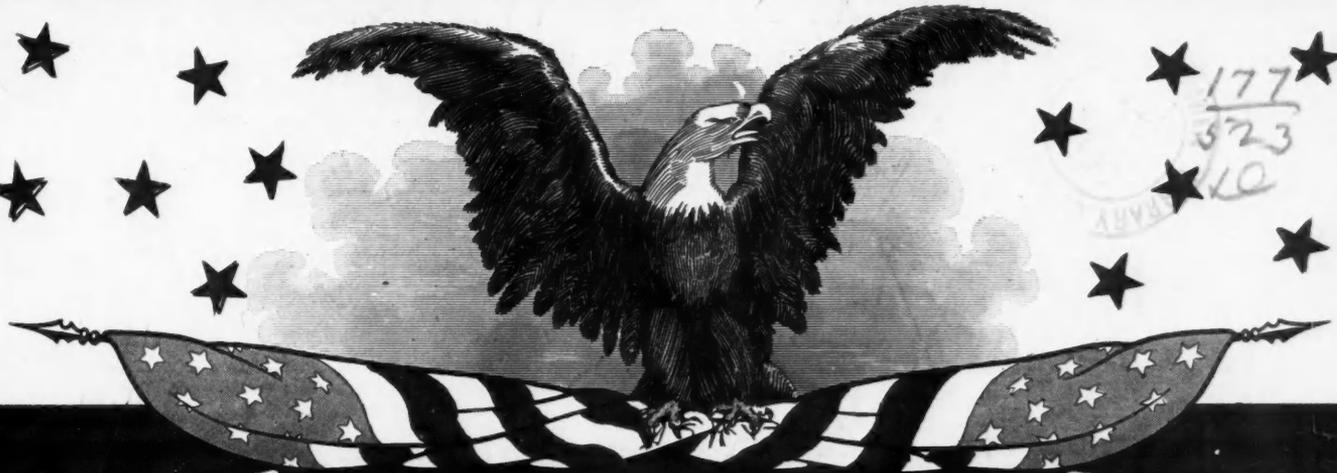


OCTOBER 1914

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

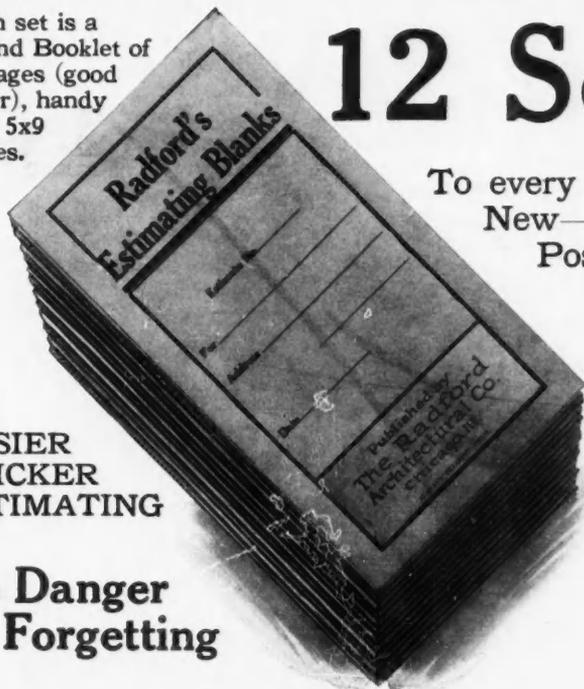
Each set is a Bound Booklet of 32 pages (good paper), handy size, 5x9 inches.

12 Sets FREE

To every one of Our Subscribers—Old or New—we want to send absolutely Free, Postage Prepaid, One Dozen sets of our new "Estimating Blanks."

EASIER
QUICKER
ESTIMATING

No Danger
of Forgetting



Each set covers every possible item of cost on any and every job. This is just what builders have long wanted to simplify and standardize their estimating work. "Radford's Estimating Blanks" are newest and best. Send for yours today.

See Pages 140-141 for
Special FREE Offer

Price 20 Cents

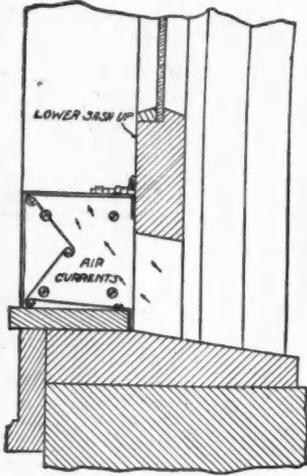
TH1
A25

FRESH AIR

WITHOUT
Draft, Dirt, Rain or Snow

By the use of
**BERRY WINDOW
VENTILATORS**

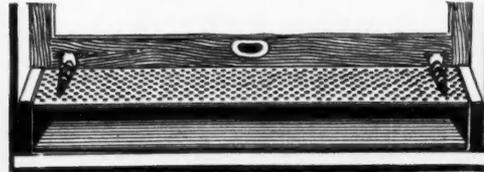
PERFECT VENTILATION



Cross section of window showing ventilator open

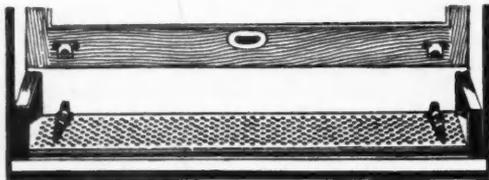
for the living room, bedroom, office, kitchen, nursery or shop is assured by the use of Berry Window Ventilators.

The supply of fresh air is admitted through the ventilator and deflected upward, eliminating all chance of draft, while the impure air is forced out through the opening between lower and upper sashes. Any room equipped with a Berry Ventilator has a complete Ventilation System and is absolutely burglarproof.



Showing window open with ventilator in use

Construction of Berry Ventilator



Showing window open with ventilator closed and not in use

Ventilators are constructed of a new process galvanized metal, finished with two coats of heavy enamel and come in stock sizes of 3 inches apart, from 17 inches to 71 inches—finished in black, mahogany or oak, or white enamel. Adjustments furnished with each ventilator, permitting same to fit any opening any part of 3 inches greater than stock sizes. The Berry Ventilator is collapsible, operating like an accordion, and the amount of air admitted can be regulated by raising or lowering the window. (We can furnish

ventilators in special sizes or finishes. Send us your specifications.) Ventilators are easily applied and the only tool required is a screw-driver.

TAKE ADVANTAGE

of the popular demand for fresh air that is growing stronger every day.

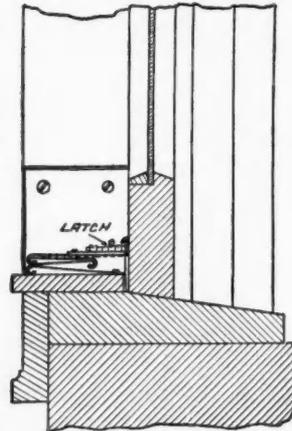
BECOME OUR AGENT

We have a liberal proposition that will interest you, put them on your houses, schools, churches, offices, etc. Establish yourself in your locality as the ventilating man, and handle a ventilator that has been proven by experts as scientifically correct. Write for special proposition to all *American Carpenter and Builder* readers.

**BERRY
WINDOW VENTILATOR SALES CO.**

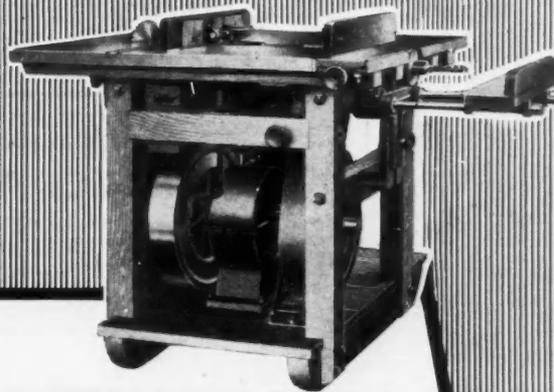
14-16 West Randolph Street CHICAGO

Cross section of Window showing ventilator closed



S. M. 18/11/16

How To Make More Money



"EVEREADY" SAW RIGS

SAVE THE WAGES OF SIX MEN

That's **one** way, Mr. Contractor, the "EVEREADY" Portable Saw Rig makes you money. If the **saving** of **wages** for **six men** is not a "clincher" argument for the "EVEREADY," figure its **wide range** of **uses**; besides cross-cutting and rip-sawing, this mechanical masterpiece **joints, sands, jig-saws, grooves, bores, mitres and grinds tools.** All attachments included—**no extras to buy.**

The Mixer with the Effective 4-Way Mix



Also Built for Steam and Electric Power

The "EVEREADY" is built **heavy** and **strong** for **any** service, yet two men can easily move it. So simple in construction that any one can do perfect work with it. And the "EVEREADY" **Engine** delivers **real power.** Bore, 4 1/4 inches; stroke, 6 inches. Compare them with others. We guarantee over 4 **actual brake** H. P.

OSHKOSH MIXERS

This sturdy, well-built mixer has **proved best** by many a **test** in all classes of work. Your men need not be concrete "experts" to get **perfect results** from the OSHKOSH MIXER. Any one can produce a smooth, well blended mix, **guaranteed** inspection-proof. Few parts; loads and cleans easily; mixes any material; requires little power.



Live Agents Wanted in Open Territory

OSHKOSH MANUFACTURING COMPANY

316 S. Main Street, Oshkosh, Wis.

Chicago Office, 1440 Monadnock Bldg.



CONTRACTORS' EQUIPMENT
"The Best Made"
1914

OSHKOSH MANUFACTURING COMPANY.
OSHKOSH-WISCONSIN.

Write for Free Catalog Today

Coupon, letter or postal brings the Oshkosh Catalog—the book that every contractor should have—and can have for the asking. **ASK!** Mail the Free Coupon **TODAY.**

This Book Shows You How To Make Money

Mail This Coupon Now!

OSHKOSH MFG. CO.,
316 S. Main St., Oshkosh, Wis.
Please send me—**FREE**—the big Oshkosh Catalog—the book that shows me how to make more money.

Name

Address

S. No. 18/11/16



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 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 simplic-
ity itself and built mechanically
correct to withstand years of hard
service.

Write for our FREE
TRIAL proposition

**Ideal Floor
Sander Co.**
No Inc.

105-109 N. Canal St.
CHICAGO



M. L. Schlueter's Rapid Floor Surfacing Machines

PERFECT RESULTS GUARANTEED

Our Latest

"The BABY SURFACER"

Especially adapted to use in small rooms. Old or new floors.
Will surface from 500 to 800 square feet per day.

VACUUM CLEANER PAN! NO DUST!

Will do the same work but costs,
complete with 100 ft. Trailing Wire
and two Rolls Garnet Sand-Paper, etc.

Less than Half the Price of Our
Larger Machines. Write for our FREE
TRIAL OFFER and catalogue.

DEMONSTRATING AND SALESROOMS:

225-227 W. Illinois Street, Chicago, Illinois



1/2 H. P.
Motor
Roller
may be
attached
to either
side of
Machine.



STEEL SCREW

WIDE, STRONG FRAME

H
HARGRAVE

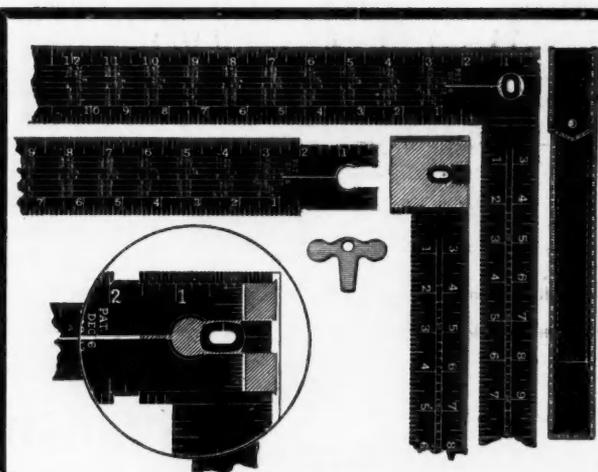
Hargrave **H** Quality

Standard Clamps

**WEAR LONGEST
PLEASE BEST**

The Steel Screw and the wide,
Strong frame are two of the
reasons. For others and full
particulars about the Hargrave
line of superior tools, write to-
day to Dept. H.

The Cincinnati Tool Co.,
NORWOOD, OHIO



Nicholls Expansion Fit Take Down Square No. 500-R

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 re-finish and re-true old Squares, **35c** each. In-
clude enough postage for their return.

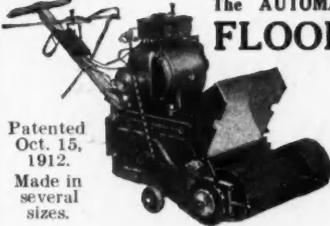
NICHOLLS MFG. CO.
OTTUMWA, IOWA



IMPERVITE is Guaranteed to Waterproof Walls: Cellars & Pits.

A facing of IMPERVITE MORTAR on the inside will resist water on the outside.

ASK FOR BOOK No. 62 **The Standard Paint Co.** NEW YORK BOSTON CHICAGO



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 simply 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



The FOX Floor Scraper

Complete Scraping Outfit Consists of:
1 clamp block for sharpening knives.
4 crown knives, large size.
3 old floor knives, small size.
1 Special Knife, substitute for sander.
1 burnisher. 1 file.
1 wrench. 1 oilstone.
Complete set of instructions for operating.

is conceded by Carpenters and Contractors to be the most perfect and practical tool of its kind in use today. It will do the work.

Our Knives are made from a special steel, tempered by our own process to the exact degree of hardness and toughness required for floor scraping.

We ship on ten days approval.

FOX SUPPLY COMPANY
Dept. A. BROOKLYN, WIS.

\$25.00

You May Use This Machine Ten Days FREE

Put it to any test—the hardest tests you know of—scraping wood floors, hard or soft, old or new.

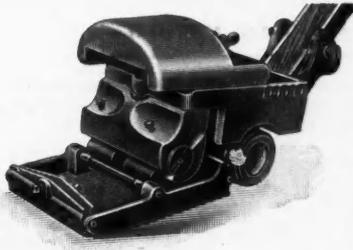
If it doesn't do your work quickly, easily, perfectly; if it doesn't prove to be the biggest time-saver, labor-saver, **money-maker** you ever saw, or, if you do not wish to keep it—just ship it back at **my expense**.

Or, pay for it at the end of ten days, and then if at **any time** or for **any reason** through fault of the machine it fails to do your work satisfactorily, you may have your money back if you want it.

For the H-P-D ADJUSTABLE FLOOR FINISHER
is sold under a guarantee that **protects you** absolutely.

Scraper—with six blades, burnisher, wrench etc. on ten days free trial .. \$22.00
Sander Attachment 2.50

SANDER FREE—if cash accompanies order.



Read This Guarantee

If at any time or for any reason thru fault of the machine the **Adjustable Floor Finisher** fails to please you, you may have your money back if you want it.

H. P. Didriksen ANDERSON, IND.



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.

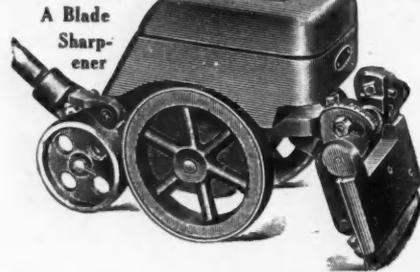
THIS COUPON IS WORTH \$2.50

Name.....
Town..... State...

Sander, FREE to Cash Buyer

A THREE TO ONE PROPOSITION—

3 Machines in 1
A Floor Scraper
A Floor Sander



A Blade
Sharpener

The Triple "A" SPRING DRIVEN Floorsmoothing
does the work of any three other floor scraper machines on the market

- It saves the cost of two machines and two men's labor.
- Only machine equipped with the SPRING MOTOR DRIVE.
- Easily operated by one man. No extra expense for power; can be used anywhere.

ADJUSTABILITY

Its wide range of adjustments permits of the reversible shear cut; working close to baseboards; in corners, small rooms or halls, etc.

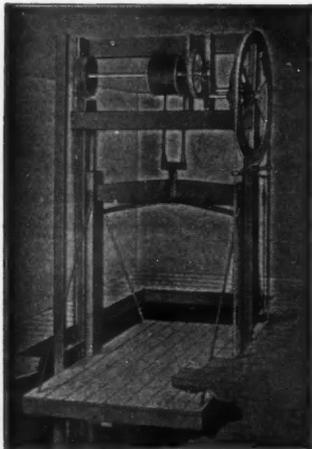
It will successfully scrape and sandpaper to a perfect surface wood floors of all kinds, whether new, old, varnished, shellacked, painted or covered with any other substance.

It cuts below the grit, owing to its abundant weight and power.

TRIPLE "A" MACHINE CO., Room 327, 300 W. Grand Ave., Chicago, Ill.

A Good Elevator

Is a Good Investment
Saves Time and Labor



Our product includes *Dumb-Waiters, Carriage, Auto and Store Elevators*—Hand and Power.

These machines are serviceable and will pay for themselves in a very short time. Being practically self-contained, they can be erected by any carpenter or "handy man" in a few hours' time. Plans for erecting furnished with each elevator.

The Reasonable Cost Will Interest You

Write to us today stating your 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

WARNER ELEVATORS and DUMB-WAITERS

We give you more good material—good workmanship—good Elevator and good service than any elevator builder on earth—for your money.

Send for Catalogue

The Warner Elevator Mfg. Co. : Cincinnati

Where Any DUMBWAITER is Wanted a Sedgwick is Needed

BECAUSE:

First:—The SEDGWICK line is so complete that you can select just the size and type of outfit that will exactly meet the requirements of each job.

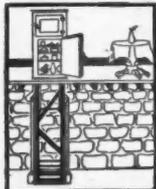
Second:—Each SEDGWICK outfit is superior in Design, Material, Workmanship and Finish.

Third:—Each SEDGWICK outfit is guaranteed by the makers.

Furnish a SEDGWICK and make a permanent customer.

Catalog L gives complete descriptions and easiest and best method of installation. Write for it now.

SEDGWICK MACHINE WORKS
132 Liberty Street NEW YORK



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.



THE COLUMBIA
DUMB WAITERS ELEVATORS
CELLAR HOISTS
JUMPER DISAPPEARING DUMB WAITERS
CHAIN HOISTS, CRANES and TROLLEYS
SEND FOR CATALOGUE.
J. G. SPIEDEL, Reading, Pa.

CHELSEA

EXEMPLAR OF QUALITY

Send for our Elevator and Dumbwaiter catalog

CHELSEA ELEVATOR CO. 330 W. 26th St., N. Y.



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.



Use this Floor Scraper for One Week at My Expense

and if it does not do the work to your entire satisfaction, return it and you are under no obligation.

THE ACME FLOOR SCRAPING OUTFIT

is the most complete hand operated floor scraping equipment on the market. Thousands in daily use and all give perfect results.

Write to me now for particulars of my free trial offer and catalog.

JOS. MIOTKE, 247 Lake Street, MILWAUKEE, WIS.



Courtney Scaffold Brackets Are Safe

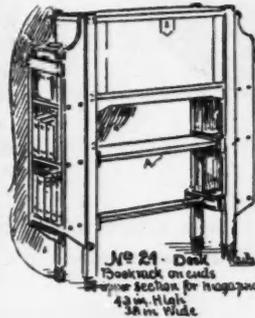
They carry a ton—Last a Lifetime—They save enough on tire jobs to pay for themselves—Easily and quickly put up and taken down by one man.

Our crosshead keeps the scaffold from swinging—no extra charge for this feature.

\$13.50 per dozen for three foot brackets—if cash comes with order.

To Save Money, Order While This Advertisement is in Your Mind.

American Steel Scaffold Co., Dept. 5, Detroit, Mich.



EASY TO MAKE FURNITURE

It does not require a lot of practical experience to understand the system of making furniture. It is fully explained in our Portfolio of **easy to make furniture**. Can be made with or without machinery. Each of the one hundred designs is useful and Practical. It is not a work for the Kindergarten, but chuck full of up-to-date designs in perspective on an easy, workable detail scale. Just the thing for the mechanic, designer, architect, student or schools. It will pay for itself twenty times over in the knowledge obtained during the season. **Price \$2.00 Prepaid.**

Crater & Holt 45 N. National Ave. Grand Rapids, Mich.

SEND

ME

THIS

COUPON

Everywhere I go machinery is replacing hand labor and old fashioned methods—car unloaders, steam shovels for excavating, tractors for plowing, automobiles, trucks to replace horse drawn wagons, automatic machines in factories replacing scores of mechanics. Everywhere it is one endless effort to cut down costs.

The reason behind the Weber Double Acting Floor Scraper is the same. I'm a contractor myself. I saw a place where building costs could be cut down, so I made the Weber Floor Scraper. I knew from personal experience just what features were needed. And I did not rest until I got them.

NOW--I have a machine that I can swear by. It works either forward or backward, with or across the grain.

It has both **PUSH** and **PULL**--it has a nose that smells out the work in the close corners and it just eats up a strip by the baseboard. Some machines are almost uncanny in their operation. They seem to think. If you want a floor scraper that seems almost to think, then it's the Weber for you.

Don't dream about it a single night. Write **NOW** for a Weber Double Acting Floor Scraper for a 5 day **FREE TRIAL**.

Then sit back and have a smoke and watch it work. It'll take you about 5 minutes to realize that your floor scraping troubles are at an **END**. Fill out the coupon and send it to me **now**.

The WEBER DOUBLE ACTING Floor Scraper

Weber Mfg. Co. 670-71st Ave., West Allis, Wis.

To John F. Weber, Pres. Please send me one of your Double Acting Floor Scrapers on 5 Day Free Trial.

NAME _____
ADDRESS _____
EXPRESS _____

A THREE TO ONE PROPOSITION—

3 Machines in 1
A Floor Scraper
A Floor Sander
A Blade
Sharpener



The Triple "A" SPRING DRIVEN Floor smoother does the work of any three other floor scraper machines on the market

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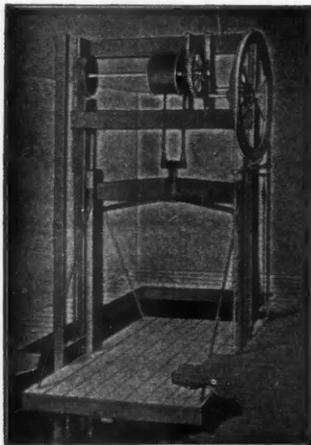
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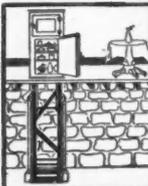
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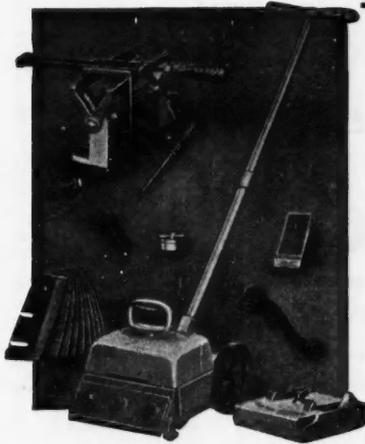


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 ■ To John F. Weber, Pres.
 ■ Please send me one of your Double Acting Floor Scrapers on 5 Day Free Trial.
 ■ NAME _____
 ■ ADDRESS _____
 ■ EXPRESS _____



Prices
on
Request!

At An
Operating Cost
3c of But
Per Hour

Two wheelbarrows per batch. Daily capacity up to 75 yards with loader. Daily capacity up to 50 yards without loader.

"Big-an-Little" Concrete Mixers

ARE USED BY ALL KINDS OF CONTRACTORS EVERYWHERE, ON JOBS BOTH LARGE AND SMALL. It gets in the corners—around the corners—into high, low and out-of-the-way places—gets everywhere with wondrous ease. They're money-savers on big jobs and you can easily put them to work on small, scattered jobs. They're willing workers and will stand the racket. RECORDS PROVE WE TELL THE TRUTH.

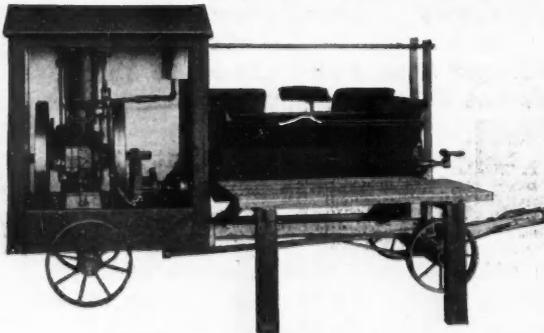
The man who pays the bills appreciates "BIG-AN-LITTLE" ECONOMY, it's always ready to fill every command—and at the smallest cost! It costs the least to use!! It's light in weight but brutally strong!!

THE JAEGER MACHINE COMPANY

318 West Rich Street

COLUMBUS, OHIO

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
286 Carpenter St.,
CAMBRIDGE SPRINGS, PA.

ARCHER CONCRETE MIXER

Capacity $4\frac{1}{2}$ cubic feet wet concrete per batch. Just the mixer for economical work on large or Small Jobs.



Saves the Work of 5 Men

The Archer Mixer by fast mixing and by discharging the concrete directly into the forms saves the work of five men. No wheeling is necessary. Loading platform is low. Barrow dumps into the charging hopper which is strongly braced so it will not bend or "give" under weight.

The price of the Archer makes it an attractive investment for the Carpenter and Contractor. It is built of first quality iron and steel with blue annealed steel plate drum. $3\frac{1}{2}$ H. P. Gasoline Engine. Platform 5 feet long by 38 inches wide and 21 inches high. Can be used anywhere on the job—in the basement or on the roof. We agree to refund your money if the Archer does not do all we claim. Write for full description and price.

Archer Iron Works
2430 West 34th Place

CHICAGO,
ILLINOIS

Wanted--Results:

When you invest good money in equipment, particularly a Concrete Mixer, your choice is based largely upon representations of the Builders. You couple with these all the information you can obtain from the testimony of purchasers. The number of purchasers, their geographical distribution, the variety of conditions surmounted—all indicate probable RESULTS in your particular case.

Known Value is therefore the deciding factor. You look in vain for this with respect to many machines that otherwise "look good" to you. You know, however, that between "look good" and "make good" there is a wide gulf fixed. Right here

WONDER MIXERS

"The Mixers that Make the Money"

appeal with tremendous force. Their KNOWN VALUE is a positive quantity—one that has been piling up for years—rolling in from every State in the Union. It is a matter of common knowledge that WONDER MIXERS give RESULTS—"make good"—hundreds of contractors say, "They do more than we expected".

Wonder "Five" Results

\$17.50 per day profit over hand mixing.

Perfect concrete, better work and increased business due to advertising value.

You more than double your income, because you can do twice as much work with greater profit and less labor.

You can compete for big jobs with confidence that the WONDER will mix at the lowest price per cubic yard, stand the "grief" and yield good profit.

These are not theoretical results—they are real life experiences from hundreds of purchasers of the LITTLE WONDER "FIVE." What they have done you can do.



LITTLE WONDER "FIVE"
without SIDE LOADER
Capacity 35 to 50
Cubic Yds. per day.

Here's How--

Accept our "Man to Man" proposition — TEN DAYS' FREE TRIAL on your own work without obligation—we even pay the freight if the machine does not suit you in every particular. This guarantees against disappointment and insures RESULTS —PROFITABLE RESULTS.

WATERLOO CEMENT MACHINERY CORPORATION

103 Vinton Street, Waterloo, Iowa

Manufacturers Concrete Mixers, Builders' Hoists and Contractors' Equipment

NEW YORK, 11 Broadway PHILADELPHIA, The Bourse CHICAGO, 2nd Floor Ins. Ex. Bldg. KANSAS CITY, Commerce Bldg

Supplies the Demand for a Small Perfect Mixer



The McCracken Portable Batch Mixer

is designed and built to meet the demand for a strong, simple, durable and practical mixer, that is large enough for all ordinary contract work, yet light enough to be profitable on the small job as well as on the large. Mounted on good steel trucks, EXTRA LARGE DRUM OF THE PROPER SHAPE, equipped with our own high-grade 2-HP. SIOUX engine, enclosed in a good steel housing (not a cheap box), also has friction clutch, so that drum can be started and stopped without stopping the engine. Capacity, thirty to forty yards per day. Cost for power, twenty-five cents per day. The largest, best and most complete mixer on the market for the money.

Write for Further Particulars
SIOUX CITY ENGINE & MACHINERY COMPANY 9th and Division Sts. SIOUX CITY, IOWA

Capacity
3 to 5 Cubic Feet
Per Batch

Weight, 800 Lbs.

On Trucks,
1000 Lbs.

On Trucks
with
Engine,
1400 Lbs.

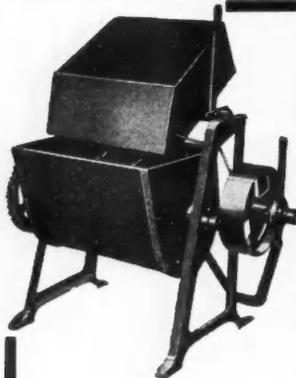
THE WINNER MIXER



Will make money for you even if you don't have work enough to keep it running all the time. The cost is very small, and one gallon gasoline will run it a day.

Mixes 4 and 5 cubic feet per batch
 Daily capacity, 30 to 40 cubic yards

Ask for our FREE Catalog
THE CEMENT TILE MACHINERY CO.
 133 Rath Street Waterloo, Iowa



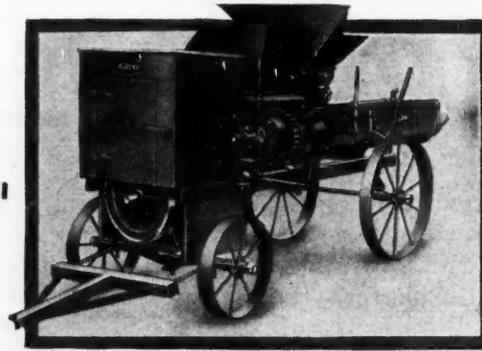
Think of It!

This HELPER mixer that will mix mortar and concrete, only **\$35.00**

It will mix two cubic feet at a time. The measuring box enables you to get another batch ready while one batch is being mixed. Requires 1½ h.p. engine to run it. Daily capacity 15 to 20 cubic yards.

Send us your order now, or ask for FREE catalog giving more information.

THE CEMENT TILE MACHINERY CO., 132 Rath St., Waterloo, Iowa



The BABY GRAND CONTINUOUS MIXER

combines all the good features of mixer and hoist at the price of one machine.

The BABY GRAND is a logical investment for the Carpenter and Contractor because both mixer and hoist are greatly used in modern construction. You can afford the Baby Grand. It is portable; capacity, 4 to 5 cu. yds. an hour. 2½ H. P. Gasoline Engine furnished with the machine.

The HOIST is mounted on the frame (see illustration). Operates with or independent of the mixer. Simple friction clutch for starting and hand brake for holding load. Capacity of hoist, 400 pounds. Lifts load 100 ft. per minute.

Our latest CATALOG gives a complete description. Send for it. We also make the HARTWICK TWO TROUGH MIXERS for heavy construction work.

HALL-HOLMES MFG. COMPANY
 436 Oak Street Jackson, Mich.

JUST RIGHT in Price, Capacity and Construction

That's the beauty of buying a Northwestern machine. You can get a mixer that will suit you in capacity, construction, and price. All our machines are built to satisfy and they do it. By ordering a Northwestern Mixer you avoid a big initial investment and all future worry and expense.

Northwestern Special Batch Mixer

Capacity 5 cu. ft. per batch. 40 to 50 cu. yards a day. This is a speedy and durable mixer that will soon pay for itself. Has the sturdiness, simplicity, and mechanical perfection that makes it a winner. Low Charging. High Closed Discharge. Combined cone and cylindrical drum. Strongly braced truck. Wide face truck wheels. 2½ H. P. Engine. Let us send you a complete description of this mixer which can be bought at about half the price asked for other machines of the same quality.



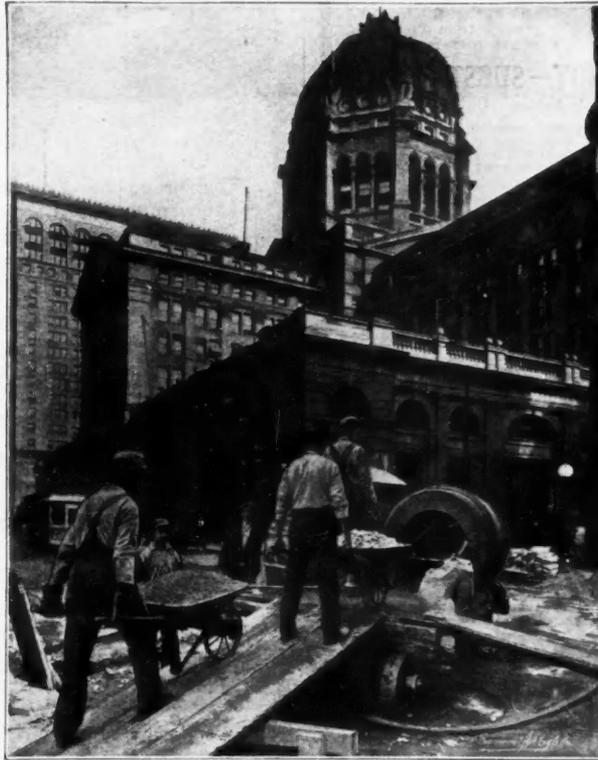
Carpenter's Hand Batch Mixer

An especially strong, well-made little machine for handling small batches of concrete quickly and with a small amount of labor. 3 cu. ft. of loose material per batch. Perfect mixing guaranteed. Best iron and steel construction. Weight 220 pounds. PRICE...\$23.00
 Get Our Complete Catalog of Mixers, Hoists, Moulds, Brick and Block Machines, Crushers, and all Concrete Machines and Supplies.



Northwestern Steel & Iron Works
 625 Ball Street - - - Eau Claire, Wis.

LOW-CHARGING MIXERS



*Laying streets
around the
United States
Post Office,
Chicago, Ill.*

**"The STANDARD"
LOW-CHARGING**

Frost Will Soon Be Here

Have you progressed far enough on your work to ignore the approaching freezes?

Do you know that we can furnish you with just the sized mixer for your needs—**AND AT A VERY REDUCED PRICE**, on account of the lateness of the season?

Do you consider that you have sufficient equipment now, to be able to complete your contracted work?

Will you be able to pull your machinery into storage and breath a sigh of relief, "well done"?

Have you our Catalog No. 44-10 on mixers and contractors' equipment? We will send it, you may need something in a hurry; Shall we?

The Standard Scale & Supply Co.

NEW YORK CLEVELAND PITTSBURGH PHILADELPHIA CHICAGO
136 W. Broadway 1547 Columbus Rd. 243-5 Water St. 35 S. Fourth St. 1345-7 Wabash Ave.



90 Cubic Yards Per Day

Saves 60 to 90 cents on every yard. Pays for itself several times each season. Gives you the edge on your competitors. So light that two men can carry it. Big savings in freight and handling. Can always be set to discharge direct into forms. Saves all wheeling from machine. This alone saves one-third the labor necessary to operate other mixers.

Not a Man-Killer
Has an enormous capacity

SIMPLE—COMPACT—HANDY—SUBSTANTIAL

New Principle—Quick Charging—Quick Action—Quick Discharge

Its mixing blades have a criss-cross, kneading, plowing, hoeing motion which press and fold the entire batch over upon itself many times every second. Insures a quick and thorough mix. You will be proud to say you have a Northfield Hand Batch Mixer, once you see its work.

The SLUSH mixer mixes 4 cu. ft. of finished concrete per batch. A batch per minute or 90 cu. yds. per day is easily possible under favorable conditions. 30 to 60 cu. yds. per day is a fair average on ordinary abutment, floor, wall or bridge work. Over 10 cu. yds. per hour have been averaged. When operated by power—one man alone can mix mortar fast enough for a crew of 20 brick layers.

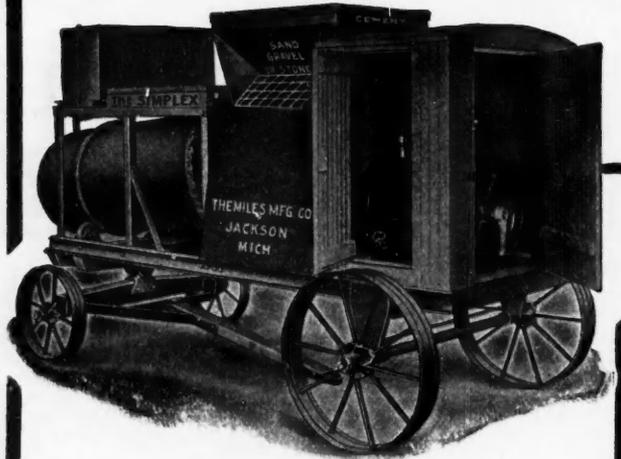
The DRY or WET mixer is good for any kind of mixing—either Dry, Wet or Slush. Is extra fine for brick or block plants, core sand, plaster, brick mortar, chemicals, etc. Capacity—2 to 3 cu. ft. per batch—or 15 to 45 cu. yds. per day. Is just like the SLUSH mixer except a slight change in the drum heads and agitator. Is the best for an all-purpose mixer. The SLUSH mixer is best for big jobs and rapid contract work where slush mixtures are used.

