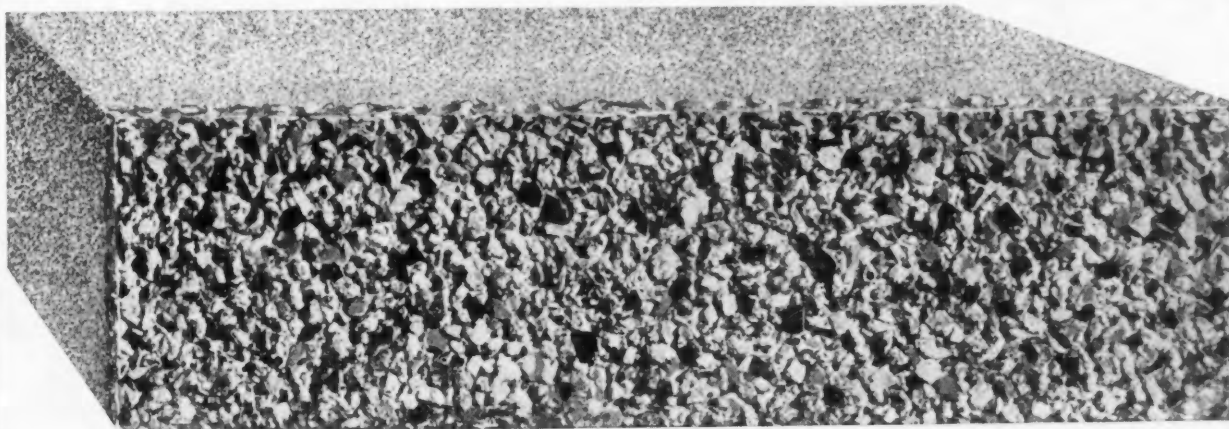
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CHICAGO

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Granite Brick and Blocks by the Helm Process Will Bring You Enormous Profits

These brick sell for \$12 to \$20 a thousand and the blocks in proportion. Nearly one-half of this is actually gross profit. This is a "classy," distinctive product and a rapid seller. The texture may be coarse or fine, rough or smooth. The face is readily waterproofed. Moisture will not show on it any more than on the most expensive clay face brick. The face is even stronger than the body of the brick or block. The edges and corners are sharp and strong. Any aggregate used in the face is exposed in all its natural beauty and color without the use of chemicals or acids by this process.

Here is a wonderful field open to you with a Helm machine. No need for expensive clay face brick to be shipped into your community. You can furnish a more distinctive product and make big money. The process is so simple any novice can handle it successfully and produce effects as beautiful as the view above taken from an actual photograph of a granite face brick made on the Helm press.

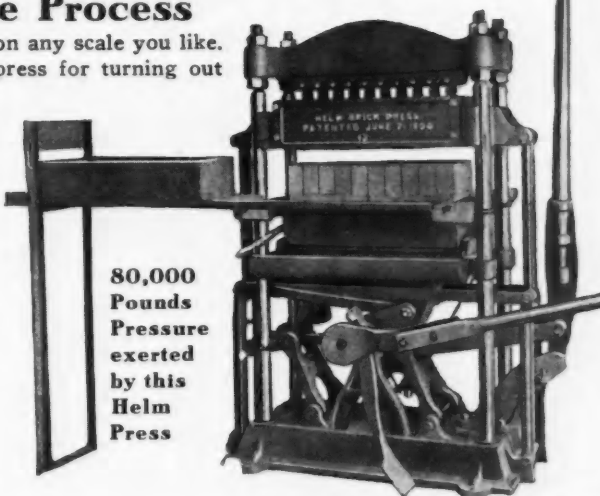
\$25 and up will get you a Helm Machine and the Granite Process

You can take possession of this field. You can start on any scale you like. With equipment for 2,000 brick a day or with a Helm press for turning out 5,000, 10,000 or 15,000 brick daily.

Helm Presses make pressed cement brick which compete with the CHEAPEST to most expensive clay brick. They make blocks which positively secure dry walls. These machines work by hand or power, automatic, rapid, no tamping. Medium wet concrete is driven together under enormous pressure, securing the best quality of brick and blocks.

You Should Investigate The Helm DRY WALL Building System

This is the system which appeals to builders, contractors and architects. It overcomes the opposition to concrete because it offers absolutely dry wall construction. It saves money for builders, as no furring and lathing are required. It makes rigid walls and fireproof walls. This is the system which is bound to get you business and give you the advantage over all other products.



Send for This Book, "The Way to Success with a Helm Press"



Tear off the corner coupon right now before you turn the page. Let this free book tell you all about this great opportunity which is open to you today. It will tell you all the details of this system, about the Helm Machines and the dry wall building system. Let this book show you how to get into the most profitable end of the concrete industry.

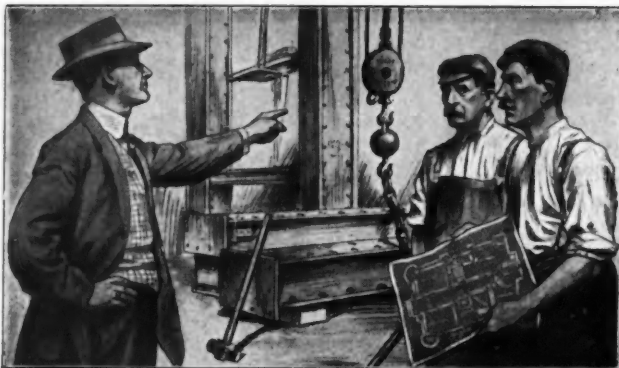
Helm Brick Machine Co.
172 Mitchell St. CADILLAC, MICH.

**Helm Brick
Machine Co.**

172 Mitchell St., Cadillac, Mich.
Please send your free book

To

Address



Get Into Business For Yourself

You'll never get anywhere as long as you're hammering away for the other fellow. You've got to get into business for yourself if you want to get ahead.

Instead of pounding away as a carpenter you should take the contracts yourself and you would earn more in a day than you can now hammer out in a week.

You've got just as good stuff in you as the man you're working for. You can learn as much about the building business as any big contractor knows. And you don't have to take 10 or 15 years to get this knowledge. There is a better way—and that is through the clear and practical Building Courses of the International Correspondence Schools.

Learn Building Contracting and Increase Your Earnings

With the practical experience you get on the job coupled with one of these thorough instruction Courses, you can learn more in six months about drawing plans, making estimates, selecting materials and construction methods than you can pick up in six years by experience alone.

Thousands of carpenters have built big and profitable contracting businesses on the knowledge they gained from the I.C.S. *You can do the same.*

Just mark and mail the attached coupon, indicating the Course in which you are most interested. And the I.C.S. will send you free of cost a complete description of this Course and an interesting booklet "1,000 Successes in Architecture."

Mark the Coupon—NOW

International Correspondence Schools

Box 910-B SCRANTON, PA.

Please explain, without obligating me, how I can qualify for the position before which I have marked X.

Architect
Arch'l Draftsman
Contract'g & Build.
Building Inspector
Estimating Clerk
Law for Contractors
Structural Eng.
Structural Draftsman
Concrete Construct'n
Plum. & Heat. Con.
Supt. of Plumbing

Foreman Steam Fit.
Plumbing Inspector
Heat. & Vent. Eng.
Civil Engineer
Surveying
Mining Engineering
Mechanical Eng.
Mechanical Draft'm
Stationary Eng.
Electrical Engineer
Electric Lighting

Electric Railways
Automobile Runn'g
Sh.-Met. Pat. Drafts.
Textile Manufact'g
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Civ. Service Exams.
Chemist

Name _____

Street and No. _____

City _____

State _____

Present Occupation _____

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

A Chainless Litter Carrier

J. E. Porter's book, "Perfect Barn Equipment," contains much valuable data for barn builders and barn architects, as well as for enterprising dairy farmers. The illustrations show the complete line of Porter sanitary barn equipment—steel stalls and stanchions, feed and litter carriers, and carrier track.

We have made quite a study of barn equipment books. We find it a worth while diversion and we advise all contractors and builders to do the same. A thorough knowledge of modern sanitary barn equipment will mean money for you in your business. Running through this J. E. Porter book we discover at once a type of equipment that is new, at least we have not seen it elsewhere—a *chainless* or geared type litter carrier.

The illustration shows how this is arranged. Instead of the customary chain hoist this has a train of spur gears all securely inclosed. These transmit the power at a satisfactory



An Item of Special Interest in the Porter Barn Equipment Book.

speed and power ratio to the cable drums, thereby raising the tub. This geared hoist can't get gummed up or fouled with litter, as the exposed chain hoist often does. Dairy men like it for this reason. It is pleasanter to use and more sanitary.

A friction brake engages the inner surface of the hand wheel, permitting the load to be lowered by gravity or securely held at the proper elevation from the floor, as desired. These carrier tubs are automatically tripped by releasing a catch at one end, which results in the contents being dumped, the tub turning completely over. It can be tripped to either side. The tub is completely under control of the operator at all times, no possibility of accidental dumping.

The Porter tubs are built of galvanized steel, reinforced with steel angle iron, the whole being securely riveted together; the seams are soldered, making a water-tight job and one that will withstand continuous service.

We suggest that every one of our readers write the J. E. Porter Co., Dept. AC., Ottawa, Illinois, and ask for a copy of this "Perfect Barn Equipment" book. It will repay any amount of study you put in on it. The architectural department of the J. E. Porter Co., is also at the service of our readers for free consultation and advice about barn plans.



Sales This Year Have Tripled

Who talks hard times? The weatherstrip hustlers haven't noticed it! Word comes from the Diamond Metal Stamping Co., 626 Kerr St., Columbus, Ohio, that their sales this year



For Porches, Steps and Walks

You want materials that will not wear out, rot or require repairs or painting. Concrete porch floors, steps and walls are even, clean and attractive. They are easy to free of snow, last like stone, and please owner or buyer. Many builders are making nice profits by replacing wooden porches with concrete.

But your materials must be right. Inferior cement or sand may ruin the job. Use

ALPHA THE GUARANTEED PORTLAND CEMENT

and be sure of everlasting results. ALPHA is made in only one grade—the product of 24 years of high-quality policy. It is absolutely guaranteed to more than meet the U.S. Government standard for strength. Expert chemists inspect it during every hour of its making. Every ounce is sure

to be pure, live and active—full of binding power, great in sand-carrying capacity.

By insisting on ALPHA Cement—by refusing “just as good” substitutes and laying your walks, floors, etc., carefully—you are sure of permanent work. Using a Guaranteed Portland Cement

saves worry. Don't experiment. Specify ALPHA and be SURE.

Capacity 25,000 barrels a day; storage for 2,000,000 barrels. Six great plants on six great trunk-line railroads. Eight branch offices at your service.

Send for the ALPHA Book No. 10, giving valuable information about cement and concrete work generally. This illustrated book tells how to do stucco work, how to build concrete barns, silos, ice-houses, and other small concrete buildings, walks, steps, porch floors, tanks, storage cellars, etc.

ALPHA PORTLAND CEMENT CO., General Offices: EASTON, PA.

SALES OFFICES: New York, Chicago, Philadelphia, Pittsburgh, Buffalo, Baltimore, Boston, Savannah



Get This FREE BOOK On House Moving—NOW!

Here is a book that is worth a lot of money to any one who is interested in house moving—or to any carpenter or contractor who isn't making as much money as he'd like to, and is willing to make some extra money just by investing two or three hundred dollars and doing a little head-work. Take notice right here that I tell you frankly at the start off that the plan I want to put up to you requires the expenditure of a little cash, but you hold the stakes at all times and I know by long experience that my plan is a winner—and if you follow the plan I will outline to you, absolutely free, you can

Make \$1,500 to \$3,000 a Year—Extra

You can handle this proposition right along with your regular contracting business or you can make it your entire business, just as circumstances dictate. That part is up to you. What I want to do now is to show you where a mighty profitable business is being neglected and how you can step right in—now—and clean up a lot of money. Others are doing it, and you can do it, too. I know of one contractor who cleared \$450 in just 10 days—some are netting \$100 to \$300 or more on every job they tackle.

Considering the small amount of money you have to invest in equipment, I don't know of any business that will pay such enormous profits as house-moving. Now bear in mind that house moving isn't in the class it used to be. New tools have been invented—new systems have been worked out—

greater efficiency has been attained all along the line. House moving today is a clean, practical, big-money-making business, and if you're willing to invest 2c in a stamp to mail me the coupon below, I will outline a practical, thoroughly-tryed-out plan that will start you on the real road to money making. I cleaned up fifty thousand dollars in the house-moving business in ten years—and I'm willing to give you the benefit of my experience and show you how you can get started. This is a business proposition that you can't afford to neglect.

Just Mail This Coupon

Get full details of the plan I offer to send you free, then judge for yourself, whether or not you can afford to pass up this opportunity to make thousands of dollars—extra—every year. Tear out the coupon—fill it in—send it to me now!



E. W. La Plant

President of La Plant-Choate Mfg. Co., designer of the original La Plant house moving tools and the new all Steel Giant Trucks which have revolutionized house moving.

E. W. La Plant, President.

La Plant-Choate Mfg. Co.,

620 Eastlack Court, Cedar Rapids, Iowa.

Send me your free book on house-moving and complete details of your plan, without obligation to me.

E. W. LA PLANT,
President

620 EASTLACK COURT, - - - CEDAR RAPIDS, IOWA

La Plant-Choate Mfg. Co.

Name

Address

City State

have been three times the preceding year's total. This company make the Diamond metal weatherstrip, which are sold through carpenter and builder agents. They have agencies throughout the United States, Canada and Alaska, but we understand they still have good territory open for live-wire men. They have a desirable proposition that is worth while investigating.



The Sands Level Team

No mechanic is better than his tools. Up at Spooner, Wis.



On the Level, These Are Crack Workmen!

the builders aim for high quality. Here is a photograph of Contractor Wm. S. Baggs and his gang. They are an eight-man team. Everyone carries a Sands aluminum level and would not think of being on the job without it. The photo shows the force just after finishing up a modern residence this past summer. The men in this picture are as follows: Bottom row, reading from left to right, Wm. S. Baggs, Christ Tuch, Elmer Story, Manly Story; top row, Conrad Carlson, John Schucker, Joe Sutter, Carl Carlson. All of them are boosters for the Sands aluminum levels.

Incidentally, Contractor Baggs writes that he is a regular subscriber to the AMERICAN CARPENTER AND BUILDER, which he says is necessary for him to read in order to keep up with the times.



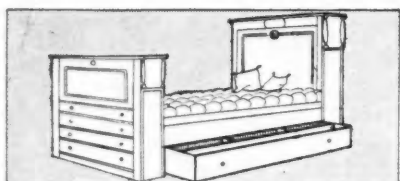
Dickelman Extra Metal Shingles

The catalog of the Dickelman Mfg. Co., Forest, Ohio, shows a great array of attractive, long-lived, high-quality roofing material. Metal tile and shingles bearing the "Dickelman" brand are made of open hearth iron, said to be 99.9 per cent pure. This, combined with perfect galvanizing, produces a roof guaranteed to last. For a quarter of a century the Dickelman Mfg. Co. have been producing corrugated, V-crimped and roll roofing, besides shingles and other metal specialties. Their catalog featuring their complete line should be in every builder's reference file. Ask for a copy today, addressing Dept. C.

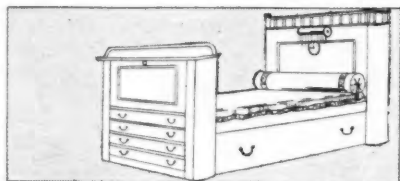
If you are a builder and contractor ask them about their profit-sharing arrangement.

The All-One Cabinet Bed A REAL SPACE SAVER

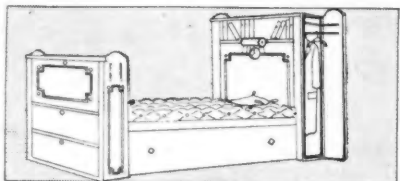
To the Living and Bed Room what the Kitchen Cabinet is to the Kitchen. Is designed to meet the Great Demand for More Room and at the same time give More Convenience and Comfort.



As a Couch. Also note large Divided Drawer



As a Luxurious Bed. Finest Steel Springs



Showing Large Wardrobe—Adjustable Reading Lamp

SOME of the Features of an **ALL-ONE** are Bed, Dresser, Chiffonier, Desk, Wardrobe, Dressing Table and many others.

An **ALL-ONE**, Table and Chair will furnish a Room Complete.

Adds at least 30% to your Floor Plan.

Ideal for Small Apartments, Bungalows and Hotels.

We Want Your Co-Operation and will pay well for it.

We want you to figure them in your Floor Plans, recommend them to your Customers, show them where they can Save Money by Using an **ALL-ONE**.

Explain to them that you can build a Smaller House and get the same amount of Floor Space.

An **ALL-ONE** in an 8x10 room gives you more Floor Space than 10x12 the old way.

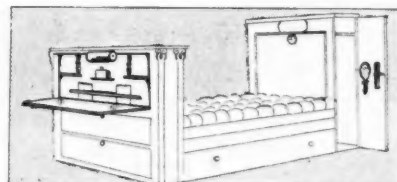
Get in touch with us. We'll send **ALL** Details and Catalogue. It's Profitable.

THE CABINET BED CO.

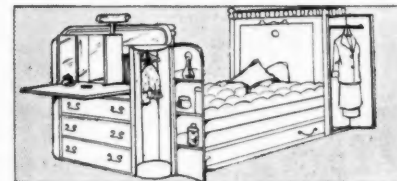
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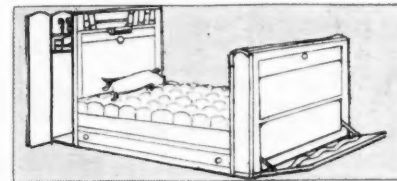
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Showing Commodious Desk. Note Desk Light



Dressing Table. Triplicate Mirror. Adjustable Light



Shoe, Rubber and Slipper Space

Aladdin Houses Protect You

You Can Make Larger Profits

Have you ever *lost money* on a job? Have you *always* pleased your customer on the *quality* of material in the house? Have you ever *lost a contract* because your competitor submitted a better design, a lower price and finished the job in half the time? Aladdin Read-Cut Houses help you to make a safe bid on the job—the complete cost of each design is listed on each page. Aladdin Houses are guaranteed—all exposed material inside and outside *clear and knotless*. Aladdin Houses save you a third—all material cut-to-fit—you pay for no waste; you can build them in less time. The Aladdin catalog pictures over 100 designs. Get this catalog and have us prove our statements.

Aladdin Houses \$138 to \$5,000

Dwellings, bungalows, summer cottages, garages, barns, farm buildings—the Aladdin catalog enables you to give your customer a picture of the building before it is started.

5-Room House Complete \$298

A complete five-room, year round Aladdin House for \$298. Price includes all material necessary to complete. Aladdin Houses are sold direct—no middlemen's profits.

You Can Figure Safer Estimates

Aladdin Read-Cut Houses Save Carpenters a Third Price Includes Everything

You get material absolutely guaranteed to be sufficient for the completion of your house, as follows: Sills, cut to fit; joists, cut to fit; studding, cut to fit; building paper; sub-floor, cut to fit; rafters, cut to fit; roof sheathing, cut to fit; siding, cut to fit; outside finish, cut to fit; flooring, cut to fit; lath and plaster or plaster board, inside finish, doors, windows, glass, nails of all sizes, locks, hinges, paints, oils, varnishes, stains, with complete drawings, illustrations and instructions for erection—**The Complete House.** The big Aladdin catalog No. 790 tells all the interesting facts.

NORTH AMERICAN CONSTRUCTION CO.

795 Aladdin Ave. BAY CITY, MICH.



Your Customer Gets a Better House

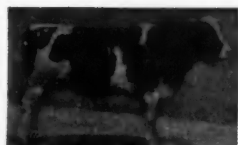
We Invite Every Ambitious Carpenter-Contractor

TO SHARE THESE HELPS TO CONTRACTORS—

Get the benefit of our 20 years' experience Wholesale Lumber and Millwork **Direct to Contractors Exclusively.** We understand their needs and co-operate with Contractors.

Become one of the fine lot of **live, prosperous Contractors** who are our customers and our friends. Use Our Reliable, Dependable, Pleasing, absolutely **RIGHT Grades of Lumber and Our HIGH CLASS Millwork—these helps** have made many contractors Successful Business M.n. **TRY THEM.** On equal material, our prices are not beaten.

LUMBER and MILLWORK FOR HANDSOME HOMES and BULLY BARNs.



We want to figure House and Barn Bills. Don't waste time on catalogs. **LIST Lumber and Millwork from plans and MAIL LISTS TO US FOR ESTIMATES.**

BARROWS & DONNELLAN Co.

8755 Baltimore Avenue

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You can buy cheaper NOW than you can for next 5 years.

38 Times More Efficient Than The Best Building Paper

Costs no more than back plaster. Takes the place of back plaster. Can be applied to either new or old buildings. And it keeps cold out in winter—and heat out in summer. Makes actual saving of 40 per cent in fuel bills when applied according to our specifications. Linofelt is made of pure flax fibre quilted 1/4 inch thick, between two layers of Kraft paper. Vermin-proof, odorless and sanitary.

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"Between You and the Weather"
(© 1914, Union Fibre Co., Winona, Minn.)

keeps out the chilly drafts that come in around the door casings, windows and around the base of walls. Write for free descriptive literature. Learn how Linofelt will help you build warmer, more comfortable buildings for your customers.

Learn About Lith

Insulation—too. Best insulating materials for cold storage plants, creameries, etc. Railroads specify Lith for their refrigerator cars. Write for valuable cloth bound book "Insulation for Cold Temperatures." **FREE Address**

Union Fibre Co.
118 Union Street
Winona, Minn.



Announcement

An Expansion of Interest to

Engineers, Contractors and Builders

The Eureka Machine Company of Lansing, for ten years builders of high-grade Continuous Mixers, is placing on the market a **Batch line** of Concrete Mixers of **exclusive design and quality**.

The production and distribution of both types will be vigorously pushed.

Spaces 139-140 have been reserved at the Coliseum, Chicago, February 10-17, for display purposes.

The expansion, with increased manufacturing facilities, will permit of the appointment of a few **high-class representatives** in unoccupied territory.



Eureka Machine Company

103 Handy Street

Lansing: Michigan: U. S. A.

The "Little Devil" Concrete Mixer

One of the most popular small mixers on the market today is the "Little Devil" mixer manufactured by the Chicago Builders Specialty Co., 455-470 Old Colony Building, Chicago, Ill. The accompanying illustration shows the "Little Devil" just after completing a silo October 8 to 22, 1914, built by Contractor G. W. Quick, Tiskilwa, Ill., for E. R. Allen, of Sheffield, Ill. On this job the "Little Devil," being an end discharge, dumped concrete directly into bucket, which was then hoisted by means of hoisting drum on main driving shaft. This will hold 150 feet of $\frac{1}{4}$ -inch cable. With a $3\frac{1}{2}$ -horse-power engine there is plenty of power to mix and hoist at the same time.