Two men turn either machine easily and do not work as hard as the show-ers. A pump engine will run them. It is not necessary to have a big expensive power mixer to economically mix concrete. No job is too big or too small for the Northfield. No better mixer can be had, even at ten times its price.

Write direct to factory for catalogue, prices and terms.

NORTHFIELD IRON COMPANY
402 Water Street Northfield, Minn., U. S. A.

Buy The SIMPLEX 1914 Model MIXER



Combining the good features of both batch and continuous mixers in the one machine.

The best feature of the Batch Mixers is the rolling of the materials. The greatest advantage of the Continuous Mixer is the automatic measuring and feeding of the materials.

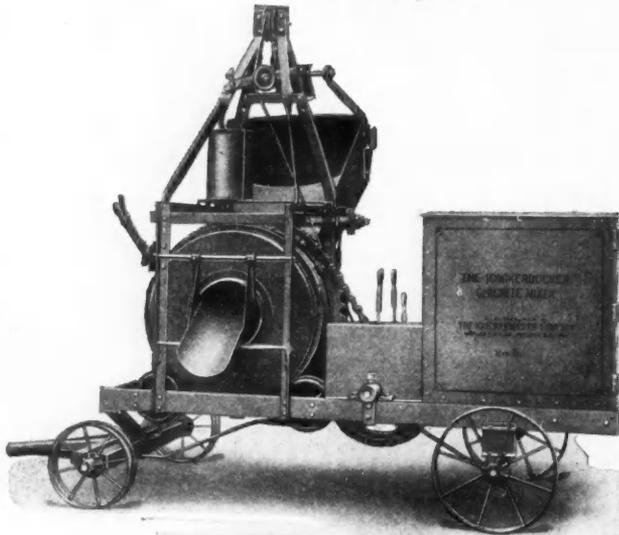
Only one machine combines these two features—the SIMPLEX. It's the happy medium between the two types of mixers, giving the points of advantage claimed by each, and eliminating the faults of both.

Write for New Complete Catalog.

The Miles Mfg. Co.
309 E. Franklin St. JACKSON, MICH.

Knickerbocker-Quality

First
Last
Always



Mixes 5 cubic feet at a batch without slopping

Quality in Design
Quality in Construction
Quality in Power

RESULT IN

Quality in Production.

Quality is Economy in the End.

Write for Catalog A.

The Knickerbocker Co.

Jackson, Michigan

AGENTS WANTED

You Builders Of Homes, Skyscrapers, Factories

Should Certainly Visit the Permanent Exposition and

Building Material Exhibit

Come to the Building Show. Come and bring your friends. Come as often as you can. Come every time you want to get Building information. If you are interested in any kind of building you can learn more and see more at this show in a short time than in weeks of scattered visiting

of scattered factories, mills, warehouses and offices. You can see it all at your leisure, in your own way. Unbiased experts are on hand to answer your questions and give counsel, without charge.

Look Before You Build

The country's greatest manufacturers have brought their products to one central point for display. You can see the good things for your house, flat, bungalow, factory, warehouse or office

building—all in one place at a great saving of time and expense. The value of this exposition in dollars and cents is important to you as a builder. *It doesn't cost you a cent.*

ADMISSION FREE—Open Every Week Day from 8:30 A. M. to 6:00 P. M.

BUILDING MATERIAL EXHIBIT

J. P. FORAKER, Pres. A. FRIEDMAN, Vice-Pres.

ENTIRE SECOND FLOOR,
INSURANCE EXCHANGE BLDG.

Jackson Blvd., Fifth Ave. and Sherman St., Chicago

TELEPHONES: Wabash 2020-2021-2022-2023-2024-2025-2026-2027-2028
CHICAGO

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Hunt, Robert W. Co.	57	Building Material Inspectors.	Vaughan & Bushnell Mfg. Co.	78	Mosaic and Tile Floors.
Heppes Co., The.	33	Roofing.	Vermont Marble Co.	15	Fire Escape Ladders.
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International Heater Co.	22	Furnaces and Boilers.	Woodburg Granite Corp.	119	Fireproof Windows and Doors.
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Iron Products Waterp'fg Co.	20	Waterproofing Material.	Westra & Deeds.	6	Heating System.
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Kelly, Thos. & Bros.	80	Patent Closets.	Yeomans Bros.	136	Washing Machines and Stationary Vacuum Cleaners.
					Sewage Ejectors.

THE *Atlas* MIXER



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

Contractors everywhere are enthusiastic in endorsing its wonderful adaptability to any size job and any kind of work.

They tell us that two 5-foot **Low Charging Atlas Mixers** do considerably more work than one 10-foot machine and the cost is no greater.

Atlas Mixers

Portable Durable
Simple Dependable

Sold at a price you can afford to pay

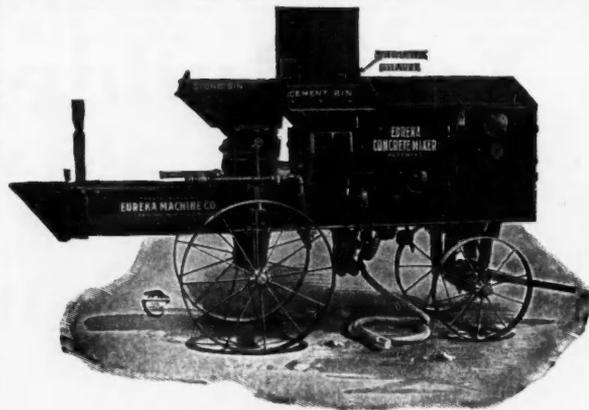
How the Atlas is built

Channel iron frame—heavy boiler plate drum—splendid lubricating system—expanding ring clutch—very low charging hopper and, last but not least, an exceptionally sturdy, powerful engine—the kind used on machines that sell at much higher prices.

Every contractor and every dealer will find the Atlas Mixer Book interesting. Just ask for it.

Atlas Engineering Company

789 Thirtieth St. MILWAUKEE, WIS.



We have some mighty interesting facts for you about the

EUREKA ^{SELF} MEASURING MIXER

"WHERE GUESS WORK ENDS"

May we show you these things in a clean cut way—one business man to another—no extravagant claims, no glittering generalities, **JUST PROOFS AND FACTS THAT HAVE AN IMPORTANT BEARING ON YOUR WORK.**

GASOLINE, STEAM OR ELECTRIC POWER

- It costs you less than half as much to buy it!
- It costs you less than a third as much to run it!
- It costs you less than a fifth as much to move it!

The Eureka Mixer, capacity for capacity, with any standard batch mixer, weighs less than half as much.

Powerful, Simple, Easy to Operate. Its Cost is Surprisingly Low. Send for the Facts Now.

EUREKA MACHINE CO., 12 Case Street, Lansing, Michigan



Patent No. 842262 and 782700

DUNN No. 1

Concrete Mixer
(Power Discharge)

PRICES FROM \$67.50

We will prove that the Dunn Mixer will save you time, labor and money—besides mixing your concrete correctly—by giving you the privilege of using it for 15 days before you pay us. Write for the mixer catalog.

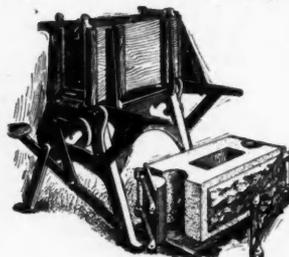
How to Get the Big Profits from Concrete

We issue a book giving costs and profits in manufacturing concrete blocks, brick, fence posts, concrete porches and ornaments, drain tile, and other concrete products. We show how this is a profitable side-line for building contractors.

This book, and full information, will be sent free upon request.

Dunn Concrete Block Machine, \$40

Makes three styles of blocks, and has a daily capacity of 150. Sold on 15 days' trial. Write for block machine catalog.



W. E. DUNN MFG. CO.

4132 Fillmore St., CHICAGO



"CHICKEN FOR DINNER, DAD"

What "luck" it was for Dan!

Every so often during the morning Dan Higgins kept coming back to the black covered book, entitled "Woodworking Machinery" and as many times he'd toss it back on the bench and try to get his mind off it.

"It's going to take a piece of money to buy the machine for my shop, I know—but then I think the Sidney people will give me a good, liberal deal. Of course, there's the cost to operate and the interest on the money, I du'no—maybe I'd better not. But I could keep busy, I'm sure, all the year around and that's worth something—blame it, I would buy one, only that I feel's though I was takin' a little 'chance' and I don't quite want to risk it."

Nearing his home at dinner time, Dan still pondered. As he turned in at the gate he lost the puzzled look that had hung over his face all morning and determined within himself: "If Mary has chicken for dinner I'm going to buy a SIDNEY right away. If she doesn't, I'm go-

ing to forget woodworking machines for another year. The proposition strikes me now as 'nip and tuck'—I'll just make this one chance decide it."

"Son," said Dan, at the dinner table, a few moments later, "you don't know what those words of yours, 'CHICKEN FOR DINNER, DAD,' may cost me—but say, Mary, this one plate full was worth the price, at that!" Then Dan told his wife of his resolve and she insisted that he could smell the chicken before he turned the corner!

A YEAR LATER. Dan drives up to the shop of a friend in Lawton, twelve miles away. Yes—it's a Ford!

"Hello there, Bill, you black rascal—how're things?"

"So, Dan, just so—but how come the Ford?"

"I know what you're thinkin', Bill—no, that Bonanza stock hasn't panned out! But I'm panning more gold out of the business—and it's a wonder you don't get wise, too. But hold on here, I keep forgetting that it was a 'chance' that finally decided me to—"

"One thing at a time, Dan! But don't tell me you made carpentry and building buy you this car—eh?"



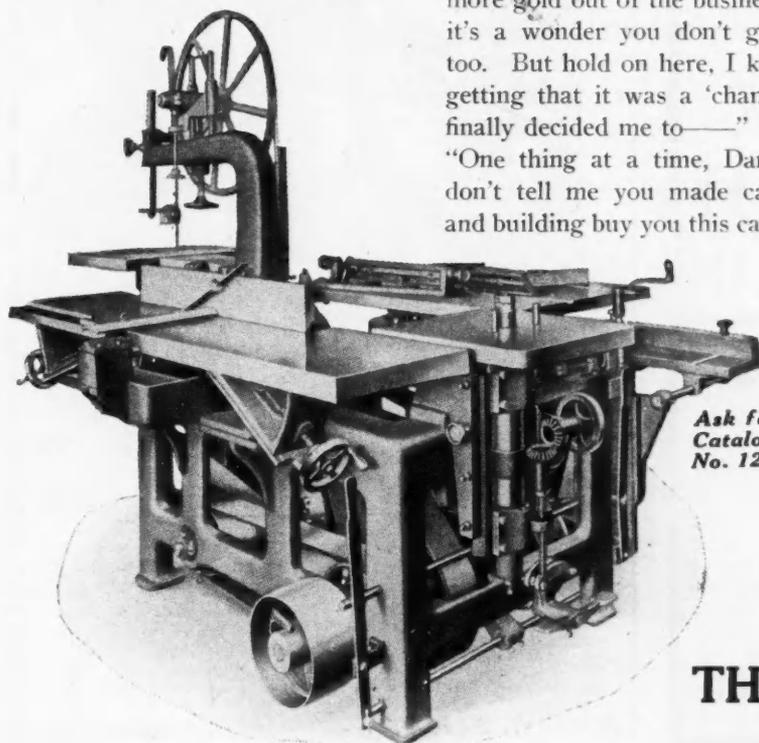
"Sure thing, Bill—well, no, not exactly. You know about this SIDNEY Combination Woodworking Machine? Well, a year ago I about passed it up, but—" And Dan told Bill how he came to buy a Sidney.

"But what about this car?—tell me!"

"Easy. I made the Sidney machine pay me six hundred in the year since I bought it. I was getting a nice living out of the business, as it stood, so I just took the extra dough and bought the car I've wanted. I can handle all sorts of mill finish and job work now in short order—and in a slick, nice manner. Am building a couple of big houses now. I don't have any idle moments—I feel better—I have a name for being a better business man—I'm making more money—and if things keep on booming with me another year, I'm going to go after this big contract work stronger yet—there's money in it, take it from me."

Bill didn't wait for the 'chance'—he took Dan's word for it—got a catalog and made a deal for his Combination Woodworker without delay. Another man will soon be driving his own car on Sidney profits!

What Dan and Bill did any carpenter and builder can do. And the very first thing is to send for that black-covered book, "Woodworking Machinery"—it's as free as the air you breathe.



Ask for
Catalog
No. 12

THE SIDNEY TOOL CO.
SIDNEY, OHIO

Let Chicago Machinery Exchange Start You in Business



CHICAGO No. 10 VARIETY SAW

We have the largest line of
high grade

Wood Working Machines

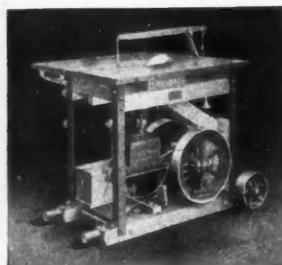
in the United States, and we are in shape to supply an equipment that will meet any requirement or pocketbook. We can figure on the entire outfit, including the machinery, line shafting, belting, motors or gasoline engines, and will also plan your shop.

We also have a separate department carrying a large stock of second-hand machines that are offered at bargain prices. Very often you can select a mixed outfit of new and good second-hand tools and get an excellent combination for comparatively little money.

Chicago Machinery Exchange
1215-1223 Washington Blvd. :: CHICAGO



C.H.&E.
Means
Quality
Machinery
SEND
FOR C. H. & E. CATALOG

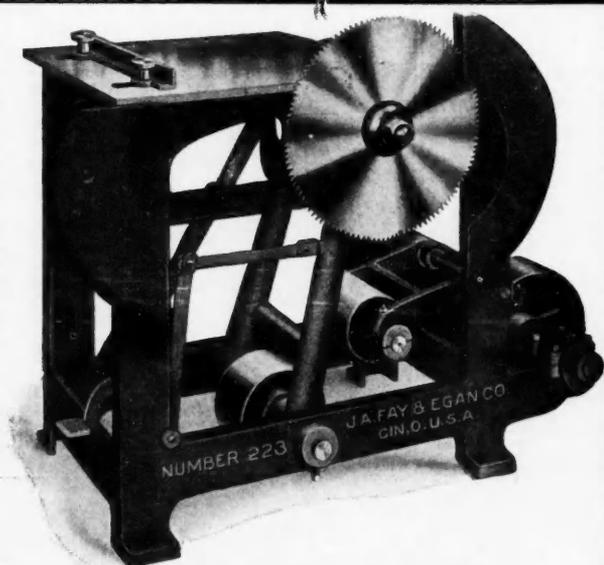


No. 3 Saw Rig

C. H. & E. Manufacturing Co., Inc.
322 Mineral St. Milwaukee, Wis.

**ASK
US**

for our big GUARAN-
TEE when we send you
that big catalog which
gives you full details of
our six different sizes of
PORTABLE Saw Rigs.



The Carpenters and Builders Ideal Saw

Fay-Egan
"Lightning" No. 223 Inverted Swing Cutoff

It is entirely self-contained, does not need wall or ceiling, and can be placed where most convenient. You do not reach and pull saw into cut—a slight pressure on treadle does this. Both hands are free to handle work.

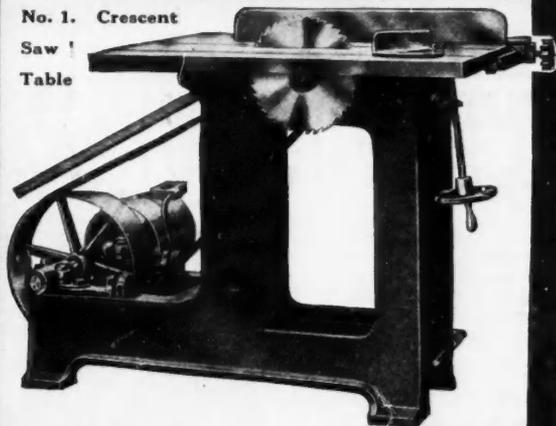
Let us Send Bulletin Q-17.

J. A. FAY & EGAN CO.
545-565 W. Front St. - - CINCINNATI, OHIO

Crescent

Woodworking Machinery

No. 1. Crescent
Saw
Table



Every shop, no matter how small, can use some power equipment to advantage. Put yourself in a position to handle more work and bigger work. Do your own mill-work this winter and gather in that extra profit. We have shown a few woodworking machines on this page. We make several models of each machine, surely you can use one or more of them to boost your profits and capacity, for handling work.

The Crescent Line

includes six models of Band Saws, five models of Saw Tables, two Shapers, two Jointers, four models of Planers, two Surfacers, Disk Grinders, Post Borers, Universal

Borers and our Famous Crescent Line of Universal Woodworkers. These machines can be furnished for either gasoline or individual motor drive.

No. 1 Crescent Saw Table: (Illustrated).

Here is a machine so very low in price that the smaller shop can afford it. Made of best materials. Frames cast in one piece insuring a rigid machine. Ripping fence will tilt to angle of 45 degrees for level sawing. Our Catalog describes this and other saw tables fully.

8, 12, 16, 18, 20 and 24-inch JOINTER: (Illustrated.)

If you need a jointer, we recommend the Crescent 8, 12, 16, 18, 20 and 24 inch. Here is a machine that will plane one surface straight and by use of the fence will bring one surface or dimension stock square with another, or on accurate level with another.

32-inch Crescent Band Saw: (Illustration.)

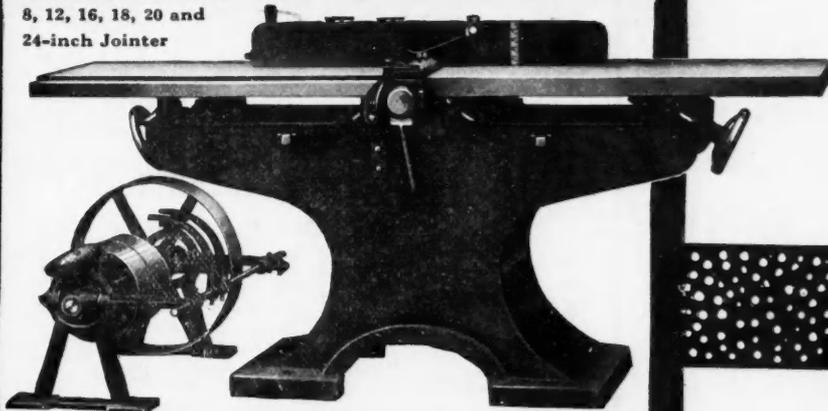
A popular Band Saw for the Contracting Builder, delivers the goods that a larger and more expensive machine does. Frame is cast in one solid piece and hollow throughout. Our Catalog gives complete description.

By use of special cutters this jointer can be used for beading, grooving, making light molding and other similar work, our catalog gives complete description.

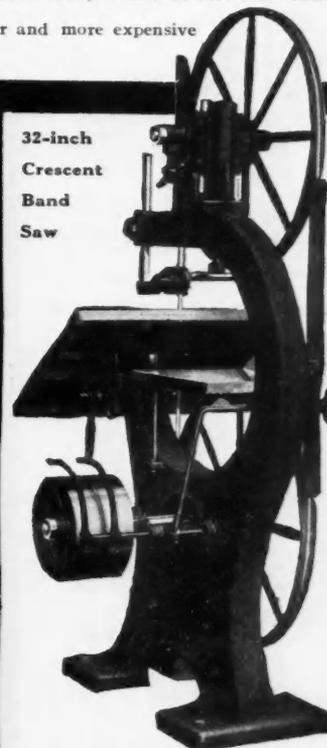
We want all readers of the American Carpenter & Builder to have a copy of our handsome catalog and to become acquainted with the Crescent Line of Woodworking Machinery. Just send your name and address to us now and you'll get your copy.

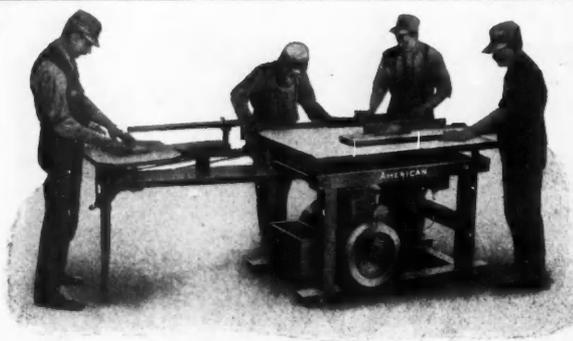
The CRESCENT MACHINE CO.
224 Main St., LEETONIA, OHIO

8, 12, 16, 18, 20 and
24-inch Jointer



32-inch
Crescent
Band
Saw





GET READY FOR YOUR WINTER CONTRACTS

Winter is the time when you want to push your jobs along—cut out all delays—have everything ready when it's wanted. There's nothing that helps work toward all this than a

“AMERICAN”

Contractor's Portable Variety WOOD-WORKER

It makes you practically independent of the mill, because you can do practically all your mill work right on the job, with the “American”. It helps you push things along fast, because it will do a lot of work that otherwise must be done by hand.

It helps you keep down the costs—cut out the lost time—do better work and do it quicker.

Send for Pamphlet No. 47 on the “American”

American Saw Mill Machinery Co.

80 Main Street, Hackettstown, N. J. 1360 Hudson Terminal New York City

HOLMES SAW FILING & SETTING MACHINE

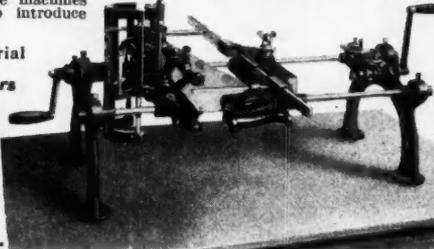
(Patented 1914)

Our Machines are guaranteed to accurately file and set, all fine saws such as Hand, Circular, Band, Gig Saws and Butcher Saws, either for Cross-Cutting or Ripping. This Handy, time-saving device is made especially for Carpenters and Builders, and should be in every shop. I am making a special price of \$50.00 for the two complete machines and attachments, to introduce the same.

Ten Days FREE Trial

Write for Circulars and Details

W. J. HOLMES
679 Michigan St.
BUFFALO
N. Y.



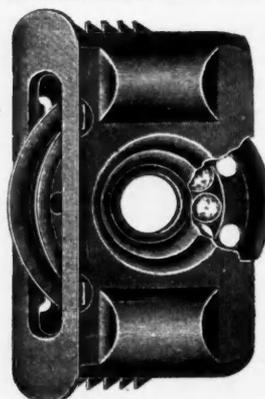
COMPLETE OUTFIT \$15.00 HAND AND FOOT-POWER MACHINERY

Our No. 7 Scroll Saw is warranted to be made of good material and workmanship, and to saw pine 3 inches thick at the rate of one foot a minute.

Send for Catalogue.

W. F. & Jno. Barnes Co.

74 Ruby St. ROCKFORD, ILL.



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.

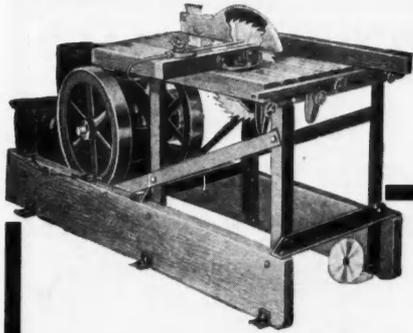
The Bearing contains eleven 1/4-inch Solid Steel Balls running in lubricant.

NOISELESS EVERLASTING

Write for FREE Samples

Grand Rapids Hardware Co. MANUFACTURERS

158 Eleventh St. :-: Grand Rapids, Mich.



\$72.88

for this
**Portable
Woodworker**

Fully Equipped

with Gasoline Engine of sufficient power, one 10-inch Rip Saw with Guard; one 8 inch Cross-cut Saw with an angle adjustable cross-cut guide with adjustable stop. This machine all belted up and ready for use, price \$72.88. We will send this machine on 30 days trial.

We are the Originators

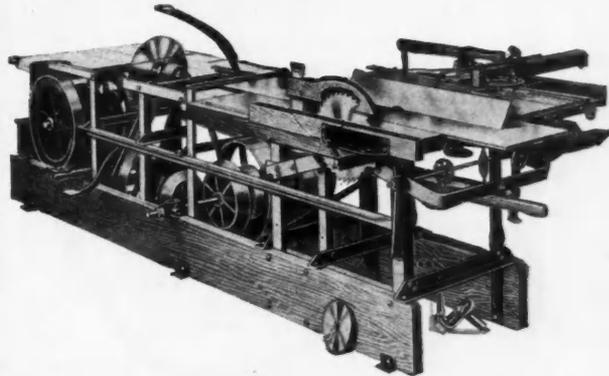
and Largest Manufacturers of Combination Woodworking Machines for small shop use in the world. Our large output and manufacturing facilities enables us to quote lowest prices on either power, hand or foot driven woodworking machinery. We always have a large stock of machines on hand and can guarantee prompt shipment.

Combination Woodworker

Here is a rigged well-built machine that fulfills every need. This Parks machine is the result of twenty-five years of experience in making practical combinations that will do your work. This machine consists of Circular, Rip and Cross-cut saws, Swing cut-off Saw, Boring, Tenoning Machine, and 12 inch Jointer; other valuable attachments can be added or you can take a larger combination that already has them on.

Our Special Selection of Catalogs

will help you to pick out the wood worker you want for general purposes. Should you want some special combination for your use, specify, as we have some hundred and fifty or more different arrangements of circular saw, Jointer, Band Saw, Jig Saw, Light and Heavy boring, Hollow chisel mortiser, Reversible spindle shaper, Sand disks etc. together with our latest and most valuable SWING CUT OFF SAW for use out on the job. Either of the above machines can be furnished in single machines if so desired. If selection of foot power machines is desired, be sure and mention same.



Parks Ball Bearing Machine Co.
Fergus St. and C. H. & D. Ry. CINCINNATI, OHIO

"OHIO EXTRA" AUGER BITS

are High Grade Single Twist Bits, carefully made from specially selected auger bit



steel. They are the Most Rapid Cutting and Perfect Clearing Bits on the market today and are fully warranted.



"OHIO" CHISELS, PLANES, ETC.

All "Ohio" Tools are made with the same painstaking care that has built up our present reputation for making only high grade tools. We use in our Edge Tools high grade steel, treated and tempered by the most improved process, which insures Uniformity and Correctness of Temper, and a Keen, Tough and Lasting Cutting Edge. If you appreciate Good Tools it will pay you to insist on having "Ohio" Tools from your Dealer.



Write for our special Carpenters' Catalogue of High Grade Tools and Benches

OHIO TOOL CO. (Dept. 15) Charleston, W. Va.

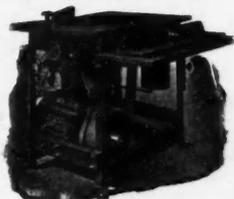
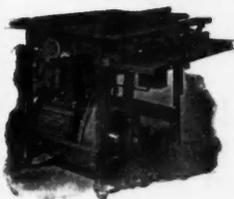


GENUINE BANGOR

Roofing Slate
Structural Slate
Blackboards

Large Facilities, Prompt Deliveries
EAST BANGOR CONSOLIDATED SLATE CO.

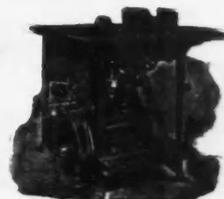
East Bangor, Pa.

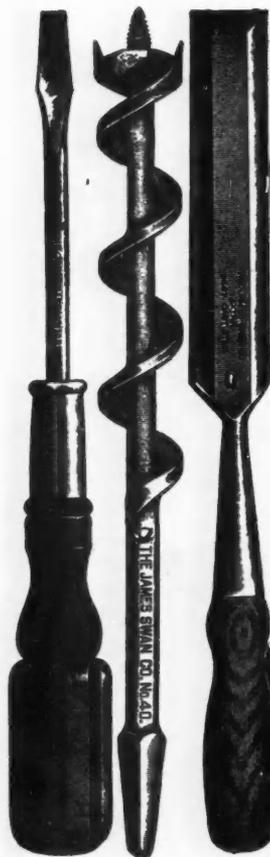


**Standard Portable
Combination
Woodworker**

9 Machines in 1
6 H. P. ENGINE

SEND FOR CATALOG
ATLANTIC ENGINE CO.
Meadville - Penna.





When you want tools of any kind — tools that you can bank on to be just the kind and quality 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.



Hammer Insurance

SPECIAL

Our "VANDOR VANADIUM" Nail Hammers in four sizes, No. 21 1/2, 16 oz. Standard; No. 22, 13 oz. General Purpose; No. 22 1/2, 10 oz. Finishing; No. 72 1/2, 16 oz. Ripping Style. We will send either size Parcel Post for your Dealer's name and \$1. This Hammer we insure for life. Made for hard work and lots of it. You can return it any time if it proves defective and get a new one.

This Hammer is warranted to draw anything from a headless brad to a spike.

Drop Forged from the toughest Vanadium Steel. Second growth hand shaved Hickory Handle. Tempered in oil. Easy to work with. Get one today. Remember only \$1 and your dealer's name for either size, 16 oz., 10 oz., 13 oz., or 16 oz. Ripping. Mail your order NOW.

VAN DOREN MFG. CO., INC. Chicago Heights, Ill.
(Vanadium Dept.)

1853



1914

Fine Beveled Edge
Shank and Socket

Chisels



Tang and Socket Butt Chisels

Plain and Beveled Edges

Send for illustrated Catalog

Buck Bros., Millbury, Mass.

C. E. JENNINGS & CO'S

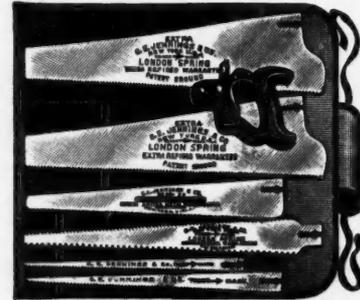
71-73 MURRAY ST., N. Y., U. S. A

TRADE MARK.

COMBINATION SET OF SAWS No. 131

This set of saws is just what you need. Takes up very little room in the kit and is less expensive than if you bought all the saws separately.

Each blade is fully backed by our guarantee both as to quality and workmanship. The saws are hand-forged from extra refined spring steel, hand filed and set. Warranted to hold edge and set for longest possible time and to run smoothly and easily.



An adjustable lever in the handle operates the screw that holds the blade. Blades may be removed from the handle instantly and another blade substituted. Blade is held firmly and evenly.

Combination Set No. 131 consists of:

- 1—Garland Adjustable Handle
- 1—18-inch Hand or Panel Saw
- 1—18-inch Rip Saw
- 1—16-inch Double Edge Pruning Saw
- 1—15-inch Hack Saw
- 1—14-inch Compass Saw
- 1—12-inch Keyhole Saw

A Waterproof Canvas Case for this set with seven pockets—one for each blade and one for the handle, will be furnished at a slight extra cost.

Ask your hardware dealer to show you Set No. 131. It is so handy and the price so reasonable that you'll like it. Write us for descriptive Circular.

Henderson House and Barn Builder

The best designed machine for framing all material for any building. All material, including bridging braces for a two-story, hip roof residence 16'x32' was prepared in 3 hours and 20 minutes. 4 h.-p. engine gives necessary power to run all the machines at the same time. Hand jointer, rip saw, swing saw, boring machine and work bench 9' long x 32' high, all complete. Handles heavy or light timber.

Write for description and price.



Perfect in every way. Makes mousing, stops, frames, jamba, studding, joists, sleepers, rafters, braces, etc. No marking necessary.

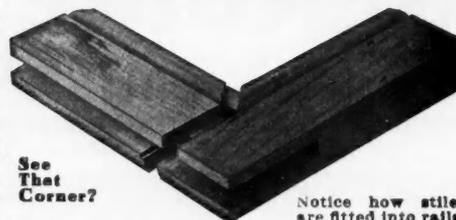
Lock Box 184

Henderson-Traylor Mfg. Co.
XENIA, ILL.

MADE TO ORDER

Fly Screens and Screen Doors

We use the best grades of wire cloth, black enamel, galvanized, pearl and copper bronze, fastened by the improved Standard Shoulder Strip Method, which makes the wire drum tight and firm, can not sag or pull away.



See That Corner?

Notice how stiles are fitted into rails.

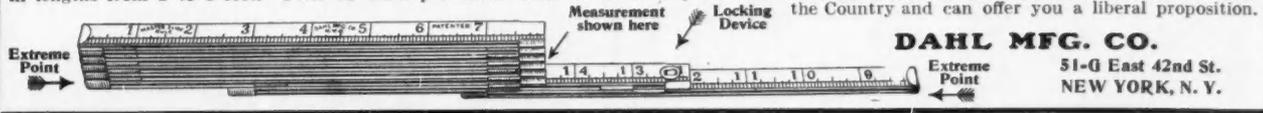
Dealers, Carpenters, Contractors and Builders, write for a free copy of our 1913 illustrated catalog

STANDARD SCREEN CO., 1848-50 W. 14th St., Chicago, Ill.

Our screens are all mortised, tenoned, joined with waterproof glue and pinned with steel pins, will last a lifetime.

Carry an Interlocking MASTER SLIDE RULE—Measure Accurately

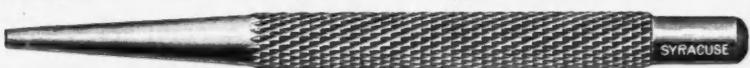
the inside of frames, doors, windows, cupboards, furnaces, etc. Rule made of boxwood trimmed with solid brass and comes in lengths from 2 to 8 feet. Price 15 cents per lineal foot. Order from your dealer or send direct to us. We want Dealers all over the Country and can offer you a liberal proposition.



DAHL MFG. CO.
51-G East 42nd St.
NEW YORK, N. Y.

“SYRACUSE”—HIGHEST QUALITY NAIL SETS

Each point is carefully cupped and tested on steel. A “Syracuse” can be depended on to give the maximum amount of service. Knurling is sharp and clear cut to give firm grip.



This nail set is the result of 15 years of experience. Best materials used. If your hardware dealer cannot supply you we will send you any number at 10 cents each. State sizes wanted.

3 sizes—2-32”—3-32”—4-32” points—Price 10 cents each.
SYRACUSE TWIST DRILL CO., SYRACUSE, N. Y.



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.

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.

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 3/4 view of the 30". Just like seeing the actual levels.
J. SAND & SON 1027 Rivard St., Detroit, Michigan

Articles Every Carpenter Needs

- Boxwood Folding Rules
- Spring Joint Rules
- Steel Rules



- Steel Tapes
- Woven Tapes
- Pocket Tapes

We guarantee to YOU absolute satisfaction **CATALOG ON REQUEST** When in need of these say to the hardwareman
THE LUFKIN RULE CO.
New York Saginaw, Mich.



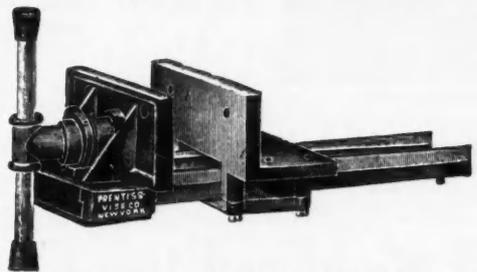
CALDWELL SASH BALANCE



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 Street, Rochester, N. Y.

BLAKE QUICK ACTING VISE



For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best.
Send for Catalogue of all kinds of Vises.
PRETISS VISE COMPANY, MAKERS
106-110 LaFayette St., New York, U. S. A.

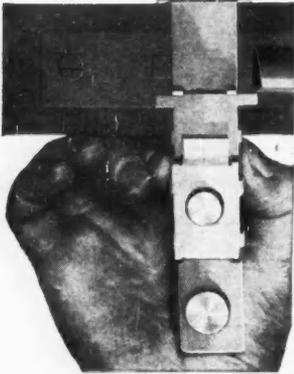
Miller's Lock Mortiser
TWO MINUTES

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 1/2" to 1 1/4" 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 Rule Gauge for 75c. Postpaid

The Standard Lock-Striker Gauge and Holder



The most difficult part of putting locks in doors is to place the striker in right position on frame, and to hold it firmly in place while marking around it. This gauge and holder overcomes these difficulties easily. No measuring necessary. Place holder across edge of door; move slide forward until it touches face of latch; correct position for striker is found. Striker is then placed in holder and held firmly by thumb screw; it is then placed on frame for marking. Whole operation performed in 15 seconds; mistakes impossible.

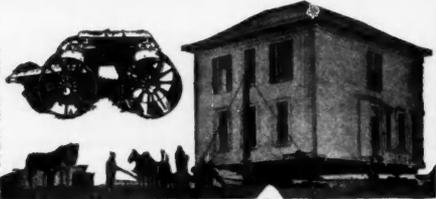
Tool is fitted as scratch gauge; also serves all purposes of a butt gauge. Made of Machine Steel. Nickel Plated. Sent on receipt of \$1.00. Big discount to agents. Write for terms.

W. B. Carpenter & Co.
112 Mathewson St., Providence, R. I.

CONTRACTOR CLEARS \$450 IN 10 DAYS

M. H. Ireland,
Anamosa, Ia.

—Contractor—
cleared above by using **LITTLE WONDERS**—
What one man can do with Little Wonders you can do—Get next to this **LITTLE WONDER TRUCK**—It will triple your profits.



Here's the Little Wonder!

10 ROOM HOUSE 5 MILES 10 DAYS MOVED

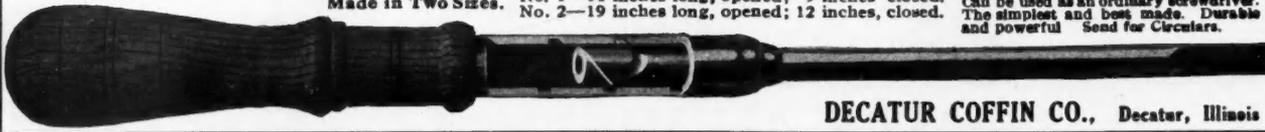
Let us furnish your complete House Moving Equipment—everything from Little Wonder Trucks to rollers, jacks, etc. Get our catalog "B" right away. Don't delay. Just a post card brings it in a hurry.

HOUSE MOVERS SUPPLY COMPANY 628 Eastlack Court Cedar Rapids, Iowa

The "EUREKA" Spiral Screwdriver

Made in Two Sizes. No. 1—14 inches long, opened; 9 inches closed. No. 2—19 inches long, opened; 12 inches closed.

Push on the end and the screw goes in. Can be used as an ordinary screwdriver. The simplest and best made. Durable and powerful. Send for Circulars.



DECATUR COFFIN CO., Decatur, Illinois



HERCULES CONCRETE BLOCK MACHINES

Are the **ONLY** machines that meet every requirement of the architect and builder

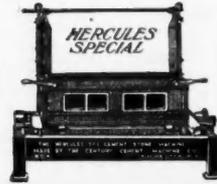
They are simple in construction, easy to operate and do not require skilled labor. You can install them with small equipment and add to it from time to time, according to your needs. The output from One Hercules exceeds the combined production of from Two to Four machines of other makes.

Hercules machines make stronger and more durable blocks Because they use a Coarse Wet mixture—other machines do not.

For the man who wants to make 16-inch blocks, there is nothing to equal our new Hercules Junior machine with complete equipment, for it is the best block-machine value ever offered.

Investigate—send for illustrated catalogue. It's Free.

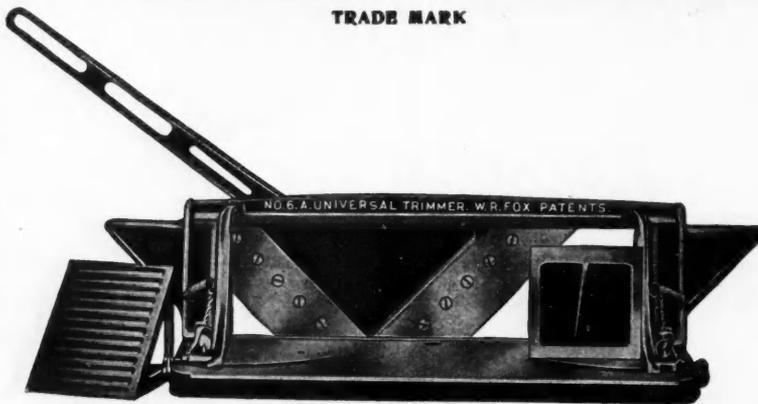
CENTURY CEMENT MACHINE COMPANY, 220 MILL STREET, ROCHESTER, N. Y., U. S. A.



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

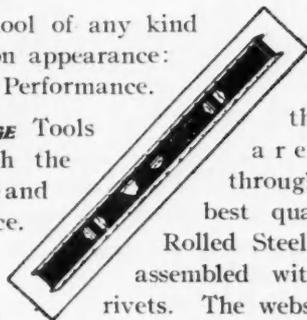
DIAMOND EDGE TOOLS

A Recognized Standard of Quality

All **DIAMOND EDGE** Tools have original ideas; exclusive features; highest quality materials and handsome in appearance.

The first tool of any kind is bought on appearance: the next on Performance.

DIAMOND EDGE Tools have both the appearance and performance.



The stocks of these Levels are made throughout of the best quality Cold Rolled Steel; all parts assembled with brass rivets. The webs of stocks are oxidized copper finish; the flanges handsomely nickel plated and polished. The vials can be quickly adjusted and placed in any position.

Ask your hardware dealers for "Diamond Edge" Tools. He can supply you. If not, write us, department W.

SHAPLEIGH HARDWARE CO.



Established 1843
ST. LOUIS



"DIAMOND EDGE IS A QUALITY PLEDGE"



Trade **SIMPLEX** Mark

Reg. U. S. Pat. Office

ROOFING NAILS

FOUR NAILS at PRICE OF ONE

When You Buy Them.

ONE NAIL in place of FOUR

When You Drive Them.

BECAUSE the Simplex has four times the head area of an ordinary roofing nail—hence four times the holding power, as head area is the all-important point in laying prepared roofing or sheathing papers.

Demand Simplex Nails from your hardware dealer. Don't buy prepared roofing unless Simplex Nails are packed in the rolls. **FREE** samples sent on receipt of request accompanied by dealer's name.

H. B. Sherman Mfg. Co.

Battle Creek, Mich.

RED DEVIL BITS

SINGLE OR DOUBLE TWIST

HONED LIKE A RAZOR, NOT SIMPLY GROUND, BUT TRUED ON A LATHE

Red Devil Bits are made with 10% greater clearance than any other. Will drill with or against the grain, in any kind of wood, and under any conditions.

If your dealer can't supply, send \$3.25 for set No. 2401 of 32 1/2 quarters in wooden box.

At any rate, send for Booklet of 3,000 Red Devils.

SMITH & HEMENWAY CO.

156 Chambers St., NEW YORK CITY

The Red Devil Bit—Always Makes a Hit



A Christmas Present Worth Having



THE custom of giving useful presents for Christmas is growing every year. A present that will last a long time and will serve as a continual reminder of the giver is the one to select.

A gift of a **STANLEY HAMMER**, similar to the one illustrated above, would delight every man and boy who has the slightest interest in tools.

This Hammer is made of a special steel, carefully forged, hardened and tempered. The Head is full nicked—highly finished. The Handle is of selected, second growth hickory—mahoganized, and every Hammer is fully warranted.

Packed in an attractive Christmas box.

Price Each, \$1.25

If your Hardware Dealer cannot supply you with this Hammer, we would be glad to send you one, postage prepaid, upon receipt of price.

Address

STANLEY RULE & LEVEL CO.
NEW BRITAIN, CONN. U.S.A.



The Holes in the Handle

are drilled the size of the drill points inside, forming a gauge by which the size of drill required can be ascertained instantly.

Holes in Wood

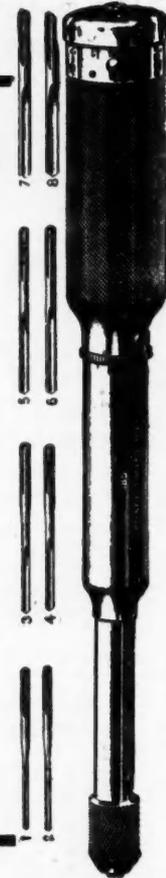
brass and iron are easily and rapidly drilled by our

185 AUTOMATIC DRILL

Goodell-Pratt Company

Toolsmiths

Greenfield, Mass., U. S. A.



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.

"Sterling" Convertible Level

To compete successfully with the up-to-date Builder a reliable level or transit is an absolute necessity. In selecting an instrument do not overlook the many advantages to be gained in the purchase of a "Sterling"—accuracy, durability, simplicity—efficiency.



Write **today** for details of **Free Trial Offer**, price, terms, etc., of the **instrument you will ultimately select!**

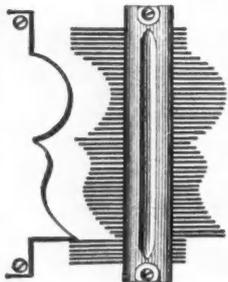
We **Repair** and **Adjust** all makes of instruments, **tape lines**, etc., and take old instruments in exchange.

WARREN-KNIGHT CO.

Makers of "Sterling" Transits and Levels.

136 No. 12th St., Philadelphia, U. S. A.

Reinhardt Profile Gauge or Adjustable Templet



is a special tool that **YOU** need to take profiles or to reproduce irregular curves and surfaces. Made in various styles and sizes to meet every want.

If not sold by your dealer, write us for illustrated price list.

Little Brother (demonstrator) mailed on receipt of 15c

Warren Profile Co.

103 Chambers Street, New York

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.

WHITE'S IMPROVED LEVEL

SHIPPED ON APPROVAL—Our No. 2011 improved level, illustrated herewith, is especially designed for work where a general purpose level is required. Telescopes 12 inches long with magnifying power 25 diameters, and is capable of detecting an error of 1-16 inch in 300 feet. We ship this level out on approval, express prepaid, in order that you may try it out on your own work before deciding to keep it. Ask for particulars and catalogue illustrating Builders' levels and transits at a wide range of price. Ask today!

DAVID WHITE COMPANY
No. 2011 419 E. Water St. Dept. C Milwaukee, Wis.



Builders' \$35⁰⁰ Level

A simple, accurate, well-made instrument, with 12-inch telescope, magnifying 20 diameters—very sensitive level with graduated vial—improved eye-piece—horizontal circle—complete in mahogany finished case with plumb bob adjusting pins, metal trivet and hardwood tripod—\$35

Write for booklet, "How to Use Levels."

THE L. BECKMANN CO.
7500 Adams Street, Toledo, Ohio



Builders-Transit

Builders OR Architects Transit Level

A Convertible Level with a good wide scope of uses, that is so simple and easy to operate that any average man can use it. No knowledge or skill in surveying is necessary. Why not have a combined Builders Transit and Architects Level for little more than the price of one.

G & B FEATURES

In normal positions this is a first-class Architects Level and in less than twenty minutes you can attach patent standards and use to the full extent of a Builders Transit.

This Transit Level excels in many ways and has many features that mark them as superior instruments. The prices are lowest consistent with highest quality.

Write for our Circular "A" and get full details about this wonderful instrument.



Architects-Level

GEIER & BLUHM, 672 River Street, Troy, N. Y.



Rent This Level 10 Months Then It is Yours

Builders --- Contractors --- Architects

This is not the old style Architect's Level. It is the newest model convertible level. There is not a single Builder, Contractor or Architect 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, contractor or architect can use the convertible level, sent free on request.

Send Coupon—No Obligation

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

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

WARNING
The Level we offer is the new Aloë Convertible Level. Don't confuse the Convertible Level with the ordinary 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 Aloë 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.

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. Oct. 14

Stair Work Made Easy

Starrett

Patent

Stair

Gage

Send for our catalog No. 206 and see what other time savers we make.

Our builders' combination tool will look pretty good to you.

This gage is to be used in connection with any carpenter's steel square, and can be adjusted to any pitch or angle desired. For cutting in rafters, braces, stairs, etc., it will soon pay its cost and prove one of the most valuable tools in a carpenter's kit.

The attachment is furnished either plain or graduated in inches, 4ths, 12ths, and 24ths.

It is made in the shape of a steel angle, $\frac{7}{8} \times \frac{1}{2}$, $\frac{1}{2}$ inch thick, ground straight and nickel plated.

PRICES

- No. 110A Plain, 18 inch, nickel plated \$1.00
- No. 110B Plain, 28 inch, nickel plated \$1.50
- No. 110C Graduated, 18 inch, nickel plated . . \$1.50
- No. 110D Graduated, 28 inch, nickel plated . . \$2.25

Sent plain unless otherwise ordered.



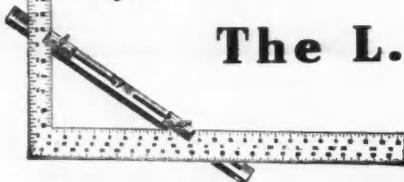
The L. S. Starrett Company

ATHOL, MASS.

NEW YORK: 150 Chambers St.

CHICAGO, ILL.: 17 N. Jefferson St.

42-31



"A Bit of Utility"

Guided by its circular rim—instead of its centre—the Forstner Labor-Saving Auger Bit will bore any arc of a circle, and can be guided in any direction.

Doesn't matter how hard the wood is, no consequence whether it is full of knots, or the grain awkward to negotiate. The Forstner Bit works with equal smoothness under any condition and leaves a true polished surface on every job.

Unequaled for Delicate Work

Supercedes chisels, gauges, scroll-saws, or lath tools combined, for all kinds of delicate work. Cabinet and pattern makers and carpenters are enthusiastic because they do more work than other bits and cost no more.

We can offer something special in the matter of price on sets packed in a sensible box. Send today for particulars and catalog.

The Progressive Mfg. Co.
Torrington, Conn.



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

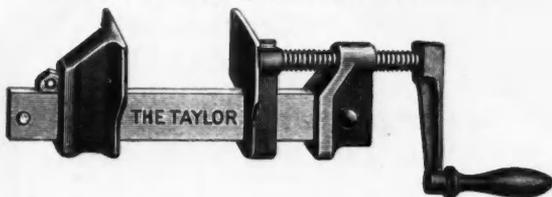
\$13.95

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!



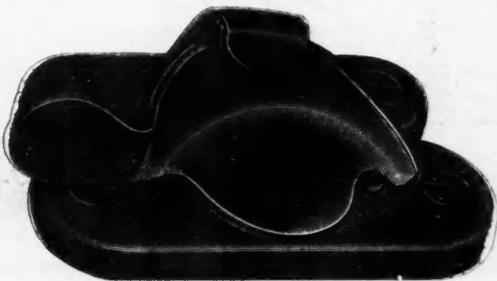
Save *minutes* for your workmen and you will save *money* for yourself. A man's time costs just so much per hour; use clamps that will increase his output.

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 SASH LOCKS



(PATENTED)

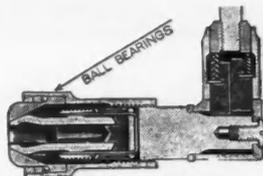
NEVER BREAK

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

The Champion Safety Lock Co.
Geneva, Ohio



The best Brace ever made

If you want a brace that will give you absolute satisfaction, last a life time, and be the envy of all your fellow workmen, ask your dealer for

MILLERS FALLS BIT BRACE No. 872

The two forged steel jaws sit in an unbreakable socket made from bar steel. These jaws have four longitudinal millings which give a powerful grip for their whole length on any bit, round or taper. Round shanks from $\frac{1}{4}$ to $\frac{1}{2}$ in. in diameter, No. 1 Morse taper, and all sizes of bit stock and expansion bit shanks may be accurately centered.

Ball-bearing shell with case-hardened hood gives an extra grip

Other important features are the ball-bearing, free-acting head and sweep handle, which greatly increases ease of action, and the patent cup washer, which holds the chuck to sweep without working loose.

This Brace, though so superior to all others, costs very little more than the ordinary kind. Ask your dealer to show it to you.

Another Millers Falls Tool you should have

The New Extension Bit Holder No. 6—Outer sleeve telescopes over inner spindle, and may be adjusted at intervals of one-and-a-half inches from 16 $\frac{1}{2}$ inches (length when collapsed) to 24 inches (total length). Chuck with grip like a vise will follow any bit of $\frac{3}{8}$ inch or over.

Send for pocket catalog showing complete line.

MILLERS FALLS CO., Millers Falls, Mass.

Bishops Refined "Greyhound" Steel Saw—A Masterpiece

Of the Saw Maker's Art. We are proud of its quality and guarantee it to cut faster and run easier in all kinds of wood, to hold its sharpness and set longer than any other good saws,

It's the Your-Money-Back-If-Not-Satisfied Saw

30 Days' Trial Will Prove Our Guarantee

The "Greyhound" is the result of years of experimenting to originate a purity of steel with fine grain and tough body.



Made in both Straight and Skew Back

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 & COMPANY
LAWRENCEBURG, IND.



37c For This Lock Set

No. 5155 Antique Copper 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.
1501 Blue Island Ave.
CHICAGO, ILL

No. 5155

Wire Window Guards



Counter Railings
Elevator Enclosures
Tubular Hand Rails
Brass and Bronze Work

The Cincinnati Mfg. Co., Cincinnati, O.

RELIABLE FOLDING Scaffold Bracket



Strong and safe; requires only a few minutes to attach. No holes to bore. Four 10-d or 16-d nails fasten them securely. Positively rigid; no vibration.

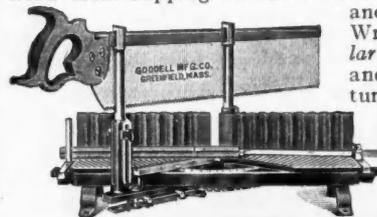
The Low Price of these Brackets can be saved in time and material on the first two jobs.

ELITE MFG. COMPANY
100 Ohio Street ASHLAND, O.

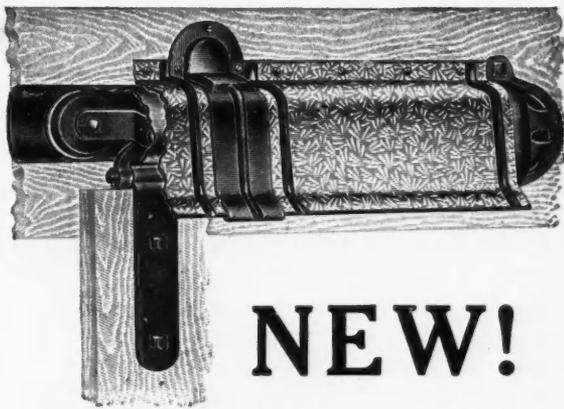
GOODSELL MITRE BOX

Made Of Steel—Cannot Break

For years this Box has been recognized as being first in quality and improvements, and the new **Steel Bottom Plates with Angular Serratures** to prevent the work from slipping add still more to its convenience and attractiveness. Write for new *Circular C* describing this and many other features



Goodell Mfg. Co.
Greenfield, Mass.



NEW!

You know the old, reliable Cannon Ball Barn Door Hanger—competitors have been trying to equal it for years and haven't hit the mark yet.

Well—if such a thing is possible—we've improved the Cannon Ball—made an addition which gives the user protection plus.

A cover for Cannon Ball track—as illustrated above, is now to be had at nominal cost with new track. It gives the finishing touch of protection—makes the outfit positively weatherproof in every respect—keeps rain and weather away from the hanger and top of the door itself—and adds but little to the cost.

**New Track For Cannon Ball Barn Door Hangers
Now Furnished With Cover if Desired**

Write for detailed information—prices, etc. In addition to the largest line of door hangers, we make the best barn equipment, too. Ask us.

Hunt, Helm, Ferris & Company

304 Hunt St.

HARVARD, ILL.

This Bolt



*has the best
Grip known*

When inserted in stone, brick, tile or any hard substance, the patent shield surrounding the bolt expands, solidly embedding itself in the material and practically becomes part of the wall, ceiling or floor.

SEBCO EXPANSION BOLTS

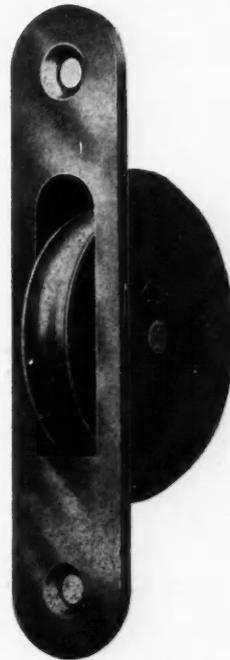
The shield may be used with machine bolts or lag screws of any size from No. 5 to No. 30 and will firmly hold the heaviest fixtures. Nothing is simpler in operation nor more dependable in use.

Send for Samples and Catalog with illustrations showing the many uses of SEBCO Products.

Star Expansion Bolt Co.

147-149 Cedar St.

NEW YORK



WE manufacture and carry a full stock of

“AMERICAN”

Pressed Metal

SASH PULLEYS

Furnished to match any hardware, with plain axle, ball or roller bearings.

Also:

Fire Proof Window Pulleys and pulleys approved by the U. S. Government. Special pulleys to Architect's specifications.

Labor saving or “drive” pulleys.

The American Pulley Co.

Philadelphia
Boston

New York
Chicago



What is the Difference in Adze?

When you go into a store to buy an Adze, do you just ask for an adze or do you ask the clerk for the best Adze? Do you depend upon that clerk's judgment? How many Adze do you suppose he has ever used?

The next time—just for an experiment—ask for a White Adze and *see that you get it.* If it isn't the best Adze you ever used, barring none, it wont cost you a cent. Send for our Adze folder showing all styles and prices. Send today.

THE L. & I. J. WHITE CO., 10 Columbia St., Buffalo, N. Y.

Bracket Folded

CARPENTERS and CONTRACTORS

Here is a scaffold bracket that can be removed without a ladder—one man can erect. Guaranteed perfectly safe and strong, will carry any weight usually placed on scaffolding.

Will pay for themselves in first season's use. When folded can readily be stored or moved from one job to another. Send for sample; money refunded if not satisfactory. Try them and save money.

Write for prices.

Rockford Bolt Co., Rockford, Ill.

A Huther Bros. Dado Head
Fits Any Saw Rig

Cuts perfect grooves with or across grain. Simple, no-screw adjustment. The choice of experts.

Patented: Nov. 29, 1892
July 19, 1910

Huther Bros. Saw Mfg. Co.
1101 University Ave. :: Rochester, N. Y.

HOISTS

"RELIABLE ERIE"

All styles single and double drum hoists at prices from \$25 to \$150. Any contractor or builder contemplating the purchase of a hoist will save time and money by getting the "Reliable Erie" Catalog at once.

Our Hoists require less power and have a greater lifting efficiency than other hoists. Made to stand the strain of heavy loads without "give" or breakage.

Let us help you select the hoist you need.

ERIE CLUTCH & PULLEY CO. ERIE, PENNA.

HOISTS

KEES SHINGLE GAUGE

Easily attached to any hatchet. Always accurate. Seven quick adjustments by quarter-inches. Won't work loose. Enables you to shingle fast without a helper. Saves using chalk-line or straight-edge. Made of cold-rolled steel, nickel plated.

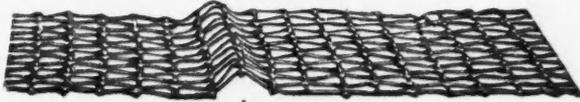
Send 15c Stamps or Coin for Sample. Your Money Back if You Are Not More Than Pleased.

F. D. KEES MFG. CO.
BOX 552 BEATRICE, NEB.

MAKERS OF
Kees Metal Building Corners, Siding Clips, Gossett Storm Sash and Screen Hangers. **SAMPLES FREE.**

**GRIMM'S
GALVANIZED CORRUGATED
WIRE LATHING**

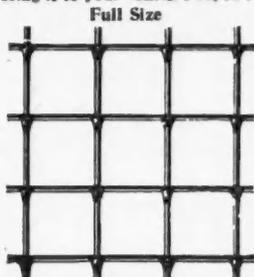
"Patent Applied for"



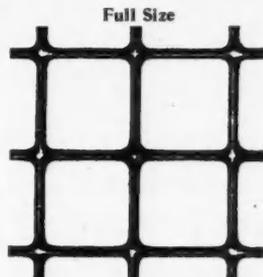
IT'S ALL  IN THE V

THIS V-shaped corrugation eliminates furring, keeps plaster clear of wall, thereby securing air space and dry atmosphere. Gives necessary STIFFNESS without added weight, such as is necessary in most forms of stiffened Wire Lathing in which rods or small angles are woven into the fabric for stiffening purposes.

Plaster keys so firmly that it WILL NOT CRACK or drop off. This lathing is absolutely NON-CORROSIVE and WILL NOT RUST as it is galvanized after woven, which solders each joint and covers the entire surface of the wire with spelter (zinc) and COSTS 50% LESS to install than ordinary lathing. It will be to your interest to send for our Booklet No. 6-A. B. on Wire Lathing if you contemplate building. A post card will bring it to you. SEND FOR IT NOW.



2 1/2 Mesh, No. 20 Wire



2 Mesh, No. 19 Wire

BUFFALO WIRE WORKS CO.

(Formerly Scheeler's Sons)

316 Terrace, BUFFALO, N. Y.

Send Us Your Plans for Estimates
—ORNAMENTAL IRON—

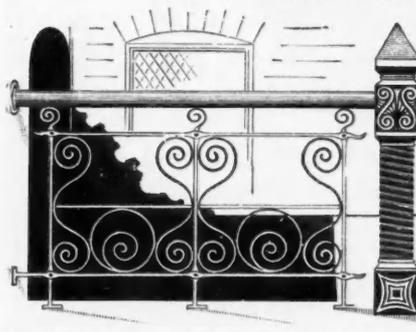


**Iron Stairs
Railings
Balconies
Elevator Enclosures
Fire Escapes
Side Walk Doors
Etc.**

**OUR PRICES WILL
INTEREST YOU**

THE MACK IRON & WIRE WKS. CO.
Sandusky, Ohio

RAILINGS
OF ALL KINDS



Elevator Enclosures and
Cabs, Bank Work, Iron
and Wire Guards.

Miscellaneous
ORNAMENTAL IRON
AND
BUILDERS' IRON WORK

DOW
Wire & Iron
Works

LOUISVILLE, KY.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

DISSTON BRAND GOODS
QUALITY GUARANTEED

**No. 55
Plumb and Level**



To the mechanic who is proud of his skill and wants the very best of everything in his tool kit, this plumb and level will make a strong appeal. Mahogany stock, FULL BRASS BOUND, with Arch Top Plate, two Brass lipped side views, and SOLID BRASS ENDS. It is highly polished, and presents an unusually fine appearance.

But its great beauty does not detract from its efficiency. It possesses the adjustable feature that has made Disston Plumb and Levels famous. While each tool is in perfect adjustment when it leaves the factory, it may, through accident, need re-adjusting. With our non-rusting, easy adjustment features you can always keep it true.

Sizes 24 to 30 inches

D 19 Flooring Saw



The old method of boring holes and chiseling when it was necessary to cut out sections in floors, partitions or ceilings was time-consuming and troublesome.

This work can now be done quicker and easier by the use of our new D 19 Flooring Saw, especially designed for the purpose. Not only is the work done rapidly and with less trouble, but sections cut out with it can be replaced in the original position if desired.

This saw has a Cherry handle, carved and polished. The handle is reversible, interchangeable, and adjustable to various positions. The blade is held firmly in place by patent bolt and ratchet.

Sizes 16, 18 and 30 inches

Booklet, "How a Disston Handsaw is Made,"
FREE on request

HENRY DISSTON & SONS, Inc.

Keystone Saw, Tool, Steel & File Works

PHILADELPHIA, U. S. A.



Reg. U. S. Pat. Off.

A Carborundum Stone that has been in Use for Seven Years



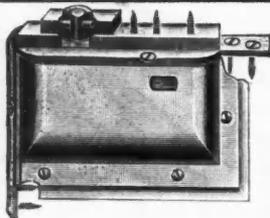
SIX days a week for seven years a New England craftsman used this Carborundum Sharpening Stone.

It is still on the job keeping his tools keen and smooth.— It still cuts clean and quick.— There is no sign of glazing, and he says it is good for years to come.

This is a real practical test of the uniformity, durability, and genuine efficiency of Carborundum Sharpening Stones.

There is a Carborundum Stone for every edge tool. Your hardware dealer has them, or order direct.

THE CARBORUNDUM COMPANY
NIAGARA FALLS, N. Y.



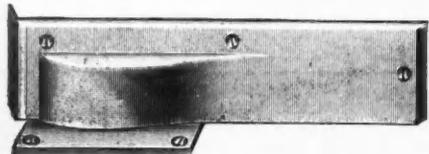
Do "U" Know
Do "U" Know
Do "U" Know
Do "U" Know

THE SHELBY "CHIEF" Double-Acting Surface Floor Hinge and Oil Door Check, is the World's most practical and economical device for operating and controlling double swinging doors?

THE SHELBY "CHIEF" will allow the door to open easily and closes it without slam, jar or noise, making it perfectly harmless for children to pass through?

THE SHELBY "CHIEF" is the easiest installed, and will give the most satisfactory results for less money than any other device for the same purpose you can specify for your clients?

THE SHELBY "CHIEF" makers, also manufacture the well known Shelby Chief Floor Hinge, and an extensive line of Builders Hardware, which you should not overlook?

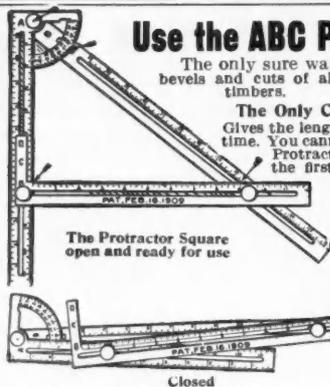


Do "U" Know

THE SHELBY "CHIEF" is sold by all the leading Hardware Dealers? Ask your dealer to see a mounted model of it.

or write us for our general catalog, and further information about the Chief.

The Shelby Spring Hinge Co., Shelby, O.



Use the ABC Protractor Square

The only sure way of getting correct lengths, bevels and cuts of all rafters and other framing timbers.

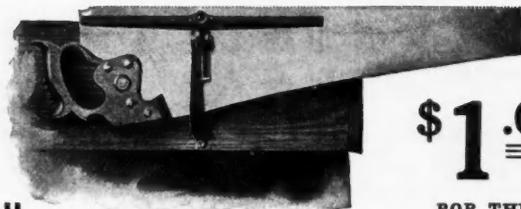
The Only Correct Tool for Stair Work. Gives the length, bevel and pitch at the same time. You cannot make mistakes with the ABC Protractor Square. It pays for itself on the first job by preventing errors and speeding up work.

Simple as the steel square but handier to use and quicker in giving correct readings and measurements. Fine for the man who cannot do complicated figuring. Folds up so you can carry it in the tool kit. Complete instructions with each Protractor Square.

Special sample price this month.....each \$1.50
Regular price.....each 3.00

AGENTS WANTED
Write for sample at once

STAMPING & TOOL CO. Dept. 7 La Crosse, Wis.



\$1.00

FOR THIS

Keystone Folding Saw Clamp

Made of fine malleable iron, instantly attached to work bench, tool box or edge of board. Jaws 14 inches long—folds up and fits neatly in tool chest.

60 DAYS FREE TRIAL

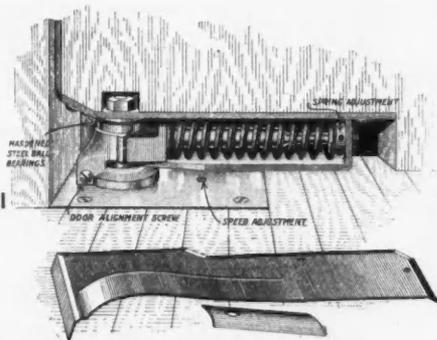
Send a \$1.00 Bill and Clamp will be sent charges prepaid, if clamp is not satisfactory return it within 60 days and we will refund your money.

Descriptive Circular sent on Request

KEYSTONE GRINDER & MFG. CO.

106 WOOD STREET

PITTSBURGH, PENNA.



Stops the Flop

No more flopping, slam-banging, wig-wagging doors when the **Standard Floor Hinge** is used. It controls the door at all times, closing it slowly and stopping it at dead center without jar or noise.

Standard Floor Hinge

Double Acting Self-Checking

with the 1914 improvements, is easy to install. The weight of the door rests on hardened steel ball bearings insuring easy action. The door can swing either way and the back flop is prevented by the checking mechanism. It combines the features of the spring hinge and the door check and differs from all other makes of swinging door hinges.

The Standard is the safest and most noiseless hinge you can use. It will give great satisfaction in your buildings. Specify and use it. Price is reasonable.

Ask for Information on the 1914 Model

STANDARD MANUFACTURING CO.
SHELBY, OHIO

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-

ally correct hog house windows on the market. Investigate. One hog house in a community with these windows brings more business for you. Write for prices.

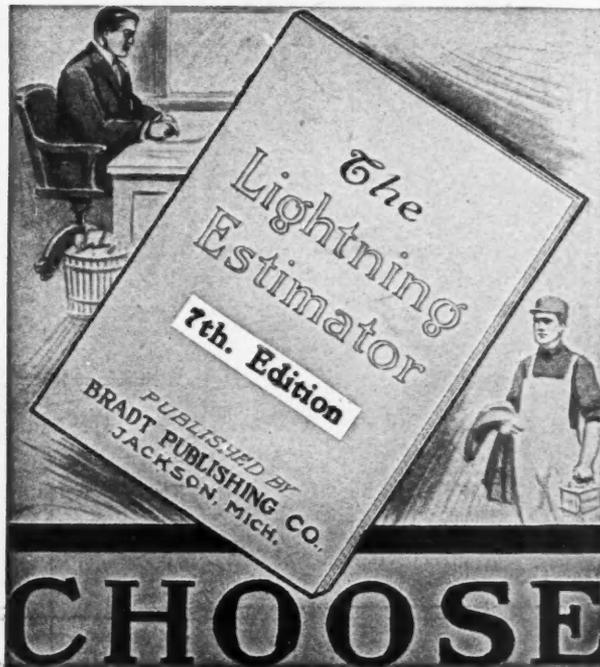


CHIEF CUPOLAS

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.

Address

SHRAUGER & JOHNSON
430 Johnson St., Atlantic, Iowa



IT'S up to you to be the man at the top instead of the man with the dinner pail.

Don't hesitate to grasp this opportunity to win success, for there's always room at the top for the man who knows how.

The LIGHTNING ESTIMATOR

stops worry, lying awake nights, over or under estimating and guessing—in fact, by showing you how to estimate the cost correctly, it spells the word **\$ucce\$\$** for you. Don't do yourself an injustice by passing up the greatest opportunity ever offered to Carpenter, Contractor or Builder.

The New Seventh Edition of the LIGHTNING ESTIMATOR

will teach you: How much time and material involved in each part of your work; how to figure on unfamiliar work; how to estimate quickly and correctly on a large job; how to estimate on time, material and prices in all parts of the country.

This Book is written by a man who has made good in this profession, and is based on hard, solid facts, secured by the knocks of experience, making it an invaluable guide to any one engaged in or those about to enter the building business.

If you are just starting out, here is your chance to get a firm foothold. If you are an old timer and getting a little behind the times, here's your chance to brighten up and get some new ideas.

This Edition is bound in cloth, profusely illustrated—a feature not found in other books of this kind. The price, \$1.00. Don't delay. Send for it today.

BRADT PUBLISHING CO.

1260 Michigan Avenue

JACKSON, MICH.

SARGENT

Other Sargent Quality Tools are described in the Sargent Tool Book, a handbook for mechanics sent on application.

No. 53.

A light floor or veneer Scraper with wood face to lessen friction.

A useful and convenient tool, low in price.

For full description of this and other

SARGENT WARRANTED PLANES
SEND FOR SARGENT PLANE BOOKLET

SARGENT & COMPANY
Makers of Squares, Planes and Mechanics' Tools

1149 Leonard St. New York

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OUR new Rafter Square, No. 500R, is the most complete Square ever made for the carpenter.

It contains accurate measurements for all kinds of rafters, common, hip, valley, jack and cripple—in the most convenient form.

These measurements are all given on the Square; they are complete, correct and final. They save the trouble of multiplying and dividing and then obtaining a result about which there is some doubt.

Simple and easy to use. A great time saver.

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Each blank is a bound booklet of 32 pages and covers, excellent paper for writing, and of handy pocket size.

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You're right, he has. Send us pictures of your buildings, during construction or after they are finished, photographs of your office or shop, photographs of your power equipment, and photographs of yourself. We are glad to see you and your work, and we will handle your photos with consideration.

Very cordially yours,
Editor AMERICAN CARPENTER AND BUILDER.