The "Little Devil" has numerous exclusive labor-saving features and is built so well that it will stand up under the roughest kind of usage. Hoisting drum is equipped with



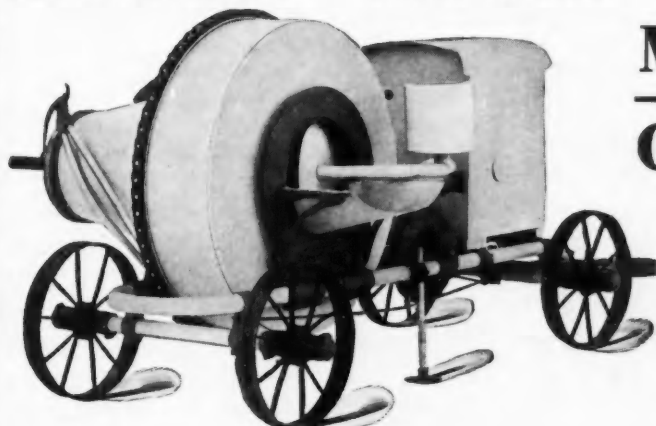
"Little Devil" Mixer on Two Wheels with Hoist.

brake so load can be held in any position until workmen on top of silo are ready for material. On lowering bucket it is indispensable, as it prevents extra cable from reeving off after bucket reaches the ground. Mixer is equipped with $3\frac{1}{2}$ horse-power air-cooled engine, automobile type, which can be used to operate the hoist independently, while mixing drum is idle. On a cement-block silo, mixer can mix material for blocks in the plant and can then be moved to the job and used as a hoist.

The "Little Devil" discharges concrete unusually fast on account of the scientific bucket and blade arrangement, which also means a fast and thorough mix. The drum will easily hold 6 cubic feet of loose material or $4\frac{3}{4}$ cubic feet of mixed concrete and when equipped with batch hopper, which can be loaded with wheelbarrows or material shoveled directly in from the ground will easily turn out between 50 to 75 cubic yards of well mixed concrete every day. Batch hopper being filled while mixer is mixing a batch, does away with side loader, costing a man to operate same.

The other photograph shows mixer being used on footings for a residence, built by Contractor W. R. Ashton, of Chicago. The gear around the drum is semi-steel and is put on in segments, which are duplicates, and in case of breakage can be replaced on the job with 5 minutes' work. This does away with drilling of holes and placing burrel pins, which is

Double Drum Batch Mixer



Specifications:

Large substantial wheels, tubular frame and axles. All sheet iron. 12" galvanized, basic open hearth iron. Trunnions, runways semi-steel. All cross-members, clips, etc., are malleable iron.

Drive is by heavy steel chain with case-hardened pins and rollers. Large sprocket is steel.

See our exhibit at Chicago Cement Show.

Makes Concrete

BY THE ONLY

Correct Method

One Drum Mixing Dry while the Other Drum is Wetting

Double Mix — Double Capacity

Mixes Sand or Pit Run Gravel
as Wet or as Dry as Desired

The "Double Drum"

Make these features possible. Very low, easy feed. High discharge.

Very Low Mixing Cost

Absolutely uniform proportion. Correctly mixed concrete.

Wheel barrow loader which keeps coarse material mixed with fine until discharged.

Enormous capacity for size. Others have taken the lead with this mixer. Why not you? Write for book, "Why the Double Drum," prices and terms.

Basic Patent on Double Drum, others pending.

Olsen Concrete Mixer Co.
301 Olsen Street — ELKHORN, WIS.

Make More Money

A HOUSE equipped with all modern conveniences sells or rents quickly and at a good price. Builders are finding this especially true when a house has installed in it a

TUEC STATIONARY CLEANER

For Health and Happiness

For the average \$3000 house the Tuec Cleaner complete with hose and tools costs only \$160, F. O. B. Canton, Ohio. You can install it for less than forty dollars and get at least \$500 more for the house. Rentals will be increased in even better proportion.



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Write today for particulars and FREE BOOK telling where thousands of TUECS have been installed. Our special proposition will interest you greatly.

The United Electric Co.
30 Hurford St. Canton, Ohio

An Ideal Mixer for the average Contractor-Builder

The Baby Grand

Just right in size—just right in capacity—just right in operation for the average job of the average Contractor and Builder. Not big and unwieldy or expensive. Built to handle foundations, sidewalk and block-plant work economically.

SPECIFICATIONS

Mounted on 3" channel Iron frame. Steel axles, Steel wheels. Power transmitted by gears. All gears carefully housed. Has Automatic Proportioning device, make feeding mechanical—this assures accuracy and economy. We also build the Hartwick Two-trough Mixer. A big brother to the Baby Grand. Send for Catalogue and prices.



Hall-Holmes Mfg. Co.
444 Oak St.,
Jackson, Michigan

a common sight on mixers after they are 2 and 3 years old.

The main driving gears between engine and driving shaft are cut steel, and will last for years before showing wear. When the mixer is furnished on two wheels it can easily be moved by two or three men, as the weight is counter-balanced when one end is lifted up. When moving machine from job to job, mixer can be hooked on the back of a farm wagon or tool wagon and will track directly behind same, as the wheels are on 4-foot 8-inch centers.



"Little Devil" Mixer on Two Wheels, with Charging Spout and Holst.

"Modern Silage Methods"

The tenth edition of the 256-page book, "Modern Silage Methods," has just been issued by the Silver Manufacturing Company, Salem, Ohio. This is an extremely practical book on silos, covering their construction, process of filling, silage and its composition, proper feeding of silage—in all, a complete guide for silo builders, and for feeders and dairymen. The chapters devoted to silo construction are very complete, going fully into details, and clearly illustrated with working

drawings. All of the recognized types of silo construction are covered. The Silver Manufacturing Company offer a line of silo filling machines, and a few pages of this book are given over to illustrated descriptions of these machines. The book itself, however, is a thorough text book regarding silos and silage, issued for the instruction of silo builders and farmers. A small charge is made to cover postage. Write the Silver Manufacturing Company for a copy of this book.

No. 1240. In Plain Oak, Quartered Oak and Maple Mahogany. Price in Q. O., \$19.06

No. 1241. In Quartered Oak and Real Mahogany. High grade. Price in Q. O., \$23.12



Screen Door. No. 314 93c

One Pan Selected Fit Door. Very Handsome. Sizes, 2 ft. x 6 ft. to 3 ft. x 7 ft. Price \$2.04 to \$2.99

H-9, Red Oak Door 1 1/2 in. Thick. \$4.75 Glazed.



Glazed with clear D. S. Glass. Without glass, open, \$4.23. This front door is made of fine selected hardwood. We sell it at the lowest possible price. A complete line offers you a nice selection.



BUILDERS' HARDWARE

At prices much less than you'll pay at your hardware store. We can furnish you with complete hardware for any of your buildings. Our hardware men will pay close attention to your requests. Send us your lists. We guarantee quality and satisfaction.

Try Us On a Sample Order

Let us demonstrate the Quality and Economy of our goods, above all let us show you the service our large organization can furnish you. No order too large, no order too small. Write today for the Large FREE Book of High Grade Building Material.

What 1 Cent Will Do

A postal costing one cent will save you many dollars on Building Materials this year, by bringing to you our large illustrated bargain catalogue of

High Grade BUILDING MATERIALS

This same postal also brings our large, handsome Mantel Book, showing all Styles and prices.

Learn what real Bargain Prices are—Learn what real Quality and Service are. No matter what kind of Building Materials you need, we can furnish them quickly and at lowest prices. Prices much lower than your local dealers can.

Let us quote on your Lumber, Millwork, Builder's Hardware, Roofing, Wallboards, Mantels, Paints—everything that goes to make up building.

The Huber Builders' Material Co.

45-49 Vine St., CINCINNATI, OHIO

Copper Bearing Roofing Tin



C.B. OPEN HEARTH
1 1/2
32 POUNDS COATING

ROOFING TIN

Means Building Insurance



C.B. OPEN HEARTH
1 1/2
32 POUNDS COATING

ROOFING TIN

WHEN your roof is covered with MF Roofing Tin, you have taken the greatest possible precaution against fire losses. MF Roofing Tin offers the utmost resistance to storm and fire. Made from selected Copper Bearing Open Hearth Steel plates, double dipped and free from flaws—a masterpiece of workmanship and a guarantee of roofing protection. Our free booklet "Copper—Its Effect Upon Steel for Roofing Tin" sent upon request.

This Company will exhibit at San Francisco



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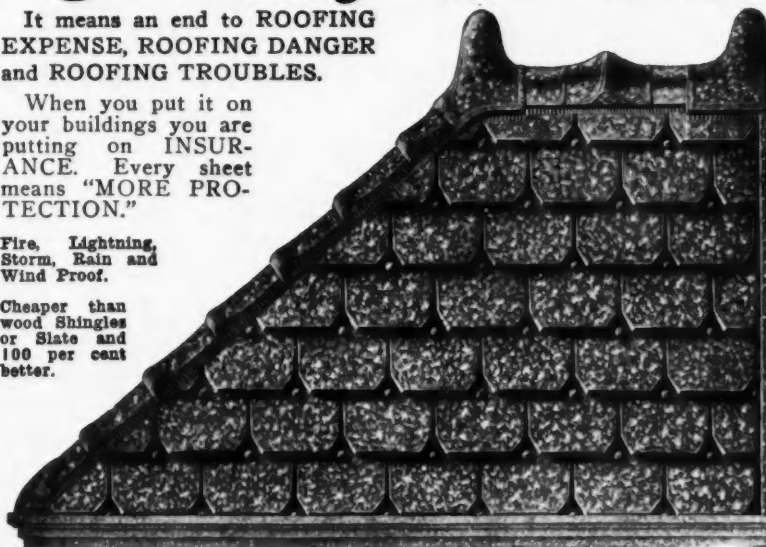
Quality The DICKELMAN EXTRA Distinguishing Trade Mark Metal Tile and Shingles

It means an end to ROOFING EXPENSE, ROOFING DANGER and ROOFING TROUBLES.

When you put it on your buildings you are putting on INSURANCE. Every sheet means "MORE PROTECTION."

Fire, Lightning, Storm, Rain and Wind Proof.

Cheaper than wood Shingles or Slate and 100 per cent better.



THE MOST BEAUTIFUL ROOF IN THE WORLD.—Ornamental and Lasting.

Many different designs in painted tin, galvanized or copper. Easy to lay, economical, beautiful.

If you are a builder and contractor, let us know, for we have a profit-sharing arrangement which we make with builders, and it would pay you to ask us about it.

Consist of 99.9% pure, open hearth iron. This combined with perfect galvanizing, enables us to give you a roof that will last! Over a quarter century experience is back of all our products, which include corrugated, V-crippled and roll Roofing besides shingles and other metal specialties.

DEFIES THE DESTRUCTIVENESS OF TIME

Here is an investment that pays unusually large dividends to

Carpenters and Builders

Galvanized Shingles can be laid by a Carpenter or Roofer quicker than any other material. No soldering required, just nails; the lock and flange take care of the rest. Under no condition can any of our DICKELMAN EXTRA Metal Shingles or Tile ever blow off.

No little bills to pay for Soldering and Painting on account of Leaking. Once on, on for a life time.

Reduce the cost of insurance, being both fire and lightning proof. Lightning was never known to strike or injure a building covered with a metal roof.

Can be successfully laid by any workman who will read and follow our printed instructions. No solder is used; only a pair of snips and a hammer are needed.

Write for FREE CATALOG.

Offers many valuable roofing suggestions. Explains "Dickelman Quality" and guarantees.

The Dickelman Manufacturing Co., Department "C" **Forest, Ohio**

The Stormproof Roof

ABSOLUTE protection from the elements is assured the house roofed with Cortright Metal Shingles.

They interlock and overlap so that no snow or rain, spark or ember, can penetrate.

There's no solder used on a Cortright roof, and not a nail exposed to the weather. No expansion or contraction from heat or cold can pull it apart, or lightning harm the house under it.

CORTRIGHT Metal Shingles

have all the virtues of other roofings with none of their defects. They last indefinitely and never need repairs.

Contractors and Builders everywhere are recognizing that wood shingles are rapidly becoming obsolete and are dropping them for the handsome stormproof, fireproof, and inexpensive Cortright Metal Shingles.

There's more money for you in Cortright than in wood shingles, and you do your client a real service in recommending them. Easy to lay, expert help not necessary. Write today for samples, prices and our interesting new catalog.

Cortright Metal Roofing Co.

PHILADELPHIA
AND
CHICAGO



Modernizing the Farm Home

How Scientific Heating Has Added to the Cheer and Economy of Country Homes

Possibly no other single home utility has done more for the modernization of the farm home than up-to-date scientific heating apparatus.

Heretofore the average farm house has been anything but a home of comfort in the winter months. Two main conditions have been responsible for this. Naturally-exposed location has placed an unusual burden on the heating. On top of this the heating apparatus has been inadequate, owing to the old style top-feed stoves and grates with which the country dweller has had to contend.

Where the city resident has had his heating plant centralized—only one fire to tend—the country householder has been compelled to take care of several stoves and grates throughout the house. Besides the added care incidental to lugging coal and ashes, have been the discomfort and unhealthfulness of dust, smoke and gases scattered through the house under the old-time method, to say nothing of cold "in-between" rooms and bleak hallways.

All of which has meant that from a heating standpoint the average country home has not been a success, a fact which has been forcibly brought home to builders generally.

As a result, this phase of home building has been receiving particular attention and study on the part of builders. They have come to realize the greatly increased value of the house equipped with a proper heating system.

The number of new systems that have been tried is legion. These have run the whole gamut of heater-dom. Methods that would not be countenanced for one moment in city homes have been offered as solving the heating problem of the farm home. These have come and gone—lost in the abyss of failure.

The conditions imposed by the country home on a heating system are unusually severe. Heaters that give out generous heat have been found to do so only at a great coal cost, while those for which claims have been made for coal economy have usually sacrificed heat to the saving.

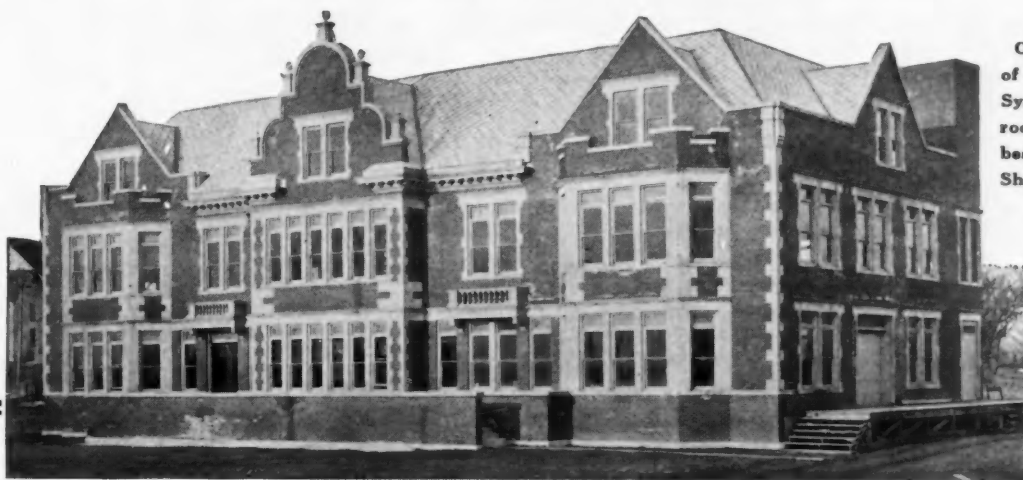
Pre-eminent among heating methods that have overcome the manifold disadvantages of old-fashioned grates and stoves is the Williamson Underfeed method of heating. With the Underfeed, coal is fed from below. All clean fire is on top, right next to the radiating surfaces. This means that no heat is consumed through fire having to fight its way against dead coals which under other methods must be "dumped" on top. Another advantage claimed for this method is that all smoke, gases and coal dust are consumed and converted into live, clean usable heat instead of finding their way through the house or up the chimney.

In other words, this is the "candle" principle. Hold a lighted candle right side up and note the steady flame, the absence of smoke or odor. The tallow is drawn up into the wick. The fuel supply is below the flame. Note how the heat rushes to meet the hand held a few inches above the flame. That is because nothing is there to interfere with proper radiation.

Now turn the candle upside down. In this way the flame has to fight its way against the fuel supply. This means heat consumption—not heat radiation.

It is this clearly scientific principle which has made the Williamson Underfeed so popular in the country as well as in the city. The saving in fuel bills is so pronounced that the makers guarantee a saving of from one-half to two-thirds where the furnace is properly installed and operated.

The installation of a satisfactory heating equipment has a three-fold advantage. It adds to the prestige of the builder by giving an appreciated touch to his work; it adds to the renting and selling value of the building because of the effi-



Office Building
of W. C. Baumer
Syracuse, N. Y.,
roofed with As-
bestos "Century"
Shingles.

ASBESTOS "CENTURY" SHINGLES

"The Artificial Roofing Slate that Outlives the Building"

One thing we notice—and it happens so regularly that there must be sound reasons for it—

Just so sure as a contractor gets one roof of Asbestos "Century" Shingles up in his community, we receive frequent and increasing orders from him.

You might find it worth while to get in touch with Asbestos "Century" Shingles, and learn *why* this is the fastest growing proposition in the roofing business.

Write us today for prices. Then feature the fact that you are in position to furnish your clients with this highest value of roofing material—Asbestos "Century" Shingles.

KEASBY & MATTISON, Factors
Dept. B - Ambler, Pa.

Branch Offices in Principal Cities of the United States

Choose Roofing as You Choose Your Life Insurance

A HUNDRED and one roofing manufacturers ask for your patronage. Each backs his claims with arguments that seem convincing. It's confusing to say the least. And the loss is your client's if you select unwisely.

There is only one absolutely safe course to follow. Choose roofing as you choose your life insurance!

Just as you consider the insurance company first and the policy second—because you realize that the policy is simply a promise to perform and the standing of the company your actual security—so you should consider the roofing manufacturer first and the roofing itself second.



J-M ASBESTOS ROOFING

"The Roll of Honor"

We tell you that this roofing is made from asbestos rock—that it is practically imperishable—that it is unaffected by heat or cold, rain or sleet—that it affords excellent fire protection—in short, that it will give your client absolutely satisfactory and lasting service without any painting, coating or attention whatever.

But, more than this—we remind you that behind this "promise to perform" is the security that lies in buying your roofing from a company with a country-wide organization built up by a policy that does not willingly permit a single customer to be dissatisfied.

Write Our Nearest Branch for Illustrated
"J-M Asbestos Roofing Catalog No. 303."

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Away With Cobweb Roofings

The man who furnishes roofs that are not so good as the roofs furnished by his competitors, is giving them a chance to undermine his business and his reputation.

You are absolutely safe against such risks by using

Genuine Bangor Roofing Slate

That is why the foremost contractors prefer it. It leaves them a good profit. It secures them customers glad and willing to pay for good material plus your good workmanship. It builds up their reputation.

Also we stand ready to help you build up business with it. We have some interesting pamphlets that will show you why and how.

In your own interest send the attached coupon today. Slip it in the mail before this slips your busy mind.

February, 1918.

Genuine Bangor Slate Co., Easton, Pa.
Please send information.

Signed

Address

City State

ciency and economy; it adds to the satisfaction of the user by reason of the new comfort and the saving in fuel bills.

The heating problem is paramount in the building of the country home. And this part of the equipment should be carefully considered and planned since it has all to do with winter comfort. Write The Williamson Heater Co., 147 5th Ave., Cincinnati, for full particulars.

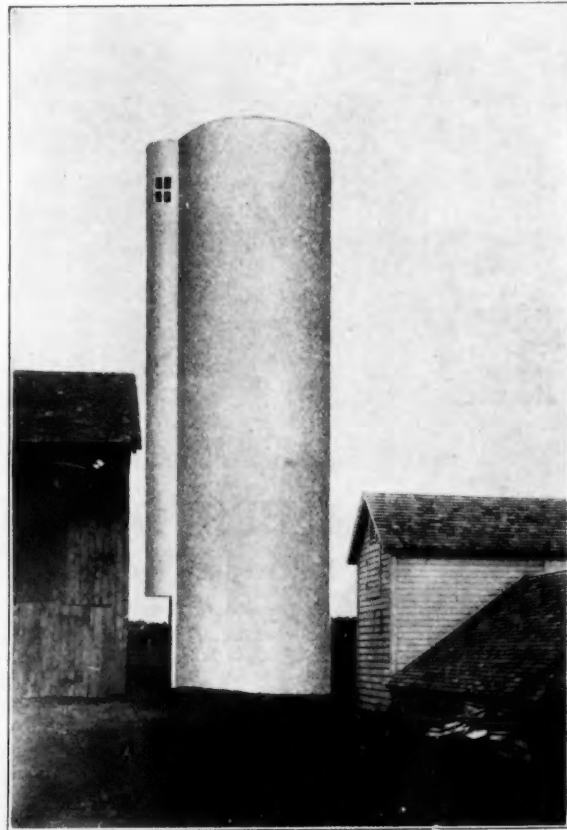


Build Concrete Silos

If you are looking for a good opening for spring business in the concrete silo line, the offer made by the Conklin Construction Co., of Hartford, Mich., will surely appeal to you from a business standpoint. This company make a specialty of furnishing first-class, up-to-date equipment for the construction of monolithic concrete silos, and are putting a large amount of equipment on the market in different parts of the country.

There is no question but that the concrete silo has come to stay, and its advantages are made more evident each year through the experience of men who have built this form of silo. Up-to-date farmers in all communities have at least considered the building of this type of silo, even if they have not one or more on their farms at the present time. Therefore, with an introduction of this kind to serve as an opening, it should not be difficult work to convince most any farmer that he can save money in the end by building a monolithic concrete silo.

In order that builders may work to the best advantage in this kind of construction, the Conklin Construction Company are now offering to send out an experienced man with their silo machine. This man will stay with you for three days, show you how to set up the machine and teach you how to build a monolithic concrete silo. By having this expert to instruct you, your job will be right, and all other work thereafter should be equally well done. You can have the machine



S. A. DRAKE FARM.
14 by 54-Foot Silo. Built by Sutton & Moore, Canton, Ill.
Built with Conklin Forms.



REAL ART IN METAL WORK

We offer you a variety of exclusive stock pieces and designs to select from, that cannot even be approached in artistic merit or numbers by any other manufacturer in the world, or we will produce faithfully reproductions of sculptors' own models or artists' own designs.

Architects of repute and sculptors of note endorse and use our work.

MULLINS SHEET METAL STATUARY

while costing far less, rivals in appearance and endurance the finest cast or sculptured work.

We manufacture and can make prompt shipments of Metal Tile Roofing, Skylights, Cornices, Finials, Building Fronts, Capitals and Sheet Metal Ornamental Work of every description.

MULLINS' Fireproof Windows are approved by the National Board of Underwriters.

We submit quickly estimates of Architects' drawings—Our Service is prompt—Our prices attractive. We make special discounts to the Trade.

We have catalogs covering any line or lines that you may be interested in. Write today for what you want.

THE W. H. MULLINS CO.
214 Franklin St. Salem, O., U.S.A.



R. S. Shapier, Architect.
Summit, N. J.

The Finishing Touch

to a Cement or Stucco House is a stain of some pleasing Artistic Color.

Cabot's Waterproof Cement and Stucco Stains

give soft rich colorings, that add to the beauty of a Building and at the same time make a permanent, waterproof surface. These Stains are very durable and will last as long as colors can. Easily applied and very inexpensive. One gallon will cover from 200 to 250 square feet.

Not a Paint

Cabot's Waterproof Stains are transparent and show all the variations in texture and tone of the surface producing deep rich colorings. They are positively waterproof and penetrate deep into the pores, keeping out all moisture and acting as a preserver.

Cabot's Waterproof Cement and Stucco Stains come in a variety of pleasing colors.

Send for Free Color Cards, showing the beauty of these Stains. Write for them today.

SAMUEL CABOT, INC.

Mfg. Chemists

15 Oliver St. Boston, Mass.

AGENTS ALL OVER THE COUNTRY.

Fiberlic Building Board

Fiberlic walls and ceiling last as long as the house itself, for Fiberlic is made from an interlaced mass of long, tough, chemically treated root fibers, from which all growth and insect life is forever excluded. It is the only building board having the property of absolute sanitation.

The finished board is hard and rigid, yet it is as easily handled as seasoned lumber.

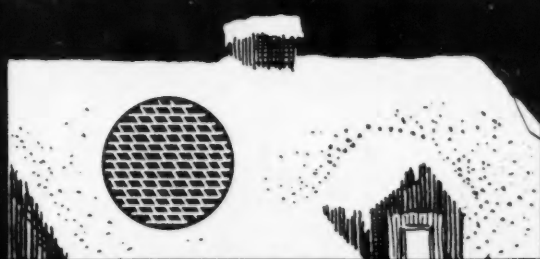
Fiberlic is used successfully by carpenters, builders, contractors and architects who had despaired of securing permanent satisfactory results from a wall board.

Fiberlic is sold by a steadily increasing number of dealers who are staking their reputation on its guaranteed superior quality and adaptability.

Three convenient thicknesses, one-eighth, one-quarter and one-half inch, at prices no higher than you are asked to pay for ordinary wall boards.

Write for samples and particulars.

The Fiberlic Company
CAMDEN, NEW JERSEY



SNOW and ICE Can't Harm a Roof of G. F. T. ROOFING SLATE

Neither can extreme heat or fire. It's the one roofing material that guarantees permanence.

No Upkeep Costs

Most roofings on the market have to be frequently repaired and renewed. You can figure up how much this comes to when a house is twenty years old. A Slate roof requires no repairing and will last as long as the building. Slate is by far the best appearing roof, harmonizing with any style architecture. If you are looking for Beauty, Economy and Durability specify Genuine Franklin Tunnel Slate.

A FREE BOOKLET ON SLATE

Will be sent postpaid to all Contractors and Builders sending us their name and address. It contains valuable information about Slate and how to lay it, etc. Write for your copy TODAY

SLATINGTON SLATE CO.
Slatington, Penn.

FLEX-A-TILE "Giant" Asphalt Shingles



These sturdy, fadeless shingles of wear-and-weather-proof asphalt have proved their splendidly serviceable quality on installations of every description—from the biggest roof surfaces to the smallest.

Flex-a-Tile "Giant" Asphalt Shingles are 50% heavier, 50% thicker and 100% stronger than any standard asphalt shingles. Flex-a-Tiles are made in the best roofing plant in the country. On top of pure wool felt—doubly saturated with high-melt point, oil-free asphalt—we lay a coating of rubber-like gilsonite and into this while still hot the surfacings of slate or granite are compressed.

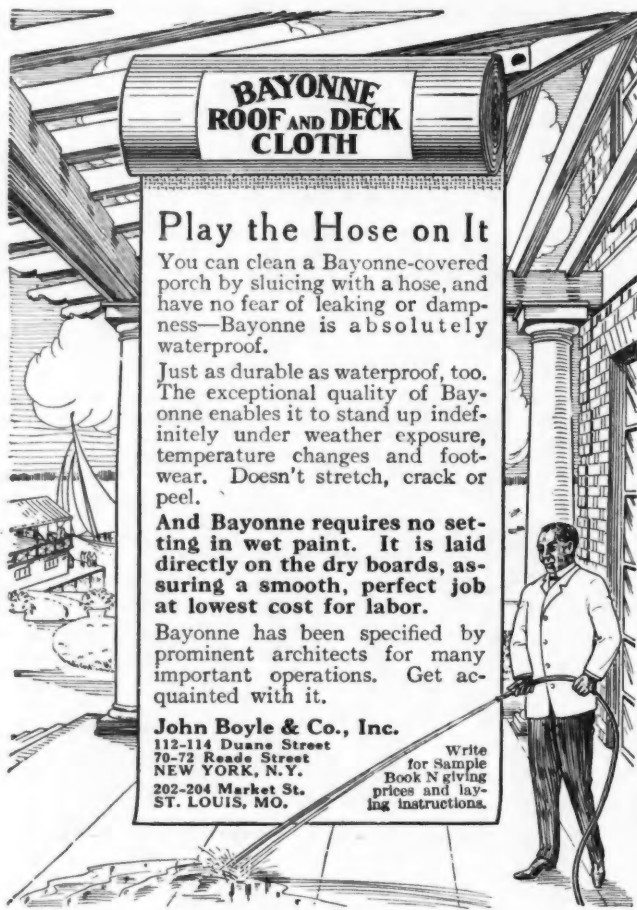
Specimen shingles and complete information gladly sent. Write today.

THE HEPPE'S COMPANY

Mfrs. also of Asphalt Paint, Asphalt Roofing
in Any Finish and Utility Wall Board. ::

1010 So. Kilbourne Avenue

CHICAGO, ILL.



BAYONNE ROOF AND DECK CLOTH

Play the Hose on It

You can clean a Bayonne-covered porch by sluicing with a hose, and have no fear of leaking or dampness—Bayonne is absolutely waterproof.

Just as durable as waterproof, too. The exceptional quality of Bayonne enables it to stand up indefinitely under weather exposure, temperature changes and foot-wear. Doesn't stretch, crack or peel.

And Bayonne requires no setting in wet paint. It is laid directly on the dry boards, assuring a smooth, perfect job at lowest cost for labor.

Bayonne has been specified by prominent architects for many important operations. Get acquainted with it.

John Boyle & Co., Inc.
112-114 Duane Street
70-72 Reade Street
NEW YORK, N.Y.
202-204 Market St.
ST. LOUIS, MO.

Write for Sample Book N giving prices and laying instructions.



INTERNATIONAL Asphalt Shingles

Durable—Rich in Color—Fire-resisting—Economical

International Asphalt Shingles are a superior Shingle. Made of best materials, by a special process, they guarantee the maximum of service. They will resist heat, cold, fire. They make durable, water-tight roofs.

Made in standard size, 8" x 12 $\frac{3}{4}$ ", carefully packed in cartons. Easiest to lay—any carpenter can lay them.

A FULL-SIZE FREE SAMPLE

We will send you a Full-Size FREE Sample, postage paid, if you send us your name and address.

INTERNATIONAL ROOFING COMPANY 5305-21 So. Western Ave., Chicago

set up on your premises and show every prospective silo buyer the many advantages of having the silo constructed under the Conklin system. They will also furnish you with 50 catalogs, 500 business cards, 100 contract blanks, 2 electrotypes of finished silos and a leather-covered book of silo photographs mounted on cloth. This puts you in a good position to take orders for the spring work. The Conklin Company ask for a small deposit on this outfit, which will be taken off from the cost of your silo equipment when purchased. This is a fine opportunity if you are entering the silo business, and should not be overlooked.

The equipment for the Conklin monolithic silo is built very strong, carries its own scaffolding, and is automatically raised by two jacks on the center mast of the equipment. The silo may be built to any height or diameter by using the proper size of mould, and will not vary from a true circle or a true perpendicular.

We would advise that you write to the Conklin Construction Co., 750 W. Main St., Hartford, Mich., and ask for their free catalog and a detailed statement of the great opportunity they are offering at this time.



The "Ro-San" Washstand

There are plenty of opportunities for the wide-awake builder to add to his profits by a little extra effort; but those opportunities which pay out best in the end are those that offer to the carpenter a chance to supply his customer promptly with something that the customer is most likely to want as soon as his building is completed.

So much publicity has been given to modern sanitation that the average man who builds a home or a store or a small factory is generally pretty anxious to have it equipped with every modern convenience, but often doesn't care to invest in a plumbing system.

We show here the "Ro-San" washstand, which can be set up in three minutes by anybody who can handle a screw driver. It supplies running water, hot or cold, without pipes or plumbing. This is just such a fixture as the average owner is looking for when he gets his building finished, ready for use. This is the kind of a fixture that sells readily and the contractor is the man to sell it.

If the builder, when he has put the finish on the floors and has cleaned the shavings out of the basement, can go to the owner and offer to install a fixture that is low in price that provides running water in any room in the house where it is wanted, he is going to touch a subject close to the owner's heart. He is going to make a good profit for himself and add to his reputation as an enterprising contractor.

The "Ro-San" washstand consists of a rust-proof metal reservoir holding 4 $\frac{1}{2}$ gallons of water, concealed in a handsome wood cabinet with a French plate mirror in front; vitreous porcelain bowl equal to the best grade of plumbing ware, and a hollow, white enameled metal pedestal which receives the waste water. All metal fittings are of the best grade nickel ware and the



An Elegant Appearing Fixture.

\$250⁰⁰ MONTH REPAIRING AUTO-MOBILE TIRES

Be first to enter this new big paying business in your town. Open your pockets. Let the dollars pour in. Act quick. Every auto sold means more tires to mend. Automobile business is growing fast—enormous field for tire repairing. Punctures and blowouts are common. Tires need retreading and vulcanizing. Something going wrong all the time. Thousands forced to buy new tires because they can't get old ones fixed. Think of the old bicycle days—repair shops on every corner—all making money—busy day and night. Autos make same proposition over again—only ten times bigger and better. Users of Haywood Tire Repair Plants are making big money. Johnson, Tex., writes: "**I made as high as \$18 profit in a day.**" Another man who bought a plant September, 1911, writes he has **cleared over \$3,000.00.** That's going some! Operate a plant as side line in connection with auto business—garage or as an independent business. Find neighborhood where there's a bunch of autos—get all the steady business besides transient work. Experience unnecessary. You learn quick. Simply follow directions—practice a few days on a couple of old tires and you'll be ready to coin money. Business comes fast and easy.



Repair Tires at Home. Young men! and boys repair father's tires—get money he pays garage man. Get the neighbor's work. Make money to attend college or to start a garage and repair business. **Auto owners**—repair your own tires—save money—pay for your outfit in short time. We have outfits for home use. Anyhow investigate. Send today for catalogue. See the wonderful possibilities in this marvelous field. Learn of the enormous money-making opportunities in this fascinating new business.

HAYWOOD TIRE & EQUIPMENT CO.,

660 N. Capitol Ave., Indianapolis, Ind.

Use Creosoted Shingles That Come Already Stained

Save the time, cost, muss and bother of staining on the job.

Use one color on roof; another on side walls. The result is artistic, permanent and economical.

"CREO-DIPT" STAINED SHINGLES

17 GRADES

16, 18, 24-INCH

30 DIFFERENT COLORS

We use only the best Cedar Shingles thoroughly seasoned and dried and stain them for each job with permanent colors that thoroughly preserve them against dry rot, worms and decay by our **exclusive process.** Earth colors are ground twice in linseed oil and creosote. We guarantee both quality of shingles and even stain.

Write for sample colors on wood and catalog that shows CREO-DIPT houses in all parts of the country by prominent architects.

STANDARD STAINED SHINGLE CO., 1028 Oliver Street, N. TONAWANDA, N. Y.



Residence of David Kahn, Beachwood Ave.
G. C. Burroughs, Architect, Rose Hill, Cincinnati.
Roof, one color; Side Walls another color of CREO-DIPT Shingles.

Indestructible Roofing



GOthic TILE

Cover your buildings with Montross Metal Shingles and save yourself time, money, worry. Economical in price and easily laid. Our booklet, "The Best Roof Under The Sun" will make you a roofing expert. Free on Request.

AGENTS—MAKE MONEY

On our profit sharing inducement to all reliable live wire dealers. Write for information, how our agents are growing rich handling Montross Metal Shingles. Big demand. This is your chance. Don't overlook it. Testimonial letters and affidavits cheerfully given.

MONTROSS METAL ROOFING CO., 102 Erie St., CAMDEN, N. J.



HUDSON ASPHALT SHINGLES

Durable, Beautiful, Low in Cost. Colors: Red and Green

Write for FREE Samples

ASPHALT READY ROOFING CO., 9 Church Street New York, N. Y.



Make Money Faster and Easier than You Ever Did

before, by handling W. & C. Metal Shingles. We have a special selling proposition to make to one live man in every town in the country, and its acceptance puts the acceptor in a position to make a great deal of money easily

Walter's and Cooper's Metal Shingles

are proof against fire, wind, storm, snow, rain, lightning, rust and decay; will not curl, check, split, rot, crack, blow or drop off, and are long lasting. Cost no more than wood shingles. Ask for catalog and selling plan.

National Sheet Metal Roofing Co., 339-345 Grand Street Jersey City, N. J.

whole fixture presents a handsome, inviting appearance. It is 5 feet high and occupies floor space 18 inches square.

Private homes, offices, hotels, waiting rooms, small factories, etc., are being equipped with "Ro-San" washstands. Carpenters and builders all over the country are introducing these fixtures to their customers. This work not only provides profitable winter employment—it is work that takes little time and is carried on throughout the year, yielding a most satisfactory annual profit. The Rowe Sanitary Manufacturing Co., 202-CC Sixth St., Detroit, Mich., manufacture "Ro-San" washstands and the "Ro-San" indoor closet, and they will explain their proposition to readers of this paper who write to them. A handsomely printed booklet discussing these fixtures will also be sent.



The Lightning Rod Vindicated

The old fashioned lightning rod agent was so thoroughly discredited that he has been well nigh driven out of business—a good example of the way in which a flourishing industry may be wiped out by too little attention to square dealing. The theory on which the use of lightning rods is based is perfectly sound, and modern science has so clarified it and made it more precise that it is now possible to furnish sure protection to almost any building. Worthless devices badly put up and with poor ground connection or none at all, killed the lightning rod business a generation ago.

It is a builder's proposition to put up lightning rods properly. Every new building in the country should be rodged at the same time it is being roofed and as a part of the same job. If the lightning rod agents in the old days had been carpenters and builders, responsible men who understood what they were about, it is safe to say that the business never would have fallen into bad repute.

Within the last few years some very interesting facts have been gotten together calculated to show the protection that lightning rods afford. Prof. W. H. Day, of the Ontario Agricultural College, has been one of the leaders in this work. He found that in the state of Iowa the claims paid by fire underwriters for lightning damage amounted to \$4,464 on rodged buildings and \$341,065 on unprotected ones. Apparently for each dollar paid rodged risks, \$76 was paid on unrodged. This shows a protection of 98.7%. In the state of Michigan he found one mutual company that insures only rodged and inspected buildings—in four years they have paid only \$32 in claims on a total of \$55,172.75 of insurance risk. Another mutual company taking both protected and ordinary risks, paid out \$32,269 in claims during the same period on practically the same total insurance. This loss, Prof. Day found to be practically all on unprotected buildings.

It is a fact that lightning rods do protect and it has been demonstrated that carpenters and builders doing rural work make the very best agents to sell and install the rods. Fire underwriters emphasize the importance of careful workmanship. This they say is more important than the particular type of rods and points used. Builders naturally appreciate this point as their experience in their building work has taught them the lesson of thorough construction. We believe a great many of our readers operating through the country districts will be glad to affiliate with a reliable manufacturer of lightning rod equipment.

Rayburn, Hunter & Co., 412-432 N. Sangamon St., Chicago, whose business was established in 1849 and who are said to be the oldest and largest manufacturers of lightning rods and fittings in the world, desire to correspond with any of our readers who would be interested in this lightning rod proposition. Write them for their catalog and special proposition to carpenters and builders.

WANTED

Good Contractors and Builders to act as our agents in every community for our well advertised



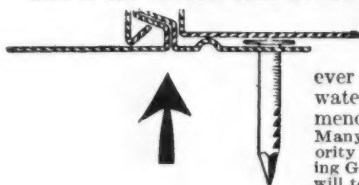
Buckeye Cupola Ventilators and Buckeye Metal Shingles

Two indispensables that every barn builder will need. These goods lead in simplicity and strength of design, easy application and quick salability.

Write for our free booklet on "The Ventilation of Modern Farm Buildings" and "Buckeye Metal Shingles."

See How It Locks?

This is the **Raised Side Locking Joint** which make



Buckeye Metal Shingles the best roofing material ever produced. Makes a watertight lock that commends itself on sight. Many other points of superiority in Buckeye Metal Roofing Goods that the big catalog will tell you all about.

Write for Our Catalogs Today

Ask for our agents' proposition. There is real money in it for the man who is wideawake.

The Thomas & Armstrong Co., Dept. A.
LONDON, O.



The tendency towards Parquet Flooring for all type of buildings is so universal that all builders should make themselves familiar with the possibilities of Federal Parquetry.

Carpenters who want to keep busy all winter should go after Parquet Flooring Jobs!

With Federal Parquetry Squares and Herringbone Strips—you needn't fear price competition—even with ordinary strip flooring.

Federal Parquetry is the very finest quality of thoroughly kiln-dried, uniform, perfectly matched White Oak. Easy to lay; full directions with each shipment. In the usual sizes or special sizes to order.

Write for Special Circular No. 17

FEDERAL PARQUETRY MFG. CO., Inc.

Offices:
175 5th Ave., New York

Mills:
Lexington, Kentucky

Agents wanted wherever we are not now represented

Modern Building Practice Demands HERRICK OUTSIDE ICING SANITARY REFRIGERATORS

**When Laying Out Plans, Don't Fail to Include
This Economical Service for Your Home Builders**

Be Progressive! The latest refinement for modern building is this outside icing—Herrick. It eliminates all the disagreeableness of the iceman entering the house and dirtying the kitchen. Besides making icing convenient, it adds a touch of up-to-dateness that will increase your reputation as a wide-awake, progressive builder. Include this Herrick outside icing in your plans.

The Herrick Outside Icing Refrigerator gives 12 months' service, requiring ice only during the warm period. During the cool months no ice is needed.

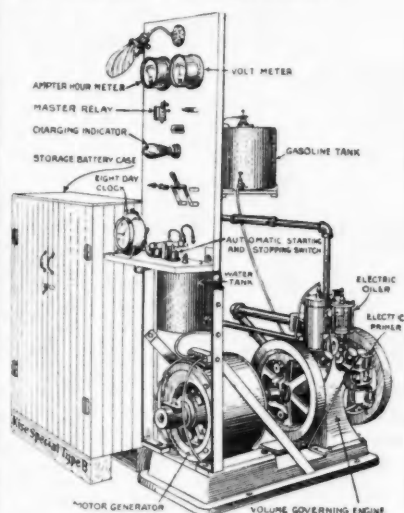
HERRICK REFRIGERATORS are built for service. They represent the highest degree of Refrigerating Efficiency. Scientifically constructed so as to assure perfect air circulation, they keep foods clean and fresh. Walls are heavily insulated, assuring minimum cost of operation, and consequently show a substantial saving in ice consumption. If you want a high Quality Economical Refrigerator with twenty-four years of experience behind it, install a Herrick.

Our Special Builders Service Department is at your disposal. Send us your plans and let us figure on them. It won't cost you a cent and you can talk it over with your customers. We also make Refrigerators for Stores, Hotels, Florists, etc. Write to us for our Large Catalogue 24-A, showing all styles. It's Free.

HERRICK REFRIGERATOR CO.
WATERLOO - - - IOWA



**SEND US THE NAMES OF PARTIES
Who are Building New Homes who
may be interested in an Electric Light
and Power Plant for same. If we can
sell them a Plant we will send you
a check for \$10.00.**



Make the Home modern. Use an Electric Plant. One that will light the home and outbuildings, pump water, run the washing machine, vacuum cleaner, electric irons, fans and all modern electrical appliances. We build plants for small towns, Churches, Country Clubs, Public Buildings, Garages, County Farms and country homes.

Send for
Bulletin No. 22.

KISE ELECTRIC CO., Inc.
Peoria, Ill., U. S. A.

Carpenters and Builders Can Make Money

acting as our local representative. We will pay you a big commission on every acetylene generator ordered through you. Hundreds of homes in your locality should have private lighting plants. Scores will install acetylene gas plants soon. You can "cash in" on every installation and clean up a substantial income yearly, if you get in touch with us right now. Write for full details and proposition at once.

THE GEM CITY ACETYLENE GENERATOR CO
Dept. G. DAYTON, OHIO
Manufacturers of Faultless Pit Generators.



ACETYLENE GAS THE HOME MADE LIGHT



Our Small Gas Plants

are simple in construction, durable, absolutely safe and furnish the best light for the country home. No experience is necessary to install our plant. WE PAY THE FREIGHT and guarantee safe deliveries.

Agents Wanted Catalogue Free

The Geo. W. Clark Co. Dept. C Jacksonville, Fla.

Can You Recommend a Man?

WE ARE looking for a man in your neighborhood—unless the right man has **already** applied.

\$5,000 to \$10,000 a year earnings must not be beyond his ambition.

BUT he must be willing to work hard, to overcome obstacles, and most of all, to be able to look a **new** proposition in the face and judge it on its own merits.

FURTHERMORE, he must be willing to back his judgment by spending for his own equipment, \$150 to \$5,000—the amount varying with the extent to which he wishes to take up the business.

ON THIS investment, he should, after several months of real work, begin to earn **no less than 10% a month**, which rate should not only remain steady, but should steadily increase.

OUR seven years' experience has shown that two kinds of men are most successful with the Norwalk Vault proposition:—

a—The man already doing well in business, whose business, however, is not developing rapidly enough to suit him, or has slow seasons at one time or another.

b—The man who wants to go into business for himself, but has so far seen nothing really worth while within his reach.

TO THE man already established it offers a side line that, given half a chance will soon outgrow his main business. **18% increase in profits** is not abnormal in a case of this sort; a man now making only 6% should, by adding the Norwalk Vault proposition, clear 24%, and a firm with enterprise enough to clear 20% on its present business should easily increase its profits to 35% at least.

TO THE man just starting out for himself it offers an opportunity—on a cash outlay astonishingly small compared with the possible returns—to get in on the ground floor with a great national organization with an established trade-marked article, and with no competition worthy of the name. Whatever business such a man builds up is **HIS**—nobody can take it away from him and no changing fashion or season can affect it.

ON THE other hand, this is neither an experiment nor "get-rich-quick" game in any sense. There is a perfect gold mine of business on all sides **waiting**, but it takes a fairly good man to cash in. If you know such a man, then show him this advertisement; if **you** are the man, write yourself.

YOU may have all the details without the slightest obligation. Our sales and office force are paid to answer your questions frankly and willingly. You may see maps, figures, costs, photographs, letters from successful manufacturers, etc. Unless you are the right man we don't want to do business on any terms and naturally you will feel the same about us. Therefore, the more questions you ask, the better. If the thing sounds reasonable to you, please address:

The Norwalk Vault Company
40 Seminary Avenue, NORWALK, OHIO

Not a "Trouble Saver"

We made a foolish mistake in the news item appearing on page 146 of our January issue, and we want to do what we can here to rectify it. We were telling about the improved scaffold bracket known as the "Trouble Saver" now being offered by the Steel Scaffolding Co., Evansville, Ind. We illustrated one of these "Trouble Saver" scaffold brackets; and, by way of contrast as sort of a horrible example, put along side of it an illustration of an old-style bracket. The idea was to attract attention to the difference. By mistake the caption was made to read "Two Styles of 'Trouble Saver' Scaffold Bracket." The one illustrated to the right was, of course, the "Trouble Saver," and the other the old-style bracket.



Fiberlic Building Board Made From Licorice Fibre

In this age of efficiency, results are accounted of greater importance than traditions and precedents. The man who succeeds and whose services are sought, is the man who is at once prepared to abandon those traditions and precedents to which he has long clung, as soon as he finds a new and better method to achieve a desired end.

A new and better method for interior work in building is that offered by Fiberlic building board. The manufacturers confidently submit this material to alert architects and builders who are ready to take advantage of a modern method which presents many advantages over the old methods of interior building construction.

Fiberlic building board is a material quite unique. The raw material from which Fiberlic is made differs fundamentally from that employed in any other building board. This raw material is licorice root, the fibres of which are long and very tough. After the licorice extract and the resinous matters have been removed, a long, strong fibre of nearly pure cellulose is obtained.