Contents for September, 1914

	Page		Page		Page
Amount of Material for Concrete Walls	75	Freaks of Lightning	79	Raising Roof	78
Announcement of Third Annual Prize Contest	38	Good Progress Elevating Concrete with Power Loader and Hoist	57	Removing Paint	73
Beautiful Four-Room Bungalow	49	Guaranteed Building Plans	45	Roof Raisings with Block and Tackle	75
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Boost for Cottonwood	72	Handy Device for Stair Work	76	Sewerage	40
Builders Hardware	61	Hardware—Its Use and Abuse	61	Shavings	43
Business Patriotism	37	Height of Colonnade	72	Small House with Large Porches	53
Casement Window for Sleeping Porch	78	"How Can I Turn My Spare Time to Profit During the Winter Season?"	38	Small School House	73
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Church Design	76	Interesting Five-Room Bungalow	45	Southern Style Home	50
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Contract of Sale	41	Measuring Rafter Lengths and Other Inaccessible Distances	64	Stucco Around Openings	75
Correspondence	71	Mitred Inner Casing	69	Terra Cotta as a Decorative Material	67
Cost of Carpentry Items	77	Modernized New England House	46	That Head Rafter Again	65
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CHICAGO SPRING BUTTS

REPUTATION

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



Chicago "Relax" Spring Hinges

are in great demand. They are substantial in construction and readily applied. The EXCLUSIVE FEATURE of spring action release, allowing the door to be placed at any desired position and automatically re-engaging when the door is closed,

is of recognized merit and utility.

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

Chicago Spring Butt Company

CHICAGO

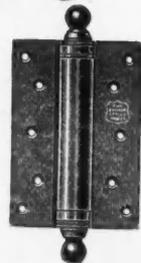


NEW YORK

Yes! the World does Move! Facts are Stubborn Things



Don't Buy
SPRING HINGES
OF
OBSOLETE
CONSTRUCTION
ONLY



BOMMER

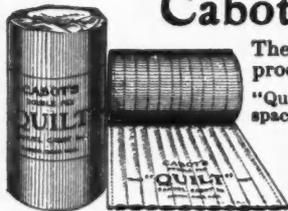
Double Acting Spring Butt Hinges

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.

**YOUR HARDWARE MERCHANT CAN SUPPLY THEM
Bommer Bros., Manufacturers Brooklyn, N.Y.**

Cabot's Sheathing and Deadening Quilt



The Cold-proof, Heat-proof, Sound-proof and Fire-retarding Lining

"Quilt" is a matting filled with dead air spaces, and one layer is as warm as twenty-eight layers of common building paper. A house lined with it will always be warm and save coal. Floors and partitions lined with it will stop the passage of sound. Roofs lined with it will keep cool

in summer and prevent heat from escaping in winter. It will save coal enough to pay for itself every two winters as long as the house stands.

Send for a sample and catalog.

**SAMUEL CABOT, Inc., Manufacturing Chemists, Boston
24 W. Kinzie St., Chicago - 1133 Broadway, N. Y.**

Cabot's Creosote Shingle Stains; Stucco and Brick Stains, Conservo Wood Preservative.

STANDARD

for 30 years
**MORRILL
Saw Set**



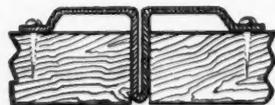
The Morrill Special Saw Set accurately sets any hand saw; takes out the wrong and puts in the right set at one operation. Send for Free Booklet: "Saw Points."

**CHAS. MORRILL, 98 Lafayette Street
NEW YORK**

METALLIC BATTEN STRIPS

PRACTICAL—EVERLASTING—ECONOMICAL

These Batten Strips of Galvanized Metal will never warp, split, or draw away from the boards. Offer no obstruction to sliding doors. Allow for expansion and contraction of the siding. Made in 8-foot and 10-foot length with interlocking joint. Easily cut; no waste. Nailed directly to siding with small nails.



End view showing joint closed. A perfect fitting Batten at all times, in all weathers. Beautifies any building.



End view showing joint open. Provides for expansion or contraction of the siding so nails will not work loose.

Metallic Batten Strips make strong, neat joints. They make the building wind-proof, weather-proof and rat-proof. Also valuable for lining grain bins or wagon boxes.

Write for Free Sample and see for Yourself

METALLIC BATTEN COMPANY

Owensville, Indiana

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The
**World's Greatest
Building Paper**

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When your subscription expires, renew at once, using the blank enclosed in your final copy. If it expires with this issue your renewal must reach us before October 25, to avoid missing the November number. Use P. O. or Express Money Order if possible, but bills or 2-cent stamps may be sent at our risk.

The
**World's Greatest
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American Carpenter and Builder

Entered as second-class matter July 1, 1905, at the postoffice at Chicago, Ill., under the act of Congress of March 3, 1879.

Published on the first day of each month by

AMERICAN CARPENTER AND BUILDER COMPANY
RADFORD BUILDING, 1827 PRAIRIE AVE., CHICAGO

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Furnished on application. Advertisements, to insure insertion should reach our Chicago office not later than the 20th of the month preceding date of publication.

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."

Business Patriotism

A SENSIBLE and patriotic message is being sent out by the Simonds Mfg. Co., and we are glad to pass it on to our readers. It is truly encouraging and will gain the ready assent of all thoughtful men at this time.

"We believe in our country. We have faith that the United States of America will continue to be the most prosperous nation in the world. Although panicky people pinch tight the mighty dollar, fearing disaster for this country on account of the European war, our crops are the most bountiful in years. These crops must be harvested. The mills will grind the wheat and corn; the railroads will transport the flour and meal; starving nations will find some way of getting these and the wealth received in return will be spent at home.

"As 5 per cent of our country's products are all that are exported, we are likely to suffer a great deal more from the abnormal tightening up of the

purse strings of our merchants, our manufacturers, and our consumers, than from loss of European business.

"Let us all have faith in our country. Let us go on in a normal way. We are confident of peace in our states. We are practically sure of a larger market from outside, than we have ever had before.

If we can supply the wants of South America at

this crisis in European conditions then we have builded a new outlet for our products. A market hitherto European and one estimated at one billion dollars a year in volume will be ours. It is an opportune moment for the manufacturers of this country to take advantage of this market and to

send their real men to make business connections, establish agencies and acquaint their houses with the wants of South Americans. Their orders should be filled understandingly in accordance with South American ideas, with the intention of pleasing the trade heretofore going to European nations.

To Our Readers

The money you spend in response to American Carpenter and Builder advertising and the inquiries you send its advertisers goes far to encourage and sustain those aggressive, public-spirited, courageous business men who are spending their money to keep business conditions in the Building Industry normal, healthy and prosperous.

"We believe that now is the time for patriotism in its broadest sense—that is, to take advantage of present conditions by pushing ahead everything American, demanding American made goods for ourselves and offering them to meet the requirements of our South American friends in such a way as to supply their needs from their own hemisphere.

"Let us all work together in a natural, normal, and sensible way. Then we have faith to believe that in six months from now the wheels of industry will all be moving and this country will be on the eve of a period of prosperity the like of which few Americans have ever seen."

HURRY! HURRY!!—Just Time to Get Your Letter in Also for Our Big Third Annual Prize Contest



Closing Date
Oct. 15th

Winning Letters
to Appear in
Nov. "A. C. & B."

We Want 100 (or more) Answers to This Question of Moment to Every Carpenter and Builder:

"How Can I Turn My Spare Time to Profit During the Winter Season?"

There are hundreds of ways to do it. Enterprising readers of the "American Carpenter and Builder" are solving this problem successfully every year, adding many a neat sum to their winter income.

We want to hear from these now—for the benefit of other builders.

Our big Winter-Work Contest of two years ago and again last fall made such a hit that it has become an annual institution. Hundreds of our subscribers came forward at that time with frank, helpful letters.

WE want all of these and others, too, to write us now. Here's your chance to do a good turn—to help some fellow workman—and at the same time to win a nice prize.

Are you able to keep busy right through the cold weather? Yes! Then how do you manage it? Many of your brother builders are not so lucky; they have not been able to get just the right combination, and often find their supply of hard, round, iron dollars cut down just when they are needed most.

For the benefit of these—to give some suggestions that might help other carpenters and builders at this season of the year—won't you

kindly write us a letter telling what you have found out about developing and handling spare-time sidelines?

We want a flood of good, practical letters from practical men. Don't mind if they aren't models of rhetorical composition; if they contain the Real Goods, that's all we care. Carpenters and builders want to know how they can keep busy all the time—winters same as summers; and if you will write out simply and clearly some of your own experiences with spare-time work and winter work, you will be helping some other builder and at the same time have the chance of winning a nice Prize for yourself.

In order to encourage a full and free discussion and interchange of ideas, we offer a number of \$10.00 First Prizes and \$3.00 Second Prizes for the most helpful and sensible letters on winter work for Carpenters and Builders. If you have been up against the part-time problem and have mastered it, won't you write and tell just how you did it?

NO able bodied man can afford to loaf around even part time." He owes it to his family and to himself to turn every hour to account.

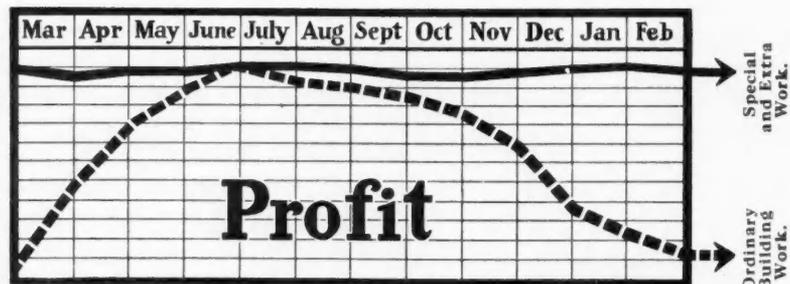
Some builders have snug woodworking shops where all kinds of cabinet woodwork can be made. Some build handcraft or Mission furniture and find it has a ready sale. Some build boats in the winter time—row boats, canoes, and motor boats—and have no trouble selling all they can make, at a good profit. Some do a regular planing mill business during the winter, making up in advance, for future use, all sorts of standard frames, sash, cabinets, etc.

Some carpenters and builders (both young and old) welcome every spare moment and these long winter nights as just the time to read and study practical building and architectural books and so fit themselves for better work and bigger earnings. Some employ any spare time they may have in the winter season getting around among the people and talking up new building projects for spring; drawing up plans, showing plan books and building magazines,—and so investing this time to their future profit.

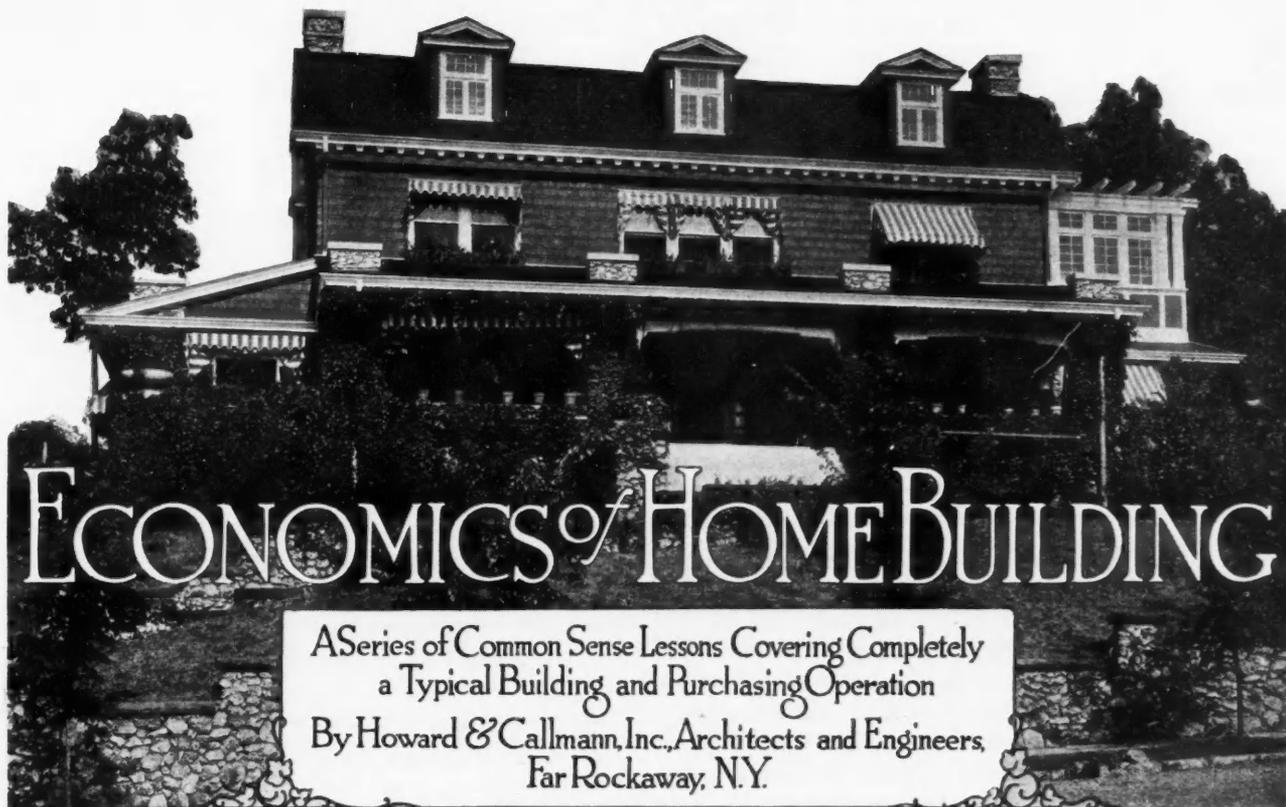
These ways and dozens of others are good. What is your way? and what have been your experiences?

There will be as many prizes as there are different branches of the subject discussed. Write a good, helpful, practical letter and we will do our part toward keeping the money "coming in during the winter months."

Prepare your contributions AT ONCE. They must reach this office at least by October 15th to appear in the NOVEMBER American Carpenter and Builder. Write today and help a friend. Address WINTER WORK EDITOR, American Carpenter and Builder, 1827 Prairie Ave., Chicago.



Can You Keep Your Earnings Up The Year Around?



IN TWELVE PARTS—PART I

How to Purchase a Lot and Build a House

Advantages of Careful Study before Building—Selecting the Right Plot of Ground—Provision for Sewerage—Character of Building Site—Explanation of a "Contract of Sale"—Closing the Purchasing Deal.

MANY technical books have been written on "House Building" which describe the details of construction minutely. These works are necessary for the education of those who desire to engage in building as a business; but the average person is not trained to understand them, nor could they acquire so much technical matter to prepare for building a home.

The subject of this course is "A Purchasing and Building Operation" in its successive stages, viz., selecting a plot of ground, negotiating a purchase, procuring a mortgage, and building a house.

Let us suppose that an individual had the practical experience of a real estate broker, an attorney, an architect, and a builder. This would make an ideal combination, as the site would be selected at the right price; a satisfactory mortgage would be procured; the building would be suitable, and built at the lowest possible cost.

However, this is hardly possible, so this course is offered to explain in plain terms each transaction in its order, whereby an owner can co-operate intelligently with each of his advisers and builder.

It is remarkable how an owner will invest thousands of dollars in building, without first acquiring a general common-sense knowledge as a guide! While this information was written primarily for the general public, it will benefit real estate brokers, architects, draftsmen and builders.

Time lost in preparing plans for buildings that are not erected, is enormous, due to the estimates exceeding the appropriation. *Architects and builders, why not work out your plans to timber sizes, and adopt other suggestions we offer, which will save a large percentage of waste and reduce the estimates?*

It is not difficult to lay out a building after this method when the principle is understood. This is not a theory, as many buildings



Why Not Work Your Plans to Regular Timber Sizes and Save Waste?

have been erected in this manner, and it seems logical that the length and quantity of material should be considered in working out a set of plans.

Selecting a Site

(1) A suitable site may be selected in a section that has been gradually built up, or it may be in a new development. In either case, consideration should be given to the location with respect to the sun for cheerfulness and the prevailing breezes during the summer time.

(2) The surroundings should receive attention in case there are objectionable barns or business buildings in the vicinity, as they would affect the value of the property.

(3) It is not advisable to build a large house in a locality where there are smaller houses, and vice versa, nor is it advisable to build a high-priced house on low-priced property.

(4) A house built on a plot 40 feet front by 100 feet deep will have very little spare ground. The cash value of these lots should regulate the cost of the house, which should be about three times the amount paid for the lots.

(5) On the other hand, a plot 100 feet front by 150 feet deep, or more, is different, as the size of the plot is a consideration which to some extent would influence the amount that should be invested in a house.

A house built on a large plot has a better chance to increase in value than a small plot, as the increase in value will be obtained from the lots, and not from the building.

(6) It is prudent to build about the same class of house as the adjacent houses.

Some properties increase in value, and some decrease.

(7) For instance, if at some future time a car line was laid in front of the house, or objectionable business buildings were erected in the immediate vicinity,



Consider Probable Future Character of Neighborhood, and Build Accordingly.

either of these would decrease the value of the property for residential purposes. The possibility of such a contingency should be determined by studying the probable trend of local development. If a purchase is made where the property is restricted to the erection of private dwellings this menace is eliminated.

(8) In purchasing property, there are many points to consider, viz.:

Will the property increase or decrease in value?

Is the property restricted, and if so, what do these restrictions consist of?

Is the ground high or low?

Is water, gas, electricity and sewerage available?

(9) If property is purchased from a "Land Improvement Company" and all improvements have not been installed, it is necessary to ascertain if the company is financially responsible, as they may fail to carry out their obligations, and the purchaser would be put to expense and serious inconvenience.

(10) *The Level of the Ground.* It is desirable for the natural ground level to be above the sidewalk, as it eliminates the necessity of filling or raising the level of the ground and also takes care of the surface drainage. On the other hand, if the property has to be filled in, to bring the lawn level above the sidewalk, to shed the rain water towards the street, this filling should be estimated upon and added to the price asked for the plot; as the price may seem low, but after the cost of the filling is added it may be high as compared with other plots in the same locality.



Grade Up a Terraced Site for a "Bungalow" Type House.

(11) *Rock.* If rock has to be blasted out for the cellar, this should also be estimated upon and added to the purchase price.

(12) *Water Line.* Under all property there is a water line, and it is well to ascertain how far it is below the surface. If the ground is low, or near marshes or other water, this water level might be so close to the surface that a special water-proofing treatment would be necessary to obtain a dry cellar.

Sewerage

(13) *Establishing the Cellar Floor Level.* In case any plumbing fixtures, such as laundry trays, servants' water-closet, etc., are to be set in the cellar of the building, a fall from the cellar floor to the sewer is necessary for a flow. If the sewer in the street is not laid deep enough below the surface, the cellar floor line will have to be established high enough above the sewer to obtain a fall. This will raise the height of the exposed part of the building, and might destroy the symmetry of the house.

(14) To overcome this increase in height a terrace can be formed around the building or the ground can be filled, which is costly and should be estimated upon and added to the purchase price of the property.

(15) *Depth of Sewer.* A sewer laid $4\frac{1}{2}$ feet down from the man-hole cover in the street will meet the

average condition, except in cases where it is desired to have the piazza or porch floor only one, two or three steps above the grade; then the sewer would have to be deeper, or no plumbing fixtures placed in the cellar.

(16) *Cesspools.* If a cesspool is to be used, it is usually located 30 feet or more from the rear of the building. It is advisable to examine the subsoil. The best is coarse gravel, as it allows free percolation. Inquiries should be made from the tenants in the neighboring houses (if there are any) as to their experience with their cesspools, as it might be necessary to have two of them.

Character of Building Site

(17) *Top Soil.* The top soil on the site should be examined to ascertain its depth; at least six or eight inches of soil is necessary to get a first-class lawn, it should range in color from a rich brown to almost black. If the top soil is good it is value received in the purchase price; otherwise it has to be supplied, which is added expense.

(18) *Trees and Shrubs.* Trees, shrubs, etc., on a site are of value and should be uprooted and the roots covered with soil if they are in the way of the building, and then transplanted when the grading is completed.

(19) *Sand and Gravel.* Sand and gravel are used for making concrete, mortar, plaster, stucco, and all cement work. If this material can be obtained from the property it is a saving, as otherwise it would have to be purchased and hauled to the site.

Contract of Sale

(20) We will assume that sufficient knowledge has been acquired to guide in selecting a plot. It would be unreasonable to expect to get all the best features in every plot; but after mature consideration the best selection should be made in the location desired.

(21) It is customary to sign a contract of sale, at which time the purchaser deposits with the seller 10 per cent of the purchase price.

(22) A contract of sale is an instrument which covers the transaction so far as to show that the owner is willing to sell the property for a certain sum and the purchaser agrees to buy it.

(23) The 10 per cent deposit of the purchase price is a guarantee to the seller of the purchaser's good faith and is necessary, as during the thirty days while the property is being searched it is out of the market and the seller might lose an opportunity of selling to another party.

(24) The contract should state that on a certain date, usually within thirty days, the transaction will be completed. There should be a description of the boundary lines of the property and figured diagram made from a survey. The distance from the nearest cross street to the nearest boundary of the property should be given.

(25) *Warranty Deed.* The seller should agree to give a "Warranty Deed," which guarantees the purchaser against any defect in the title or incumbrances.

(26) *Title Insurance Policy.* Before title to the property is taken by the purchaser, a search of the records is made by an attorney to ascertain if there are any flaws in the title, or claims against the property. If possible, the purchaser should obtain a "Guarantee Company's" title insurance policy, which is not expensive, and the fact of a sound company issuing a guaranteed policy is an assurance that the purchase is in perfect order.

Closing the Deal

(27) In all agreements of sale a time is set for the closing; that is, when the purchaser takes title to the property. The word "closing" means that the selling transaction is to be completed.

(28) In some instances the seller has not been able to deliver the property with a clear title, as a flaw has been found in some previous conveyance. In such a case if the purchaser takes title he assumes all responsibility which is not advisable, and the sale consequently falls through. The seller has to return the 10 per cent deposit.

(29) On the other hand, if the purchaser for any



Frequently Sand and Gravel Suitable for Use is Dug Out in Excavating for the Cellar.

reason refuses to take title, he loses the deposit of 10 per cent, and runs the risk of an action at law for non-fulfillment of contract. Therefore, before signing "a contract of sale" all matters in connection with the property and the financing of the entire operation should be well considered.

Property is usually purchased:

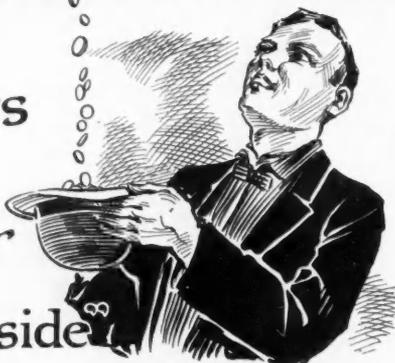
(30) By paying the full amount of the purchase price in cash or certified check at the time of closing. Or by paying part cash and giving back a purchase money mortgage to the seller for the balance of the purchase price.

(31) *Providing for the Future.* A purchaser may desire to acquire a plot of ground before it rises in value, and may not have sufficient cash to pay the full amount, in which case part cash and a mortgage is given.

To be continued in November
American Carpenter and Builder

Extra Profits

How
Builders
make
Money
"On the side"



PRIZE LETTER—Has Sold and Installed Ten Acetylene Systems

Extra Profits Editor, Bunceton, Mo.

AMERICAN CARPENTER AND BUILDER.

During January, 1913, while the weather was bad, sitting near a warm fire, not earning anything, I asked myself the question: Why cannot I take the agency for some article used about a dwelling, to make a little extra profit beside my income for building alone? Nearly every dwelling I had erected was usually sooner or later equipped with an Acetylene Lighting System. Having the AMERICAN CARPENTER AND BUILDER lying on my table, I found the advertisement



Don't Sit Listless by the Stove All Winter. Hustle Out and Get Busy. There Are Chances for Profit in Every "A. C. & B." Ad.

of the Davis Acetylene Company, Elkhart, Ind., looking for carpenters and builders to handle their generator and fixtures. I wrote to them, met their salesman, and bought a complete acetylene plant for my own dwelling. You cannot sell anything unless you show the public that you have good faith in the goods you are selling, and that such goods will make good—really are equal or superior in their line. That was the best investment I ever made. Up to date, I have sold and installed ten Davis acetylene generators and fixtures besides my own, clearing \$500 profit in less than two years. I expect to install many more acetylene lighting plants in the future. The plants are giving good service; we all know that a good lighting system is a necessity and not a luxury. I am satisfied that other brother builders and carpenters living in a rural community where people have no access to gas or electric current can do just as well, or better than I did; I had no previous experience in that line. A builder with an honest reputation can sell easier than some unknown traveling salesman. Hoping that my experience in the *extra profits* line will benefit others following the same vocation,

I am,

Respectfully,

A Charter Member of the AMERICAN CARPENTER AND BUILDER.

P. S. Please do not use my name in connection with this article. Should people knowing me, read it, they would naturally think that my profit was too great.



Specializes on Floor Finishing

Extra Profits Editor, Topeka, Kan.

AMERICAN CARPENTER AND BUILDER.

Referring to the subject of Extra Profits as mentioned in the AMERICAN CARPENTER AND BUILDER. While I have not had much experience in handling the specialties you enumerated, I have had quite a bit of experience in a side line which has netted me neat little sums; namely, that of scraping floors preparatory to the application of filler and varnish. I happened to be working under the supervision of a contractor on a large house in the suburbs of our city. The weather became such that we could proceed no further with the outside work. The contractor for whom I was working made the remark that he wished he could get a man to scrape the floors, as that work could be done very nicely during inclement weather.

I volunteered the information that although I had no previous experience in this line, if he had the tools necessary at hand I would be glad to undertake the work. He seemed impressed with my earnestness in the matter and proceeded to show me how the work was done and encouraged me in it. It was not hard to get on to, and soon I was making good headway. It was while working on this job that the thought occurred to me that I could make this a profitable side

line, and with that idea in view I made every effort to perfect myself in the work.

I am still working for the same contractor, and secure all of the floor scraping work which is to be done under his contracts. When a rush job is on, I



"The Contractor Came to Me, Wanting a Man to Finish Floors."

am taken off the carpenter work and used exclusively on floor scraping, which of course pays a better rate, and when the weather is such that outside work is impracticable I do not have to lose much time, as there is usually a job of floor scraping to be done. Of course there are times when it is not practicable to make much in the way of extra compensation, but I figure that by picking up this side line I am able to secure more money than I would otherwise.

Yours truly,

G. I. HAMAKER.



Cash Prizes for Personal Experience Letters About EXTRA PROFITS

THERE are many ways in which carpenters and builders pick up considerable money "on the side." There are any number of popular building novelties and pieces of modern equipment for buildings that are being sold by carpenters and builders.

For the best letter each month we will pay \$10.00 (in goods selected from our advertising pages); also \$1.00 (in advertised goods) for every other letter published.

Study through our advertising pages and note the variety of interesting offers for carpenters and builders to act as local agents. There seem to be good opportunities for profits in connection with each of the following:

- | | | |
|-------------------|-----------------|-------------------------|
| Dumbwaiters | Metal ceilings | Door and window screens |
| Store Fronts | Metal shingles | Lighting systems |
| Ventilators | Weatherstrips | Lightning rods |
| Skylights | Wood mantels | Detachable hinges |
| Silos | Wall board | Keyless locks |
| Furnaces | Floor finishing | Shinglers chairs |
| Bath room outfits | Steel roofing | Clothes driers |
| Vacuum Cleaners | Waterproofing | Popcorn machines |
| Coal chutes | Gliding Castors | |

We would like to hear from builders who have had experience in handling any of these. Your advice and encouragement may be worth many dollars to other builders. Address EXTRA PROFITS Editor, AMERICAN CARPENTER AND BUILDER, Chicago.



By H. C. Kaner, Foreman Shaver

"LAZY JOE" PROVES INVENTOR—Necessity is said to be the mother of invention, and from the severe demands she makes, I sometimes believe she is the step-mother. One of the laziest men I had, was put at the job of sifting sand with a shaking sifter, and I thought I had him where there was no dodging. He worked along until noon and when he came back from his dinner he brought an old roller skate, cut it in two parts and had that sifter on wheels, doing double the amount of work with half the labor. He has been relieved of the doubtful distinction of being called "Lazy Joe" and raised to a position more in keeping with the intelligence he made it evident he possesses.

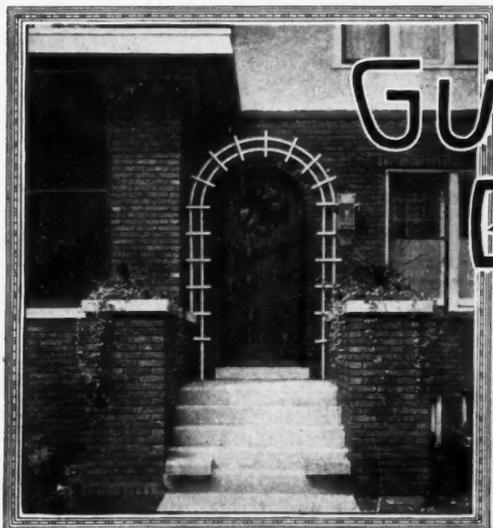
DON'T SLIGHT THE SHAFTING—Another builder I knew, who had a small power shop, became so disgusted with the labor he had to work, that he just piled up a lot of blocks and drift bolted them together to carry the shafting from his shop. The remedy was infinitely worse than the first trouble, for he has on his hands the most wiggly piece of shaft imaginable. He has learned that even small shafting needs to be well put up, especially where there is a bevel gear on the line.

BEVEL FRICTIONS—With the use of bevel frictions on the shop machine, a good deal of belting is eliminated, but for such as we use, it might be well to remember that the length of a belt is what will be measured around the pulleys with a tape line, less one-eighth of an inch for each running foot, leaving off the fractions of a foot. This will give a belt just right as to tension, and the right tension is what gets the service out of a belt without undue wear, when it is properly proportioned.

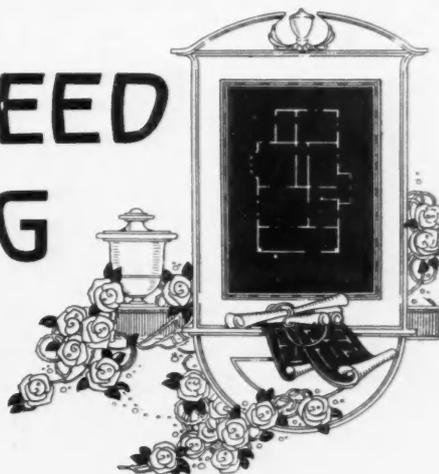
CHAIN MORTISER TIP—For the power shop that is large enough to afford a chain mortiser, one of the most important bits of information is the brief notice attached to the machine so "run the chain slack." The reason for this is plain when the machine is understood, but it seems hard for some men to resist the temptation to run it tight in spite of these instructions, to the detriment of the machine and the work.



Luxurious Living Room in One of Chicago's North Shore Residences. Finish is Simple and Rich. Notice How Sparingly the Ceiling Beams are Used. All Decorative Lines and Members Emphasize Breadth of the Apartment. The Wall of Particular Interest Features a Broad Brick Fireplace Flanked by Built-In Bookcases. The Cased Opening Gives a Vista Through the Dining Room to the Sun Parlor or Screened Porch.



GUARANTEED BUILDING PLANS



Interesting Five-Room Bungalow

Judging from the number of five-room bungalows, this size must be more popular than any other. The reason undoubtedly is that most families require two bedrooms so that the parlor, dining room and kitchen fill out the five rooms. It so happens that five rooms work out better on the same floor than six. The popularity of five-room bungalows seems to be on the increase.

In this design we have an exterior that is extremely neat. It has a clean look as though cared for by intelligent, progressive people. The plan shows living rooms on one side and sleeping rooms on the other side which is the most approved bungalow arrangement.

Living room, dining room and kitchen on the one side, two bedrooms, a bathroom and a screened sleeping porch on the other side give the main arrangement of rooms. Arrangements for going down cellar are provided at the side of the large pantry. In this pantry is placed a refrigerator with an

opening for ice to be put in from the rear porch. Provision is made for an outside cellar entrance at the side of the porch. In villages and small towns it is still the habit of thrifty people to buy vegetables in quantities and store them in a cold corner of the cellar. At such times an outside entrance is a great convenience. This same outside entrance is used during the winter to remove ashes from the furnace.



Arrangement of Bungalow, Size 29 by 39 Feet.



Splendid five-room bungalow, 29 by 39 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; 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. 6624.

Modernized New England House

Some of the old-style houses are especially attractive when touched up with modern improvements. Design No. 6618 will interest builders who are familiar with such houses in New England.

The porch, which is a renaissance of the old English porch that was adopted in Massachusetts more than two hundred years ago, consists of a roof and two little boxed-in seats. In summer time these seats often are occupied by the men of the house with their smoking outfits. In the cool of summer evenings after supper, the girls find them convenient for informal receptions.

But the real outdoor living room is a loggia opening from the large living room. This loggia is supposed to be very handsomely furnished with what is usually termed "porch furniture," which consists for the most part of willow work, or woven grasses, and the colors are generally greens of different shades to suit individual tastes.

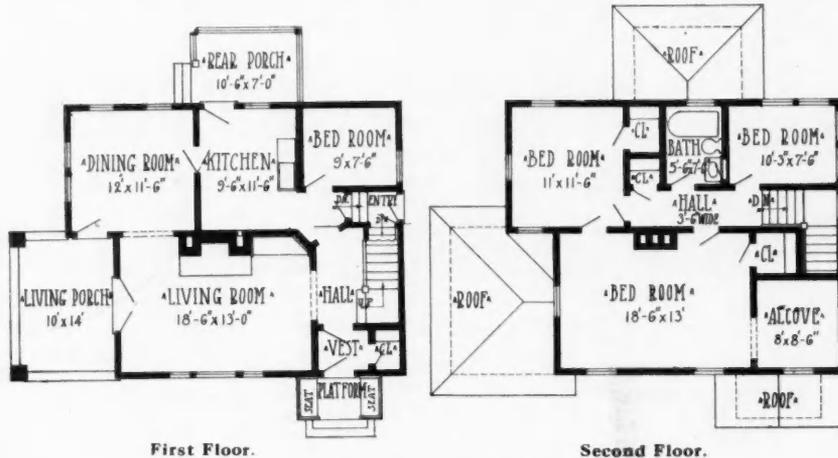
Loggias differ from porches in that there is no outside entrance. In this case, there are two doors opening from the house to the loggia, one from the dining room and one from the living room. A loggia like this is a very pleasant, attractive summer addition to

a home, and one that every housekeeper appreciates.

In planning this house special attention was given to the large living room, which is 13 by 18 feet 6 inches, with a splendid fireplace on one side and a triple mullion window to admit abundant light from the front. There are two corners in the room intended for heavy

which comes in handy for the help. Upstairs there are three bedrooms and a bathroom, with an alcove designed for a sewing room or children's playroom. Too often the rights of the children are encroached upon, and this little room is made to do this public duty.

Altogether the plan is very satisfac-



First Floor.

Second Floor.

Arrangement of House, Size 32 Ft. 6 In. by 26 Ft.

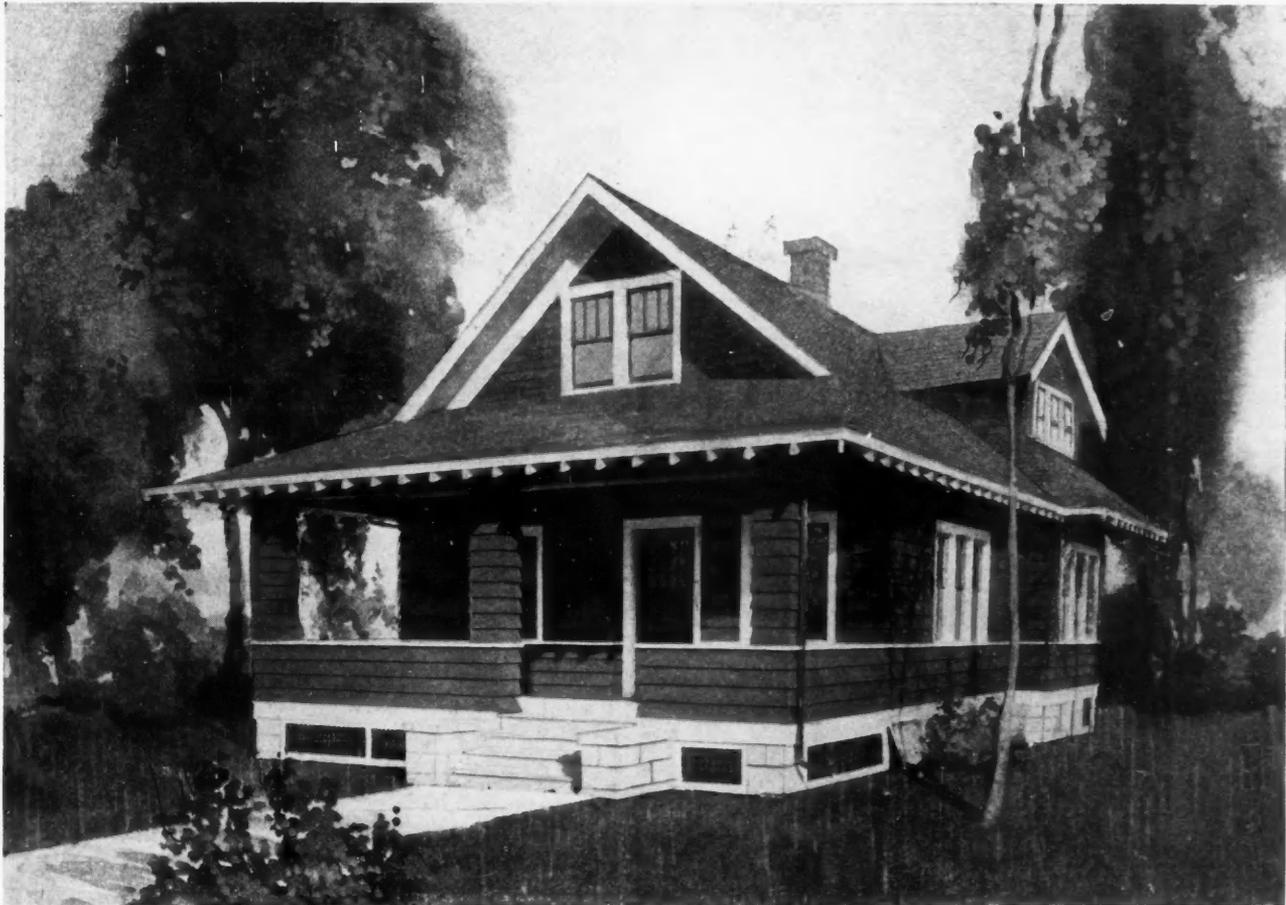
furniture and one corner next to the chimney is taken up with bookshelves.