The advantages of possessing a raw material such as forms the basis of the Fiberlic board are manifold. First—Fiberlic building board is uniform and homogeneous in composition, which stops the complaint that wall boards absorb sizing materials imperfectly and unevenly. The freedom of Fiberlic from resinous constituents will not allow it to burn. Fiberlic will smoulder when strongly heated with a bare flame, but is most difficult to actually ignite. A third advantage of a homogeneous board like Fiberlic is its resistance to attack by vermin. The board contains nothing to support mould growth or insect life.

Second—Fiberlic board is dense and rigid. The fibrous structure of the material composing Fiberlic yields a board which is extremely resistant to fracture by concussion or to warping.

And finally—Fiberlic possesses a finished surface which is perfectly adapted to the approved methods of decoration.

These are some of the advantages which Fiberlic building board possesses; advantages which are inherent in the finished board by reason of the unique material from which it is made, and which are further enhanced by a manufacturing equipment which is the best that modern machinery and scientific control can supply.

As to the superiority of the Fiberlic method of interior construction over the older methods of building walls and ceilings, every architect or builder will find a comparison of the two systems so obviously in favor of the new, that only a few points need to be mentioned.

The entire absence of dirt during erection, the simplicity of erection, the great range of adaptability to any desired style of finish, the superior insulating powers against heat, cold, sound and vibration, the lack of repairs, the exclu-

THE TRIED TOOL

Look for
the Name

IRWIN

on the shank of the bit when you buy. That's the only way to be sure it's an Irwin through and through. The Irwin price gives you the best. To pay more, or less, is extravagance.

The IRWIN Bit
Reg. U.S. Pat. Office

Whatever bit you buy, you buy it on faith. All you can SEE is the pattern and the finish. You cannot determine the accuracy of its making without delicate instruments. You cannot judge the quality of its steel without laboratory tests. You buy on faith.

Use alone is the mechanic's test of a tool. Every year of the thirty-odd years that the Irwin Bit has been in use has been a year of test. That is the foundation of the users' faith in Irwin Bits.

The Irwin Bit isn't a bit of a certain pattern—although it is the original solid center bit. It is the bit of a standard of quality—quality in material and quality in workmanship. The Irwin twist is not difficult of imitation. But the Irwin heads have baffled reproduction and the Irwin special crucible steel has defied simulation, through all the years that the Irwin Bit has held its place as standard.

The Irwin Auger Bit Company
Wilmington, Ohio

MAYES BROTHERS Manufacturers of The New Adjustable Aluminum Level of Quality



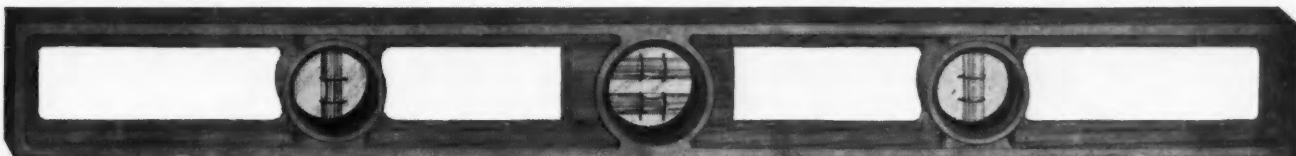
The Mayes New Adjustable Aluminum Levels are made in Six different sizes: 2 1/4 inches wide, 1 in. thick, weight from 2 to 2 1/2 lbs. Has 2 plumbs, 2 levels; works either end or edge up.

30 inches long.....	Price, \$4.50	24 inches long.....	Price, \$3.75
28 inches long.....	Price, \$4.25	20 inches long.....	Price, \$3.50
26 inches long.....	Price, \$4.00	18 inches long.....	Price, \$3.25

High-grade adjustable Aluminum Levels are guaranteed to be absolutely perfect before leaving our factory. Will not rust or crack. The Mayes Bros. Aluminum Levels are light, strong and durable. And will give better satisfaction than any other Aluminum level ever put on the market. We are the only Manufacturers of this Style Aluminum level. Remember when you buy a Mayes New Adjustable Aluminum level you are getting one of the best adjustable features ever seen in a level. When spirit glass are set once, they will remain as set. No jar can knock the adjustment out of whack. Nothing to wear and if used right will last a life time. Also remember, if you brake a spirit glass in our new aluminum level, you need not send back the whole level, just take the broken case out and send it by mail for repair and this will not delay you from using the same level on the job until case returns. It is not so with the other make of aluminum level. Do not buy until you see our new adjustable level, Mayes adjustable aluminum levels. No matter how you pick them they are in position to work either end or edge up. The spirit glasses are protected by one circular plate glass on each side of spirit glass. Spirit glasses have fine brass wire use for marks, and this together with the plate glass, one each side of spirit glass, keeping out all dirt and dust. We use the best grade of spirit glasses, which show up bubble accurately and readily. Order today and if not satisfactory, return, and we will refund the money.

MAYES BROTHERS

692-94 Medbury Avenue, Detroit, Michigan



SAND'S ALUMINUM LEVELS

Will Not Warp

Sand's Aluminum Levels are light, strong and durable. They will not warp, split or rust. Nothing to work loose or get out of order. Easy to handle. Need no adjusting. Made in 18", 24" and 30" sizes for Carpenters and 42" length for Masons. We also make a high-grade line of wood levels.

are honestly made of very high-grade aluminum specially prepared for this purpose. The finish is ideal and the greatest strength is placed where most needed. All unnecessary weight is left out. The plumbs are the best that careful experience can make. Each level is fully tested before it is offered for sale. You can count on Sand's Levels being perfect.

Ask Your Hardware Dealer

to show you Sand's Levels. If he does not sell them let us know and we will send you a circular showing full size view of our 24" Aluminum Level and 1/2 view of the 30". Just like seeing the actual levels.

J. SAND & SON

1023 Rivard St., Detroit, Michigan

Best Level to Use in Dark Places

The plumbs at each end and the double center level make it readable in any position and at arm's length. Pick it up anyway. It is always in position. Vials covered with heavy plate glass which keeps out water, dust and dirt. A Sand's Aluminum Level will last you a life-time.

sion of dampness—all these are but a few of the points which immediately occur to the mind, as overwhelming evidence in favor of the modern method, and to the detriment of the older style of partition building.

For full particulars regarding Fiberlic board write the Fiberlic Company, Camden, N. J.



New Roofings for Old

By A. E. Curtis

I remember driving through the farming country of the central west last summer and seeing farm after farm struggling to get away from the use of the old wooden shingles. The largest number of farm buildings I noticed that were covered with some other form of roofing than wood, had coverings of some patent roofing or other. And I also saw barns and sheds and even houses roofed with galvanized iron.

Farmers are business men, and they realize the efficiency of the old time shingles. And the most progressive and shrewd of these farmers seemed to have reached the conclusion that asphalt roofing is good for their purpose.

For several years the Heppes Company, of Fillmore St. and Kilbourne Avenue, Chicago, have been selling their asphalt roofing to farmers, and the demand is still growing. There has also been an increasing demand for this company's very successful Flex-A-Tile Asphalt Shingles.

One farmer who bought Flex-A-Tile Shingles for his new house and Heppes Flex Roll Roofing for his barns and tool houses got an idea that they were too stiff and hard. He

talked to the dealer about it and the dealer explained to him how they were made. Here's what he said:

"Mr. Macklin, it takes big machines, big brains and a whole lot of honest-Abe labor to make Heppes roofing, and it is made *right*. If you should go down there to their big new concrete factory you would see the pure, hard asphalt mined from the heart of the Rockies, combined with long strands of wool felt to produce this stiff, solid roofing which you have bought for your buildings.

"Don't think for a minute you have made a mistake, because you have bought stiff roofing. It is much easier and cheaper to make a more pliable roofing. It would be cheaper for the Heppes Company to mix oil with the asphalt and to make a softer and less durable roofing. Softer, more pliable roofing, however, melts and decomposes in the sun.

"Now you will notice that you can hardly tear this heavy



A Model Illinois Dairy Barn Roofed with Flex-a-Tile Asphalt Shingles.

5-ply Rubber Tex roofing, but it is easier to tear the softer and thinner kinds. It stands to reason that the harder and tougher a roofing is the longer it is going to stand the wear and tear of all kinds of weather."

Mr. Macklin has since realized the truth of this. His barn roofs are still perfect and the grayish green finish of the beautiful Flex-A-Tile roofing of his house is an object of admiration throughout his whole community.

Be "The Ro-San Man" in Your Town!

Being "The Ro-San Man" in your town means this: That you will be able to offer your customers and to people generally the advantages of running water, hot or cold, for lavatory purposes and a sanitary, odorless indoor closet without putting a single foot of plumbing pipe in the structure.

The Ro-San Washstand provides Hot and Cold Running Water in Any Room Without Plumbing.

At the right we show the Ro-San Washstand. Rustproof reservoir holding 4½ gal. of water concealed in wood cabinet with French plate mirror. Porcelain bowl like most expensive plumbing fixtures. Hollow enameled metal pedestal to receive waste water. Overflow prevented by patented device. Pedestal portable, so it is easily emptied. All metal fittings highly nicked. Fixture assembled and set up in three minutes by anyone who can handle a screwdriver. Heater attachment heats water in three minutes, using alcohol burner. Every home owner wants a Ro-San Washstand. Good money in acting as our agent. Ask for special proposition to builders. Don't let this money-making opportunity slip away from you. Only one agent wanted in a town.



Ro-San Washstand—for kitchen, hall or bedroom.

RO-SAN INDOOR CLOSETS AND SANITARY WASHSTANDS

You can make money acting as our agent

We have a special offer to make to carpenters and builders who will represent us. Easy work that will take little extra time—works in with your regular business.

The Ro-San Indoor Closet will make a hit with your customers

You can furnish a home owner or a renter tenant with a sanitary, absolutely odorless indoor closet for less money than an old-fashioned germ-breeding privy would cost and still make a better profit for yourself.

Closet consists of a sheet steel fixture, as shown at the left with vent pipe to run into stove-pipe, chimney or outdoors. Metal container inside contains chemical mixed with water which destroys all life matter, rendering contents odorless and harmless. Container emptied once every month or so. Gallon of chemical runs a closet eight months. This type of indoor closet endorsed by State boards of health. See what the Michigan State Board says in this issue of this paper. Ro-San Closet may be set up by anyone in three minutes. Easily moved. Sells as readily to tenants as to owners.

Our Proposition to Builders We want a carpenter or builder—just one—in every town to act as our agent. Liberal commissions. Write for full details about these fixtures and how we help our agents make sales. Write today if you mean business. Don't let some other man snap up this opportunity.

Ro-San Indoor Closet— set it up in clothes closet or bedroom—anywhere in the house. Absolutely Odorless.

Rowe Sanitary Mfg. Co.

202-C Sixth Street

::

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DETROIT, MICH.



Saws of Efficiency and Satisfaction Bear the Name

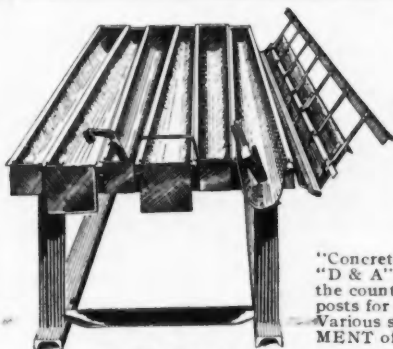
KEEN KUTTER

Made of best steel, properly filed and set. Perfectly balanced—will not "buck" and jump, but saw true and fast with little effort. Sold for over 45 years under this motto:

"The Recollection of Quality Remains Long After the Price is Forgotten"
Trade Mark Registered. —E.C. SIMMONS.
Send for our Home Furniture Design Booklet No. 1, 976.



If not at your dealer's, write us.
SIMMONS HARDWARE CO.
St. Louis New York Philadelphia
Toledo Minneapolis Sioux City Wichita



"D & A" All Steel,
6-Mold Outfit

The "D & A" CEMENT FENCE POST MACHINE is a Profitable Investment for You

"D & A" Posts are STANDARD upon prominent railways; made by Concrete Products Plants, and used by Land Owners in all parts of the world. Why not YOU? There's a Profit waiting for you.

Shape of "D & A" All-Steel Molds, combined with the "Shaking System" using WET (not slush) mixture, makes Strongest, Cheapest and Everlasting Posts. SIX OR TEN POSTS MADE AT ONCE.

"D & A" Tie Wires Fasten Fencing Very Securely

"Concrete Posts and How to Make Them," our new catalogue just issued, illustrates and describes the "D & A" MOLDS and process of making, curing, and shows the use of "D & A" Posts in all parts of the country, with names of users. Costs of manufacturing given in detail. Now is the time to make posts for Spring. Our 1915 prices are interesting. Various sizes, shapes and lengths of LINE, ANCHOR and BRACE MOLDS, also POST REINFORCEMENT of many kinds in stock. Send for Catalogue. See us at the Chicago Cement Show.

D. & A. Post Mold Co., 405-9 Third Ave., Three Rivers, Mich., U.S.A.

None But THE



This hammer is made of the finest steel procurable. Every stage of its manufacture is checked by a system of inspection of the most rigid sort. Before it leaves our factory it must be **proved** right in every particular—lines, balance, weight, tempering, etc. Just this care to put before America's building trade none but the best has established for the "Master Builder" its mighty prestige, and assured its steady demand. The hammer here shown is made in three sizes: No. 745, 11 oz.; No. 746, 16 oz.; No. 747, 20 oz.

EACH, \$1.00

Germantown Tool Works
PHILADELPHIA, PA.

Branch: 62 East Lake St., CHICAGO, ILL.

*Satisfies
the
Master
Work-
man*



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TRADE MARK

ASEPTIC CLOSETS

Right Now Are Earning
Carpenters and Builders

BIG PROFITS

They can do the same for you. Now is just the time—now is when their convenience is self-demonstrating. These Closets sell on sight in communities without sewerage. Work is slack with you, grab this opportunity, you can make a neat little sum this winter acting as our Agent in your Locality.

**You Can Do It. Get In
Touch With Us Today**

No Capital required—they sell themselves. Write to us
Now.

THE HYGIENIC PROMOTION CO., (Inc.)

279 John R. Street - - - DETROIT, MICH.



The rapidly increasing use of cement for garages, barns, corncribs, stables and other buildings has created a big demand for

WAGNER Studding Sockets for Cement Floors

—the easiest-to-use, most durable and best all around way of anchoring studding in cement floors.

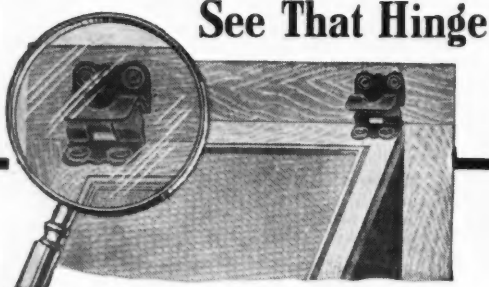
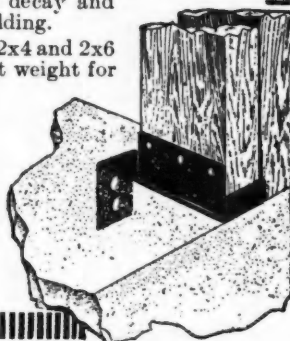
Set into the cement while fresh, they are tightly secured and hold with a grip of steel. Protect ends of studding against decay and insure long life to the building.

Made in two sizes—for 2x4 and 2x6 or 2x8 studding; also light weight for partitions.

**Your Dealer Can
Supply You**

We fill orders direct where we have no dealers. Write today for descriptive folder.

Wagner Mfg. Co.
Dept. F CEDAR FALLS, IA.



See That Hinge

It Spells Safety--- Durability and Economy

Screen cannot be jarred out of place. Makes sagging impossible. Eliminates the necessity of removing screens when washing windows. Has a two-fold purpose—can be used to hold storm sash in winter.

Furnished in either Japanned or Galvanized Steel, or Solid Brass. Give your customers the very best by insisting on

Watrous Safety Screen and Storm Sash Hanger

Its simplicity of construction makes it easy to hang. Saves half the Carpenter's time. Only tool a hammer. Barbed car nails used in place of screws.

Cost less—last longer—gives better service.

At your dealers. If yours don't handle it write us direct.

FREE Sample. Write for it today also literature on other time-saving hardware specialties.

**Our Wrought Steel Butts can't be beat---
Ask about them.**

WATROUS-ACME MFG. CO.
DES MOINES, IOWA

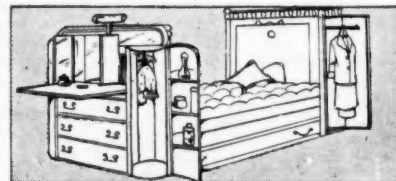
Chicago Sales Office :: 180 North Dearborn Street

The All-One Cabinet Bed

Increasing land and building values, high rents and the necessity of conserving and utilizing all available space in order to get the best returns on the investment, have brought into the market perhaps the most ingenious space saver.

It is the All-One cabinet bed, patented and produced by the Cabinet Bed Co., 930 Consumers Bldg., Chicago. As the name implies, it is the combination of many useful pieces of furniture within one cabinet; including bed, dresser, chiffonier, wardrobe, desk, dressing table, etc., with the comfort-giving convenience necessary to a well appointed room.

The All-One is constructed along lines conforming with modern furniture construction and the basic ideas are to use space under the bed proper, which ordinarily goes to waste, in an arrangement of convenient drawers; and the head and foot end, which heretofore have been only ornamental, in



All-One Cabinet Bed—A Whole Bed Room Suite in One.

an arrangement of wardrobes, desk, dressing table, paper and book rack, etc.

The bed is not a folding proposition, but may be used as a comfortable couch during the day.

The foot section is only 9½ inches deep, acting as an end support for the couch, yet is a standard size library desk, dressing table, roomy paper and magazine compartment, place for shoes and extra wardrobe space; while in the head section, the same depth as the foot, is a complete wardrobe with extension rods, umbrella rack, etc.

Attention has been given to make the All-One artistic in appearance as well as useful, and when placed in a room is a massive, handsome piece of furniture.

They want your co-operation and will pay well for it. They want carpenters and builders to recommend these to their customers. Figure them in your floor plans, show your clients where they can save money by their use. Explain to them that they can build a smaller house and get the same amount of floor space by using Cabinet Beds. Get in touch with the Cabinet Bed Co., 930 Consumers Bldg., Chicago. They will send you full details and catalogues. It'll be profitable for you.



Ceresit in New York City

Ceresit Waterproofing Company of Chicago has established its New York office at 101 Park Avenue, in the Architects' Building. Mr. R. E. Clarke is the New York manager. Mr. Clarke is a graduate of Columbia University, 1906, and is a capable and experienced waterproofing engineer.



Grab This One!

Dirty shoes with their load of dirt, mud or snow, have been the bane of every woman's life. "Wipe your shoes before entering this house" has been everybody's wish but nobody's privilege. Door mats and steel scrapers fail in this mission, because they are not scientific. They clean the sole but not the shoe, the bottom but not the sides. Grab's automatic shoe cleaner deals with this—an old problem—in an entirely new and better way. This ingenious device, weighing less than four pounds, actually cleans the entire shoe in one simple operation. It cleans the sole, the sides, the front, the heel. Mud, dirt, dust, snow—dirt of all kinds is removed in a jiffy.

In the home guarded by one or more Grab's scrapers, there is less dirt to contend with, less work to do, less drudgery to suffer, less shoes to buy. This invention has been endorsed by leading health and hygienic journals. The manu-

"D & A" CEMENT FENCE POSTS

are being used for all large contracts on account of the economical manufacture and superior construction of same.

The "Shaking System" makes SIX or TEN smooth, dense, weatherproof concrete posts at-one-time; Cheaper, Quicker and Stronger than by any other method.



Over 100,000 "D & A" Posts have been made and set in fence by this one customer, the above showing one of several plants operated using "D & A" Molds exclusively for Line and Anchor Posts.

"D & A" MOLDS are just as adaptable to the small user as the largest, as only additional molds are required to increase capacity.

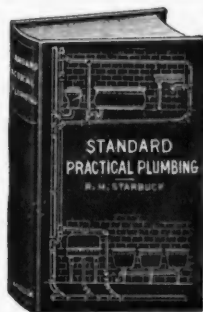
Concrete Products Plants in all parts of the world use "D & A." Why not you? Every land owner is in need of "D & A" Posts and there is profit in making and selling them.

Now is the time to make posts for spring trade. Send for Catalogue and Prices now.

See Our Exhibit at Chicago Cement Show.

D. & A. POST MOLD CO.,

405-9 Third Avenue, Three Rivers, Mich., U. S. A.



Standard Practical Plumbing

By R. M. STARBUCK

450 pages, 347 illustrations. Of the three hundred and forty-seven illustrations contained in the book, one hundred of them are full-page illustrations. The illustrations all being drawn expressly for this work, show the most

modern and best practice in plumbing construction.

Plumbing in all its branches is treated within the pages of this book, and a large amount of space is devoted to a very complete and practical treatment of the subject of Hot Water Supply and Circulation and Range Boiler Work.

Another valuable feature is the special chapter on Drawing for the Plumber.

It Contains the Following Illustrated Chapters

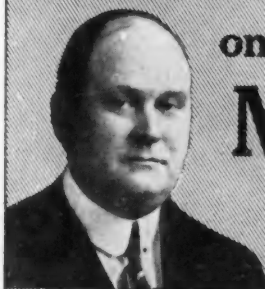
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| 1. The Plumber's Tools. | 16. Ventilation. |
| 2. Wiping Solder, Composition and Use. | 17. Improved Plumbing Connections. |
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"AMERICA'S GREATEST SASH AND DOOR HOUSE"

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Built-in Cases
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shown in our
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Beautifully
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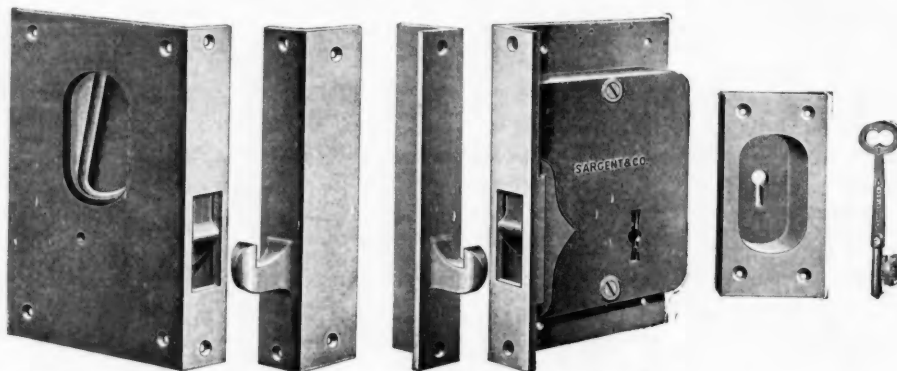
facturers want representatives in all parts of the country to assist them in supplying the demand already created. By all means investigate this proposition today by addressing the Security Mfg. Co., Dept. 72, Toledo, Ohio, and receive their free catalog.



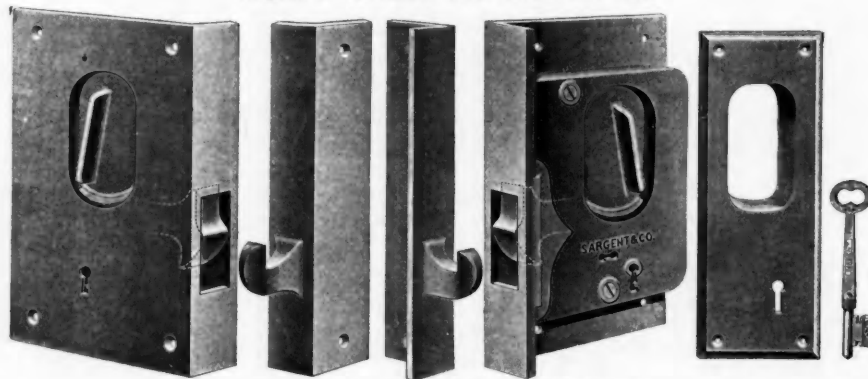
Two Barn Door Locks

Two types of locks for barn doors are now offered by Sargent & Co., New Haven, Conn., Nos. 6904 and 6909, as illustrated herewith. These locks are intended for sliding doors, and as you will see from the illustrations, the latch bolt is flush with the face of the lock and the strike catch is made so that it can be set back beyond the jamb of the door. When so applied, there is no possible injury to horses passing through the doorways.

The difference between the two numbers is that No. 6904 is operated from the inside by the lift lever and from the outside by the key, while No. 6909 is operated from both sides by the lift lever and has a key which deadlocks the bolt from both sides. These goods are made in japanned finish, with polished bolts. They are strong and secure.

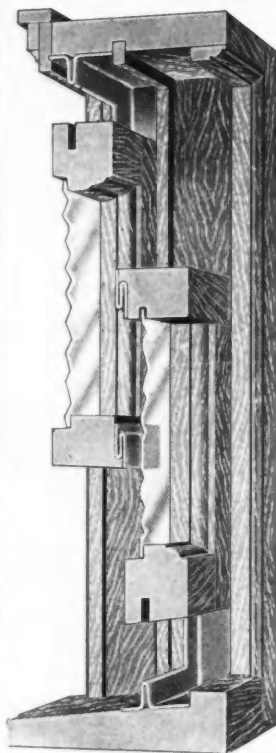


Sargent & Co. Barn Door Lock, No. 6904.



Sargent & Co. Barn Door Lock, No. 6909.

News print paper has been made by the forest service laboratory from 24 different woods, and a number compare favorably with standard spruce pulp paper.



MR. CARPENTER AND BUILDER:

Do you wish to substantially increase your yearly income?

GOOD! Now we can talk business

PERHAPS in your town or county where you are acquainted and now doing business, our metal weather strip is not represented.

WHY NOT TRY to secure the exclusive right of furnishing and installing our metal weather strip in your territory.

YOU buy the strip on the per foot basis and install same at a handsome profit.

Our weather strip is the easiest sold on the market

Because—It is the strongest and gives greatest protection.

The meeting-rail strips are double nailed and tight.

Our spring bronze is extra heavy gauge and straight. **NO KINKS.**

The All Brass Threshold has conquered the door bottom problem.

When writing for our proposition—tell us something about yourself, also territory desired.

NIAGARA METAL WEATHER STRIP CO.

737 Main Street

BUFFALO, N. Y.

Straight Talks on Durametal Weatherstrips

¶ You contractors—carpenters and building owners—why not buy weatherstrips direct from the manufacturer and do your own installing?

¶ By our unique plan, we have cut out the usual big selling expenses, which enables you to buy direct from us, make a profit on the strip and good money on the installation besides.

¶ Durametal Weatherstrips have been successfully sold for over 10 years and have stood every possible test. Their durability and simplicity makes them superior to all others.

¶ Made of best heavy zinc, and fully guaranteed. Write for samples and prices now before you turn another page. There's money in this for YOU.

A few agencies open to responsible, live, local contractors and carpenters.

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Our books show 132 Practical 1 and 2 story Plans adaptable to any climate.

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IVES PATENT WINDOW STOP ADJUSTER

Prevents Drafts, Dust and Window Rattling



The only stop adjuster made from one piece of metal with solid ribs and heavy bed that will not cup or turn in tightening the screw

Descriptive circular mailed on application

THE H. B. IVES CO.

Manufacturers of Builders' Hardware
NEW HAVEN CONN., U. S. A.

Lorenzen

As Usual in the New
MORRISON

Chicago's Latest and Greatest Hotel

Wherever tile and mosaic work was used in this famous new hostelry, the Lorenzen line was selected.

The walls and floors of the wonderful first floor grill with the attractive blue and white color scheme; throughout the kitchens; in the bathrooms—Lorenzen tiles and ceramic mosaics were used.

This is only one of many where the Lorenzen line was selected for its distinctiveness and breadth.

Write today for "Tiles and Mosaics," describing our complete line for all sorts of work.

Chas. F. Lorenzen & Co.
103 N. Clark St.
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High Grade Roofing Slate at Low Grade Prices

Guaranteed to meet the most exacting requirements at lowest minimum of cost is assured the user of

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Every known color, trade, size and thickness. Blue prints, lay outs and valuable suggestions furnished covering every detail of your Roof Question. Post a postal and get posted.

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The only stop adjuster made from one piece of metal with solid ribs and heavy bed that will not cup or turn in tightening the screw

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"STRICKLER"

STRICKLER
JANESVILLE WIS.

HAY TOOLS
and Sanitary
BARN EQUIPMENT

Steel Stalls, Cow Stanchions, Litter Carriers, Feed Carriers, Watering Bowls. Every modern barn should be equipped with Strickler goods. All Carpenters and Contractors should send for our FREE CATALOG and Builder's Proposition. Write Today.

STRICKLER HAY TOOL CO., Janesville, Wisconsin

Reliable Scaffold Brackets for Barn Building

Barn builders need good, safe scaffolding. John Willmann, builder and contractor, of Oriska, N. D., uses the Elite Mfg. Co.'s Reliable Folding Scaffold Brackets on all of his work, and he reports that they pretty nearly pay for themselves on one barn contract in time and material saved, to say nothing of the added safety.

Modern barns are pretty high structures. Why go to the trouble of building up from the ground an old-fashioned scaffold? These Reliable Folding Scaffold Brackets are positively rigid and safe. Address the Elite Mfg. Co., 100 Ohio St., Ashland, Ohio, for full particulars.



30 Days Before You Pay

Men who have building contracts, or who are in a position to buy materials such as roofings, paint, wall board, metal ceiling, etc., should investigate the offer made by Mr. Geo. A. Bottger, President of The United Factories Co., Cleveland, O.

This is the firm that makes direct from factory shipments on the "See-Before-You-Pay" plan. Any responsible person can order the material he needs on this plan—and pay any time within 30 days.

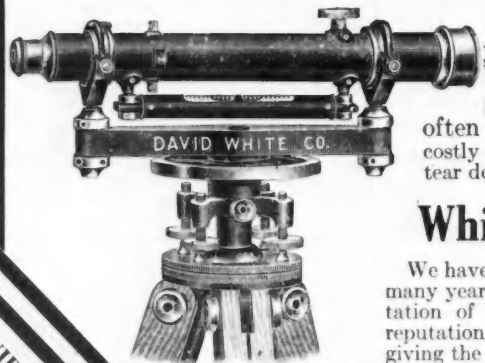
Buyers are not requested to make any deposit or sign any papers—in fact, there is none of the usual "red tape" or long delay in getting shipment.



Reliable Scaffold Brackets in Use by Barn Builder John Willmann, Oriska, N. Dak.

Before you order on your 1915 contracts, it would be a good idea to look into the United Factories catalog, and get an idea of how much you can save on the lines they are selling. A postal card addressed either to Mr. Bottger or The United Factories Co., 2225 W. 3rd St., Cleveland, Ohio, is sufficient to get their catalog; but if you are interested in any special item, you will find a handy coupon in their advertisement on another page of this issue. By filling out the coupon you will get complete information on the subject you want to know about.

10 DAYS' FREE TRIAL



Mr. Builder:—You need a good level. It is necessary to your success. A good level is a self-paying proposition. **Why?** It saves you time. Your time means money. A good level is an investment that will pay big interest. It will often save its original cost on a single job. A good level prevents costly errors, especially in concrete work. It is indeed an expensive job to tear down a concrete wall. A good level will prevent such a necessity.

White's Improved Level "ON THE SQUARE"

We have been making good levels for many years and have built up a reputation of which we are proud. This reputation has been obtained purely by giving the utmost value for every dollar

received. **Our Levels** are constructed properly by skilled mechanics who understand their business.

White's Improved Levels are built to give satisfaction to the man who buys.

We take a just pride in the fact that we have no dissatisfied users among our customers. Our line is complete in every way.

How is This for a Fair Offer

We know what our **Level** can do and we want **you** to know it. We want to prove it to **your own satisfaction** and here is how we propose to do it:

We will send any one of our complete line of surveying instruments to you on a **10 Days' Free Trial Offer**. You can use it, test it in any way on any job, and if it meets with your expectations and our claims—buy it. If it does not—return it at our expense. That's our liberal way of doing business. Could you want a fairer proposition?

We are able to do this knowing the quality of our product and knowing that, if given the opportunity, these instruments will sell themselves.

CUT OUT COUPON AND MAIL TODAY

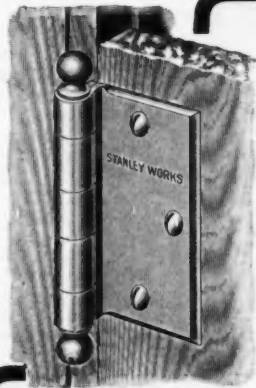
DAVID WHITE COMPANY
419 E. Water St. Milwaukee, Wis.



DAVID WHITE CO.
GENTLEMEN:—Please send me a catalog descriptive of White's Improved Levels, Transits, etc. Also details of your 10 Days' Free Trial Offer.

Name.....
Town.....
State.....
Occupation.....
A. C. B.—2-15

COUPON
419 E. Water St. MILWAUKEE, WIS.



Stanley Ornamental Surface Butts No. 165

*Save Time and Labor
and Please the
Owner*

The Ornamental leaf screws on the surface of the door, saving half the time of mortising. The slotted ball tip can be unscrewed and the pin reversed so that the butt can be used on either right or left hand doors. Packed with **Oval Head Screws** which fit into the countersink and hold the door firmly. Round head screws will not hold the doors securely in place and if not screwed in straight will cause trouble. The screw head is liable to break or the head will meet the butt on an angle so that it is impossible to draw the butt tight to the door. This makes an unsightly appearance.

The handsome, dignified, **Beveled Edge** design harmonizes with the popular designs of hardware. Made in all finishes.

Write for Booklet "A" describing this and many other lines of "Stanley" Quality Hardware.

The Stanley Works
New Britain, Conn.

WAGNER DOOR HANGERS

are furnished in styles, sizes and weights to meet every requirement of modern building. While there are more than a score of distinct models all have certain Wagner features that make them pre-eminently the *Best Door Hangers* on the market. For instance:

Wagner Ever-Tight Trolley Track

—a specially designed new track that meets a long felt want. Fits up absolutely tight to building and lower part protects hangers and top of door. Impossible for rain or snow to drive in. Self-cleaning the same as all Wagner Tracks. Absolutely bird-proof. Impossible for door to come off.

High grade roller bearing wheels improved tandem trolley with bumper on end which prevents damage to trolley wheels.

Patented cam and lateral adjustments that insure easy and accurate adjustment.

Other important features of Wagner Trolleys and Tracks are illustrated and described in our new circular which we will gladly send you, free. Write for a copy today.

Ask Your Dealer

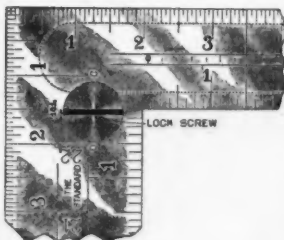
for Wagner Door Hangers and Tracks. If your dealer isn't inclined to supply you with Wagner goods, we'll fill your

order direct.

Wagner Mfg. Co.
Dept. F
Cedar Falls,
Iowa

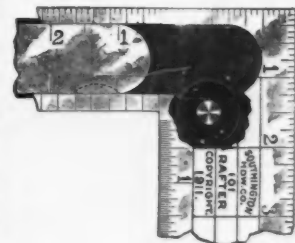
This Illustration

shows a full-size cross section of Wagner Ever-Tight Track. All Wagner tracks are made of high carbon steel. Insures longer life and better service.



The "STANDARD" Take-Down-Square

is the most satisfactory take-down-square that has been produced; satisfactory to the user because when "locked" the tongue cannot slip; easily and quickly taken apart or put together.



Ask your nearest dealer about it—But send for our NEW BOOKLET describing it.

The Southington Hardware Co.

SOUTHINGTON, CONN.

When you can get
a 26" Simonds Blue
Ribbon Hand Saw
for \$2.50 why risk
buying any other?



The Simonds is made by an old established firm. It is made of Simonds famous Saw Steel. It is absolutely warranted and you can get your money back any time you are not satisfied. Do you want a Rip or a Cut-off Saw? How many points to the inch? At your Dealers or sent prepaid upon receipt of price. **The price is marked on the Saw.**

SIMONDS MFG. CO. :: **"The Saw Makers"** :: **Fitchburg, Mass.**

17th St. and Western Ave., CHICAGO, ILL.

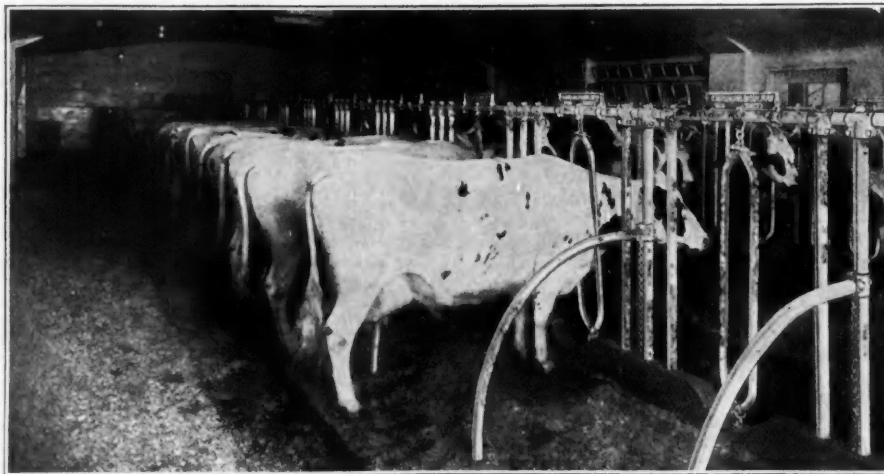
NEW ORLEANS, LA.

PORTLAND, ORE.

Send for This

O. W. Ingersoll, 272 Plymouth St., Brooklyn, N. Y., wishes to send every one of our readers a copy of his paint book. It is said that this will tell you all you want to know about paint and painting,—why some paints chalk and fade or scale off in a short time, and how to overcome these conditions and secure the best results at the lowest possible cost.

Ingersoll mixed paints are well known to country builders and farmers. They have enjoyed the official indorsement of the Grange for 40 years. Write for beautiful set of sample color cards and for paint book.



Louden Equipped Milking Barn at Strathglass Farm, Rochester, N. Y.

Louden Steel Stalls

The accompanying photo shows one of the many famous dairy barns that are equipped with Louden stalls. Scientific dairymen long ago began to realize the direct profit in housing their cows in comfort and we often hear of milk production increasing 25 per cent when cows are transferred to Loudon equipped barns.

To be contented a cow must be clean and comfortable; she must be surrounded by sanitary conditions; she must have plenty of light and fresh air.

Louden sanitary steel stalls meet every condition. They are constructed of high carbon tubular steel—the strongest material to be obtained. They do not obstruct light or ven-

tilation. They are fitted throughout with overlapping, dust-proof malleable iron connections. They are absolutely sanitary; there are no cracks or crevices to collect filth and breed bacteria. There are no sharp projections to injure the cow; every corner is rounded and perfectly smooth.

Louden sanitary steel stalls will last as long as your barns, and will earn the amount of the original cost over and over again in the increased profits from the cows; and, while a profit-maker, each stall is a pleasure to the owner in the attractiveness it adds to the barn. Write today for big new Book of Barn Plans, addressing the Louden Machinery Company, 5503 Fourth St., Fairfield, Iowa. You can buy Louden steel stalls cheaper than you can have good ones built of wood.

The "BEST" Line

BUILDERS SPECIALTIES

Chimney Caps and Tops, Chimney Coping, Ventilators, Clean Out Doors, Cistern Covers, Cess-pools, Hitching Posts, Foot Scrapers, Fence Ratchets, Stock Salters and Tank Heaters.

"BEST" Coal Chute

Here is a Coal Chute with many exclusive desirable features. Serves both as a window and a coal chute. When chute is open, heavy screen protects glass from breakage. In summer time, glass can be removed and chute act as ventilator. This chute is absolutely burglar-proof at all times.

"BEST" Stud Socket

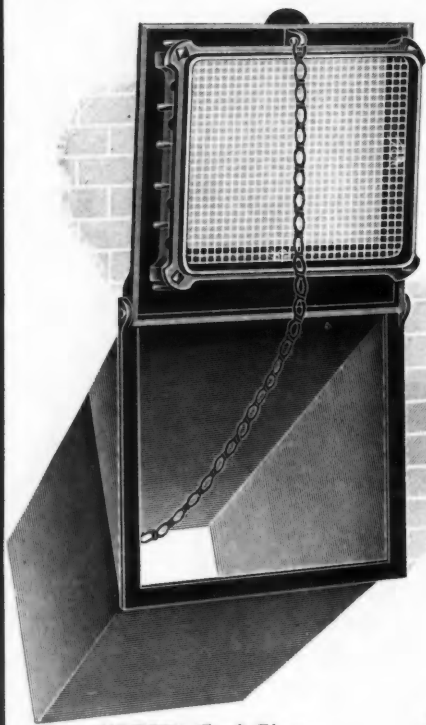
Made in one size and one style—fits all size timbers. Construction is so that when placed in wet concrete it firmly anchors itself. Hole in back permits the placing of reinforcing such as a bolt, rod or wire if desired. Studding can be fastened with either a bolt in the large hole at the side or by nails at the side and end. We also make a special corner socket.

"BEST" Stock Waterer

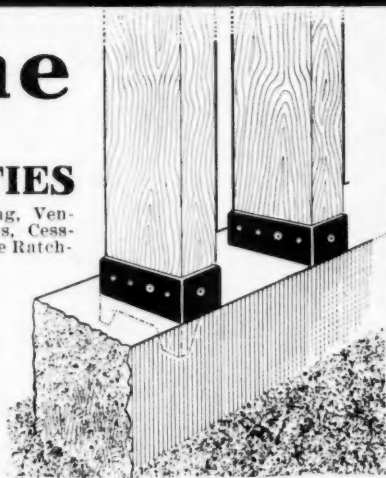
Very popular with farmers. It is ideal in operation as well as construction. Simply attach it to barrel or tank and regulate the amount of water desired in the pan by the float or valve. The automatic action insures clean, fresh water for the stock at all times.

Write us for circulars on the above "Best" articles which give fuller information and details. If your dealer does not carry the "Best" Line of Hardware, write to us direct, giving us his name.

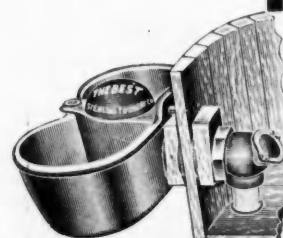
STERLING FOUNDRY CO, 8 Ave A, Sterling, Ill.



"BEST" Coal Chute



"BEST" Stud Socket



"BEST" Stock Waterer



Majestic Coal Chutes

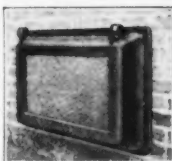
Keep the Building and Lawn Clean

Over 100,000 In Use

The Majestic Coal Chute is made extra durable, and will outlast the building. It has a heavy steel body—cast-iron door frame and boiler plate hopper. When open, the hopper comes out automatically, catching all the coal. When chute is closed it sets flush with the foundation. It has a glass door, giving good light to the basement. It locks from the inside and is absolutely burglar-proof.

Send For New Catalog and Prices

THE MAJESTIC COMPANY 305 Erie Street HUNTINGTON, IND.
New York, 50 Beekman St. Kansas City, 5212 Saída St. The Galt Stove and Furnace Co., Galt, Ontario, Can.



The "Ottomatic" Coal Chute

Patented Sept. 15, 1914

Fire Proof—Burglar Proof—Fool Proof

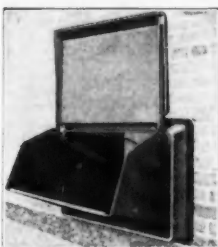
Best—Indestructible—the One Operation Chute—Locked in Both Positions.

No. 1, 17x24", wt. 100 lbs... \$12.00
No. 2, 22x33", wt. 150 lbs... 17.00

CAN BE PUT IN OLD OR NEW BUILDING

Special Discount to Agents

THE MAXIMILIAN CO.
844 Monadnock Block Chicago, Ill.



WATERLOO CAST IRON Coal Chutes



Protect the house from careless coal men. They are burglar proof—unlock only from the inside.

Being made of cast iron, are not affected by the weather.

Wire glass in door furnishes light to cellar. When door is open, the glass is protected by heavy steel, which operates automatically.

The watertable at the top of chute protects the inside of foundation from moisture. Doors are extra heavy, with three hinges at top, and are made with a beaded edge which extends over the border opening, making a tight joint. Are made to fit any depth wall.

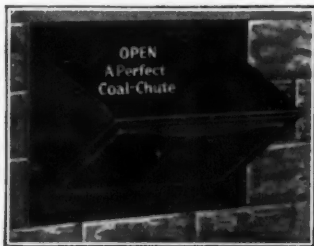
Send for catalog, which quotes special prices to contractors.

The Waterloo Register Co.

114 Rath Street

Waterloo, Iowa

The Window Chute



Ready for the Coal Man

For Your Coal Bin

The Window Chute is a selling feature for any Residence or Building.

THOUSANDS IN USE---
THE VERY BEST

If You Build,
Buy, Own

Be up to date and
Have the Worlds
Best

Write for
Booklet C



A Light Basement

HOLLAND FURNACE CO. :: Holland, Mich.

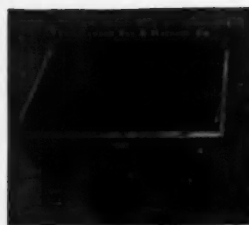
World's Largest Direct Installers of Furnaces.



CANTON COAL CHUTES



Guards Your Buildings Against



Not only Burglars, but marring of foundations, broken windows, dirtied lawns and other disagreeable features attendant with coaling.

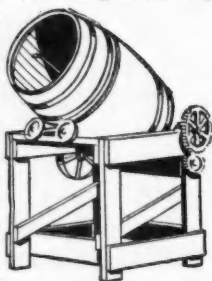
The Canton is very rugged in construction and moderate in cost.

Booklet B-1 will give full details. Write for it today.

Canton Foundry & Machine Co.
Canton, Ohio

To Build Your Own Concrete Mixer

Almost every contractor and builder realizes that concrete as a material for building foundations has practically driven the old stone foundation out of existence. A great many builders make the mistake of believing that concrete is an uncertain material to handle, and prefer to leave this class of work to contractors who are provided with special equipment for handling foundation work. Here is where these builders make a mistake, for it is not necessary to have any great amount of expensive machinery to do this class of work, and the profits of a job may easily be increased by doing this part of the work.



Sheldon Mixer.

The illustration shows a type of small concrete mixer which costs but little and does the work just as well as a more expensive plant. The parts of this machine are supplied by the Sheldon Mfg. Co., Box 320, Nehawka, Nebr., and may be easily put together in a very short time, thus building the mixer yourself at the lowest possible cost. The Sheldon Company will send you complete plans for building this mixer absolutely without charge, and furnish you with literature and prices on mechanical parts, so that you may see how simple the proposition is, and how you may easily add to your profits.