There is a small bedroom downstairs,

and a bathroom, with an alcove designed for a sewing room or children's playroom. Too often the rights of the children are encroached upon, and this little room is made to do this public duty.



A modernized New England home. Size 32 feet 6 inches by 26 feet; contains a number of very interesting features. We can furnish complete set of 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 interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6618.



Bungalow design containing 8 rooms. Size 31 by 37 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$6.00 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. 6225.

Eight-Room Bungalow

Bungalows originally were covered with low roofs having very little pitch, but the demand for more room and still retain the pretty bungalow effect has led to the style of roof shown in this design.

To get sufficient head room upstairs the stair lands almost directly under the peak. This arrangement also brings the landing near the center, where the entrance doors to the upper rooms are most convenient. The building of the stair in this manner also gives easy access to the cellar from the center of the house. The two bedrooms to the left of the hall are entirely separate from the living rooms, while both are conveniently situated as regards bathroom facilities.

In this plan the kitchen is built in the form of an extension or L, but the main roof extends as far as the hip, then drops down to cover the rear porch. This manner of extending the roof does double duty in a way.

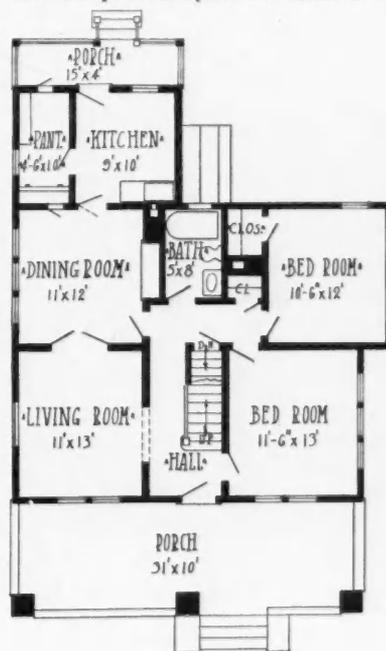
The plan of extending the kitchen permits the laying out of the other rooms to advantage, at the same time it provides a splendid, light, airy kitchen with a superior pantry. This jog in the build-

ing also makes room for a splendid bathroom having a large outside window in the rear.

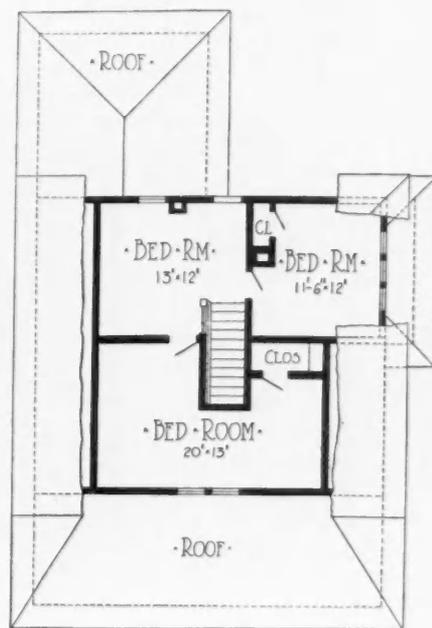
The one front gable and the two dormers provide space for mullion win-

dows to light the upstairs rooms.

A house 31 by 37 feet, arranged in this way, provides comfortable living quarters for a good sized family at very moderate cost.



First Floor.



Second Floor.

Arrangement of House, Size 31 by 37 Feet.



Economical, square-built house of seven rooms besides a large reception hall. Size 27 feet 6 inches by 31 feet. We can furnish complete set of 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 interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6583.

Two-Story Frame House With Attic

In a climate where it is necessary to furnish artificial heat for six or seven months in the year, a closely built two-story house of this type is about the most economical. It is easily heated, because the furnace may be placed directly under the center of the house.

The style of stairway in this house is also interesting, from the fact that there are two ways to go up and two extra pairs of steps to go down. Also the same space is used for the stairway to the attic. This stair is open at the bottom in the reception hall, but is enclosed from the landing up, which makes a very neat combination from the cellar to garret. Besides its economy of space, it is well lighted and it is easy of tread. In fact, it is a much better stair than is ordinarily found in a house of this size.

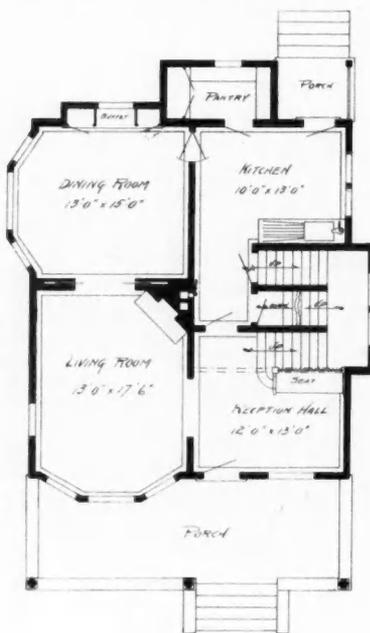
Advantage also is taken of the manner in which the stair is built to get a grade entrance, which leads to the cellar and to the kitchen with little or no extra cost.

A study of the floor plans shows the same careful economy of space in every

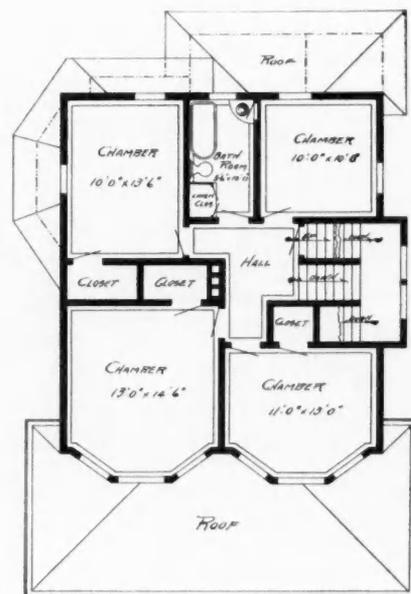
part of the house. Special attention in providing every modern convenience for comfort has been given, also for economy of labor in doing housework.

This plan contains a splendid kitchen

with plenty of pantry room, a good dining room easy of access, with a built-in buffet, large enough to be of real service. This buffet extension is roofed in an ingenious way.



First Floor.



Second Floor.

Arrangement of House, Size 27 Ft. 6 In. by 31 Ft.

Beautiful Four-Room Bungalow

The greatest possible comfort to the square foot of floor space is what architects are working for. This little bungalow was designed for a newly married young woman who wanted a large living room in the end of the house.

Here we have a bungalow 36 feet by 27 feet 6 inches in size, having a living room 12 by 20 feet. This living room is at the end of the house with two windows looking out on the front veranda. Two other smaller windows are placed in the far side where the light is unobstructed. At the sides of the fireplace chimney are two casement windows placed high enough to accommodate book shelves underneath. Altogether this large living room is as attractive as similar rooms in houses costing a great deal more money.

While there are plenty of windows for light, there is also plenty of wall space for furniture. A study of living rooms shows the necessity of planning the wall space to fit modern furnishings. The present plan of

dividing house space so as to give one large, comfortable room has led to the designing of furniture to match the size of the room. Little, old-fashioned parlor furniture looks out of place in a fine large modern living room. Large, easy chairs of many different kinds and fine,

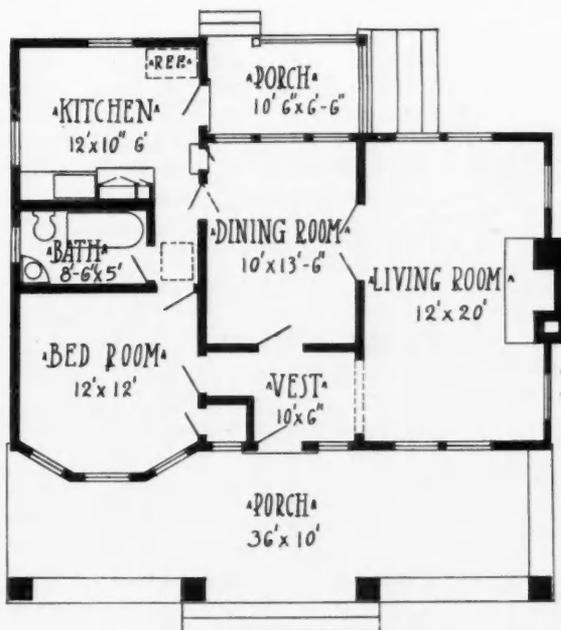
upholstered davenports, with player pianos and the large, new music boxes all require considerable room.

It is difficult to say whether the new furniture was built to fit the rooms or whether these large rooms were designed especially to hold such splendid furniture. Certain it is, however, that the two hobnob together very nicely when they are properly selected to fit each other. All these new finishings are worked out to please the woman because they are the ones who take care of and use the modern creations, while the men help to enjoy them.

The other rooms in this little bungalow are just as important as the big living room, and they are just as carefully arranged and planned for comfort, convenience, and even luxury. A convenient hallway opens into three rooms. Hallways are liked by a great many people, even in bungalows.

One end of this little bungalow is taken up with bedroom, bathroom and kitchen, with a passage or small hallway to connect the three rooms.

The kitchen is about as cheerful as any room in the house.



Floor Plan of Bungalow, Size 36 Feet by 27 Feet 6 Inches.



Four-room bungalow, 36 feet by 27 feet 6 inches in size. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$6.00 per set. Blue prints consist of basement plan; roof plan; 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. 6626.

Small Southern Home

Complete Details of Construction and Finish on Two Following Pages.

Southern type houses are sometimes appropriated by builders in the North. A great many homes in the North are built after Southern ideas of comfort. Plenty of veranda room outside and sufficient room inside to accommodate a family of four or five without crowding, briefly describes the story-and-a-half house illustrated in Design No. 6621. It is 34 by 28 feet on the ground with a "gallery," as some Southern people call a veranda, that reaches clear across the front and turning at the corner, extends all along the side of the house.

Every home should have a fireplace to promote cheerful comfort on cool evenings and rainy days, especially in the spring and fall of the year. In this plan the fireplace is built into the outside wall of the house and the chimney extends up through the end gable roof projection.

It is unusual to find five bedrooms in a house of this size. Advantage is taken of the different gables to plan so many sleeping apartments.

It will be noticed that no waste room is permitted anywhere. The stairway is a model of modesty in this respect. While the open baluster and rail give a pleasing effect from the living room,

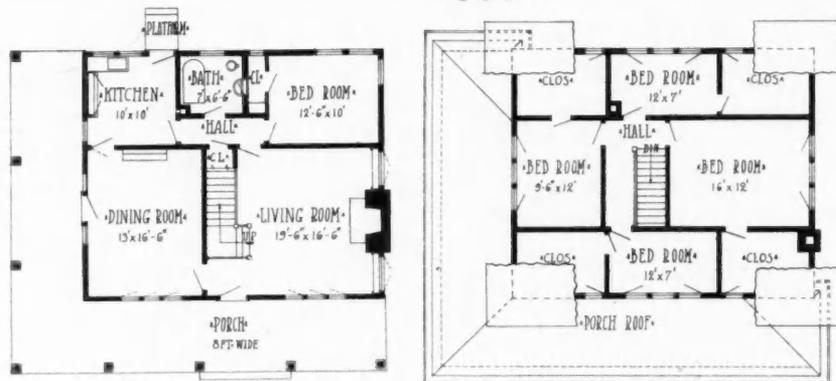
the space occupied by the stairway has been whittled down to the limit.

In outward appearance this little house is very neat and attractive. The combination of clapboards for the first story and paneled stucco work for the gables, together with the mullion windows, give a very pleasing effect. The use of mullion windows has grown into a regular fashion of late and it is a good fashion, too. The windows in this house are mostly of the mullion type, both lower and upper windows. They seem to be especially designed to fit this particular style of house. That remark has been made in connection with mullion windows in other houses of very different design. Probably no other style

of window lends itself with so much grace to the ornate improvement of modern houses.

Generally speaking, American people appreciate utility even at the expense of artistic appearance. Happily in the case of windows this fashion combines practical utility with pleasing effects. For years architects have labored to introduce sufficient light and sunshine into dwellings without using windows so large as to suggest factory buildings. The capture of mullion designs and their adaptation to modern house building has met all requirements while it has gained the appreciation of house owners everywhere.

Details of this design on two following pages.



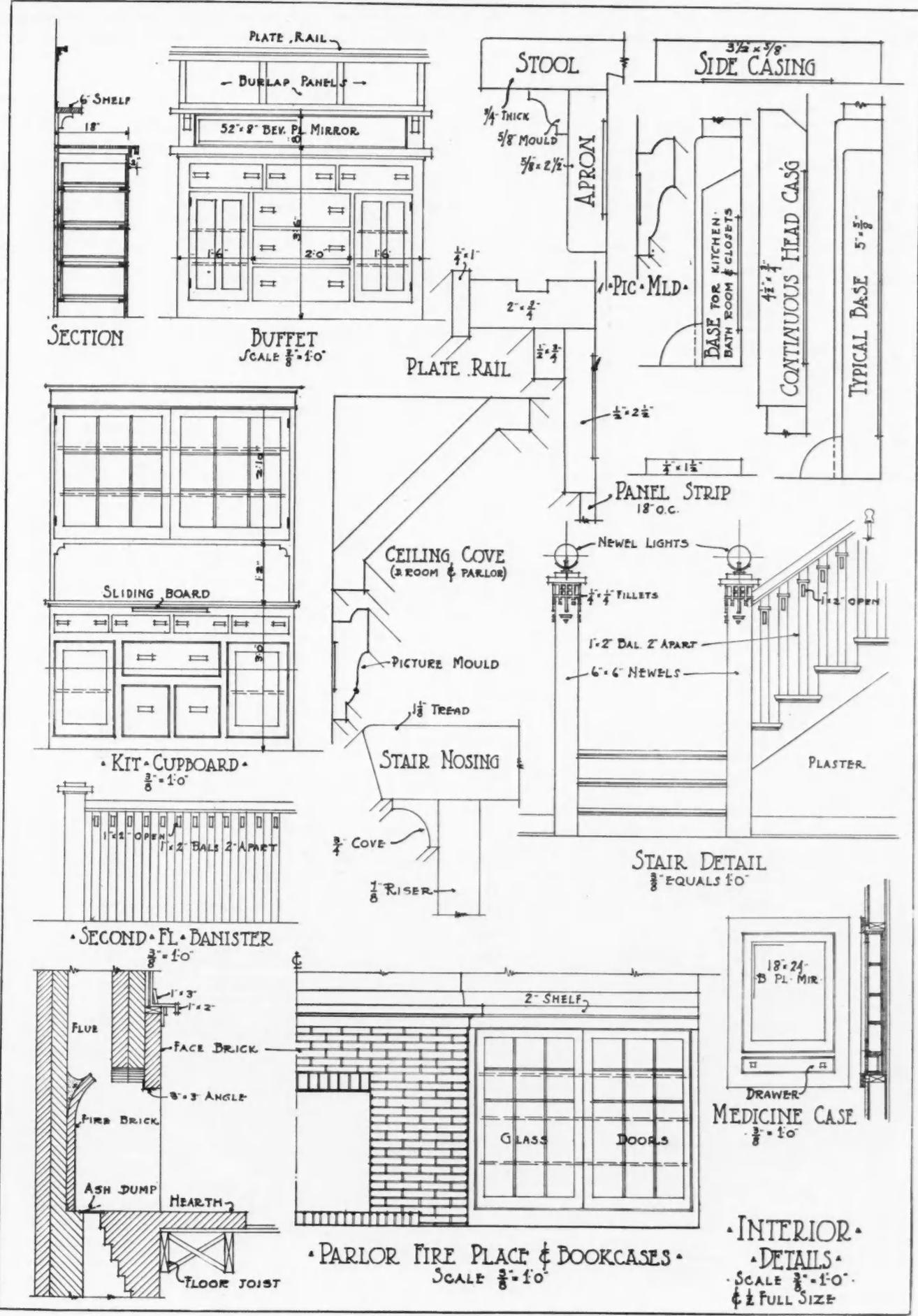
First Floor.

Second Floor.

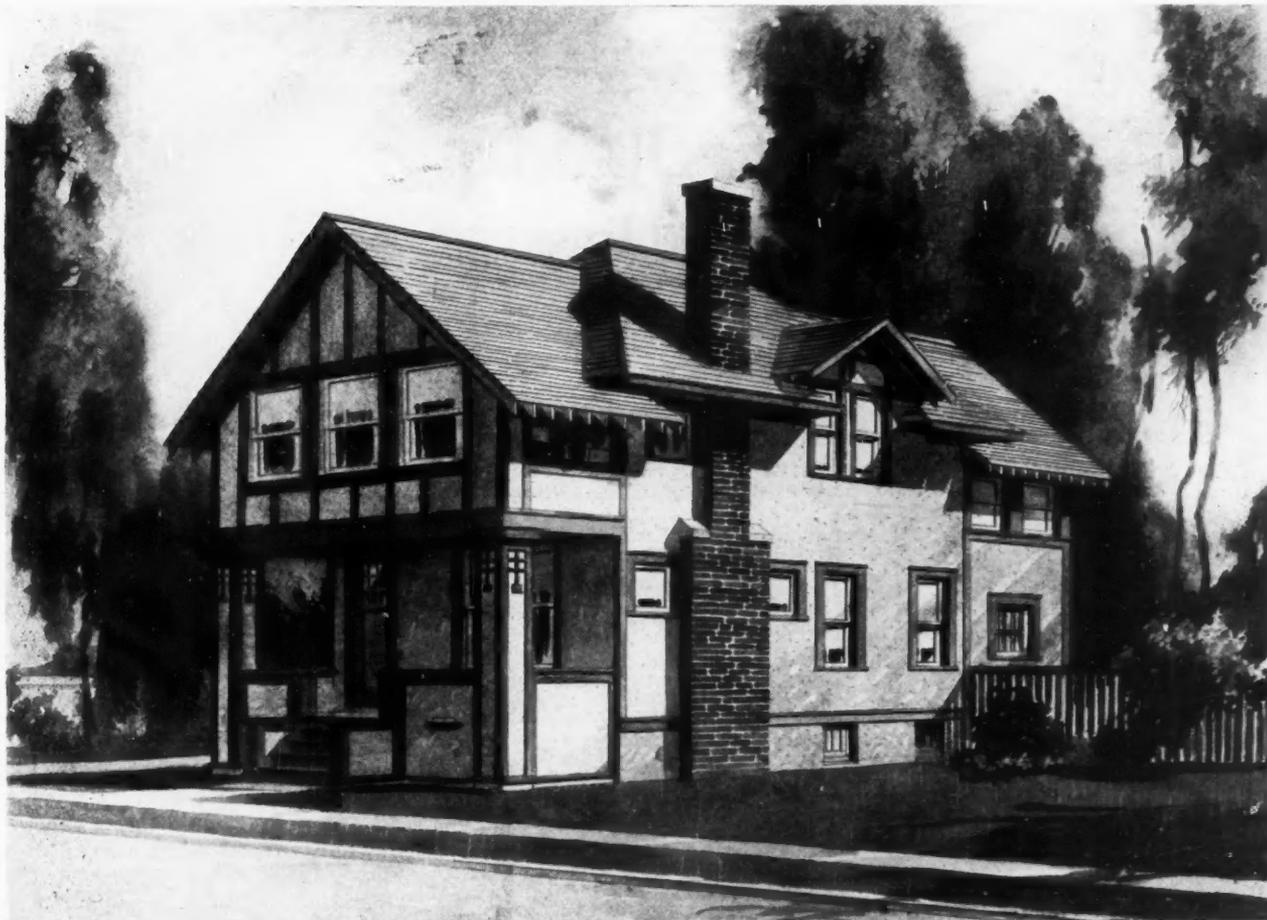
Arrangement of House, Size 34 by 28 Feet.



Southern type home of moderate size and reasonable cost. Size on the ground 34 by 28 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; 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. 6621.



COMPLETE DETAILS OF INTERIOR FINISH FOR SOUTHERN STYLE RESIDENCE (DESIGN 6621) SHOWN ON OPPOSITE PAGE.



Modern residence, 22 by 42 feet in size, with a number of interesting features. It contains six inside rooms with all modern conveniences, including sleeping porches and garage. 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; 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. 6619.

Small House With Large Porches.

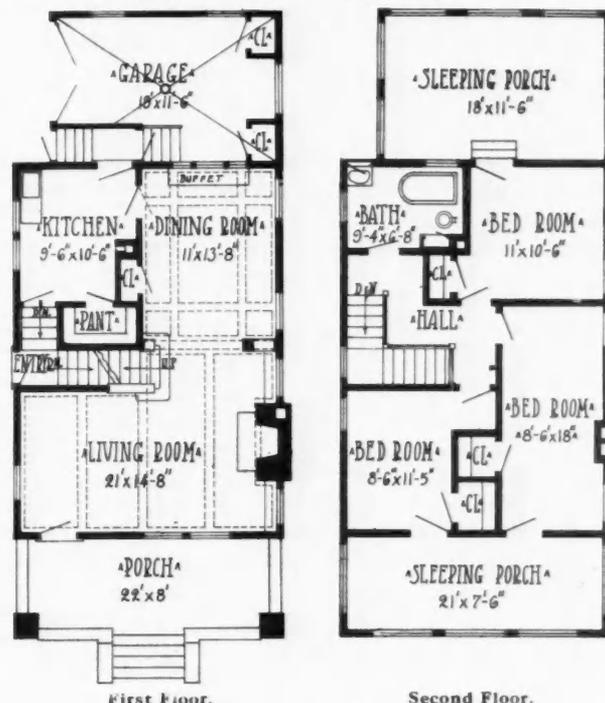
It is not always easy to design a good-looking house for a corner lot that is limited in size. But there are advantages as well as disadvantages in building on a lot of this kind. Design No. 6619 was designed for a small city lot having a corner frontage. It offers some features that are unusual in modern homes.

The planning of the roof is different from the ordinary. The center section was designed to relieve the sameness of a long straight roof, as well as to provide sufficient headroom for the two bedrooms on the north side of the house. The red brick chimney, together with the treatment of the dormer windows, adds an artistic effect on this raised roof section.

The lower floor plan is principally taken up with one large right-angle room, which answers for dining room and living room. The dining end of this great room is supposed to be partially shut off by a colonnade. Another especial feature of this house is the garage. It is 11 ft 6 in. in width by 18 ft. from front to rear. There will be an incline from the street to run the machine directly indoors. Back steps have been arranged to go down into the garage from the kitchen. This garage is supposed to be occupied by one car, though it is large enough to contain two, and still leave room to do the necessary repair work. The garage has a concrete floor, sloping to the center to the drain pipe. It is also furnished with a couple of cupboards to contain tools and a bench with a vise at one end and a tool rack in front of the window.

Over the garage is a sleeping porch enclosed with screens and glazed sash. The sash are supposed to be open except in

extremely cold weather. There is a similar sleeping porch in the front gable of the house large enough to divide in two.



Arrangement of House, Size 22 by 42 Feet.



SPACE SAVERS

for
HOME BUILDERS

Model Building
Designs Containing
Newest Devices.



5-Room Bungalow with "New Way" Wardrobes

Perspective and Floor Plans of Artistic Narrow-Lot Bungalow Providing Newest Idea in Space Saving Closet Accomodations—Details and Description of Simple Fixtures Required

IN these times of high prices, every square foot of the modern house has to be put to its best use, and if any scheme can be devised for making one square foot do the work of two, the home builder is the gainer. We are all keen for holding down building costs as much as possible, yet home builders won't stand for any cutting down or doing without on home conveniences. Better and more compact building is what is wanted.

This is a challenge that has stirred the creative ingenuity of manufacturers of building appliances. They have tackled the problem with gusto and in many instances have devised some really worthwhile improvements.

Consider, for example, wardrobes or clothes closets. We all know how fussy the women folks are about having lots of clothes closet space. It seems there can never be quite enough, no matter how large the house or apartment may be. And when it comes to the small flat and the bungalow the wail that goes up because of the little skimpy closets is heard all over the land.

Now ordinary closets take up an astonishing amount of good space. Look at some floor plans, and it seems as if almost half the space is given over to dark closets. This, of course, cuts down the size of the useful rooms.

There is this queer thing about clothes closets too. The only part of them that is used is the wall space. Valuable squares of floor surface are fenced off just to provide wall space for hanging up garments.

The "New Way" wardrobe solves this clothes closet problem in the logical way. It is an idea that is just coming into use in residences, hotels, office buildings, apartments, etc. In designing the bungalow illustrated on the opposite page, four of these "New-Way" wardrobes are pro-

vided for. One is in the front vestibule for coats and hats; two double wardrobes are provided in the front bedroom; and one double wardrobe in the rear bedroom. Notice the small amount of space these require. They are only 20 inches deep and each single unit two feet wide; yet each wardrobe containing four square feet of floor space will accommodate from 8 to 16 complete suits or gowns (if anyone has that many). An old style closet to give the same amount of hang-up space would require at least 70 lineal feet of inside walls, which means a closet 4 by 6 feet on the floor.

The illustrations show clearly how these "New Way" wardrobes are arranged. A metal carrier, nickel finished, is hung from the under side of the hat shelf. From this carriage the suit hangers are suspended. The carriage works on a telescopic principle—a light pull brings the whole outfit out into the room, so that every garment is in plain view to be gotten at. All garments are hung on the suit hangers which keeps them in excellent shape even though crowded close together. It is no more work to hang up a suit or gown on the hanger than onto an ordinary closet hook. At the bottom of each wardrobe is a broad drawer for shoes, etc. The fixtures required are inexpensive—can be freely

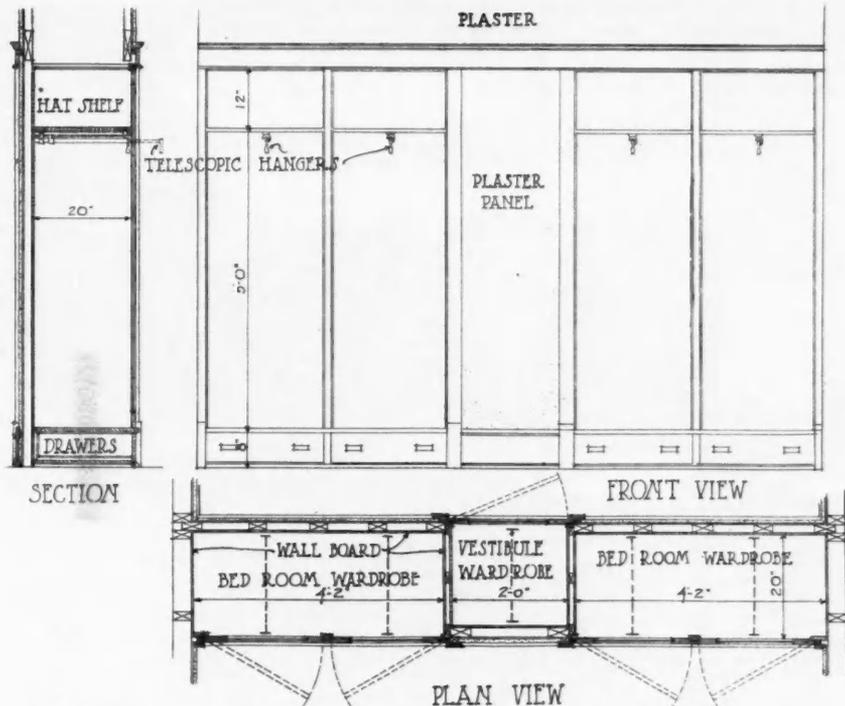


Photo of "New Way" Double Wardrobe in a Beautiful Detroit Residence—Hat Shelf Above, Two Suit Carriers (Telescopic) for Wardrobe, and Drawers Below.



Detail of Telescopic Extension Carrier With "Wish-bone" Suit Hangers, as Furnished by John T. Batts, Grand Rapids, Mich.

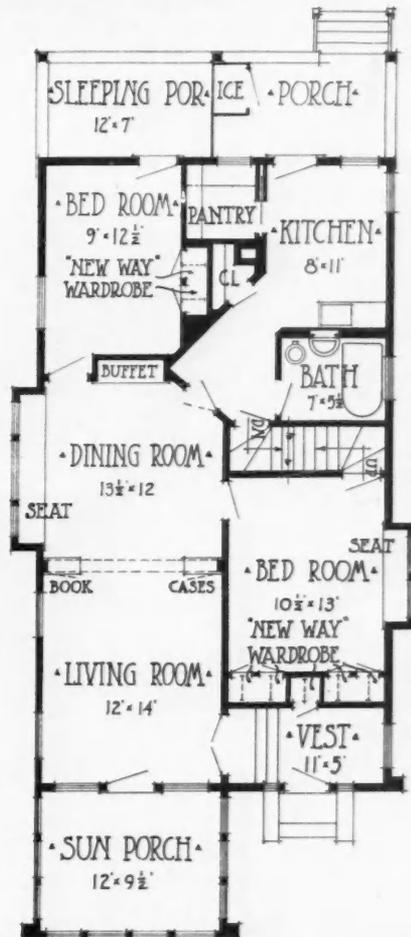
5-Room Bungalow with Space Saving Wardrobes



Detail of "New Way" Wardrobe in Front Bedroom and Vestibule, Design No. 6632.

used in both new and old buildings. The use made of the "New Way" wardrobes by our architects in designing this little bungalow shows how architects and builders are helped out of tight places very often by using these space-saving wardrobes. This bungalow was to go on a narrow city lot and so

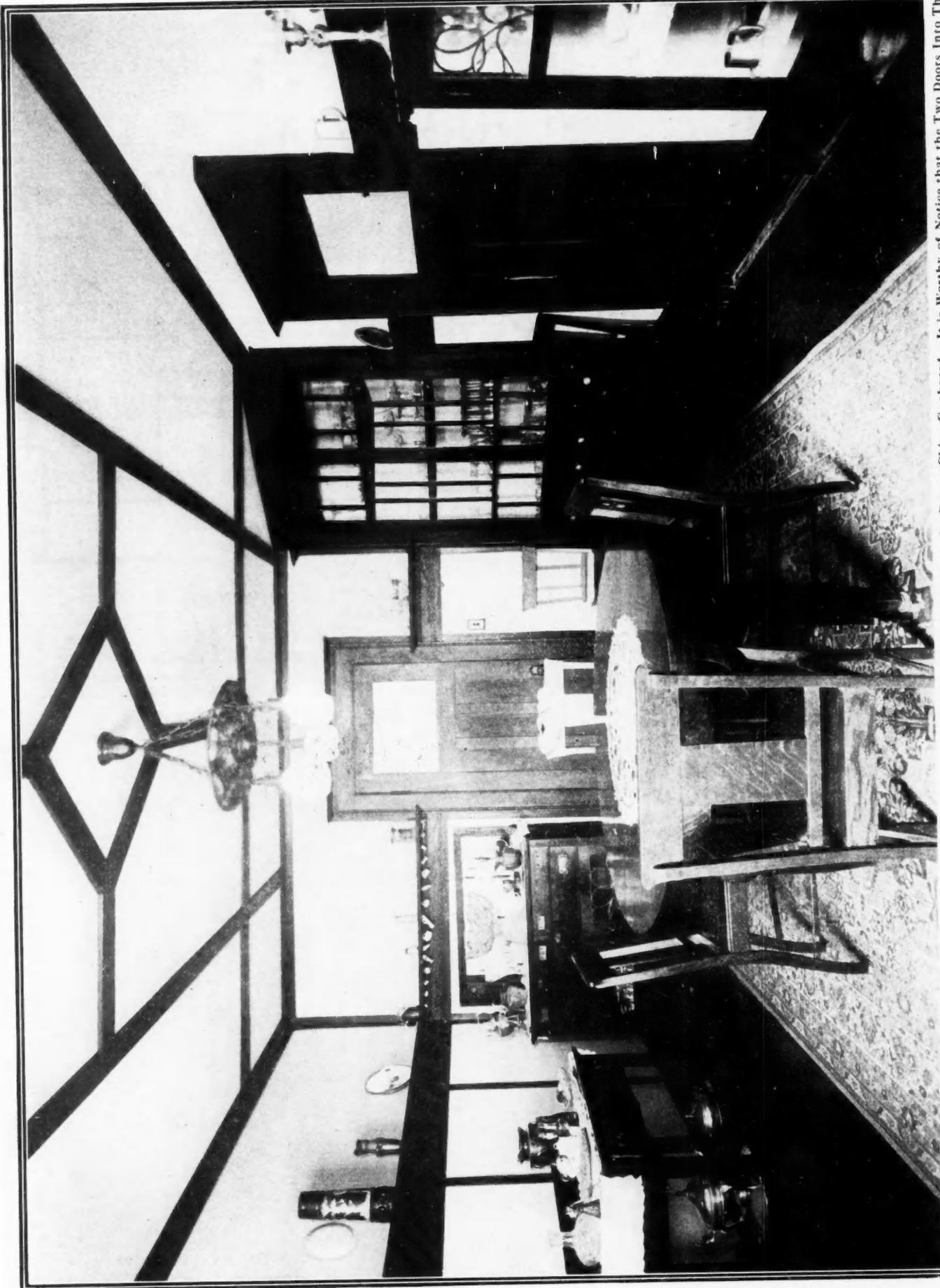
had to be kept down to a width of 24 feet. Ample wardrobe space was required, yet there was no room for ordinary clothes closets. The "New Way" wardrobes were provided, and it turns out that they not only do the work much better but actually save from \$200 to \$300 in the cost of the house.



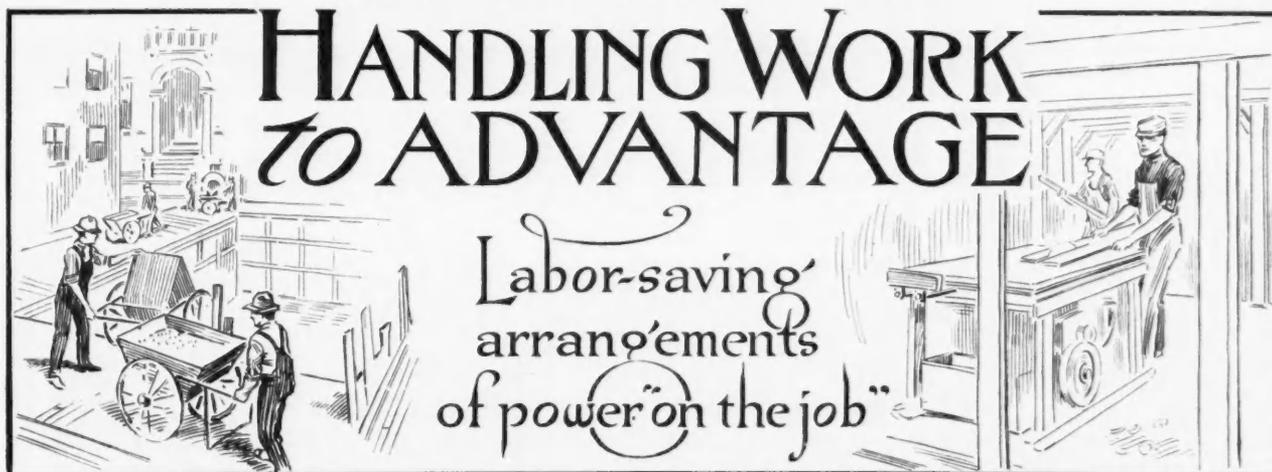
Floor Plan of Space-Saving Bungalow, Size 24 by 42 Feet, 6 Inches.