The Sheldon mixer is a batch mixer and may be obtained either as a hand machine or a power machine. It is simple in its action, and may be used either for small or for large jobs. You can handle any ordinary foundation job with this mixer without tying up any great amount of money in equipment.

It will pay you to investigate this proposition and to receive

the plans, or, if you do not care to make the machine yourself, ask for a proposition on a machine all set up and ready to run.



Monitor Cupolas with Windows

B. F. Lichty & Sons Co., Station A., Waterloo, Iowa, are offering a galvanized iron cupola ventilator that has a base with two glass sides. These windows are intended to furnish light for the hay loft or upper story of the barn. Where preferred, ventilating louvers are substituted for the glass, making a ventilating base. This is used where a pipe is carried from the lower part of the building up to the flue of



Four Monitor Ventilators Keep This Big Barn Sweet.

the ventilator, the ventilating base being for the purpose of ventilating the upper story or hay loft.

The Monitor ventilators are storm-proof and bird-proof. It is claimed that any man can set a Monitor cupola in 10 minutes. Write B. F. Lichty & Sons Co. for quotations. They manufacture a full line of architectural sheet metal, including skylights, cornice work, metal roofing, etc.

You Can Make More Money

BUILDING SILOS

Than In Any Other Line—Get Our Plans Free!

CARPENTERS—BUILDERS—CONTRACTORS!

Farmers all around you are waiting for the man who will build wood silos for them. Now is the time to get busy. Patents on door systems make the prices of ready-made silos prohibitive. We have solved the door problem. The Drico Expansion Silo Door is the simplest, most convenient, most durable door ever devised. Now in operation on silos in all parts of the country.

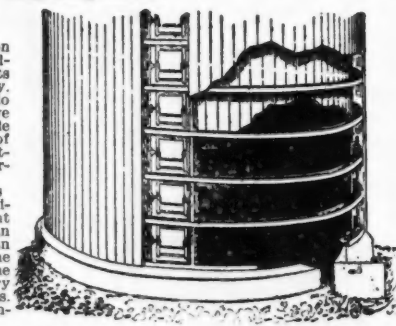


You build the silo. We furnish you all the plans down to smallest detail FREE! The Drico Expansion Silo Door opens a business for you that is now making thousands of dollars for carpenters, contractors and builders. Write today for information about the

DRICO

Expansion Silo Doors
(Sold through Lumber Dealers)

Just send us the name of your lumber dealer and we will send you a full set of plans for building a silo of any size with flooring and flat bats that you can get at any lumber yard. You do not pay us anything for plans. You do not put yourself under any obligations whatever.

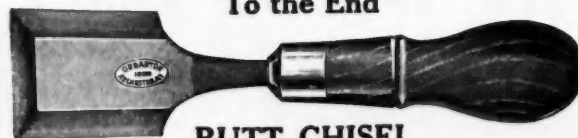


The Drico Expansion Door is wholly independent of the Harder patents—a different door entirely. Instead of building a silo to sell this door we have decided to put the whole business in the hands of local carpenters, contractors, builders and lumbermen.

Our handbook gives complete plans and specifications for 66 different sizes of silos. Any man who can drive a nail can build them. Write for the plans today, and be the first man in your territory to get the silo business. Be sure to send your lumber dealer's name.

DEAL-RICE LUMBER COMPANY
606 CLAPP BLOCK DES MOINES, IOWA

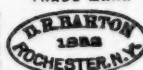
"Last a Lifetime and Give Satisfaction To the End"



BUTT CHISEL

TRADE MARK

The celebrated Barton Planes and Edge Tools for carpenters and all other woodworkers are unequalled by any other made for keen, hard, smooth cutting edges. If your hardware dealer does not handle



THE CELEBRATED BARTON TOOLS

Send direct for catalogue and our free story book, True Stories. Be sure to specify "CARPENTER'S CATALOGUE."

MACK & COMPANY, 20 BROWN'S RACE ROCHESTER, N. Y.

Building Books Absolutely Free

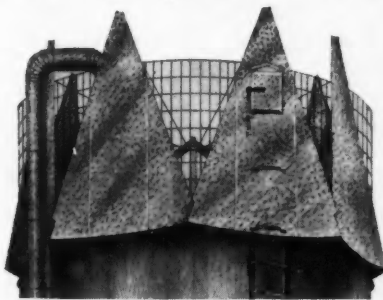
Postage Prepaid

Your Choice of Any One of Twenty Building and Plan Books

Write for Descriptive Circular Telling About Our Great FREE Offer

AMERICAN CARPENTER AND BUILDER
1827 Prairie Ave., CHICAGO

More and Better Silage



The Champion Opening Silo Roof makes it possible to fill your silo to the roof—increases its capacity from 12 to 15 tons. Protects silage winter and summer—makes better silage—prevents loss. Easy to put on; can't blow off; strong, durable—built of galvanized steel.

WILL FIT ANY SILO Easy to Open or Close

Costs little more than wood—pays for itself the first year in more and better silage and labor saved.

We want good men everywhere to handle the Champion Silo Roof. You can sell it against any other on the market because of its strong points of superiority.

Write for our Offer to Agents.

Champion Mfg. Co. 424 B Avenue
Cedar Rapids, Ia.

HOW TO BUILD SILOS



This 264-page Book, 56 Illustrations.
Only 10 cents.

Gives full, reliable facts on home-made silos, pit silos, cement, concrete, wood-stave, hollow tile, metal, etc., modifications of all kinds. When you read it you will be able to make an unerring choice of the best silo for your needs. We do not make silos—therefore can offer suggestions impartially. We cover different climatic conditions—tell how to build—suggest best sizes—crops—how to feed for best results—everything that's worth knowing about silage. We send this book for 10c. Send for your copy today.

SILVER MFG. CO.

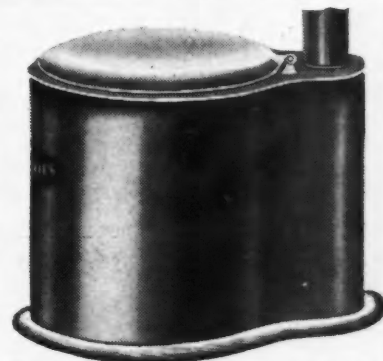
360 Broadway
SALEM, OHIO



Wolverine Chemical Closets

A practical and sanitary method of sewage disposal without water or expensive plumbing. Our underground system is practically automatic and requires no more attention than a water closet. It is guaranteed positively odorless. Here is an opportunity for you to offer prospective home owners an outfit that affords every convenience of a sewer system at half the cost. This is a legitimate proposition, backed by an iron-clad guarantee to give satisfaction. We have territory for a few good live Agents in each state. Don't Delay.

DAIL STEEL PRODUCTS CO., 730 Main St. E., Lansing, Mich.



MORE PROFITS IN SILO BUILDING



Silo and Water Tank (Holding 5084 Gals.)

Write for 1915 catalog and prices.

We will give you
**SPECIAL
PRICES**

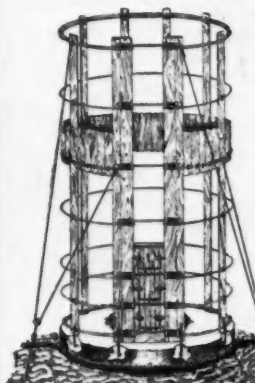
on ALL OUR
EQUIPMENT
providing the
order is received
by Feb. 18, 1915.

Call on us at
Fort Dearborn
Hotel, La Salle
and Van Buren
Streets, Chicago,
Rooms 624-5, 8
to 10 a. m. and
5 to 10 p. m.
during Cement
Show.

Conklin Construction Co.
750 West Main St., HARTFORD, MICH.

MAKE MORE MONEY

You can make twice as much money building **Unadilla Silos** than on any other, because they are easy to erect and our **free plans** enable you to put up two **Unadillas** in the time it takes to erect any other kind.



The frame construction of the **Unadilla** makes the most rigid silo. It is

A Building Not a Barrel

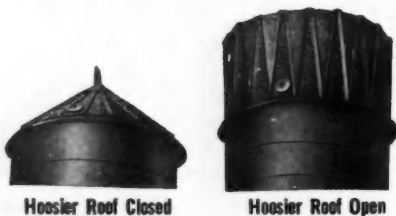
Its many conveniences make it easy to sell. The Borden Condensed Milk Co., The U. S. Government experimental stations and many other discriminating institutions and individuals **indorse** by use the **Unadilla Silo**.

Get the bigger profits. The **Unadilla** will open the way. Now is the time to act.

Write today for full particulars and territory.

Central Unadilla Silo Co.,
633 S. W. Ninth St. Des Moines, Iowa

SILO AGENTS and OTHERS



Hoosier Roof Closed

Hoosier Roof Open

are making good money taking orders for the Hoosier Silo Extension-Roof. It sells on its own merits. Every one familiar with the Hoosier roof agree that it marks a new epoch in silo construction. Every farmer who has a silo wants

a Hoosier Roof. Every farmer who buys a silo, will buy a Hoosier Roof. If you are selling silos and do not have our agent's proposition, WRITE US TO-DAY. All silo salesman who sell the Hoosier roof declare that the roof boosts their silo sales.

Write to our nearest office for Hoosier catalogue and agent's proposition.

SHEET METAL SPECIALTY CO.

GOSHEN, IND.

Dept. X

KANSAS CITY, MO.

Ask for Agency Proposition on the Victor Barn Ventilators

Diamond Cable Co. Make Attractive Offer

The modern lightning rod business works in naturally for country builders as part of their regular building work. It makes good opportunities for extra profits, too, as suggested in the following letter:

Bourbon, Ind., Dec. 5, 1914.

AMERICAN CARPENTER AND BUILDER,
Chicago, Ill.

Dear Sirs:—We are very pleased to report that the farmers are realizing to a remarkable extent the value of lightning rod protection, evidenced by a more than 50 per cent increase in our sales in 1914 over those of the preceding year.

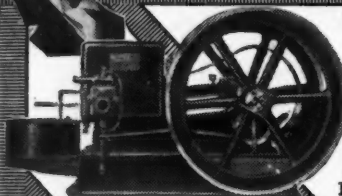
One of our customers, Mr. E. E. Delp, Prest. Delp Grain Co., of this place, has just told us that the reduction made him by the insurance companies on his insurance premiums, because of his placing lightning rods on his buildings, would amount to 20 per cent per annum on the cost of the rods, besides the added feeling of protection from fires. This saving alone will repay him in 5 years the entire cost of the rods, and they will last a lifetime when properly erected.

Many of our most valued customers are contractors and builders, and we are always glad to enter into negotiations with them with a view of having them handle our line. They are peculiarly situated in a way which enables them to get this business, and while they are finishing a building they can erect the rods more economically than any one else. All our agents who contract find it a very profitable line to work, and not a few have found it even more profitable than their building operations.

Yours very truly,

DIAMOND CABLE CO.,
Bourbon, Ind.

Why WITTE Engine Prices Are So Low



WITTE Gasoline & Naphtha Engine—Stationary
Sizes: 2, 4, 6, 8, 12, 16 and 22 H-P. Shown mounted on iron sub-base.

The WITTE is perfectly balanced and proportioned in all its parts so there is no excess friction to overcome—the highest possible percentage of fuel is converted into directly transmittable power. All have detachable cylinders, 4-ring pistons, automobile style vertical valves, automobile ignition, spark shift for easy starting, double weight, extra sensitive, positive governors and other merits without which no engine can now be high grade.

WITTE ENGINES

Kerosene, Distillate, Naphtha and Gas
Direct From My Factory To Users Everywhere

The WITTE has been the standard of engine quality for 27 years and has established a much lower cost of engine power from the liquid fuels of today's markets. This lower cost operation, in life-long wearing engines, together with my new and remarkably low prices entitles my present offer to the utmost consideration of every engine buyer-user in the country.

Most Valuable Engine Book Published—FREE

Tells you how to judge engine quality—how to decide what size and style engine is best suited for your work. This book is worth dollars to you. Mail coupon today.

ED. H. WITTE, Witte Iron Works Co.,
1779 Oakland Ave., Kansas City, Mo.

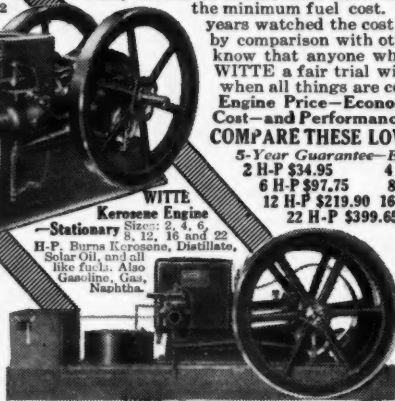
There are three reasons: 1st. I have a natural gas well which gives me free power, heat and light. It costs me nothing and I give all that big saving to my customers. 2nd. I have the most modern machinery, made after my own patterns, which has further reduced my engine manufacturing costs to the lowest possible point. 3rd. I save all dealers' profits and now sell my entire output direct to the user from my factory, which saves easily an average of \$6 to \$20 per H-P on any size I make.

I know the quality of my engine is right. My many thousands of customers know they work on the minimum fuel cost. I have for years watched the cost of power, by comparison with others; and I know that anyone who gives the WITTE a fair trial will prefer it when all things are considered—Engine Price—Economic Fuel Cost—and Performance.

COMPARE THESE LOW PRICES:

5-Year Guarantee—Easy Terms
2 H-P \$34.95 4 H-P \$69.75
6 H-P \$97.75 8 H-P \$139.65
12 H-P \$219.90 16 H-P \$298.80
22 H-P \$399.65.

WITTE Kerosene Engine—Stationary
Sizes: 2, 4, 6, 8, 12, 16 and 22 H-P. Burns Kerosene, Distillate, Solar Oil, and all like fuels. Also Gasoline, Gas, Naphtha.



WITTE Engine—on Skids
Sizes: 2, 4, 6, 8 and 12 H-P. Completely self-contained. Kerosene or Gasoline. Furnished this style.



FREE BOOK COUPON

ED. H. WITTE,
Witte Iron Works Company,
1779 Oakland Ave.,
Kansas City, Mo.

Without cost to me, and with no obligation on my part, I should like to receive your latest and finest Engine Book and to investigate your New Liberal Selling Plan.

Name.....

Address.....

Men Wanted To Learn Permanent Farm Building and Silo Construction

Hollow tie corn cribs, houses, barns, hog and poultry houses, silos, etc. are coming into their own. The demand is increasing every day. To take care of it we want a wide awake man in each community not taken to learn about this form of modern construction and take care of this growing business in his locality. No past experience necessary because we will give the right one.

FREE COMPLETE COURSE OF INSTRUCTION

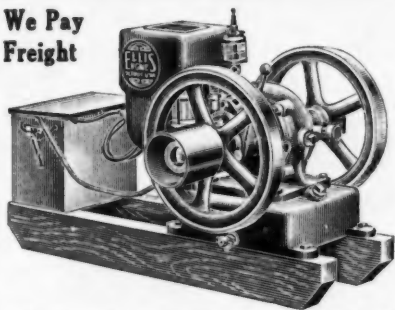
We are manufacturers of clay products. We need men who know how to supervise the construction. For that reason we have set aside Feb. 16, 17, 18 and 19 as instruction week and invite those who wish to take up this profitable business to come to Adel. See how hollow blocks are made, how to estimate a job and how they are used in constructing corn cribs, barns, silos, etc. Complete course is free. Will you come?

Two Means of Making Profit
When properly instructed you are equipped to estimate, supervise and build for the farmers in your community. The profits are good. Low investment. Besides we allow you a discount on the material. Write today and get full particulars. Address

ADEL CLAY PRODUCTS CO.
260 Main St. Adel, Iowa



**We Pay
Freight**



**All sizes for all purposes. 1½ to 18
H. P. Vertical and horizontal. Guar-
anteed 10 years**

Don't Pay For Your "Ellis" without getting it

Every carpenter or contractor who does not use a reliable engine is paying for the engine without getting it. He pays for it in lost time, and in labor costs. You can buy an Ellis Engine out of two weeks' wages to one workman; and your Ellis will give you reliable service for many years.

Ellis Engines are America's favorite with carpenters, contractors and builders. Very compact in design; light in weight in proportion to power. Easy to operate; no cranking. Run either way; reversible while running. They work successfully on common cheap lamp oil at a fuel cost of

6 cts. for 10 hours

for each horsepower developed. Just the thing for wood-workers, rip-saws, planers, cement mixers, hoists; in fact for every job where power can be used. Write for free book "Engine Facts" giving valuable information and full details of our 30 Days' Free Trial Offer, with opinions of users from all parts of the world.

Ellis Engine Co., 2863 E. Gd. Boulevard, Detroit, Mich.

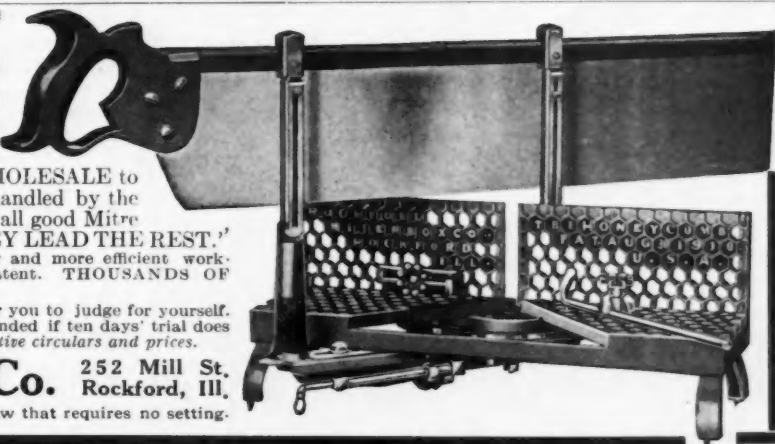
An Offer to Carpenters and Builders

We want one of our IMPROVED HONEYCOMB MITRE BOXES in every community, and will sell one Box at WHOLESALE to Carpenters and Builders where they are not handled by the dealers. The HONEYCOMB is the BEST of all good Mitre Boxes. One user says: "BEST BY TEST, THEY LEAD THE REST." More easily kept in good condition, permits faster and more efficient work. Furnished with the highest grade of Saw, our patent. THOUSANDS OF MORE THAN SATISFIED USERS.

Our pride is quality—we give honest opportunity for you to judge for yourself. An absolute guarantee of satisfaction. Money refunded if ten days' trial does not prove our guarantee. Write TODAY for descriptive circulars and prices.

Rockford Mitre Box Co. 252 Mill St. Rockford, Ill.

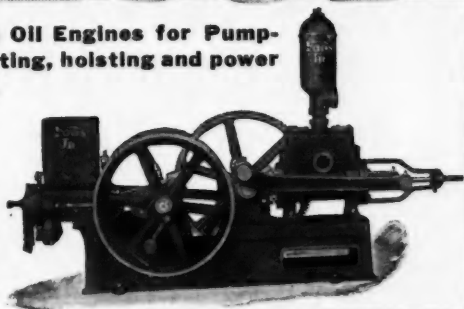
It's the only concern that can furnish a Mitre Box Saw that requires no setting.



THE FOOS

**Gas and Oil Engines for Pump-
ing, lighting, hoisting and power
service.**

**1½
to
400
H. P.**



THE FOOS GAS ENGINE CO. SPRINGFIELD, OHIO

The "Rustless" Rule

**A Revelation in Lightness, Durability,
Compactness, Convenience and Low Price!**

Here's the rule that every carpenter and builder has waited for. Won't rust, weighs little; fits the vest pocket, yet opens up to 2, 3, 4, 5 and 6 feet; costs less than steel rules, yet is just as durable; has large figures and accurate graduations; has permanent legibility.

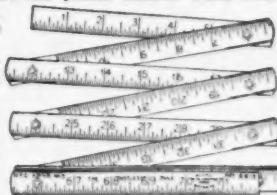
The "RUSTLESS" Rule is made of Luminoy—a special alloy of aluminum, with a bright polished surface that will never tarnish. The rule weighs about one ounce to every lineal foot, is not bulky, and folds up into six inch lengths; the joints cannot work loose.

Buy one from your local dealer. If he cannot supply you, take the small trouble to write us direct.

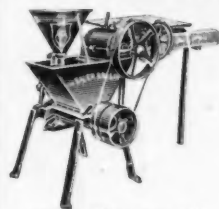
Prices—3 ft., 75c; 4 ft., \$1.00; 5 ft., \$1.25; 6 ft., \$1.50. Give us your dealer's name.

Send for printed matter.

Reliable Stamping & Co., Inc.
369 Seventh Street
Buffalo, N.Y.



"SCIENTIFIC" MIXED MILL



"Scientific" No. 132

A BALANCED RATION means Better, Healthier Stock, saves ½ to ¾ in feeding cost.

WE BUILD MILLS FOR ENGINE OR HORSE POWER.

Write for Catalogue describing 14 sizes, 6 styles.

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Grinds Hay and two kinds of Grain at one operation. Alfalfa, Clover, Cow Pea Hay, Head Kaffir, etc., separately or mixed with Ear Corn, Shelled Corn, Oats, Barley, Rye, etc.

Capacity, 500 lbs. Hay; Corn, 20 to 30 bushels per hour. Small grains in proportion. 4 to 8-H.P.

A STUCCO MACHINE

That makes Stucco Work easy and simple. With this machine any man can apply all Stucco Finishes. Here is a machine that will apply Cement Plaster or Stucco in an even, uniform coat. Taking only a fraction of the time used in applying stucco by hand and making a wall that is stronger and far superior to hand work.

A Durable Finish—Low in Cost

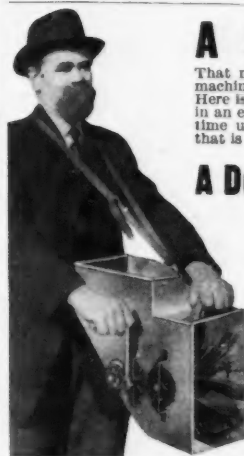
With this Automatic Stucco Machine you can apply a coat of durable stucco at the cost of a good painting job, with the advantage of endless durability. Why not get in on the remodeling business? This machine can do the work of twenty men doing stucco work by hand and do it better.

SPECIAL INTRODUCTORY OFFER

For a limited time, to introduce to builders, we will sell this machine at a discount of 33 ⅓ % from regular price. Write for further particulars and free booklet.

AUTOMATIC STUCCO MACHINE CO.

51 E. 42d ST., NEW YORK CITY, N. Y.



15 Years On The Market Never A Dissatisfied User

Queen Cupolas have that record. We've been making them for more than fifteen years and they are today giving satisfaction to thousands of farmers. Not a single user dissatisfied.

Queen Cupolas

satisfy because they do what a cupola should do—ventilate your barn. They're strong, handsome, durable and highly efficient. Light in weight and easily put on. Made of high grade galvanized steel. Rain proof. Snow proof. Rust proof. Birds' nest proof. Write for our catalog and 30 days' free trial proposition.

Queen Cupola Mfg. Co., 405 Peck St.
Cresco, Iowa



BUILD YOUR OWN Grandfather's Clocks WITH OUR HELP

With the blue prints, instructions, finishing material, etc., we furnish, any handy man can build his own Grandfather's Clock. We sell you the works, dial, weights, pendulum, and everything you need at prices so low as to surprise you.

Works complete, \$5.00 each; others with chimes, all prices.

Here's winter work you can turn to good profit. Make duplicates for your friends. Our designs are clear cut, attractive and salable.

Write for our free offer on the drawings, etc.

Clock Company
1655 Ruffner St. Philadelphia, Pa.



BERGER'S Distinctive Extra Quality Metal Shingles

The
CHIEFTAIN

The
SWANEE

for bungalows, residences, churches, garages, etc. The three point contact side lock is simple yet effective and cannot possibly become unhooked after shingles are nailed in place.

Expansion and contraction are fully provided for, and high ribs are formed at the top of each shingle to prevent leaks—a very important feature.

Size 10 x 14 inches covers $8\frac{1}{2} \times 12\frac{1}{2}$ inches; one hundred and thirty-six shingles cover one square or one hundred square feet.

Furnished in Galvanized Toncan Metal, Galvanized Open Hearth Steel or Terne Plate of any standard weight of coating.

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YOU

Would not tie a
Telephone Pole
on two sides
only, why a
wall?

Be consistent
use the
BOSTWICK
Y
TIE

Leads the stress and
strain of the wall
three ways

Ties the usual number
of bricks with half the
number of ties.

Saves tie cost—Labor

Write for Sample & Prices

The Bostwick Steel Lath Co.
NILES - - - OHIO



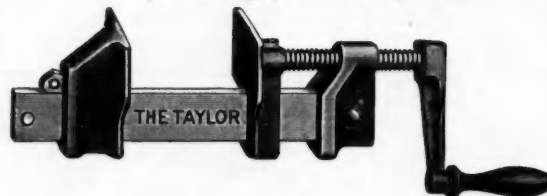
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per doz. 4 footers
—if you send cash
with order.

Absolutely Safe; two of them
will carry a ton, and they last a
lifetime. Think of the time you save!
One man alone can put them up and
take them down easily and quickly.

No Side Swing if you purchase our new fixtures
at 80c extra per dozen brackets: these keep the
brackets absolutely rigid.

Write for Catalog of Builders' Specialties!



Save minutes for your workmen and you will save
money for yourself. A man's time costs just so much
per hour; use clamps that will increase his output.

Moreover, TAYLOR CLAMPS cut down the amount
actually expended for tools. In the Brooklyn Navy
Yard TAYLOR CLAMPS have lasted more than twice
as long as the next best clamps made.

Catalogue No. 11 shows 22 styles. Free on request.

James L. Taylor Mfg. Co.
Poughkeepsie, N. Y., U. S. A.

MONITOR

Cupolas and Ventilators

Can be
Furnished
with
Ventilat-
ing or
Glass Base

Bird Proof



Should be on every Barn—every building where positive and efficient Ventilation is wanted. Built to Ventilate and built to last. Monitor Ventilators are made of the best grade galvanized steel. Will not rust or dry out. Built to withstand the strongest winds. Ventilates whether wind is blowing or not. Absolutely storm-proof and bird-proof. Any man can set a Monitor Cupola in ten minutes. If you want durability and Ventilating efficiency buy Monitor Cupolas and Ventilators.

We have special discounts for Carpenters and Builders. Write for price sheet and Catalog.

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WATERLOO,
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CORNICES

Skylights — Ventilators

METAL FIRE
SHINGLES DOORS

Sheet Metal Building Materials

Our Price Is Right

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MANUFACTURERS
CINCINNATI, OHIO

Send us your plans and specifications or give us an idea of what you want and we will quote you price

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Put 'em on all Your Barns--- GALE VENTILATORS

SUCK OUT ALL FOUL AIR

Every Building should be well ventilated especially barns. Gale Ventilators guarantee Ventilation.

Made of heavy galvanized iron, strongly built. Screened inside to keep out birds. Any man can put it on, simply nail fast. Put Gale Ventilators on all your Barns, Chicken Houses, Creameries, etc. They'll last and always give satisfaction.

Our Catalogue describes our Complete line. Write for it today.

Galesburg Sheet Metal Works
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Put These Windows In the Next Hog House You Build

They are made to use on any hog house, old or new. Easy to install. They will please the man you are building for. They will make a profit for you.

New Idea CHIEF SUNSHINE WINDOWS

Let the sunlight into the hog house where it's needed. Keep hogs healthy and strong.

Windows are made so you can shingle over flashing top and sides. Lower flashing comes over shingles. Perforated trough lets water run off, prevents leaking. Galvanized screen protects glass. Copper clips hold glass. No putty needed. The only modern scientific-

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CHIEF CUPOLAS

The best cupolas made. Rain, snow and bird proof. We have complete stock of cupolas of every size for every purpose. Strong, well made. The kind that please you because they are easy to handle and give satisfaction at low cost. They please your customers. Write today. Get descriptive circular and prices. Also full particulars of our silo roofs, silo chute and other galvanized products.

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Is the durable, serviceable, easy-running machine—the machine that is made right of the best of materials—that has accurately cut gears, dust- and oil-proof castings, malleable handle and clamp. The grinder for your tool-kit is the

Carborundum Niagara Grinder

Every machine equipped with a genuine Carborundum Wheel, the fastest-cutting, longest-lived wheel for general work—every machine carefully assembled.

*From your hardware dealer or direct.
Made in several sizes. Send for catalog of Carborundum Grinders and Sharpening Stones.*

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Hargrave Quality Trade Mark, stamped on all Hargrave tools, insures you against substitutes. Our complete catalog gladly sent on request.

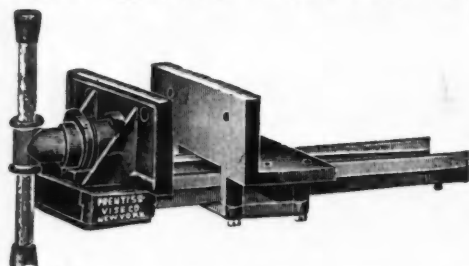
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CINCINNATI TOOL CO., Norwood, Cincinnati, Ohio.



This clamp will outlast many wooden clamps and any similar iron clamp.

BLAKE QUICK ACTING VISE



For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best.
Send for Catalogue of all kinds of Vises.
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When in need of these
say to the hardwareman

LUFKIN

Here is your chance to save money
and get the latest designs in

MANTELS

This elegant quartered oak or birch,
mahogany fine Mantel with enameled tile
hearth and facing coal grate with oxidized
copper frame and front. f. o. b. **\$27⁰⁰**
Cincinnati, for - - - -

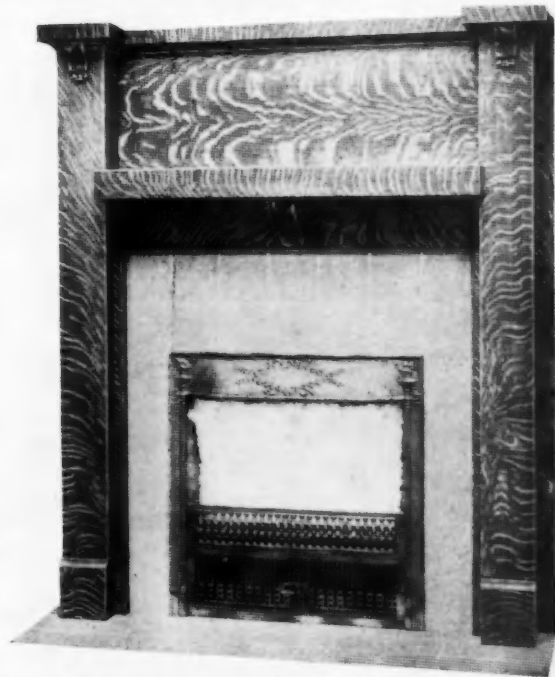
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We can also supply you with floor and wall
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for Porch, Interior and Pergola use the
NICKERSON Patent DOUBLE LOCK JOINT
THEY CANNOT COME APART

We Special-
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nola" is our
Standard for
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when Archi-
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are not fur-
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Clinch your
Trade by
giving them
the very best
Columns.
Ours have
the best
Construction and
correct shape.

All kinds of interior trim to detail.

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\$25.00

with your order, will
bring this magnificent
Book Case Colonnade Com-
plete with Art Glass (no
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all charges prepaid.

This offer is good for a
limited time only.

This is the greatest
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Do not fail to take ad-
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Pedestals 2 feet wide
and 3 feet 6 inches high,
6 inch veneered columns.

Workmanship perfect
in every detail.

22 years in our present location; this should be sufficient guarantee.

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828-838 Wells Street

CHICAGO, ILL.



\$22.50 \$25.00

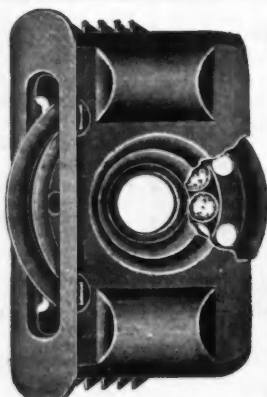
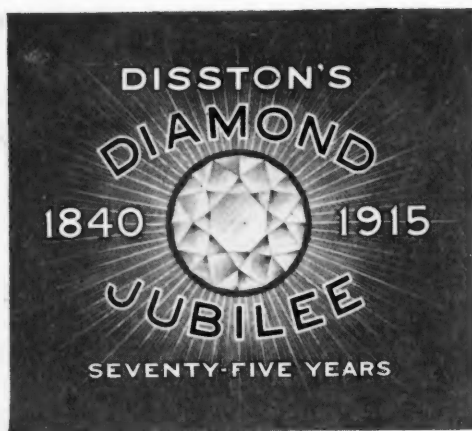
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MANTELS. BEVELED MIRRORS, 18 X 36

Prices include our "Queen" Coal Grate with best
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Mantels 82 inches high, 5 feet wide. Furnished
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No. 10 Ball Bearing

"Grand Rapids"

**BALL BEARING
ALL STEEL**

Sash Pulleys

Fasten automatically.
No Nails. No Screws.
Just bore four holes.

The automatic saw tooth fastening feature and the simple and easily made mortise will save in labor enough to pay for the pulleys.

The Bearing contains eleven $\frac{1}{4}$ -inch Solid Steel Balls running in lubricant.

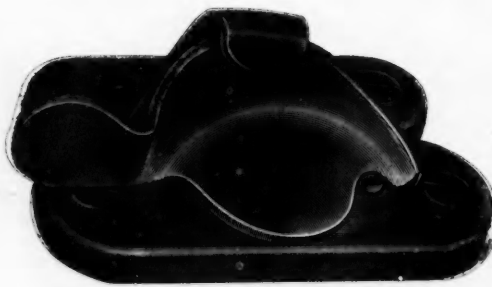
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MANUFACTURERS

158 Eleventh St. :: Grand Rapids, Mich.

MONITOR SASH LOCKS



(PATENTED)

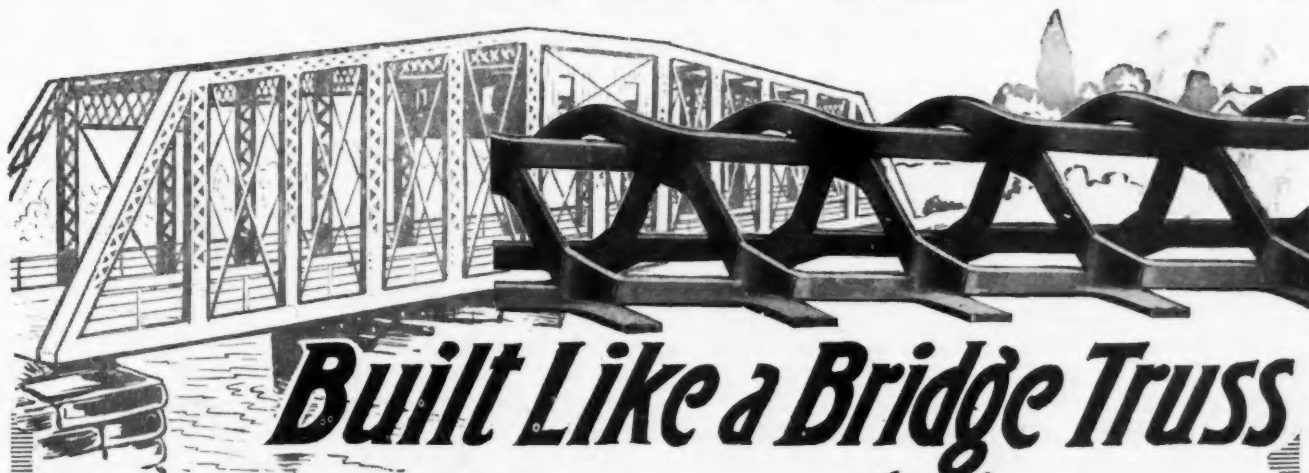
NEVER BREAK

BECAUSE THEY ARE MADE OF VERY HEAVY GAUGE METAL AND PERFECTLY CONSTRUCTED.

If the upper plate drops, the Monitor "Never Break" Sash Lock will pick it up from a lower point than any other, adjust the sashes perfectly, prevent all vibration and lock securely, so it cannot be opened from the outside.

MADE IN TWO SIZES AND ALL FURNISHED BY

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Built Like a Bridge Truss

Notice the truss construction in diagonal "U" shaped ribs of Kno-Fur Expanded Metal Lath. Then compare "Kno-Fur" from point of rigidity with all types of lath designed to do away with furring and sheathing.

"Kno-Fur" has always been the most efficient non-furred lath and now by a new process of manufacture, the price is practically no higher than that of the ordinary non-ribbed Metal Lath.

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It is equally suitable for new stucco work or over-coating and repair jobs. Send for prices TODAY.

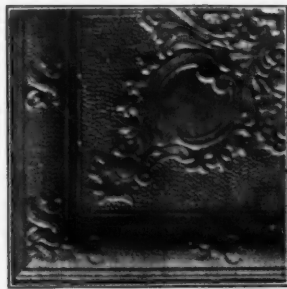
Kno-Fur Expanded Metal Lath
Used Without Furring or Sheathing

Send for our new Metal Lath Booklet, No. 33. It gives a full description of the complete North Western line of Lath.



North Western Expanded Metal Co. 903 Old Colony Bldg. Chicago, Ill.

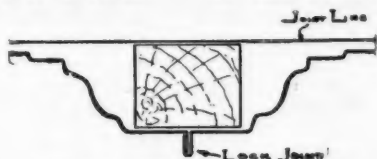
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All the newest, most artistic designs—for every class of building. Quarter century in Sheet Metal business means highest quality at lowest prices. Pictured is a popular design. Send for Catalog "C" and net price list.

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The Acme of perfect construction. Don't nail or slip the joints. Lock them. Full information in catalogue E.

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Nails can't slip or be driven in the wrong place.



Saves erecting expense, nails and temper. This is one of the exclusive features of

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BERGER'S
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Our improved Pressed Close-Fitting bead joint, that makes a perfect connection without the necessity of caulking is another.

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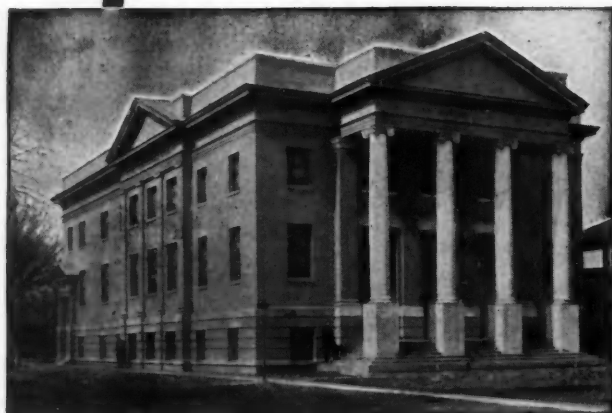
My experience in church work is valuable to you. My knowledge of church architecture assures your getting the most approved, up-to-date designs. The work I have done for hundreds of Builders, Contractors, and various Church Boards throughout the country proves that I can do satisfactory work for you. I can plan a church to meet your needs.



Presbyterian Church

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I CAN SAVE YOU MONEY



First Congregational Church

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by furnishing plans and specifications at the lowest possible cost. Tell me what you need. Information is free. You pay me only for actual services. Let me show you what I can do for you. Fill out the coupon and mail it. You pay nothing in advance fees and you will not be obliged to give me the work unless I show you that I can do it better, quicker, and at a smaller cost than anyone else.

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—ARCHITECT—

LINCOLN

NEBRASKA

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DEAR SIR:—

We propose building a church as per details given below. Please send us information as to what architectural service you can furnish us. It is understood that this information costs us nothing.

Proposed Cost

Name

Frame, Brick or Stone

Address

Denomination

Seating Capacity

Town and State

Size and Location of Lot

Northrop's Stamped Steel Ceilings



For the residence, the store, the church, school, etc. We have ceilings for all of them—and the best of their kind. Use incombustible material when possible.

Send us measures and diagrams of the rooms to be ceiled, so that we can advise you and estimate.

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40 Cherry Street :: :: :: New York



Klauer's Steel Ceilings

Are the kind you want for the work you now have coming up.

Unexcelled as to designing and mechanical perfection, they are most economical as well as most desirable.

Get our complete catalog and let us figure on your requirements.

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Here's the Big, Quick Profit Chance You've Waited For!

OPPORTUNITY is pounding on your door with sledge-hammer blows through this advertisement. In response to our strong advertising in the leading magazines, thousands of people everywhere are demanding Edwards' Metal Ceilings, Tiles and Walls. Our business is growing so rapidly that we must have

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Here is a chance to build up an independent, profitable business for yourself right at home. Many carpenters and builders are now devoting their entire time to selling our metal ceilings and walls. Others have made big profits simply devoting part of their time to selling and applying our Metal Ceilings and Walls. No matter how you handle the proposition, the profit is in it, because the demand has already been created.

You Must Act Quick

Write us about your territory **at once**. This doesn't mean next month, or next week, or even tomorrow, but **right now!** One hour's delay may mean that someone else may be given your territory. Send the coupon. It brings our special agent's proposition and large illustrated Ceiling catalog of attractive sales-making designs.

THE EDWARDS MANUFACTURING COMPANY
"THE SHEET METAL FOLKS"
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MAIL THIS COUPON NOW!

The Edwards Mfg. Co.
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Send me details of your agency plan and a copy of your ceiling catalog.

Name.....

Address.....

Business.....

Established 1837

**Sidewalk
Ice Chisel**

Just what you
need for clearing off
ice, etc., from sills,
foundations, etc.

It's not the thin, flimsy
sheet steel blade, but is made
like a regular chisel of laid steel.

Ask your dealer to send for our
Ice Chopper Folder and Prices.

**Bench
Axe****Carpenter's Adze****Remember This**

If you want Quality—Try White's
If price is the main point—Try some other

The L. & I. J. White Co., 10 Columbia St., Buffalo, N. Y.

**THE MYERS GIANT
ADJUSTABLE TANDEM
DOOR HANGER**

for TUBULAR GIRDER TRACK is adjustable to and from the building, and up or down as necessary. Has flexible engine truck with steel rollers revolving on steel roller bearings. The adjustable features prevent trouble from weather conditions or sagging of building. Storms, sleet or ice do not affect it, owing to complete protection afforded by the tubular track. Track and Hanger are constructed to carry and operate heavy doors easily.

This and other styles of Tubular and "Stayon" Door Hangers are shown in our Door Hanger Booklet. Copy mailed on request.

F. E. MYERS & BRO.
ASHLAND, OHIO

**This Pearson's Automatic
SHINGLE NAILER
WILL PAY FOR ITSELF
ON FIRST JOB**

Do your nailing fast—faster than ever before. You can use this Pearson's Nailer on any pitch roof. Wear mittens, gloves, etc. This "Hand Nailer" is the only Nailer—throw nails in by the handful—then start nailing. Nails easily driven through tin or quite heavy sheet iron.

These nailers are made in two sizes—The BLUE Nailer for 3d. common No. 14 gauge wire nails. The RED Nailer for 3d. galvanized No. 13 gauge 1 1/4-inch wire nails.

It will come right to your door, quick, by insured parcel post, all prepaid for only \$5.00.

IT MAKES GOOD.

PEARSON MFG. CO. - ROBBINSDALE, MINN.



Patented: Nov. 29, 1892
July 19, 1910

**A Huther Bros. Dado Head
Fits Any Saw Rig**

Cuts perfect grooves
with or across grain.
Simple, no-screw
adjustment. The
choice of experts.

Huther Bros. Saw Mfg. Co.
1101 University Ave :: Rochester, N. Y.

**PHOENIX
INSIDE
SLIDING
BLINDS**

WILKES BARRE, PA.

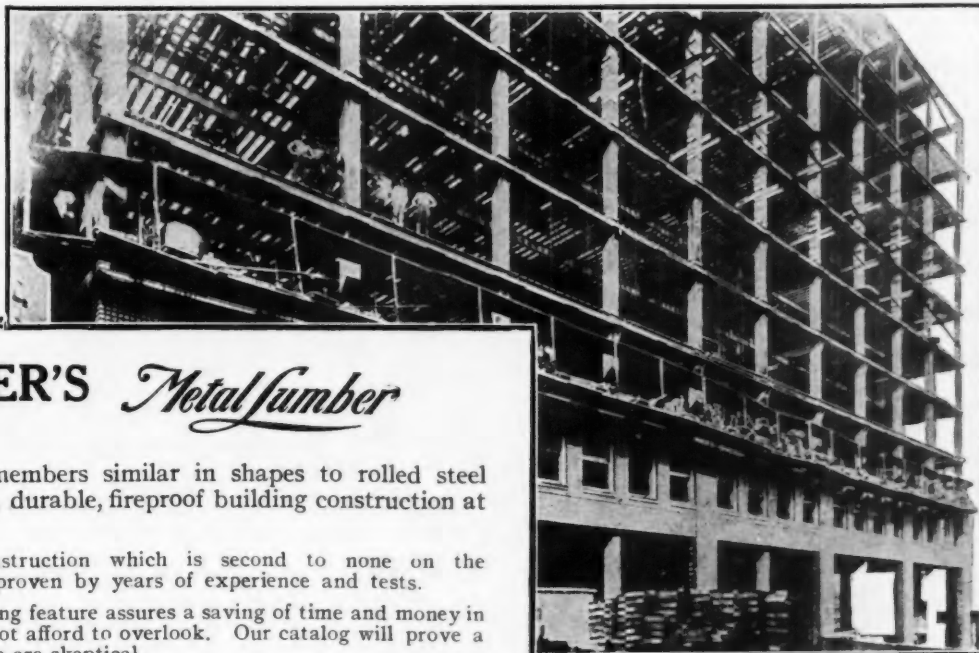
The Phoenix Sliding Blind Co.
Enclosed find my check for blinds. I am pleased with them
and sorry I did not have them put throughout the whole house.
C. W. BURT.

**Comfort!
Economy!
Convenience!**

The lately improved springs and corrugated
steel rods put the "PHOENIX" far in lead of
less improved styles. Write for Catalogue "C"
and free samples, showing construction.

PHOENIX SLIDING BLIND CO.
BRIDGE & CANAL STS. PHOENIX, N. Y.

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BERGER'S *Metal Lumber*

Pressed steel members similar in shapes to rolled steel members for strong, durable, fireproof building construction at moderate cost.

A fireproof construction which is second to none on the market, as has been proven by years of experience and tests.

The patented prong feature assures a saving of time and money in erection that you cannot afford to overlook. Our catalog will prove a revelation to those who are skeptical.

Write for it today.

The Berger Mfg. Co., CANTON, OHIO

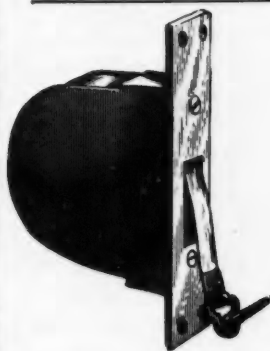
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Renkert Bldg., Canton, Ohio. Walker & Weeks, Architects. Approximately 16 miles of joists used in all floors and roof.