Five-room Bungalow equipped with "New Way" Space saving wardrobes. A practical artistic design, size 24 by 42 feet 6 inches. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$6.00 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 22 pages of typewritten matter. When ordering, ask for Design No. 6623.



A Paneled Dining Room Illustrating the Use of Wallboard Panels and Oak Bands. An Interesting Feature is the Corner China Cupboard. It is Worthy of Notice that the Two Doors Into This Dining Room Have Frosted Glass Panels to Let in Additional Light. This is Often Desirable for Inside Rooms of Large Bungalows.



Important! Cash for YOUR Way!

This department belongs to our readers. We invite you to fill it up with brief illustrated descriptions of the little labor saving tricks and methods you are using in connection with your concrete mixing, power hoisting, portable saw rigs, etc. Furnish us with a little pencil sketch or photo with each letter if possible.

We want this department to be extra practical and interesting; and to make it more exciting we will pay \$10.00 (in goods selected from our ad pages) for the best letter each month; also \$1.00 (in advertised goods) for every other letter published. Address LABOR SAVING Editor, American Carpenter and Builder, Chicago.

Good Progress Elevating Concrete with Power Loader and Hoist

Waterloo, Iowa.

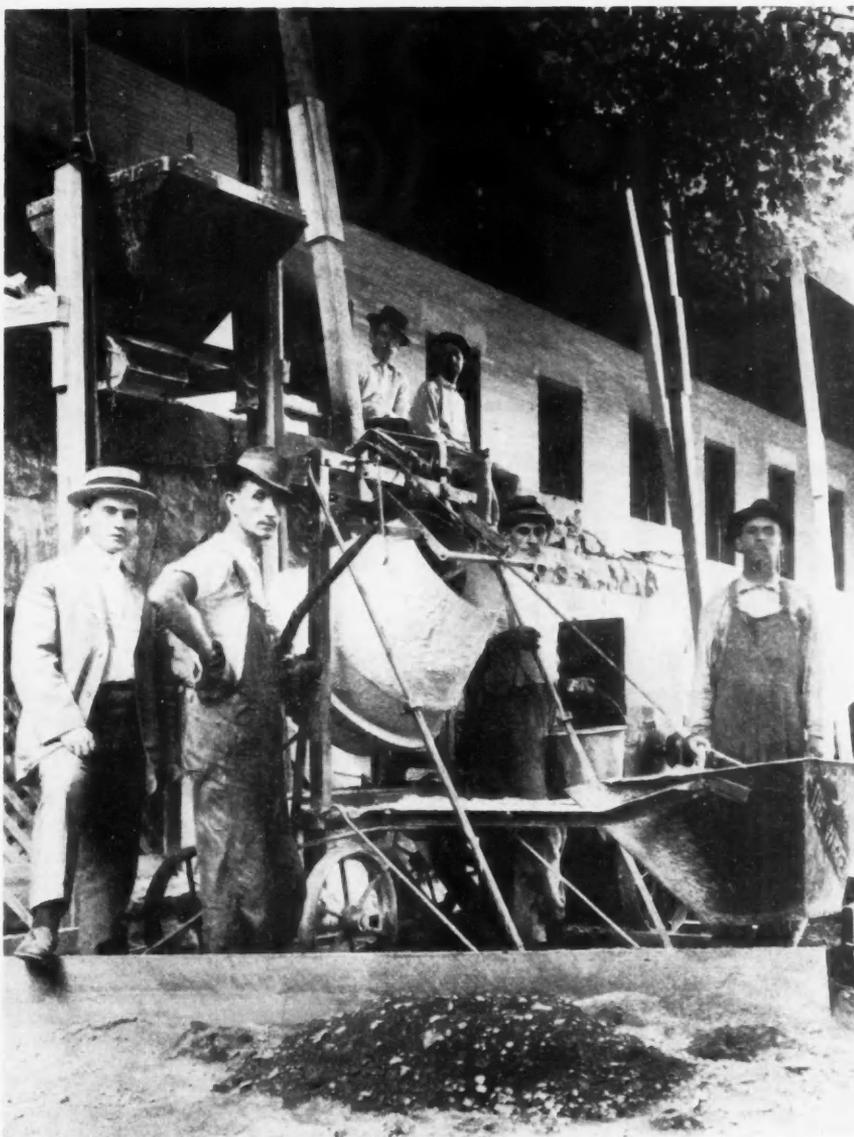
Labor Saving Editor AMERICAN CARPENTER AND BUILDER:

A report has just reached us of the efficient labor saving outfit used in connection with one of our "Winner" mixers for handling the concrete work on the new Taggart Hotel at French Lick, Ind. We believe the accompanying photograph and description will interest and benefit other contractors who are following your "Labor Saving" Department.

The contractor, Mr. I. A. Wells, reports 12½ cubic yards of concrete for floors, mixed, elevated and placed in 3 hours and 10 minutes. This was done by a gang of ten men disposed as follows: two men at the loader, one watering, one operating elevator and loader, four pushing wheel carts taking away from elevator, and two leveling off in the forms. The cart men had to wheel an average distance of 160 feet from the elevator.

While contractor Wells is highly pleased with his machine and outfit, he expects to increase this record to 20 cubic yards per 3 hours by increasing the hoisting speed and adding two men to the wheeling force. They had to wait about one-fourth of the time for the elevator, as it was.

J. H. STEWART, Mgr.,
Cement Tile Machinery Co.



Contractor Wells and His Contracting Outfit on Big Hotel Job at French Lick, Ind. Power Concrete Mixer With Side Loader Discharges to Hopper Elevator which Raises Each Batch to Upper Floor. Thence by Wheel Cars to Forms. Ten Men With This Outfit Will Mix and Place 20 Cubic Yards of Concrete in 3 hours.



Noon Hour Talks by the Boss Carpenter

Talks No. 27—Snow and Wind Load Stresses

THE BOSS TELLS ABOUT THE EFFECT OF SNOW LOAD AND WIND LOAD ON A ROOF TRUSS AND CONSTRUCTS DIAGRAMS FOR SAME

“UP to this point,” said the Boss, “we have only considered the action of dead loads in producing stresses in the members of the two kinds of roof trusses which we have discussed. If you will stop to think, you will see that these trusses must also carry the weight of snow which may come upon the roof in winter, and the pressure of wind which may blow on the roof at any season.

“The object of this talk will be to show how to find the amounts of stress which will come upon the members of the truss due to the action of snow and wind, these stresses existing in addition to those already found in previous talks for the dead load.

“If you will remember,” said the Boss, “I showed you in Talk No. 21 how to find the sizes of rafters and purlins for a given roof. At that time I gave you a table of snow loads which I told you could be found in Kidder’s Architects’ and Builders’ Pocket-Book. We will turn back in the “log book” and look at this table again for use in our talk today.

ALLOWANCE FOR SNOW IN POUNDS PER SQUARE FOOT OF ROOF SURFACE

Location	Pitch of Roof				
	1/2	1/3	1/4	1/5	1/6 or less
Southern States and Pacific Slope.....	* † 0-0	* † 0-5	* † 0-5	5	5
Central States.....	0-5	7-10	15-20	22	30
Rocky Mountain States.....	0-10	10-15	20-25	27	35
New England States.....	0-10	10-15	20-35	35	40
Northwestern States.....	0-12	12-18	25-30	37	45

Columns headed by an asterisk, (*) are for slate, tile, or metal; those headed by a dagger (†) are for shingle roof.

“You will see that the snow load varies in different parts of the country as well as with the kind of roof covering and pitch of roof. Of course, we know the location of a given building, the pitch of the roof, and the kind of roofing material. The problem of finding the number of square feet of roof surface

supported by a single joint of the upper chord of the truss has been carefully explained in Talk No. 25. It now remains for us to find our total loads for use at the joints of the upper chord of our truss by multiplying the area of roof supported by one of these joints by the proper value taken from the table.

“If we assume that our roof is on a building located in the Central States, also that it is one-fourth pitch and shingled, then we would see by the table that a snow load of about 20 pounds per square foot of roof surface would be the correct value to use. If the truss shown in Fig. 14, Talk No. 25, is the one to be used, and if the distance between trusses is 12 feet, while the distance between the joints of the upper chord is 10 feet, then the area of roof supported by each of the joints of the upper chord, except the ends, would be 120 square feet, as explained in Talk No. 25. The load per joint would be 120 × 20, or 2400 pounds per joint. Each of the end joints would support one-half of this load, or 1200 pounds.

“Now that we have our loads, we are able to construct our snow load diagram in a manner similar to that explained for Fig. 12, Talk No. 23, and as shown in Fig. 17. You will notice that the only difference between this diagram and the dead load stress diagram shown in Fig. 12 is in the amounts of the joint loads and the stresses in the members. In fact, where there are no ceiling loads present, one diagram will answer for the dead load and snow load if in constructing the load line the sum of the dead and snow loads at the joints is used. The actual construction of the stress diagram will then be the same as that for the dead load already explained. Where ceiling loads are present in the dead load diagram, it is better to use the two diagrams until you become better acquainted with the principles of graphical construction.

“After the snow load diagram has been constructed according to the scale chosen, the value of

the different lines should be measured off from the drawing and changed into pounds of total stress in the member. This was explained in Talk No. 23.

kind of stress. You will remember that Talk No. 24 explained fully how to determine whether a given member is in tension or compression. If a member is in the same kind of stress in each of the three diagrams, add the horizontal line of values across the table and put the result in the last column under

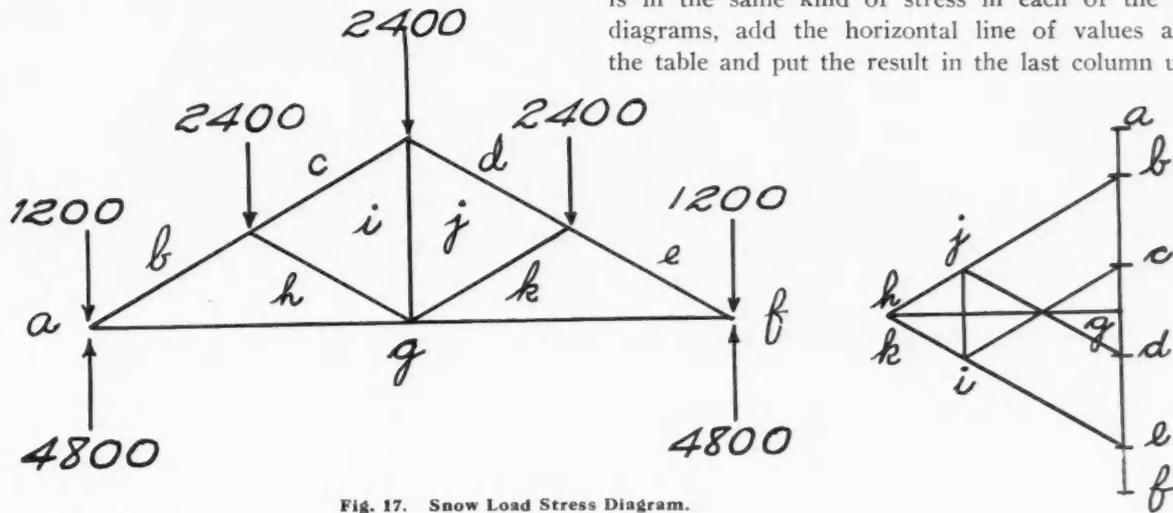


Fig. 17. Snow Load Stress Diagram.

It is well to form a table on the sheet on which the truss and diagrams are shown, and insert the amounts of stress in each of the members of the truss due to the dead load, snow load, and wind load. This table should have headings similar to those given below.

Name of Member	Stress Due to Dead Load in Lbs.	Stress Due to Snow Load in Lbs.	Stress Due to Wind Load in Lbs.	Total Stress in Lbs.
b h c i etc.	14,000	16,000	9,000	39,000

"After each of the stresses in a member are measured off from the diagram, changed to pounds, and inserted in the table shown above, they should be examined carefully to see if they are all of the same

the heading of 'Total Stress in Lbs.' If one of the stresses is tension while the other two are compression, add the two compression stresses and subtract the tensile stress to get the total. The pull in the piece will help to lessen the compression due to the other two kinds of loading.

"Never use snow loads at the joints of the lower chord of a roof truss, as the roof covering keeps all the snow on the top chord of the truss. Also, notice that snow loads act directly downward as in the case of dead loads.

"Wind pressures or wind loads on a roof are considered to act in a direction perpendicular to the slope of the roof and therefore will cause a different slant to the load line of our wind load stress diagram. Another thing to be noted is that the two reactions or supporting forces at the ends of the truss are not equal in amount in the wind load diagram. These supporting forces were each equal to one-half of the total load on the truss in both the dead load and snow load diagrams owing to the even distribution of the loading on the truss. In finding the joint loads for the wind diagram, it must be recognized that the wind can only blow on one side of the roof at a time. This means that the joint

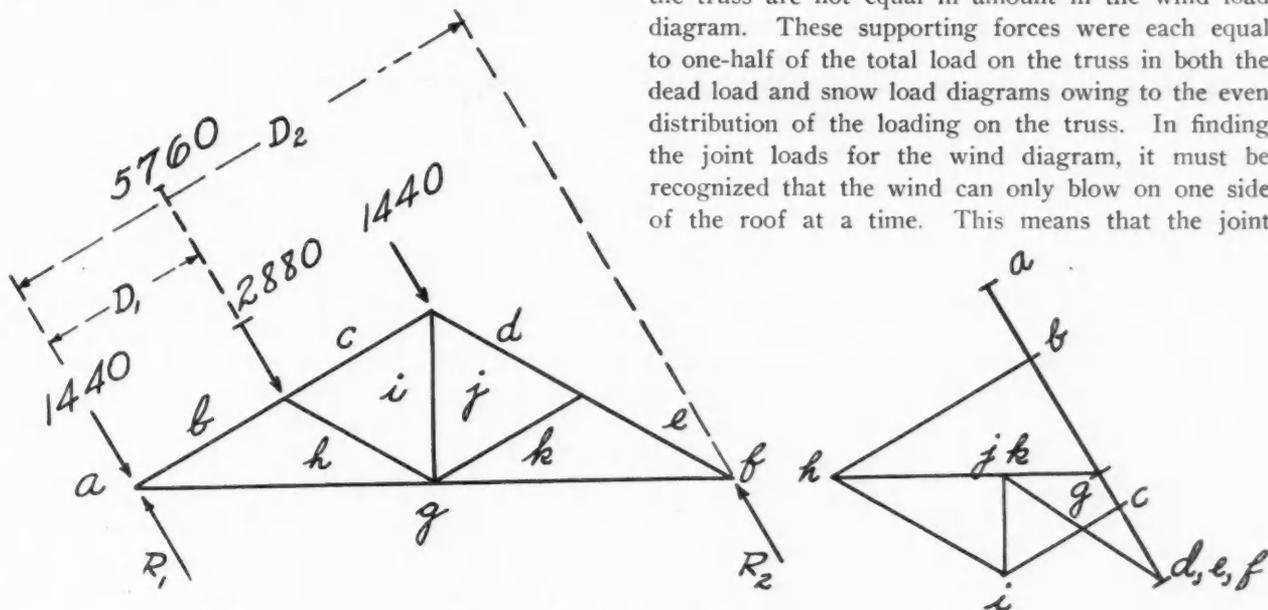


Fig. 18. Wind Load Stress Diagram.

loads on the right-hand side of the roof would be equal to zero when the wind is considered as blowing on the left side of the roof.

"If we consider that the wind currents move in a direction parallel to the ground, and that the greatest probable pressure on a vertical surface like the side of a building is 40 pounds per square foot of area, the pressures per square foot perpendicular to a roof of a given pitch are shown in the following table. The table is calculated on a basis of a heavy gale of wind.

WIND PRESSURE ON ROOFS	
Pitch of Roof	Perpendicular Pressure of Wind in Lbs. Sq. Ft.
1/2	36
1/3	30
1/4	24
1/5	20
1/6	17

"Applying the value given in the table to our one-fourth pitch roof and truss of the dimensions referred to above, we find that the load at the center joint of the left-hand side of the upper chord of the truss shown in Fig. 18 is $10 \times 12 \times 24$, or 2880 pounds. The loads at the wall and ridge are each one-half of 2880, or 1440 pounds.

"The principle used in constructing the stress diagram for the wind is just the same as for the dead load and snow load diagram, except that the load line is laid off in a direction perpendicular to the left-hand side of the roof. This is the direction in which the wind loads act, just as the dead loads and snow loads were taken as acting downward in a vertical direction in the other diagrams.

"Lay off the loads ab , bc , and cd to the scale chosen. These are the only downward forces due to the wind. The right hand support fg may then be calculated from the following:

$$R_2 \times D_2 = \text{TOTAL WIND LOAD} \times D_1.$$

Where D_2 and D_1 are measured direct from the drawing.

Then R_1 will equal $(\text{TOTAL WIND LOAD} - R_2)$.

Lay off R_2 up the load line from f and see that R_1 checks back into a .

"It will be noticed that the lowest point on the load line has been given three letters, d , c , and f . This is because there are no loads acting between d and f on the truss.

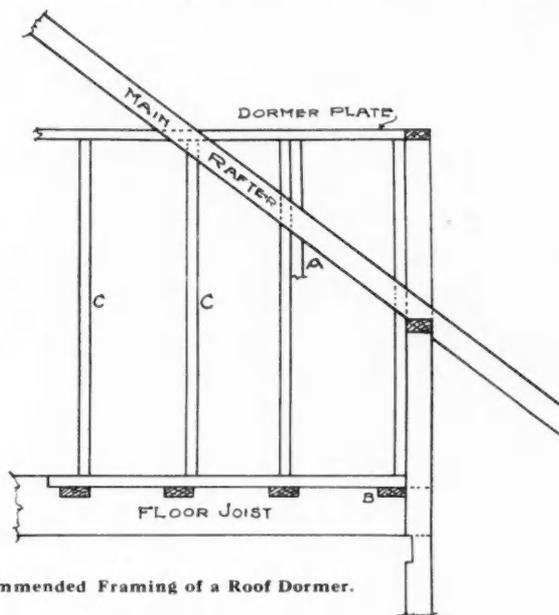
"Now that the load line is drawn, construct the diagram as in previous cases and scale off the lengths of the lines, inserting the values of the stresses due to the wind in the proper column of the table shown above.

"In the next Talk," said the Boss, "we will construct the snow and wind diagrams for the queen truss shown in Talk No. 26, and begin to discuss simple steel trusses."

Framing up Dormers

Quick and easy framing for dormers or small gables cutting in on the roofs of one and a half story houses is an item of more or less interest to the carpenter. Sometimes carpenters get in a hurry for the roof and will just stick up the frame of the dormer on top of the main roof, and run a few short pieces of studding just past the main rafter and later on piece on to it to finish the job. This method is shown at "A" in the sketch. This may be the quick way for the time being, but does not result in any permanent gain in the end; besides it always looks more or less botchy to see the studs lapped and spliced out in an irregular manner.

A better way is to nail 2x4 blocks between the joists as shown at "B" and put down a plate, running it as far in as the dormer or partition requires and stud straight up from the floor to the dormer plate as shown by C C. Also let the top plate of dormer run in as far as required. When studded up in this



Recommended Framing of a Roof Dormer.

way a few planks can be thrown across from plate to plate and it makes a good footing to stand on while framing up the dormer and main roof above. When the job is framed up in this way there is no patching out or fixing over and less time will be consumed than otherwise, and with a better result as well. In sheathing up the sides of the dormer run the sheathing up and down the main roof. This will give a chance to nail the top and bottom in good shape without the necessity of cutting in blocks between the studding along up the main roof. I. P. HICKS.



Happy Thought

MOTHER (after relating pathetic story)—"Now, Reggie, wouldn't you like to give your bunny to that poor little boy you saw to-day who hasn't any father?"

REGGIE (clutching rabbit)—"Couldn't we give him father instead?"—Punch.



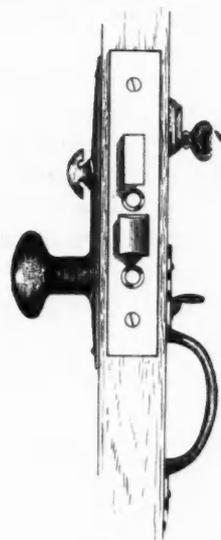
Hardware—Its Use and Abuse

HOT SHOT FROM ACTUAL EXPERIENCE IN REGARD TO APPLYING AND PROTECTING FINE RESIDENCE HARDWARE

By Henry M. Schember

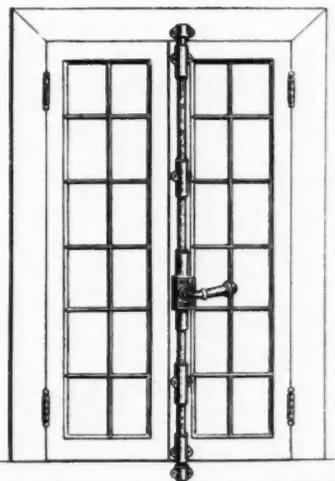
Head of Builders Hardware Dept., Hammacher, Schlemmer & Co.

VERY often a well trimmed residence is spoiled and made an eyesore by the miserable looking hardware on the door, windows, etc., no pains having been given either to the utility or beauty of the different pieces of hardware that go to make a well balanced house. One sees an entrance Dutch door with bolts of the wrong kind put on the wrong way, butts that are the wrong size and locks and trimmings that don't suit the period. The consequence is that in a short time the bolts will not operate because they were never made to do that kind of work. The butts allow the door to sag and the trim, to any one that admires beauty, is a nightmare. So it goes right through the building, and it is surprising how little interest the carpenters, foreman, and the carpenter boss take in this subject.



A Dutch Door Lock Set Properly Applied. Every Part in Perfect Alignment. Mortise for the Lock is Cut Clean and Shows No Marks Around the Lock Face.

Many carpenters don't know the first rudiments concerning the proper application of fine locks and trimmings and abuse the different articles. As an instance, the writer had occasion to visit a job concerning this line and



A French Window "Set Flush" Properly Trimmed with a Cremorne Bolt. When Lever Handle is Pulled Down it Throws the Bolts. Very Often These are Put on Upside Down.

noticed a carpenter cutting a mortise in a door for a 5-inch cylinder front door lock. Instead of taking measurements or cutting a cardboard jig and working from same, he took the lock and scribed

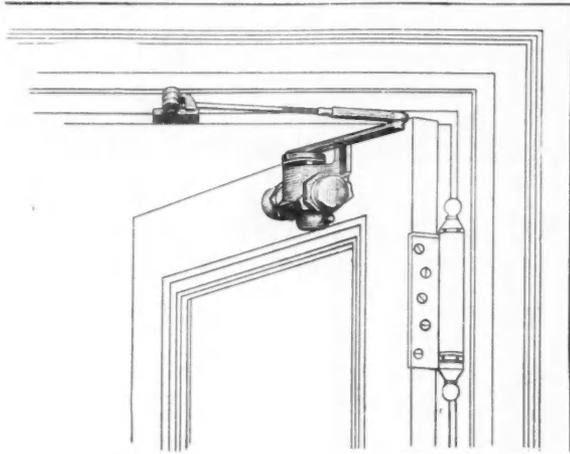


Recessed Casement Windows are Sometimes Trimmed with this Style Fast. These Fast are Made Handed and Very Often We See the Right Hand Placed on a Left Hand Sash and the Left Hand on a Right Hand Sash.

the edge of the case on the edge of the door, and tried to cut the mortise from that. After the mortise was cut, as he thought about correct, he pushed the lock into the mortise and as it fitted tight, he tried to drive it home by hitting it on the face with a hammer! Now locks of this character have very good works which are mechanically correct for the purpose intended, but were not constructed with any idea of such abuse, the consequence is that after the owner lives in the house a short time, he has trouble with the lock, and abuses the builder; and the builder in turn abuses the hardware man, and so it goes down the line.

Other things noticed, was the manner of attaching door, escutcheons, door knobs, casement fasts and double acting spring butts. Escutcheons were not placed properly over the key holes of the locks in one instance, cylinder locks, escutcheons and knobs were upside down. Door knobs in many cases did not operate properly, due to the fact that no knob washers were used, in other cases because escutcheons were not in alignment with the locks. Casement and French window hardware was even worse. Cremorne bolts with lever handles were upside down, and when

operated, the lever handle would turn upward instead of downward. On casement fasts the tendency also was to work them upside down. Double acting spring hinges seem to be another unfortunate article and often carpenters spend hours and hours trying to attach and put them into working condition.



Care Should be Taken When Cutting Mortise for the Flap of a Spring Hinge So that the Hinge Sits True and in Line with the Other Hinge.

All this could and should be avoided, with a little attention and study, and most of it can be attributed to carelessness and lack of attention to detail. Any mechanic can familiarize himself with hardware and its proper application either through the dealer or the manufacturer. In most cases when new articles are placed on the market, the manufacturers will enclose instructions with the goods and proper method of applying.

Artistic hardware should be handled with care; and

skill is required to attach same. The proper method to pursue is to take the article from the original package, see what the contents are and if all the parts are as specified, including screws. Very often claims of shortage are made to the dealer, when through carelessness, articles are thrown away with the wrappings. This means delay, especially if it is factory ordered goods. After you are positive that everything is as wanted, take your measurements and scribe off your work. Try as much as possible not to handle the goods more than absolutely necessary as the fingering by most hands and the dust of new building settling in, play havoc with fine finished goods. Glass knobs require great care; by no means tap them to set in place. It is also very essential that they work easy and are in true alignment.

After hardware is fitted, take same off, marking the different parts properly with their location, and store away until trim has been painted or varnished. Don't, by any means, leave hardware on the trim while being painted. More good hardware has been ruined this way than any other. After the hardware is again attached, wrap all the parts liable to be handled with cloth until residence is occupied by owner.

The above are facts from actual observation, and time and money could be saved if carpenters were schooled in the proper application of hardware. Probably in years to come this phase of the business will receive the same attention as the other branches of carpentry. Hardware is getting better and more artistic every year, and as it is really the finishing touch of every building and must harmonize with the other furnishings, it is no more than reasonable to expect that it receive the same attention as other details.

Locking Garage Doors

PART I. NEW STYLES OF GARAGE DOOR HANGING PRESENT NEW LOCKING PROBLEM—SIMPLE SLIDING AND PARALLEL DOORS

By E. J. G. Phillips

Engineer with the Richards-Wilcox Mfg. Co.

THE "Garage Door Problem" discussed in the last December, January, February and March numbers of the AMERICAN CARPENTER AND BUILDER dealt mainly with the hanging of the doors and a number of the best methods were described. Another question, the satisfactory solution of which has caused considerable trouble to architects, owners and builders alike, relates to the locking of the doors and holding them close to the jambs. In fact, the garage door in its many varying forms has made it necessary to design new styles of locks and bolts, especially to meet the requirements. The application of suitable locking arrangements for some of the more commonly used doors will be taken up in the following paragraphs.

Sliding garage doors, generally speaking, present two cases for locking: first, buildings with but one

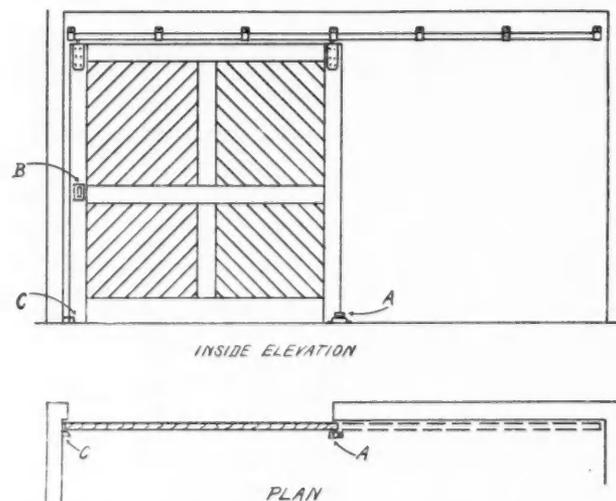


Fig. 1. Plan and Elevation of Simple Sliding Door.

main door opening, the doors of which must be locked from the outside; and second, buildings having a side door or other means of entrance such as a wicket in the large doors, so that the main doors may be locked from the inside. When locking from the inside only, a less expensive lock will usually answer.

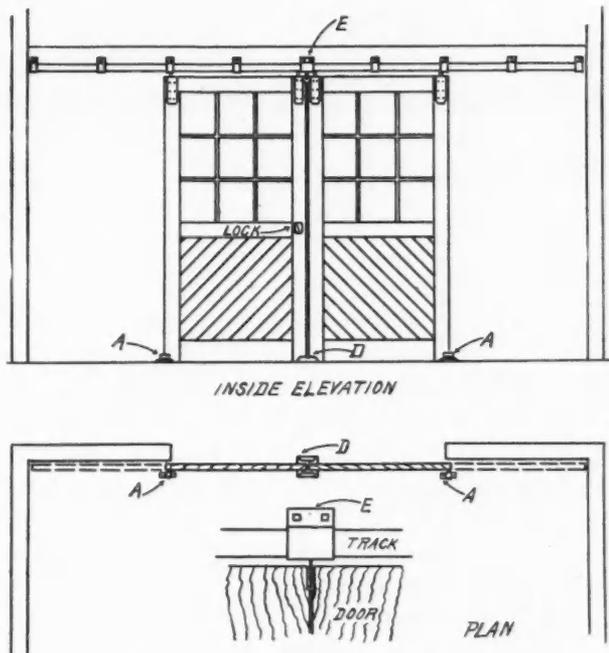


Fig. 2. Pair of Simple Sliding Doors. Locked at Center.

Simple Sliding Doors

The single sliding door (Fig. 1) requires little comment. A guide roller, *A*, holds the lower corner close to the jamb, and the lock is applied to the front stile at *B*. A combination floor stop and guide at *C* will assist in holding the lower front corner of the door close to the jamb.

A pair of doors (Fig. 2) are locked together at the

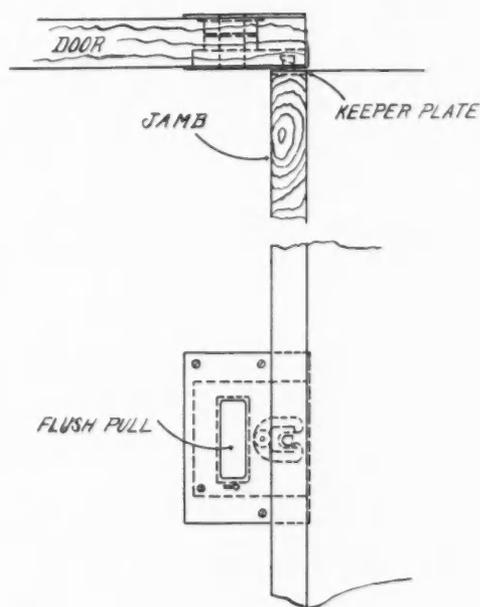


Fig. 3. Elevation and Section of Half-Mortise Lock.

center. A guide roller, *A*, is provided for each door and a floor center stop and guide holds the lower corners of the doors in position at *D*. A number of suitable locks which can be operated either from the inside or outside, have been developed and are on the market. Two of these are shown in Figs. 3 and 4.

The lock in Fig. 3 is of the half mortise type, being set into the side of the door. It is a combination of flush pulls for both sides of the door, lock and latch. A number of changes of keys are provided and the lock is adjustable for different thicknesses of doors. Fig. 4 illustrates a garage door lock of the mortise type which combines the same features as the half mortise lock mentioned above. A small trip pin projecting from the face of the lock strikes the keeper plate and releases the latch which then engages the keeper. This lock for single doors, requires a strip attached to the jamb to which the keeper plate is attached. The half mortise lock does not require this strip, the keeper plate being attached directly to the jamb; but for pairs of doors a special keeper is re-

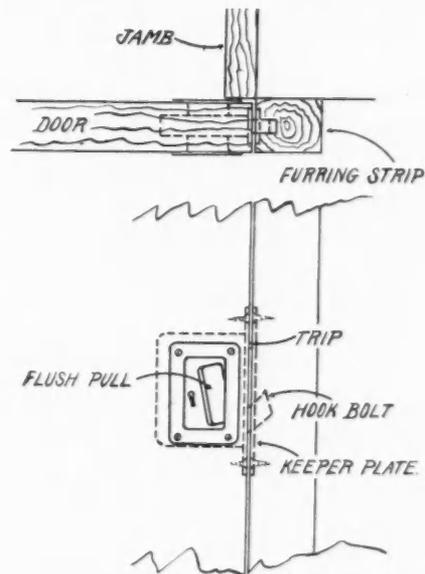


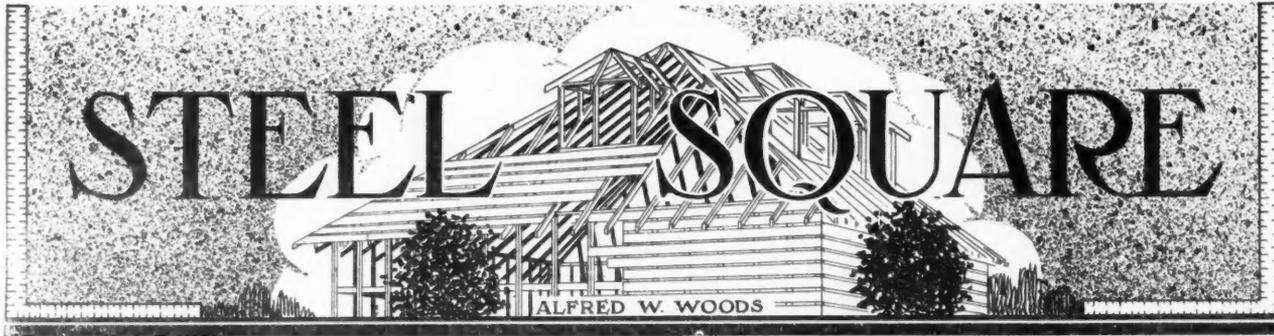
Fig. 4. Elevation and Section of Mortise Type Garage Lock.

quired. The mortise lock requires no special keeper plates and is preferable for pairs of doors. These locks (Figs. 3 and 4) will be referred to in subsequent paragraphs as half mortise and mortise garage locks respectively.

If metal weatherstrip guides are used at the bottom of the doors, the guide rollers and the floor stops are not required; but a center stop track bracket, *E*, should be used over the center of the opening for doors in pairs. This will always stop the doors in the right location and prevent their being moved after locking.

Next Month Mr. Phillips will discuss some other locking arrangements for other forms of sliding Garage Doors.

Forest officers have found that high power telescopes are not always satisfactory in fire-lookout work. In some localities heat vibrations in the atmosphere are so magnified by the glass that clearer vision can be had with the unaided eye.



Unusual Uses of the Steel Square

THE STEEL SQUARE AS A CALCULATING INSTRUMENT IN SOLVING MATHEMATICAL PROBLEMS OF VARIOUS KINDS

By A. W. Woods

AMONG the many odd uses that the steel square may be put to, we will mention a few, as follows:

To Describe a Circle

Suppose we wish to draw a circle and not having a pair of compasses at hand, it may be accomplished with the square by driving a couple of brads the distance apart that is desired for the diameter of the circle; then by placing the inside edge of the square against the brads as shown in Fig. 1, and by placing a pencil point in the angle and by swinging the square around, keeping the edges against the brads, the pencil point will describe a true half circle. Then by reversing the square and proceeding as before, the other half may be obtained, thereby completing the full circle.

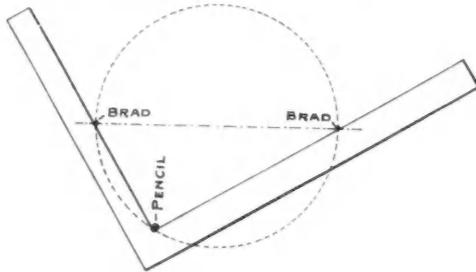


FIG. 1

To Draw an Ellipse

Suppose an ellipse is wanted, say 40 inches in length by 22 in width. It may be found with the aid of two squares, as shown in Fig. 2, as follows:

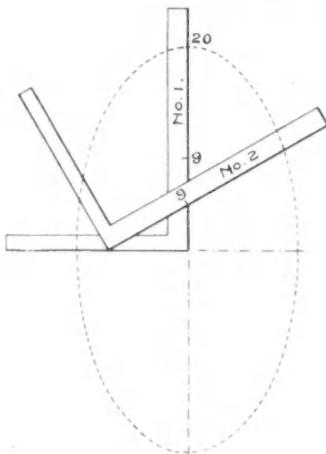


FIG. 2.