For every kind and size of Building from the Garage to the Skyscraper.

CALDWELL SASH BALANCE



Does away with weights and cords, and VASTLY more durable.

Makes sashes work perfectly.

Permits greater window space in new work, as box frames are not necessary.

May be applied to old windows without altering sashes or frames.

Write for circular to the

Caldwell Mfg. Co.
15 Jones St. Rochester, N. Y.



No. 8355

42c

For This Lock Set

No. 8355 Dull Brass Finish

FREE—No. 5. Builders Hardware Catalog and net price list to Contractors and Material Men.

We do not sell to contractors or carpenters in Cook County, Ill.

Rehm Hardware Co.
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FIRE—Excitement reigns supreme

Panic—In a twinkling of an eye.

Exit—The terror-stricken rush.

Door—Though tightly closed—

Bolt—Columbia opens with a gentle push.

Full information upon request.

The Columbia Iron & Wire Works Co.
Canton, Ohio

C. G. HUSSEY & CO.

Pittsburgh, Penna.

MANUFACTURERS OF **COPPER**

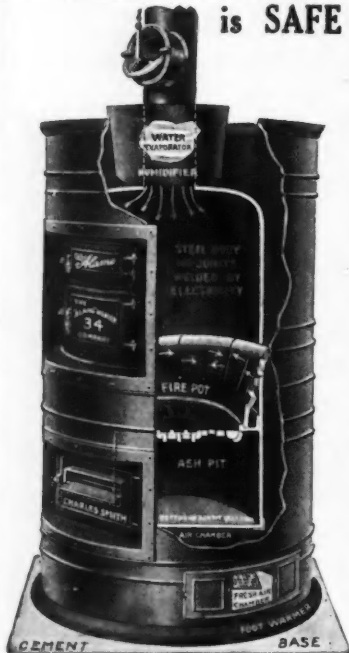
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Copper Nails, Copper Rivets, Conductor Pipe, Eaves Trough, Elbows, Shoes, Mitres, Soldering Coppers, Gaskets, Etc.

THE
"Alamo" School-Room Heater
 is SAFE for SCHOLARS



Gas Proof 
 welded by acetylene,
 has no joints, cannot
 leak gas or smoke.

Sanitary

The **Humidifier**, a new feature, makes a temperature of 65° more healthful and more comfortable than 75° would be without it.

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Air supplied from outside air duct.

Removes All Foul Air

Separate duct not interfering with chimney draft.

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All exposed castings set back from face of heater.

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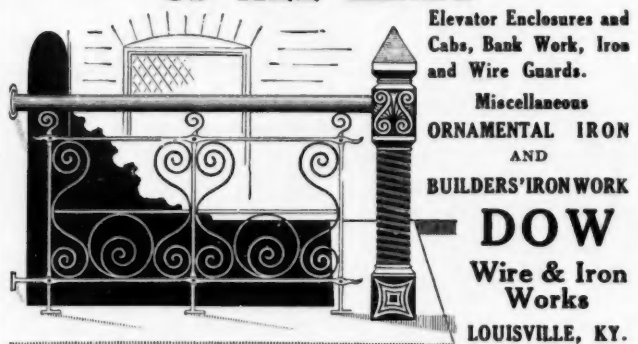
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 Saves one-third of the fuel.
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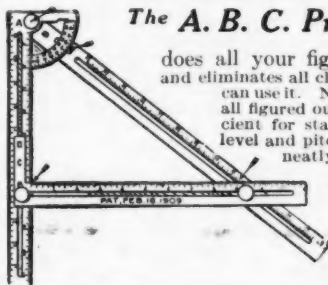
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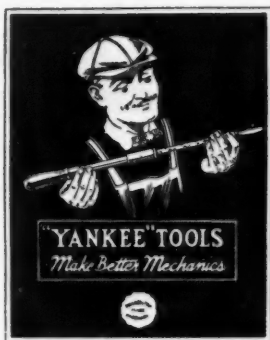


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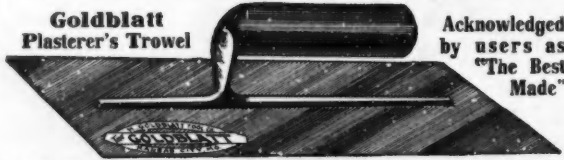
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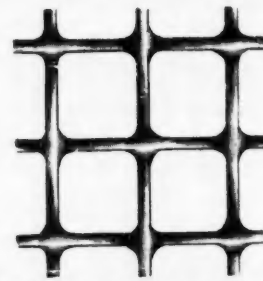
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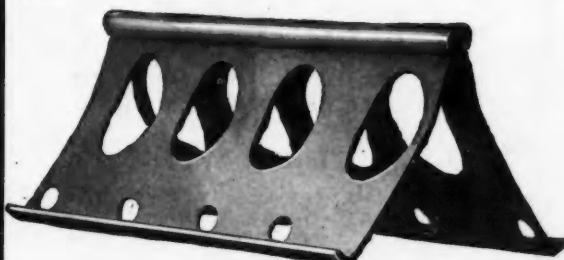
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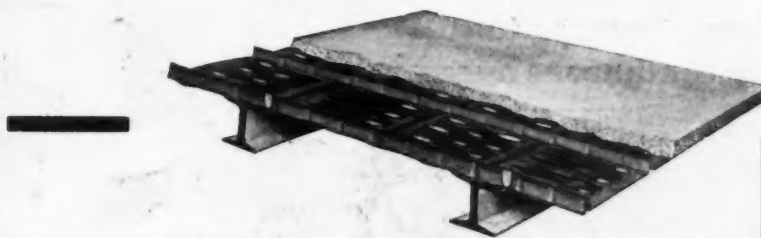
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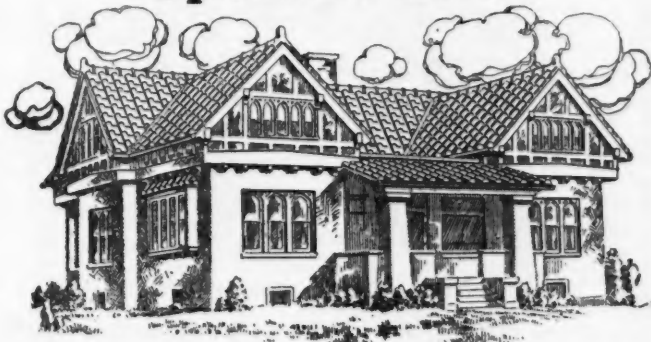
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Simply
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speed

The convenience of this feature is still further enhanced by the simple and effective ratchet shown on the crank handle. This ratchet will be found of great assistance when working in cramped corners or on a delicate job.

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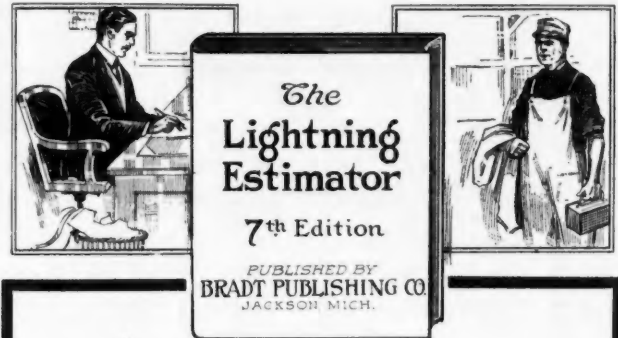
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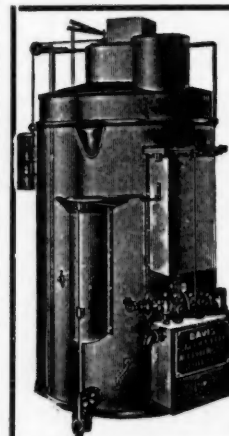
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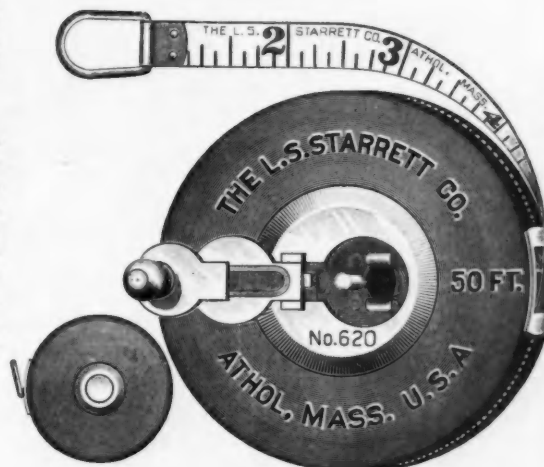


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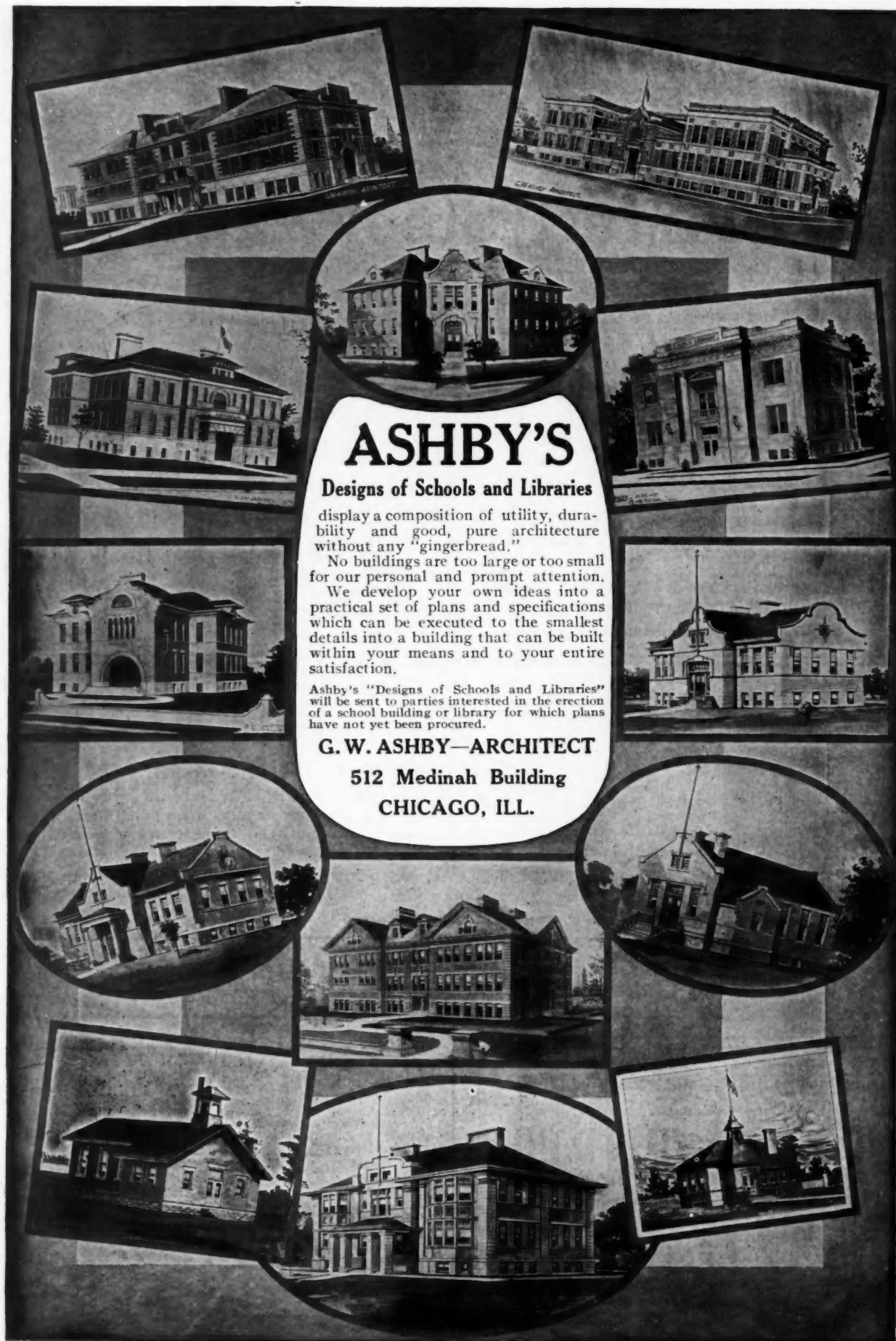
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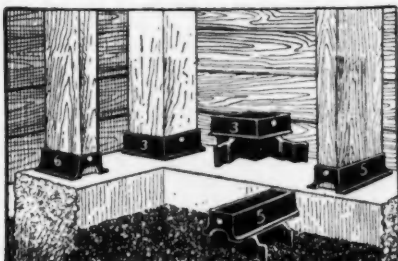
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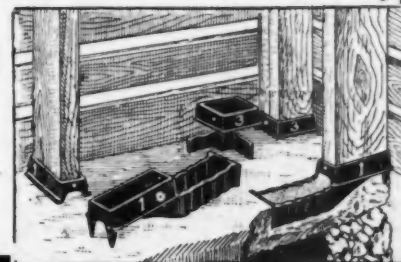
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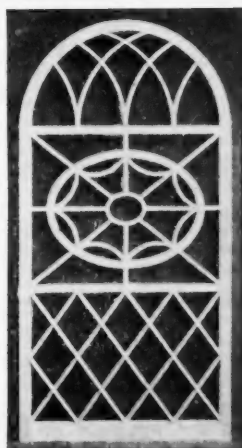
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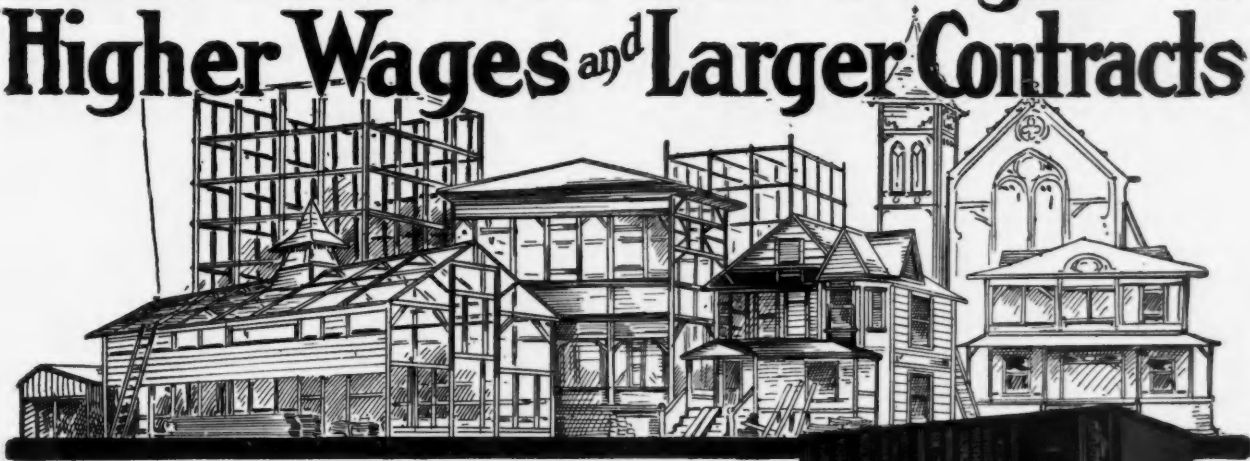
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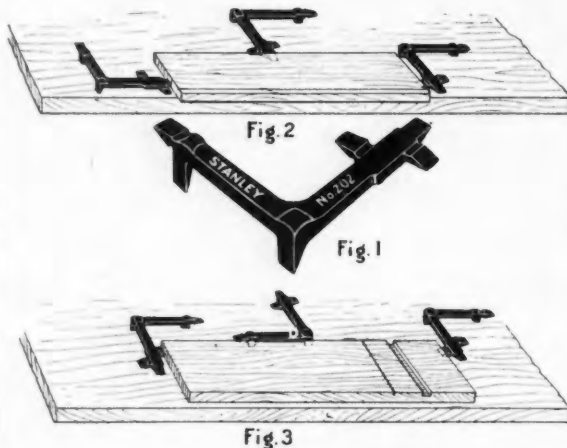
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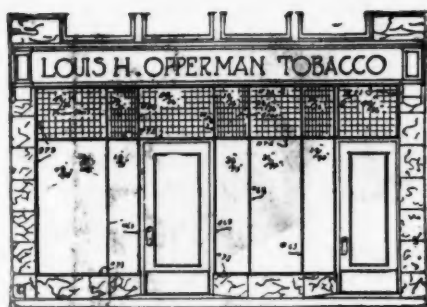
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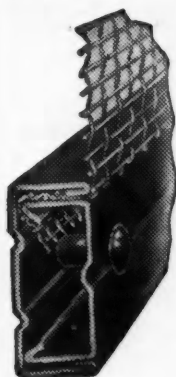
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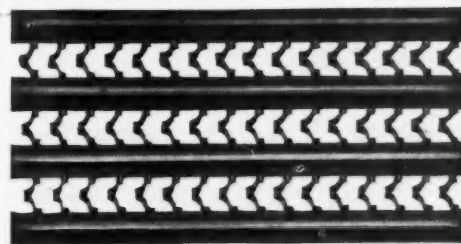


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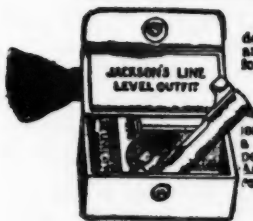
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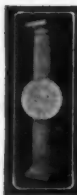


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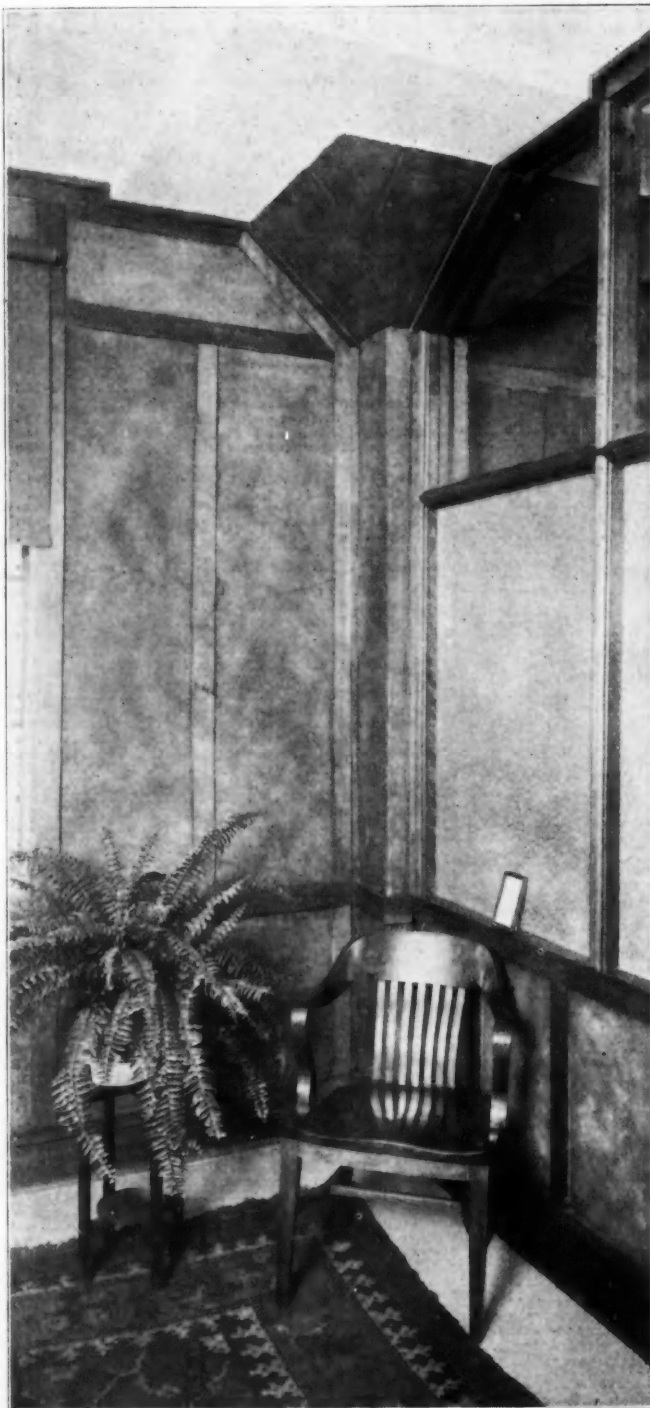
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THE McCREERY MFG. COMPANY
1012 Front Street Toledo, Ohio

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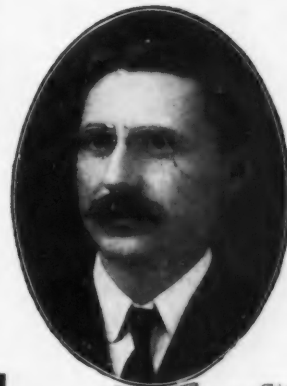
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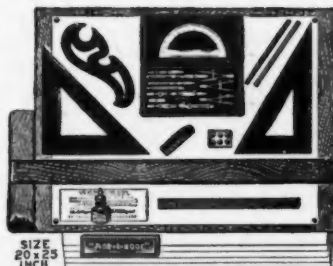
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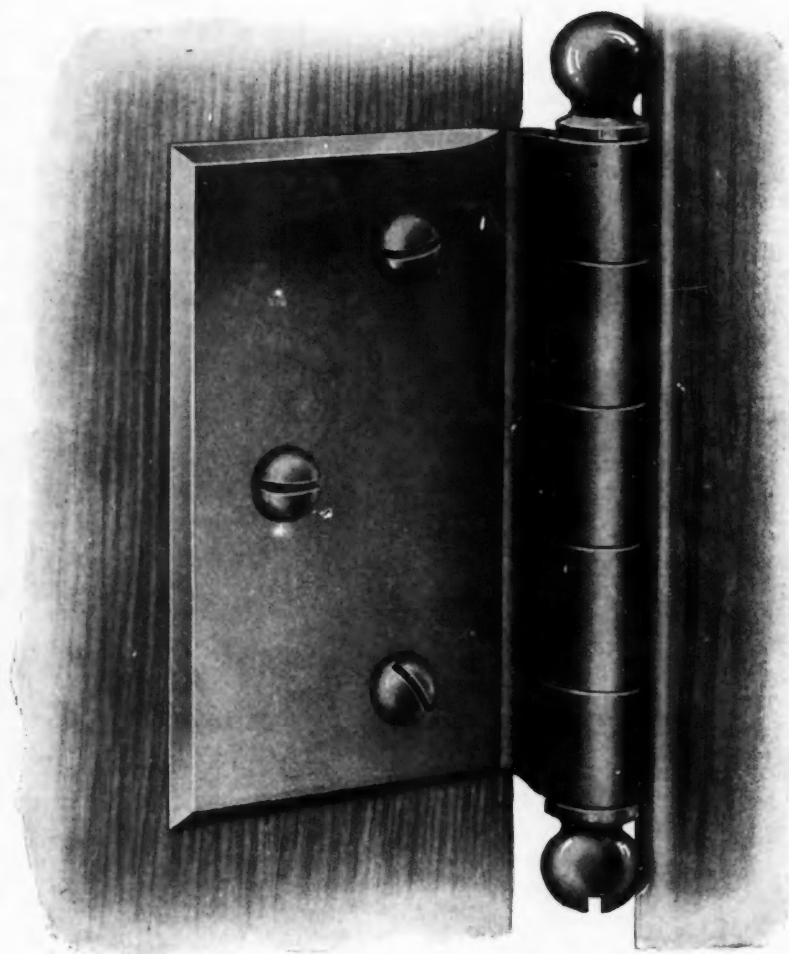
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