Lay square No. 1 on the stock material on which it is desired to lay out the ellipse. This square is to remain stationary. Now suppose we take another square, No. 2 we will call it, and lay it on top of

square No. 1 and since the long diameter is 40 we will set the pencil point at one-half of 40, or at 20 on the blade; and since the short diameter is 22, we set off one-half of 22, or 11 inches back from 20, which will be at 9 on the blade. Now, we are ready to proceed by simply moving square No. 2, keeping the heel of same along the edge of the tongue of square No. 1 and with the figure 9 always directly over the blade of No. 1 and the pencil point at the 20 inch mark, will describe one-fourth of an ellipse. Thus by four operations, it is possible to draw the whole ellipse as shown by the dotted lines.

The steel square as a calculating instrument covers a wide field, so wide, in fact, we do not know where the other side is, because the principal involved is inexhaustible.

Measuring Rafter Lengths and Other Inaccessible Distances

It is not our intention at this time to enter into this phase of the subject very far, but more to call attention to some every day problems that may be readily solved by its use, that would otherwise tax the ingenuity of the more than average mathematician. For instance, the framing of rafters is simply solving problems in square and cube root; and yet how many are there who can readily frame the rafters for a hip roof, and who can take a pencil and paper and figure it out?

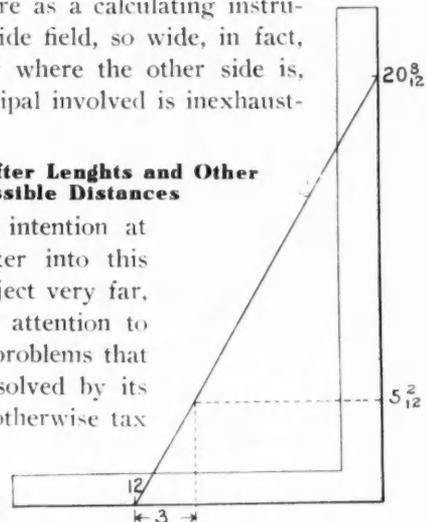


FIG. 3.

Seemingly inaccessible distances, such as measuring a river or the height of a pole may be measured by the same principle involved in finding the length and cuts of the common rafter, as shown in Fig. 3. Any angle on the square could be taken; but for

convenience we show the angle formed by 12 and 12, because it is more easily handled, as the sides of the right angle are of the same length. In the case of measuring the river, by measuring the accessible side

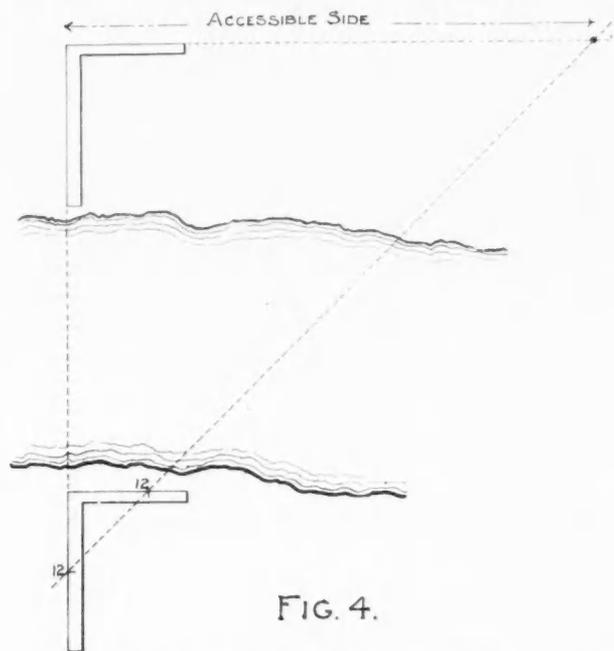


FIG. 4.

and by making proper deductions to the edge of the water from point of sight, it is an easy matter to find its width.

Number of Ft. B. M. by Steel Square

The steel square may be used for finding the contents of board measure, by using the side of the square that is divided into twelfths, drawing a line from 12 on the tongue to the desired length on blade. Thus, if the board is 20' 8" long, the figures to use on the square would be 12 and 20 8/12. If the board is 12 inches wide, it is very plainly to be seen that it will contain 20' 8" (20 2/3 feet). The same ratio must exist anywhere in the angle. Thus if the board is three inches wide; square up three inches back from 12 on the tongue to the angle line, thence square out to the blade and the figures intersected there will represent the contents in board measure, in this case being 5 2/12 inches or 5 and 1/6 feet.

That Hood Rafter Again

In the August number, we took for our subject the hood rafter and while presenting a clear illustration, we made a careless error in describing the side cut for the peak end, in which we said to "take AD and DC on the square," when we should have said "AC," instead of "DC." We received three or four letters from readers calling attention to same, and we are glad to make this correction.



Results and Consequences

A teacher asked her class in spelling to state the difference between the words "results" and "consequences."

A bright girl replied: "Results are what you expect, and consequences are what you get."

Practical Formulas for Stair Builders

By Hunt A. Westholm

Carpenters are sometimes puzzled when confronted with a problem of laying out treads and risers, and getting the proper sizes of steps when the only measurements given are length and height of staircase.

In order to help the journeyman who possesses a little knowledge of applied mathematics and use of formulas, the following rules and formulas are given out and deduced respectively.

Denote the horizontal projection (length of stair) by A.

Denote the vertical projection (height of stair) by h.

Denote the tread (width of steps) by x.

Denote the risers (height of steps) by y.

Then $A:h = x:y$ or $h:A = y:x$ (the slope of stairway) and $x = \frac{Ay}{h}$ (I.) $y = \frac{hx}{A}$ (II.)

The known rule that one tread plus two risers shall equal 24 inches, gives $x + 2y = 24$ in.

$$x = 24 - 2y \text{ (III)}$$

$$y = \frac{24 - x}{2} \text{ (IV)}$$

Comparing I and III, II and IV and valuing for x and y in values of A and h, we have

$$x = \frac{24A}{A + 2h} \text{ (V)}, \quad y = \frac{24h}{A + 2h} \text{ (VI)}$$

If n denotes the number of steps—risers—then

$$n = \frac{h}{y} = \frac{A + 2h}{2} \text{ (VII)}$$

n will be a whole number when A is an even number of feet, as, for instance, 12, 14, 16, 18 feet, etc., n should always be a whole number.

Since there usually is one tread less than there are risers, the width (x) of one tread should be divided up equally between the other remaining (n-1) treads. Consequently the actual width of the treads is

$$x + \frac{x}{n-1} \text{ as in values of A and h whole tread} = \frac{24A}{A + 2h - 2} \text{ (VIII)}$$

When n does not come out a whole number, but a whole number and a fraction, the fraction should be discarded and n made the whole number. The riser

$$(y) \text{ then is } \frac{12h}{n} \text{ (IX), and according to rule, } x + 2y = 24 \text{ in., } x = 24 - 2y. \text{ A convenient formula for the whole tread when n and x are known is, the whole tread} = \frac{nx}{n-1} \text{ (X)}$$

A and h are presumed to be in feet; x and y will be gotten in inches.

If n, x and y are known quantities, A and h, the other quantities, may easily be deduced.

Solid School Building for Salem, Ill.

A SCHOOL large enough to require nine class rooms is important enough to have a good assembly room.

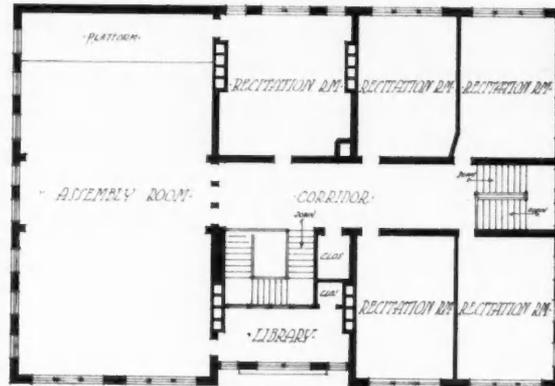
This design is solid and pleasing in appearance as well as carefully planned to include all the requirements of modern instruction.

Light is admitted to the classrooms from one direction only, with the exception of those recitation rooms intended for drawing or laboratory work.

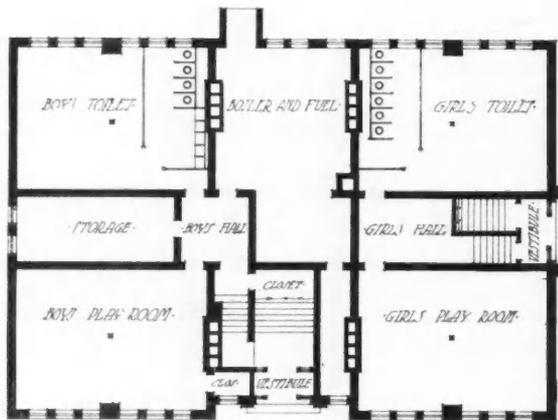
Stairways are straight, wide and well lighted with easy treads and low risers.

Sixteen ventilating flues reaching from the basement through to the open air above the roof are provided to carry off the foul air; and every sanitary precaution is taken into consideration.

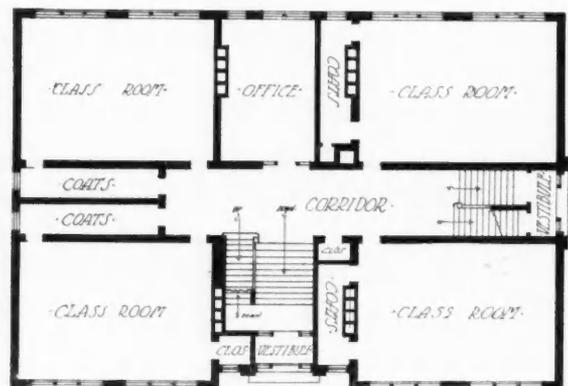
By building solid brick walls and using concrete liberally the building is made practically fire proof as compared with older school buildings.



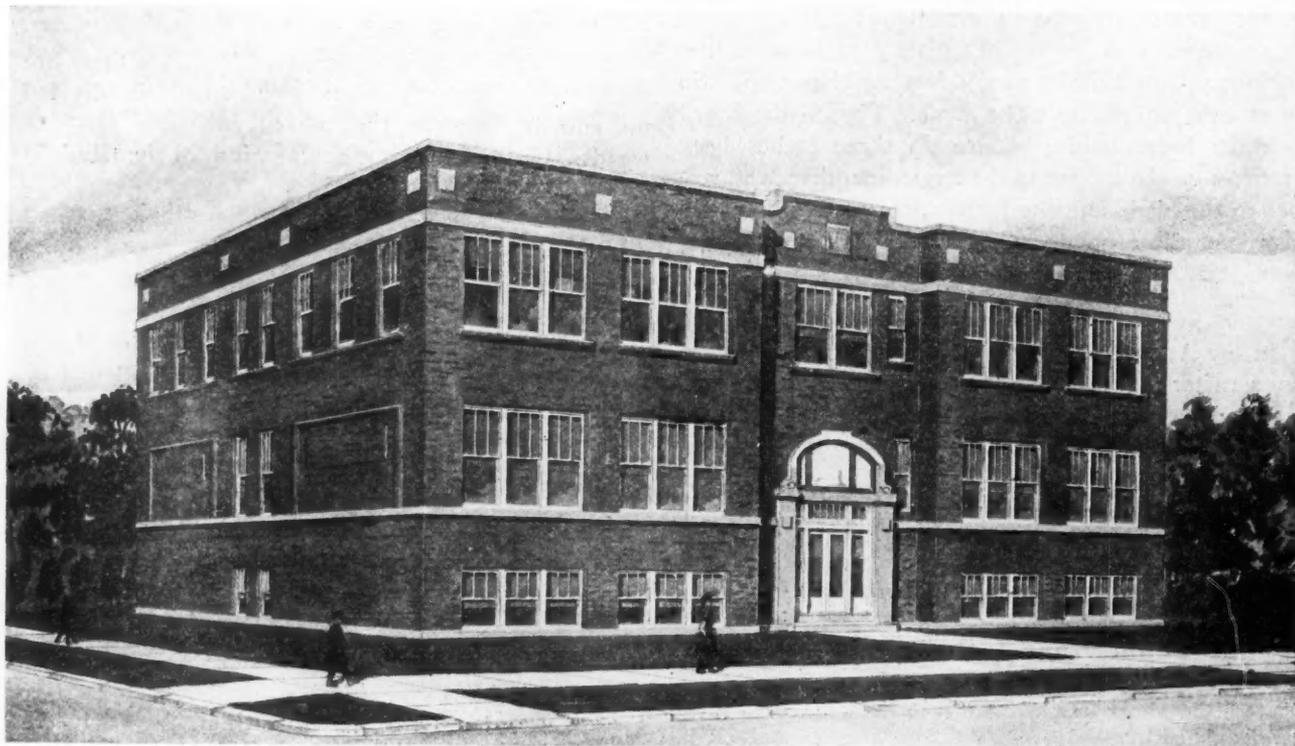
Second Floor Plan.



Basement Floor Plan.



Main Floor Plan.



Ten Room School Now Being Built at Salem, Ill. G. W. Ashby, Chicago, Architect.



Terra Cotta as a Decorative Material

MODERN apartment buildings, especially those built of red or brown brick, are greatly improved in outward appearance by using decorative inserts of white terra cotta.

Smoke does not affect it in the same degree as stone, because it is close grained. Where discolored, it may be cleaned with soap and water.

Some of the newer flat buildings show terra cotta trimmings in various forms.

Window sills and stiles and rather heavy window caps are quite fashionable.

Entrance door frames of terra cotta with outside casings in pilaster form, with bases, capitals and entablatures are imposing in appearance.

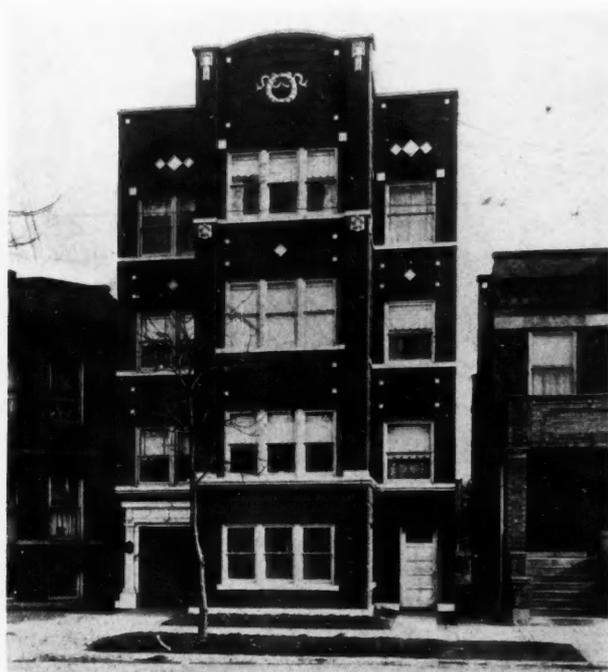
Other builders are satisfied with ornamental white terra cotta key stones, corbels supporting plain lintels, or decorative inserts.

Wall coping of white terra cotta gives a distinct sky line which sometimes is elaborated with fancy moulded gargoyles at the eave corners. This treatment carries

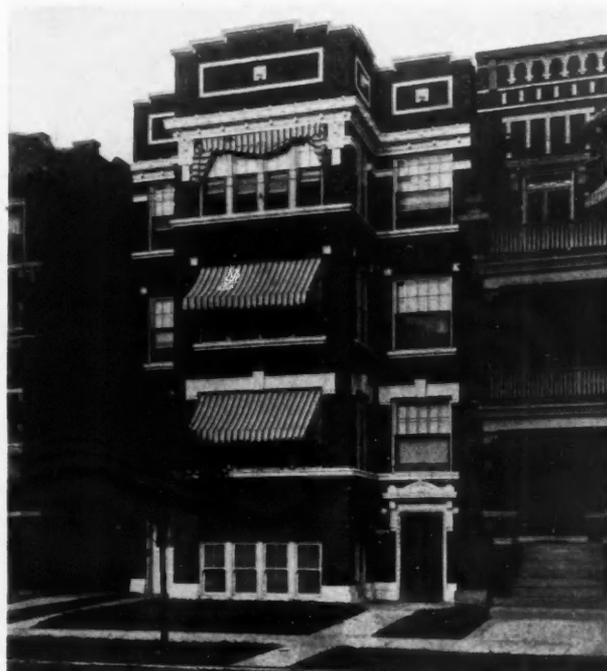
the white and brown effect all the way up from the white ground base to the wall coping.



Stylish Two-Flat Building with Prominent Sun Parlors.



Extra Ornamental Effect on Brick and Terra Cotta Three-Flat Building.



Modern City Apartment Building of Dark Face Brick Trimmed with Terra Cotta.

Unsupported Pavement Wonder of Road Builders

REMARKABLE TEST OF PORTLAND CEMENT GROUTED BRICK PAVEMENT FOLLOWING WASHOUT
NEAR CLEVELAND

By Herschel H. Macdonald

FOR sixteen months a rural brick pavement seventy square yards in extent, has hung over the void near Tinker's Creek, Cuyahoga County, Ohio. Now the county commissioners are preparing to put a roadway and a base under their pavement.

There is no apparent reason for their step, except the caution which is always counted an official virtue. The pavement had projected like a roomy shelf over the void, eighty feet long and 6½ feet in width, ever since March, 1913. For some time the pavement was used without a guard rail. Later a guard rail was erected to keep vehicles from venturing over the edge of the shelf.

It will be remembered that floods visited Ohio in March, 1913. Dayton was the heaviest sufferer. Northern Ohio, owing to the depth of its river valleys, escaped with little damage. Part of the damage, however, occurred where Tinker's Creek ran parallel to Dunham road. At this point a retaining wall of heavy stone blocks had been erected and the road built up to a height of some twelve feet above the bed of the creek. Upon the fill a modern brick pavement with a concrete base had been constructed.

The flood completely submerged the road for several days and when it receded, it was found that the wall had been undermined and scattered for a distance of several hundred feet down stream. Nearly half of

the roadway had been excavated by the force of the water and the concrete base, deprived of its support, dropped to the bed of the creek.

All that remained was the actual pavement, an unbroken surface of well grouted brick. The first impulse of the road authorities was to break down the brick shell, to prevent its use, and to rebuild the entire road from the bottom. A man with a sledge was set to work to demolish it. When he had labored for ten minutes and had only broken a single brick, the man in charge decided that such a pavement could not be much of a menace to traffic, and so allowed it to stand.

The fame of the phenomenon spread and people came by the score to behold a highway supported by thin air. Innumerable automobiles ventured to the edge of the overhang, until caution dictated a fence along its edge to prevent vehicles from plunging into the creek. A portion of the width of the overhang, however, has always been subjected to traffic since the washout.

The incident has proved a most effective lesson in a cardinal principle of good paving practice, a principle which has made Cuyahoga County roads conspicuous throughout the country. That is the proper use of a grout filler composed of one part Portland cement and one part of fine sharp sand.

This lesson was not learned in a day, either in Cuya-



Washout of the Dunham Road Brick Pavement at Tinker's Creek, Near Cleveland, Ohio, in Which Strength of Grouted Brick Was Strikingly Demonstrated.



Engineers From All Sections of the Country Visit This Phenomenon. The Picture Shows a Delegation of Engineers Snapped Beneath the Brick Pavement.

hoga County or elsewhere. Its experimental era was marked by many roads of merit. The early builders were fortunate in being allowed to correct their own mistakes, as well as in the fact that they prepared a type of road that would withstand auto traffic long before that traffic could have been foreseen.

The Dunham road pavement presents no unusual features, excepting the strange test to which it was subjected; which, impressive as it is, was made under conditions, the identical of which might not be found in any properly constructed brick highway.

Arch action can have played no part in maintaining the pavement's position. The longitudinal grade of the unsupported portion is an almost perfect level. There is a slight lateral crown comparable to a half-arch, but it is the crown rather than the base of the

arch which is supported. The base has no support excepting the lateral bond.

Lest authorities seem to have been remiss in allowing repairs to be so long delayed, it is only fair to say that the principal delay was caused by a project to divert the road, which would have involved the condemnation of land and other lengthy controversy. The delay, however, has been an advantage from the standpoint of the test, as time and the frost action of a severe winter have made the demonstration daily more impressive and opportunity has been afforded for a large number of paving experts to visit the scene and glean such practical lessons as might be had from close inspection.



Mitered Inner Casing

By J. Crow Taylor

One of the reasons why the carpenter does not take kindly to mitered joints for interior trim is that it takes a perfect plaster job to make them fit up right, and perfect plastering is more the exception than the rule. One can by fighting for it get the plastering done around window and door openings so that the inner casing can be put up with mitered joints and look as neat as a picture frame. But it takes fighting and vigilance; and sometimes there is an easier way.

The best way to get the very neatest job of mitered inner casing is made by putting the casing on the jambs before they are put up. This is one good way of doing the inner door frames, and it is accomplished by making the door jamb in two widths, covering the joint with a stop planted on instead of plowing out in the regulation way. Some very neat jobs in mahogany trim have been done in this way, and it certainly makes the work of miter jointing easier and neater.

With a miter joint, and a pattern to suit, one can use a very narrow inner casing of valuable wood and thus get a splendid appearance with less expense for wood and work. One finds more of it in office buildings than in homes, and this office building work is worth making a note of; now and then it works into home architecture very nicely.



Despite the Fact That the Pavement Was Undermined to the Depth of Six and One-Half Feet, It Was Able to Bear Up Weight of an Automobile.

Mushroom Inlets for Ventilating Auditorium

DETAILS OF A SUCCESSFUL AND POPULAR METHOD OF VENTILATING AND HEATING THEATRES, CHURCHES, SCHOOLS, ETC.

By Harold L. Alt

ONE difficulty in ventilation problems is encountered in trying to distribute the fresh air over a large territory so as to give uniform results. This is especially difficult where a building is not constructed with regard to making such distribution a possibility. A condition of this kind is frequently encountered in auditoriums, halls, theaters and churches. In these places it is absolutely necessary for the supply air to find entrance at numerous points and for the vent or exhaust air to be expelled in such a manner as to leave no dead pockets or corners without a circulation.

It is very often possible to build the ceiling of such

a "mushroom" inlet and is located under each seat or every second seat as desired. These inlets reduce down the velocity of the entering air and throw it toward the floor in such a way as to produce a minimum amount of draught.

A second method is as shown in Fig. 2 where small registers are located on the riser between steps and fed from a duct running under the step. This method is not practical unless the step risers are of considerable height, and of course cannot be used on a flat floor.

In many school halls the floors are made flat with removable seats, so that when desired the seats may

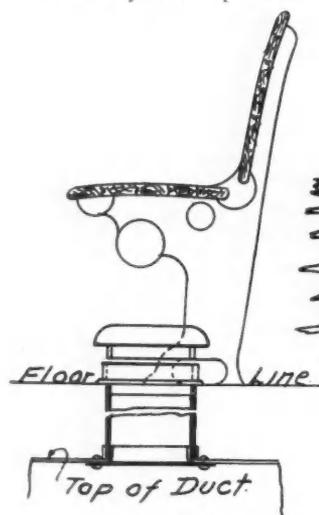


Fig. 1. Inlet Under Seats.

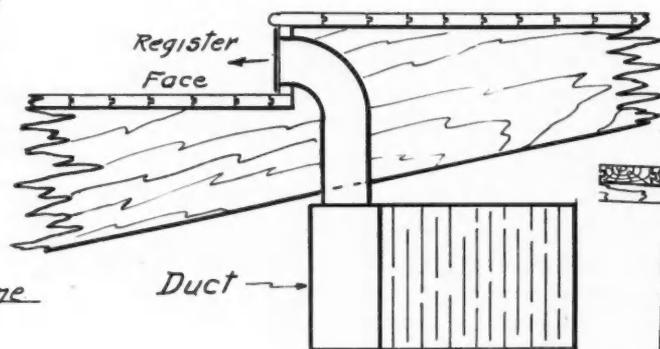


Fig. 2. Inlet Through Risers of Step Floors.

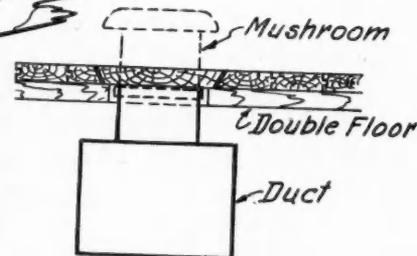


Fig. 3. Removable Mushroom Inlets for Drill Floors.

a structure with numerous grilles, an open cornice, a center vent or some other scheme by which the air may be readily carried off; but in the floor difficulties are met which are not so easily solved.

Floor registers are the first suggested means for supplying air at the floor level. There are, however, several objections to floor registers, especially in auditoriums, etc. One main objection consists of the fact that a floor register is bound to catch all the sweeping dirt, and become in time practically clogged. If a screen is used the dirt and dust are caught, but as soon as the air supply is started again the dirt is blown out of the screen and back into the room.

It is also impossible to secure a good distribution with floor registers as they cannot be located under seats. A person seated over a reasonably sized floor register would soon have more hot air than comfort. This limits the location of floor registers to aisles and open spaces—the very spots where an air supply is least needed.

The most approved way of introducing air at the floor consists of an inlet formed somewhat as shown in Fig. 1. This is called—from its general appearance—

be removed and exercises or drills held on the floor. Here floor ventilation is well nigh impossible, although some rooms have an arrangement of mushrooms which set down onto a duct flange below the floor level. The opening for the mushroom in the floor is made square and has the edges beveled. When the seats are removed the mushroom head is pulled off and a block to match the floor with a bevel to fit the hole is inserted so as to make the floor continuous and smooth. Naturally on a hundred or two hundred inlets this alteration is quite a nuisance. Fig. 3 shows a detail of how this scheme has been worked.



Easy Way to Scale Chimney

A scheme to get to the top of a high chimney without using scaffolding or other expensive methods was recently described in *The Saturday Evening Post*. The chimney rose 200 feet beside a Missouri power plant and it was proposed to attach a sign running up and down its side. A little parachute with a stout cord attached was pushed into the chimney at the bottom; the flue gases carried it to the top and then out into the air. It fell on one side, dragging the cord after it. Then by means of the cord a rope was passed up outside of the chimney and down the inside, and the chimney top was accessible.

CORRESPONDENCE



Questions Answered and Ideas Exchanged.

Our Readers Are Requested and Urged to Make Free Use of These Columns for the Discussion of All Questions of Interest to Carpenters and Builders.

Effective Advertising

To the Editor: Weyburn, Sask., Can.
As an original advertising method I trust the enclosed view will interest you. This is a photograph of an exhibit contributed to our Annual Agricultural and Industrial Exhibition held at Weyburn, Sask., on August 3rd, 4th and 5th, 1914. The bricks were supplied by the Weyburn Brick Co., and the work was done by myself, whose sign may be seen immediately under that of the brick company. The object was to display the bricks of different color and texture with the various bonds and mortar joints. Part of the show was made up of specimens of cement stucco and artistically colored slabs of cement. The cement stucco made a direct and strong appeal, being almost an untried material in this part of the country.

The four paneled specimen in the center of the picture is applied on metal lath fastened to furring strips, exactly as it would be applied on the sides of a building. Every feature

Lap Siding on Circle

To the Editor: David City, Neb.
I have been a subscriber for some time and would like to ask for some information.
Is there any rule for putting lap siding on the inside of a circular porch? I had one to build last summer, and the only way I could get the boards to fit tightly was to turn every other board upside down. If there is any other way I would be pleased to know it.

N. D. WALDEN.



Washed and Unwashed Sand

To the Editor: Birmingham, Ala.
Will you be so kind as to tell us the advantages for concrete purposes of washed sand over unwashed sand containing from 10 to 20 per cent of clay and other foreign material?
Answer: Any foreign material in the sand may affect

R. S. & G. Co.



A Business Getting Display for a General Contractor at a County Fair.

of the construction is shown including sheathing, studs, tar paper, furring strips, and metal lath.

In mixing and applying the material I follow faithfully specifications laid down by the "Cement World," providing the cement is of good quality and other conditions right. I enjoy the snug feeling of satisfaction that we all feel after having accomplished a good job.

For reliable and trustworthy advice for the builder I shall continue to read, mark, learn and inwardly digest the pages of the AMERICAN CARPENTER AND BUILDER and the "Cement World."

JNO. B. JENKIN,

General Builder—"All forms of construction."

the strength of the mortar by retarding or preventing the hardening of the cement, or preventing the adhesion of cement to the sand grains, and if present in sufficient quantities, by simple "dilution" of the cement. Organic matter is the most common source of trouble, but inert clay and loam may prove troublesome under certain conditions. Experiments indicate that finely divided inert clay or loam does not stick to the grains, while a very small quantity may seriously affect the strength of the mortar if it forms a coating over the sand grains.

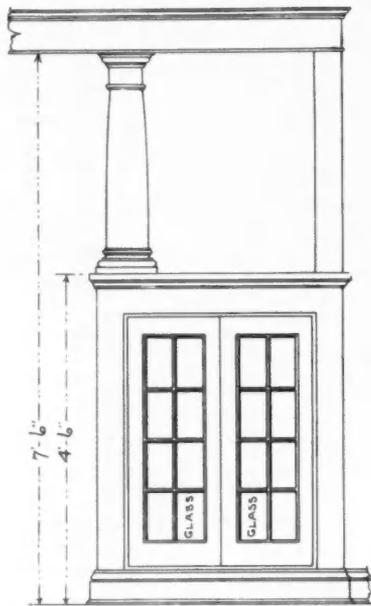
As a result of extensive experiments on sand for use in mortar, it has been suggested that in sand which is required

in reinforced concrete and other matter requiring a mortar of maximum strength and density, only 2 per cent of finely divided clay, loam, or other suspended matter may be allowed. For work that does not demand a maximum strength or density but still requires a mortar of high quality, it has been suggested that the suspended matter should not exceed 6 per cent by weight, while where high strength and density are not controlling factors, the percentage of suspended matter may run as high as 8 per cent. Thus, it will be seen that sand containing from 10 to 20 per cent of suspended matter would be a little double for use in the better class of work. These percentages are based upon the weight of suspended matter contained in a given weight of sand in the original condition.

EDITOR.



Height of Colonnade



Detail of Colonnade with Bookcases.

Sweeney, Tex.
To the Editor:
Which is the proper way to build a colonnade with bookcases, or any colonnade? Should they only go up to the same height as the door trim, or should the head trim go up to the ceiling?

ARTHUR E. ENGBERG.
Answer: The opening should be to the height of other openings,—that is, the doors and windows in the same room. The bookcases should be 4 feet 6 inches by 5 feet high, something after the illustration here shown.

EDITOR.



A Boost for Cotton Wood

To the Editor: Kokomo, Ind.
Please allow me space in your valuable journal in which to reply to Haglund Bros., of Swea City, Iowa. Yes, use all the cottonwood dimension stuff you can get; nail it together good; that is what any building needs, is plenty of nails of the right sizes. You will find that the dimension stuff you are asking about, is very well seasoned, too, if it was sawed last winter and was properly stacked and well covered. I can show the Boss Carpenter cottonwood lap siding that has now been on the house over sixty (60) years and is good lumber yet. I changed the shape of part of a roof on a house last May. The cornice on this house was all cottonwood; also some of the frame was cottonwood, and that, too, was an old house, and all the cottonwood lumber was good. If the Boss Carpenter will investigate he will find that lots of vehicle bodies are cottonwood. JOHN A. FIDLER.



A Kink for the other End of Base

To the Editor: Medina, N. Y.
So much has been said about cutting base and everybody's way is the best, but I find the scribers as used by one of our readers the most practical in all cases.
But nothing has been said about the other end,—where the base is cut to fit the plinth, or casing. With a convenience made of 7/8 inch material, like Fig. 1, the forks placed over

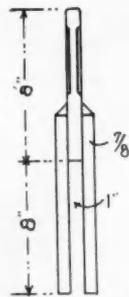


FIG. 1.

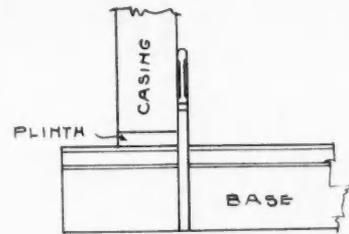


FIG. 2.

Handy Device for Working Base.

base while in position, the back fork held tight to plinth, the one in front will correspond with the line to be cut. Have seen good workmen draw a line on floor at base of plinth, then with a square held upright from this line, mark base to be cut. If this is made as shown in Fig. 1 and used as shown in Fig. 2, it will result in better and quicker work and is sure of good results.

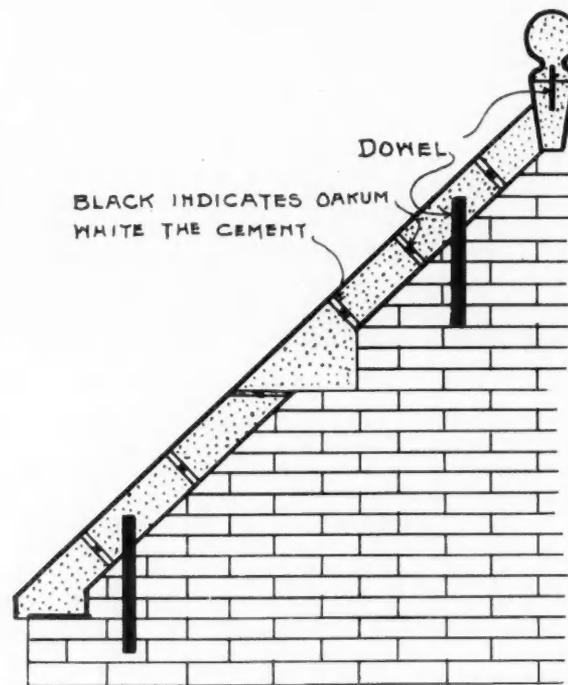
F. J. BULEMORE.



How to Anchor Stone Coping

To the Editor: Chicago.
To prevent rain and moisture from entering the coping of wall is a Steeple Jack's general run of work. On nine churches out of ten, no dowels are used, thus permitting the rain to go between the joints. So in winter the coping expands and often pushes off. To find proper place for hole under coping stone, take a steel square, place it over the corner and mark, then by putting dowel in the wall at the measurement, cut in the coping and the dowel will fit exactly. A heavier layer of mortar would be advisable under the coping stone at the bottom of joist. Pack seam with oakum and then re-cement it. The oakum will absorb all the moisture and will not permit expansion and contraction, which would force the coping out of place.

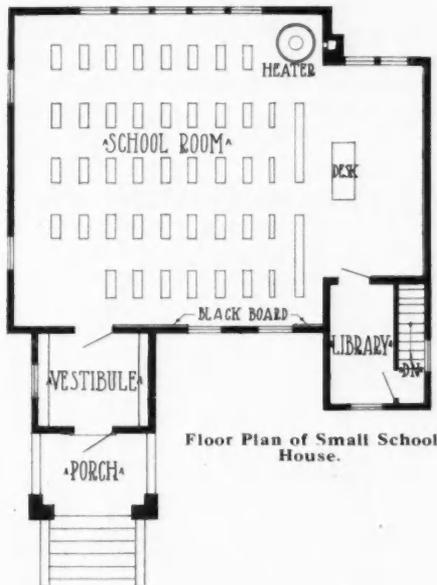
EDMOND VON KAENEL,
Expert Steeple Jack and Contractor.



Recommended Practice for Anchoring Stone Coping.



Attractive Brick and Frame School Building Nearing Completion at Moweaqua, Ill.



Small School House

To the Editor: Moweaqua, Ill.

You will find enclosed floor plan and photograph of a schoolhouse I built last year. This design is an original idea. The main room is 26 feet square and seats 43 scholars. It has a vestibule entrance, also a small library room, and coal room in basement. The face brick and porch columns are red pressed brick, which I bought from the Hydraulic Pressed Brick Company.

This building faces south. You will notice on the floor plan there are seven windows on the north, one quintet and one double window. This furnishes a mild light for school children, which I think is very necessary.

For a small country school I think this design is hard to beat. The cost of this building was \$1,800 complete.

LEWIS BECK,
Contractor and Builder.



Windows for Sleeping Porch

To the Editor: Memphis, Mo.

Please tell me how would be the best way to light a sun room, to be built in an angle of house. I wish to use it also for sleeping porch and use screens. My idea is to use all long windows, making upper sash shorter than lower, but want to be up-to-date.

HERBERT E. PRATHER, Building Contractor.

Answer: Would recommend that you use all long windows as you say, but instead of having a short sash above, would divide or have check rail at the middle, otherwise you can only raise your sash as high as the upper sash is long. If you have room for jib head frames, would recommend their use, because they will permit of raising both sash up into the pocket and thereby permit of the whole window opening, making it more desirable for a sleeping porch.

EDITOR.

Removing Paint

To the Editor: New Rochelle, N. Y.
Please tell me how to remove paint, varnish and shellac.
S. SWANSON.

Answer: There are several so-called paint removers on the market which might be used to advantage in such work. You will find such preparations in stock at your local hardware or paint store.

It is stated that benzine will soften old paint or varnish and will aid in removing same where scraping or sandpapering is resorted to. If the old paint is extra hard, use a mixture consisting of equal parts of benzine and ammonia to soften same.

EDITOR.

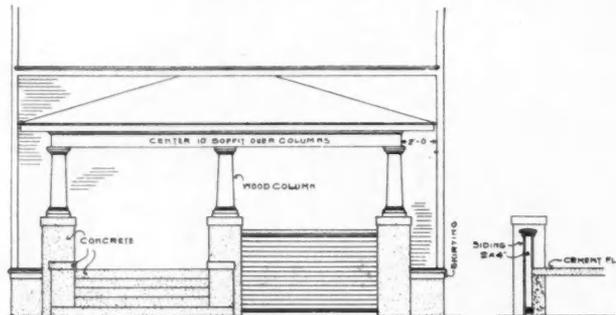
Details of Porch Construction

To the Editor:

Elgin, Ill.

I am sending a sketch of the floor plan of a concrete porch that I wish to build. I am unable to decide about the columns to use; that is, whether they should extend down to the concrete floor or be supported on top of the balustrade.

I would also like to have some suggestions in regard to



Elevation and Detail of Concrete Porch.

the skirting or band around the lower part of the walls, since the house is built of plain 6-inch siding.

Kindly give me some idea as to the height of soffit and about the design of the cornice in general. O. S. APP.

Answer: As near as we can tell from the sketch submitted, the height of your soffit should be sufficient to allow the use of three 2"x14" yellow pine timbers in forming the girder which extends from end to end of your porch, holding up the porch roof. We are printing an illustration of a similar porch showing the cornice construction and also the method of putting on the skirting. The sided balustrade on your porch may be made in a similar manner to that shown in the illustration.

We would advise that either full concrete columns be used way to the top of the porch, or else one-half concrete and timber columns as shown. Concrete columns should extend

down to the footings at grade. Where so great a span is to be used, care must be taken to make the girder construction of sufficient size that the roof will not sag in the middle. We believe that three 2"x14" timbers placed side by side with the 14" dimensions vertical will take care of this point when no loads greater than ordinary snow loads are to be encountered.

We believe that a plain concrete floor would be most suitable on a porch of this type, especially where chairs are to be moved about on this floor. EDITOR.



Triple Window Frame

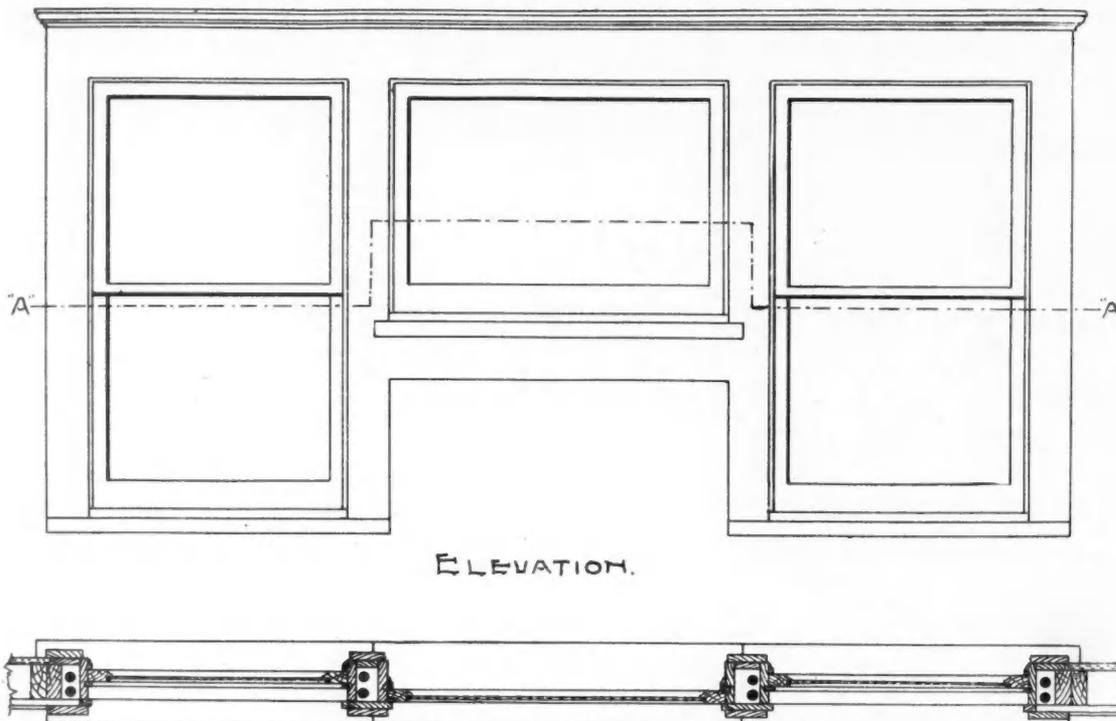
To the Editor:

Silver Creek, Neb.

I would like to ask which is the proper way to make a window frame when you have three windows, one a solid sash in the center and two check rail windows, one on each side of the solid one. Should I set center sash in at the stool the same as the lower sash on the check rail window, or put the center one out against the blind stop same as top sash of check rail window, and would this rule apply to a window frame made the same way, except the center window be just half of a window? The sill of same would be level with the center rail of the outside windows.

I want to know which is the proper way. I always make them so the stools will be the same on the inside and not to match the upper sash. FORREST L. SANDERS.

Answer: The center sash is usually made of thicker stuff and set out to the blind stop, thus making the same come opposite the upper sash of the side windows and plant on a stop to hold it in place. However, it could just as well be set back of the parting stop and held in place just the same as for the upper side sash, but in the case of a short center light, as shown in the elevation, the sash should set out to the blind stop, thus making them line up and present a better appearance. EDITOR.



ELEVATION.

SECTION AT "A-A."

Elevation and Section of Triple Windows.

Stucco Around Openings

To the Editor: Rossville, Ind.
 Here are two drawings of a sectional window frame showing two methods of joining stucco to window casing, and since this form of construction is new to me, I would like to have you tell me which would be the most practical method to use. I would like the faults in both methods explained, as I have been told that stucco is a hard proposition when it comes to getting a first-class job without any cracks, but that when you have a first-class job it is practically everlasting without any expense.

If you have a better method for joining stucco around window and door openings I would be very much pleased to have it, as stucco is just coming into use around here and one bad job might put it out for all time, when with a little care and understanding it could become the building material of the future.
 R. A. KEMPER.

Answer: Your sketches (Fig. 1) do not show the best

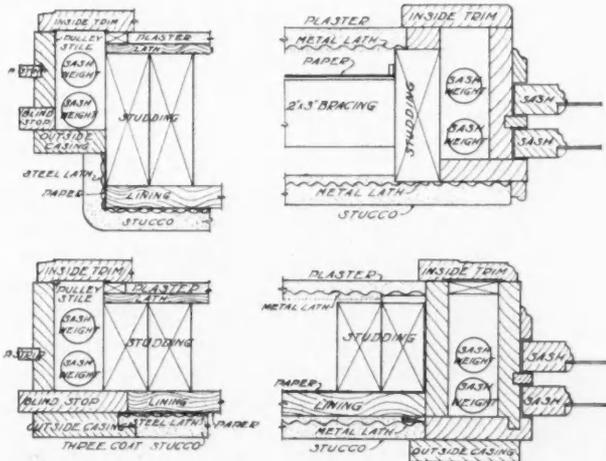


Fig. 1. Proposed Method of Finishing Stucco Walls Around Openings. Fig. 2. The Better Way as Recommended in Standard Specifications.

methods for doing this work. In the upper sketch where the plaster is used against the face of the casing, the joint would be doubtful in appearance and difficult to construct properly. In the lower sketch, where the outside casing is nailed over the joint in the stucco, there would be danger of cracking the stucco where the casing joins, and a bad job might result.

Fig 2 will show you some of the common methods used for finishing around window frames. These methods have been found to give good success, and are easily constructed as shown by the diagrams.
 EDITOR.



Amount of Material for Concrete Wall

To the Editor: Big Trees, Cal.
 I would like to have you tell me how much cement it will take to build a cement wall 64 feet long, 24 feet wide, 8 feet high and 2 feet thick.
 I. L. FLANDERS.

Answer: We have figured the contents of this wall and find that it will need about 100 cubic yards of concrete. The amount of material necessary to make this amount of concrete will depend upon the mixture used, and since we do not know just what mixture you contemplate using, we are printing a small section of a table of quantities found in "Radford's Estimating and Contracting."

AMOUNT OF MATERIAL REQUIRED FOR ONE CU. YD. OF RAMMED CONCRETE.

Mixture	Cement, in Bbls.	Sand, Cu. Yds.	Gravel, Cu. Yds.
1:2:4	1.34	.41	.81
1:2 1/2 :5	1.10	.42	.83
1:3:6	.92	.42	.84

It will be easy for you to determine from the above table

the amount of material necessary for 1 cubic yard of concrete and multiply the result by 100. This will give you the information requested.
 EDITOR.



Roof Raisings with Block and Tackle

To the Editor: Dan., Ill.
 As I am one of the boys I thought a few lines from me might interest some one of your readers. I have only taken the AMERICAN CARPENTER AND BUILDER since January, but am well satisfied with my investment.

I have read quite a bit about roof raisings. I enclose a snapshot of one I raised this season. I have raised others the same way and find it is the safest and fastest method.

On this roof I used two gin poles and two sets of blocks. The roof was 14 feet by 28 feet, and I raised it one full story. There were four men on the job. We started at 7 a. m., and at 6 p. m. had the studding under it. The hoisting was done by hand, and no blocking and bracing were necessary while the roof was going up. I cut loose just below the frieze, hoisting plates above joist, leaving about 8 inches of the old studding to spike the new ones to. When we had the roof raised about 4 feet we put our plates and second floor joist on. Now, I think this beats all jacking and blocking and bracing.

For my first job of this kind I bought jacks, but when I got to studying I decided that ropes and blocks would be better, so I used the latter. I was well pleased with the



Snap Shot of Roof Raising Job.

results. Of course, I have had about 18 years' experience in the bridge and building department in railroad work, and this gave me some advantage over the other class of carpenters.

If this is worth printing in your paper, place it there with the enclosed snapshot for my brother carpenters to read and comment on.
 G. W. McAFEE.



Black Walnut for Window Sills

To the Editor: Bergen, N. Y.
 I am a reader of your AMERICAN CARPENTER AND BUILDER and enjoy its many features, but I find that in regard to the relative merits of woods nothing has been said. Can you tell me how black walnut would be for doors and window sills?
 G. I. TRIPP.

Answer: We do not know that there is any particular objection to the use of this wood in these locations if you care to go to the expense of using it. The value of black walnut is too high for common use in locations of this kind, and we suggest that there are many other types of wood which are commonly used in building which would produce just as good results at a lower cost.
 EDITOR.

A Handy Device for Stair Work

To the Editor:

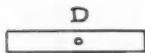
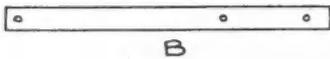
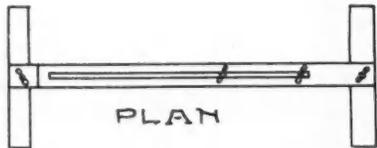
Ellsworth, Ia.

Find enclosed plan and description of a handy device to use in stair building. It is used by extending it at slot, as at A, until end D rests against wall string, then tightening all thumb nuts. Lay on tread or risers and mark both ends at D. In fitting treads up to door jambs and newel posts, make a short piece like D that fits, then fasten it on A or B and proceed as before. If D were made with a thin face of wood and fastened in the middle, with both ends to adjust with screws, thus making it convex or concave, it could be made to fit those strings that are in a circle. C is for leveling up the end, but

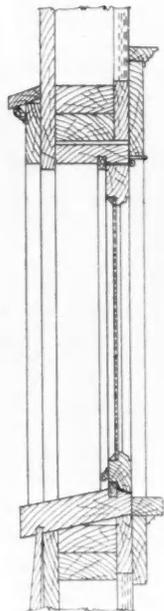
find it more useful in fitting caps in halls, where both ends strike the walls.

Hope this will help some brother as the AMERICAN CARPENTER AND BUILDER helps us.

GEORGE HOLT,
Carpenter and Architect.



Details of Handy Device for Stair Work.



Cross - Section Through Storm-Tight Hinge Window.

No Leak Window

To the Editor:

Sabula, Ia.

In answer to B. B. D., of Kansas City, Mo., will say that I was confronted with this same problem of preventing a hinged window from leaking and solved it as shown in illustration. You will notice by the sketch that the bottom of sash is plowed so as to receive one-half of parting stop which is plowed into sill just back of the two side parting stops. This brings the outside of this parting stop plowed into sill flush with outside of sash; one half of it being above sill prevents any water from entering.

JOHN S. COTTER.

Moisture on Plate Glass

To the Editor:

Scio, Ore.

I would like to know some way to prevent moisture from collecting on plate glass windows in store front. In a building which I have just completed I notice that the large front windows are covered with moisture in the morning and sometimes until quite late in the afternoon. What can I do to prevent this? I understand that there is some way of ventilating the room which will be of service. Please tell me.

J. M. MEIKELJOHN.

Answer: We know of no better way of preventing the condensation of moisture on plate glass windows than to keep a current of air moving through the room in such a way that it will remove the surface moisture which is present in the air. Sometimes an open transom will produce this effect, while in other instances an electric fan placed so as to blow the air across the window will prevent frosting over.

EDITOR.

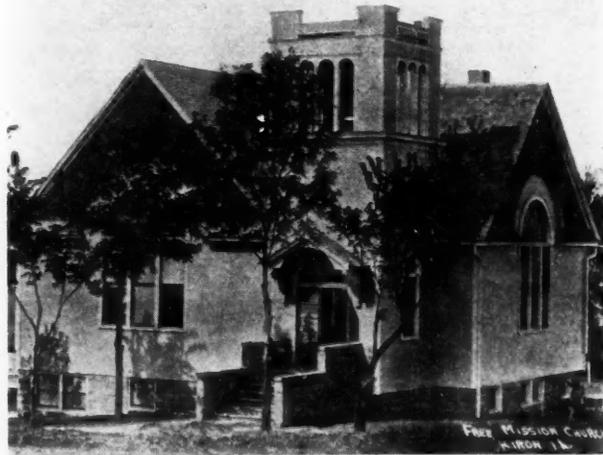
Church Design

To the Editor:

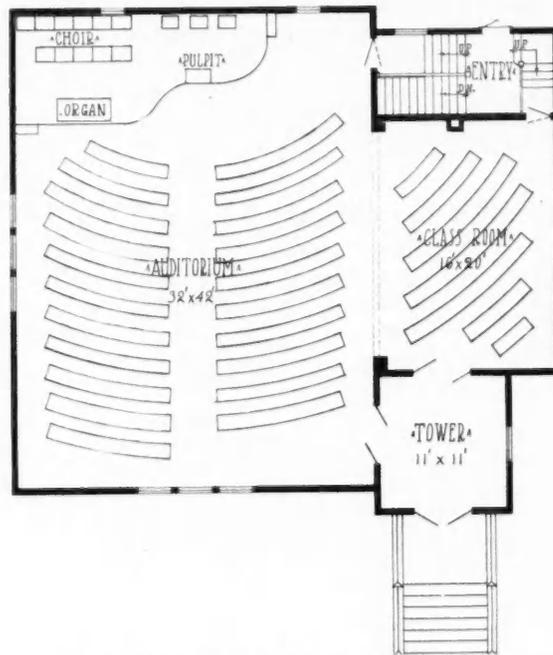
Kiron, Ia.

Here is a picture of a church which I built this year. This is the second church I have built in my home town. The main auditorium is 32 by 42 feet, with a class room on the north 16 by 20 feet. Full basement under the whole building. Heated by hot air furnace. The class room is made to open up into the main room, making it practically one room, for larger meetings.

The opening is closed by Wilson's rolling partition, 12 by 20 feet. The seating capacity is 200. The design is practically my own, and I was also carpenter foreman on the job. Cost complete with 1,000-pound bell, \$5,500.00. J. A. ENGBERG.



Photograph of Attractive Little Church at Kiron, Iowa.



Floor Plan of Church. Seating Capacity 200.

Cost of Carpentry Items

To the Editor:

Espy, Pa.

In an issue of the AMERICAN CARPENTER AND BUILDER of several months past, I noticed a request from some member of the "Big Family" for a table of various work based on a rate of 30c per hour.

Here enclosed you will find such a table. The additional rates of 35c, 40c, 45c and 50c per hour may be found also by adding thereto the various percentages as are shown.

MATERIALS IN PLACE AT 30c PER HOUR.

VARIOUS MATERIALS	Feet Per 9-Hrs. 2-M.	Hours Per 1000 Ft.	Cost of Labor		Lbs. & Size of Nails.
			M Ft.	L or Sq.	
			M—1000 Ft. L—Lineal. SQ—Square Feet.		
Joists and Sills.....	900	20	\$ 6.00	\$	25-20D
Studding placed.....	600	30	9.00		15-10D
Rafters.....	450	40	12.00		15-10D
Sheathing, Vertical.....	750	24	7.20		20- 8D
Sheathing, Diagonal.....	562	32	9.60		20- 8D
Bevel Siding.....	514	35	10.50		18- 6D
Cornices.....	45	400		.12-L	18- 8D
Shingling, new roofs.....	4000	4½	1.35		4- 4D
Lathing for Plaster.....	2572	7	2.10		8- 3D
Lattice for Porches.....	1125	16	4.80		20- 3D
Balustrade for Porches.....	36	500		.15 -L	18- 6D
Base Boards 8-inch Pine.....	216	83	24.90	.02½ -L	12- 8D
Base Boards 8-inch Hardwood.....	108	166	49.80	.05 -L	
Floors laid, Pine.....	514	35	10.50		30- 8D
Floors laid, Hardwood.....	100	180	54.00	.05½ -L	30- 6D
Floors Cleaned, Hardwood.....	100	180	54.00	.05½ -L	
Wainscoting, Pine.....	54			.10 -L	20- 6D
Paneling, Pine.....	36			.15 -8q	
Paneling, Hardwood.....	22			.25 -8q	
Porch and Verandas.....				1.50 -L	18- 8D

Shingles are for new roofs; where hips and valleys are required add 5 per cent additional for each one; where old shingles and nails must be removed, add again (20 per cent to total) for this work.

The above rate is based on figures of 30c per hour. For other rates the following will apply in addition.

- 35c per hr. add 17%
- 40c " " " 34%
- 45c " " " 51%
- 50c " " " 68%

For Example:

(A) Take 1,000 feet of hardwood floor to be cleaned at 50c per hour = \$54.00 × \$36.72 = \$90.72.

Looking again we find it would take 180 hours at 50c per hour = \$90.00.

(B) Take 1,000 feet joists to be placed at 50c per hour = \$6.00 plus \$4.08 = \$10.08.

Looking for the hours we find it would take 20 at 50c or \$10.00.

Try the various materials you have used by the comparison of time in hours, feet in hours per day, and various rates, etc., considering that two men are working together at all times.

CHAS. C. HUMMEL.



Construction for Circular Porch

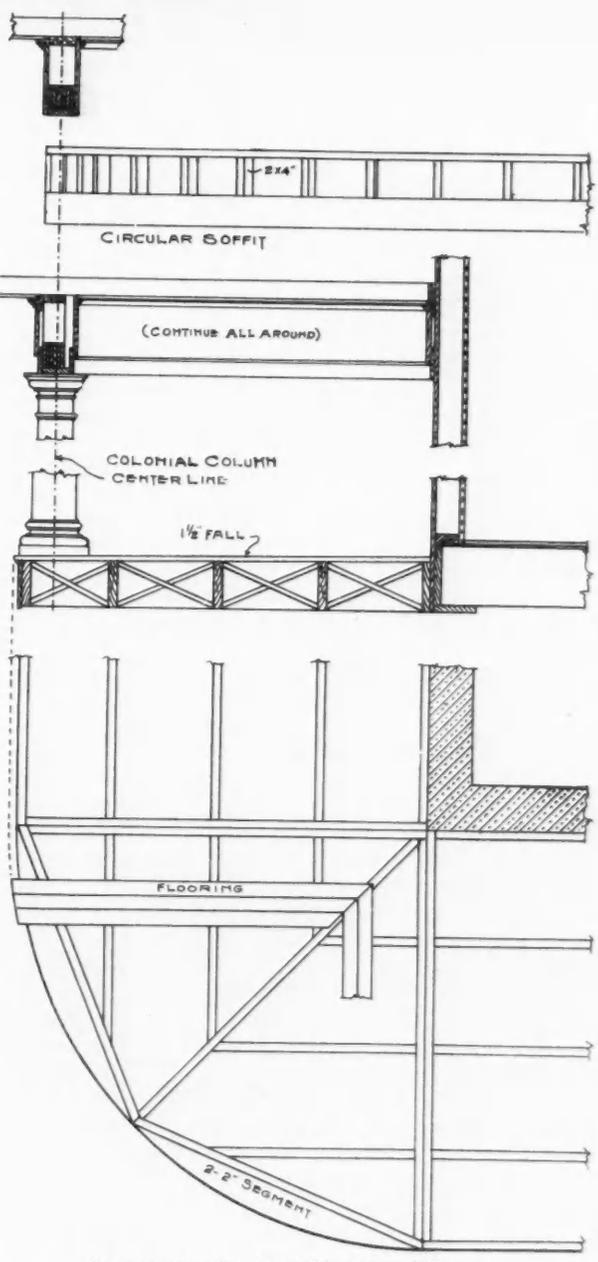
To the Editor:

Cattaraugus, N. Y.

I have been a reader of your valuable paper for some time and find many helpful hints. I have seen something in your paper pertaining to what I want, but cannot find the number it was in. What I want, is to learn the proper way for constructing a veranda with circular corner. I want the best method for framing the joist, cornice, etc. Is it proper for post in center of circle?

MERRIEL DERMOT.

Answer: The illustration shows good construction for a circular porch which is sufficiently clear without further explanation. The soffit is formed by using one inch boards, sprung to the proper curve. No joints should come opposite each other and none at the beginning of the curve, but should joint well back of same, so as to give strength to the curved soffit.



Construction Details of Circle Porch Corner.

In large circular work, a column should be set at the center of the curve for support, besides even if stout enough, does not look well without it. The rafters should be set fan shape, centering at a point directly over the center from which the arc is struck. Pieces should be cut in between the rafters and the sheathing should be trimmed wedge shape and laid close and with the long way of the rafters.

EDITOR.



Provide Separate Flue for Each

To the Editor:

Windom, Minn.

I would like to know something in regard to the proper size of chimney flues for use in an ordinary residence. Can you tell me which of the following sizes has the most draft, 8 by 8-inch square, 8-inch round or 8 by 12-inch? This flue is to be used for a building 28 by 28 feet, and will have a heating plant and two stoves connected to the same flue.

O. A. BLIXSETH.

Answer: While an 8 by 12-inch opening is used to a great extent in flues of this kind, some heating companies will not allow other stoves to enter same flue with heating

plant. You would have to determine this point when choosing your heating apparatus. You would need at least an 8 by 12-inch flue for the location suggested; doubt if an 8 by 8-inch or an 8-inch diameter flue would give sufficient cross-section area.

EDITOR.



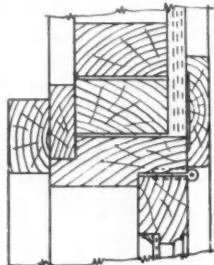
Casement Window for Sleeping Porch

Norfolk, Va.

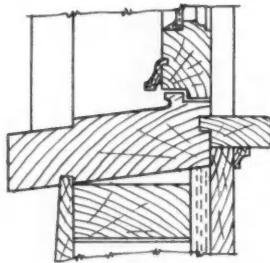
To the Editor:

In your August publication, a gentleman signing initials B. B. D., of Kansas City, asked for details of a casement window for sleeping porch. I have been in this line of business, and with one firm, for the past fourteen years, and during that time I have handled drawings from a great many architects. Am sending a detail of a casement window that I hope will be of value to the gentleman, and will be glad to be of any other service to him.

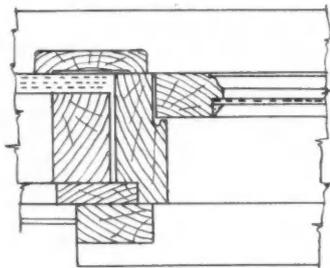
B. C. SIVITER.



HEAD



SILL



SIDE JAMB.

Details of Storm-Tight Inward Hinged Window for Sleeping Porch.



A Combination Screen and Storm Door

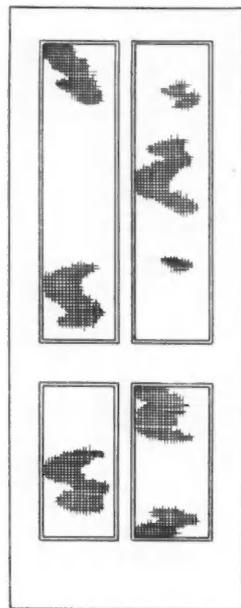
Tonawanda, N. Y.

To the Editor:

My attention was recently called to a style of door which answered the purpose of being a storm door in winter and screen door in summer. On inquiring further about these doors, I found that a small carpenter shop in a distant town is turning them out and that they have worked up quite a trade in this line.

The doors are made as shown in illustration, of yellow pine, 1" thick stiles, 4" wide and center rail 2". The doors are all made with removable mouldings and 1/4" thick panels. With each door the manufacturer supplies a set of screens which are made up in small frames the same size as panels.

When warm weather sets in, moulding is removed, panels taken out and screen placed in position,—and presto! you have a first class screen door. When cold weather again sets in, screens are removed and panels replaced in a very short time and there you have a perfect winter door, without the trouble of unscrewing and storing one door and replacing another.



Door Frame Made with Interchangeable Screen and Door Panels.

Whenever this door has been tried, it has met with approval. No doubt some of the readers of the AMERICAN CARPENTER AND BUILDER can find this a helpful suggestion to keep them busy the coming dull months in their shops.



RICHARD NEWBECKER.

Raising a Roof

To the Editor:

Portland, Conn.

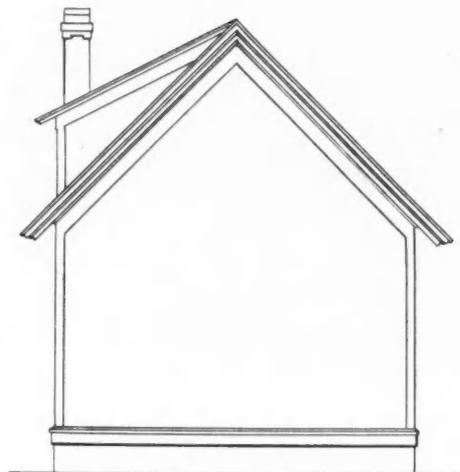
I would like a little information concerning a cottage I expect to build over. I expect to cut right around, leaving the first two rafters up the rake, and cut rafters off inside the plate and jack up the roof to form a large dormer. I want to jack up about 5 ft. to make about 6 ft. 6 inches of headroom. What would be the best way to jack it? What would be the best way to hold it at ridge pole while it is being raised? I am going to cut around and leave the cornice as it is.

LOUIS W. ROBINSON.

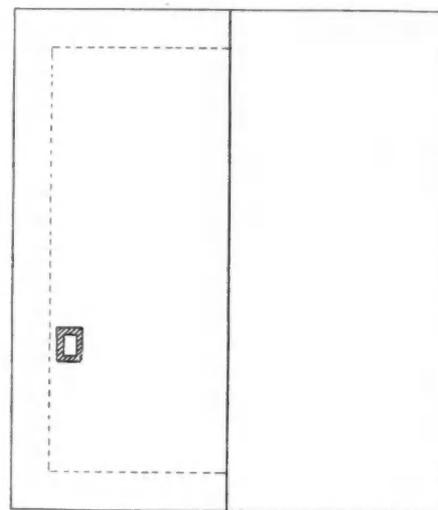
Answer: While propositions of this kind are largely a guess with us on account of not knowing the exact conditions as they exist, we would consider in this case that the following procedure might be followed.

A supplemental ridge pole could be nailed to the rafters as they now stand and fastened to the present ridge with chains. Then saw off the rafters above the supplemental ridge. Nail on a supplemental plate; put jacks under this plate, and raise the roof to the angle desired. Care should be taken to supply posts or supports under jacks if located other than on old plate.

EDITOR.



ELEVATION



ROOF PLAN.

Scheme for Raising Roof to Get More Headroom Along One Side at the Eaves.

Freaks of Lightning

To the Editor:

Plattsburgh, N. Y.

On page 90 of the April number, Mr. Eugene Quinton asks the question, "Have you ever known a building covered with metal roofing to be damaged by lightning?" Having waited all these months thinking someone better qualified to answer the question would do so, and as again in the August number L. B. D. brings up the same subject, I wish to say that several years ago a barn about three miles south of this village was struck by lightning and burned to the ground. This barn was not, however, grounded. Speaking with the man today about it, he said it was supposed to be iron instead of steel, which was put on a good many years ago before steel came so prominently into use.

The Presbyterian Church tower of this place was struck; this was covered with slate, but the belfry was decked with tin, and how it got through the tin decking and into the town clock is a mystery, but it did as some of the cogs in the works showed where the corners were melted. From there it ran into the comb of the roof and down a rafter, splintering it all to pieces, then into the eave trough and at least 60 feet where it went down a conductor, and when within 8 or 10 feet of the ground it tore the corner board off.

The hardware men made a good handle of the iron roof protection until the barn above referred to was struck and burned. We hear no more about that, but lightning rod men are doing quite a business in and about this section now.

J. W. GELDER,

Contractor and Builder.

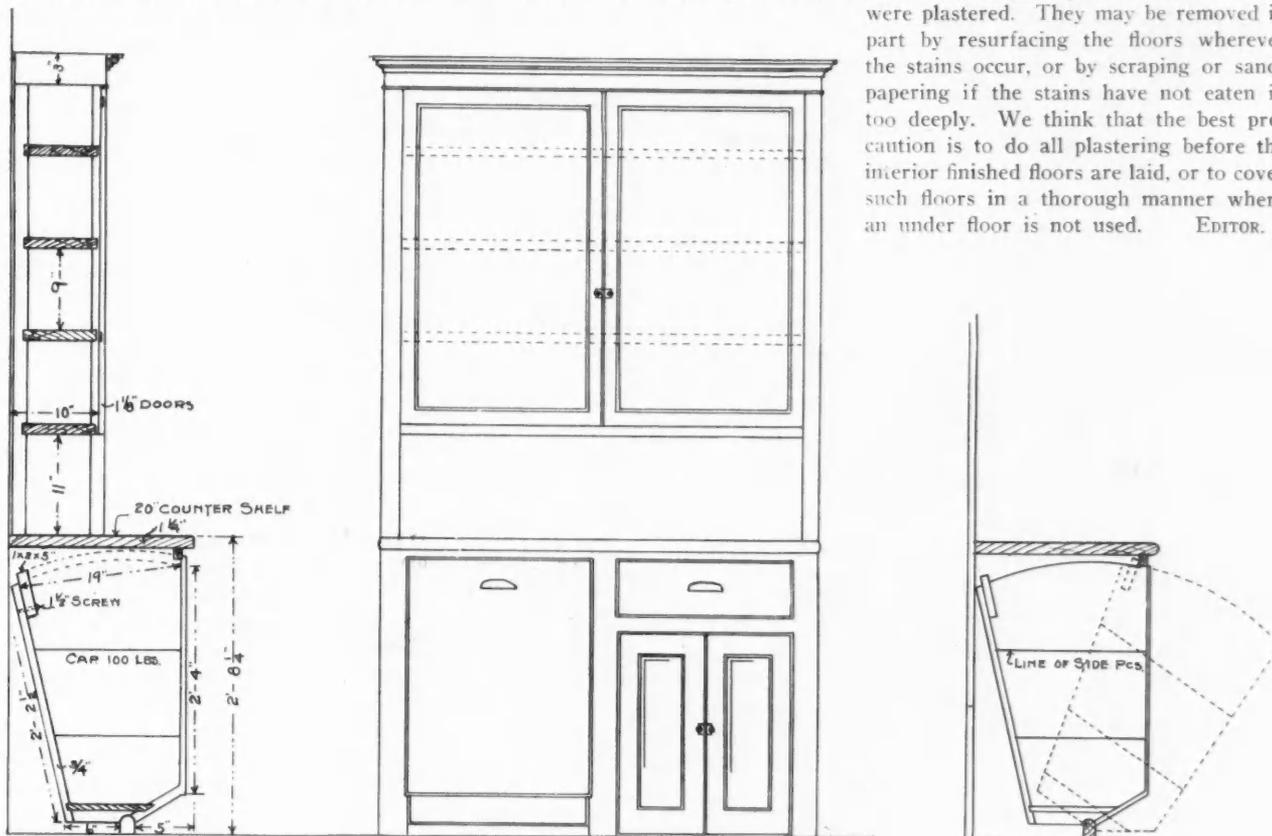


A Tilting Flour Bin

To the Editor:

Dallas, Tex.

I am sending you a detail drawing of a tilting flour bin in connection with kitchen cupboard. I have built many of



SECTION

CABINET AND FLOUR BIN.

Working Drawing for Practical Kitchen Cabinet Containing Tilting Flour Bin.

these bins and they are giving good satisfaction in every case. I use 3/4 inch stuff, which I find plenty heavy enough, as there is but little wear on any part. It is perfectly balanced and can be readily removed and set back in place when desired.

M. E. MULLOY.



Fastening Trim to Brickwork

To the Editor:

Big Pool, Md.

I would like to ask you how to arrange a brick wall so as to fasten baseboard and casings to it; that is, I want to know how you nail the base fast to the walls. I was thinking of putting in blocks but I thought you might have a better way of doing it.

S. E. BECKLEY.

Answer: The common method is to insert wood blocks or bricks in the wall when the wall is laid up, or to lay strips of wood in the joints of the brickwork. These blocks or strips provide nailing facilities for any kind of trim which is to be placed against the wall.

A better and more expensive way of accomplishing this result is to use a porous terra cotta block in place of the wood block, and to use metal wall plugs in place of the wood strips for fastening trim. These metal wall plugs are laid in the mortar joints when the wall is laid up and have an opening between the two parts of the plug into which nails may be driven.

EDITOR.



Plaster Stains on Floors

To the Editor:

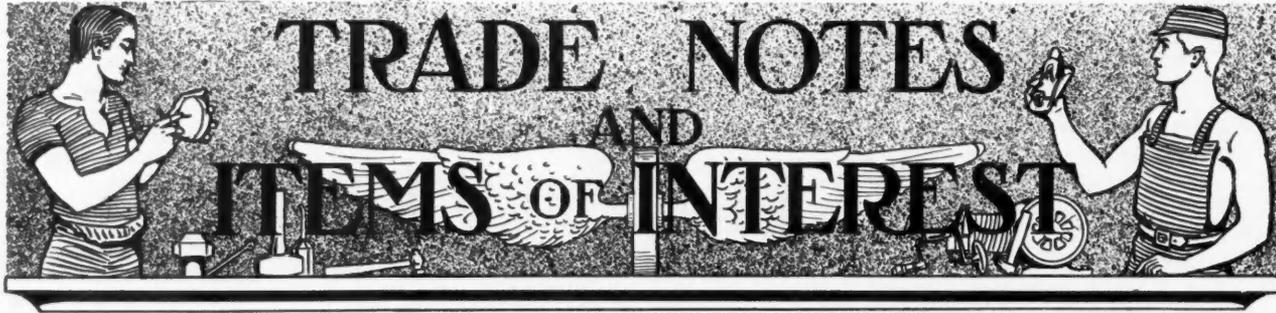
Scotts Bluff, Neb.

I would like to learn of a way to remove stains from floors which were left by plastering. I find that building paper is a great help, but next to the walls some plastering is sure to leave a stain.

THOS. W. McCANN.

Answer: We do not know of any way of removing stains entirely where plaster has been dropped on floors when walls were plastered. They may be removed in part by resurfacing the floors wherever the stains occur, or by scraping or sandpapering if the stains have not eaten in too deeply. We think that the best precaution is to do all plastering before the interior finished floors are laid, or to cover such floors in a thorough manner where an under floor is not used.

EDITOR.



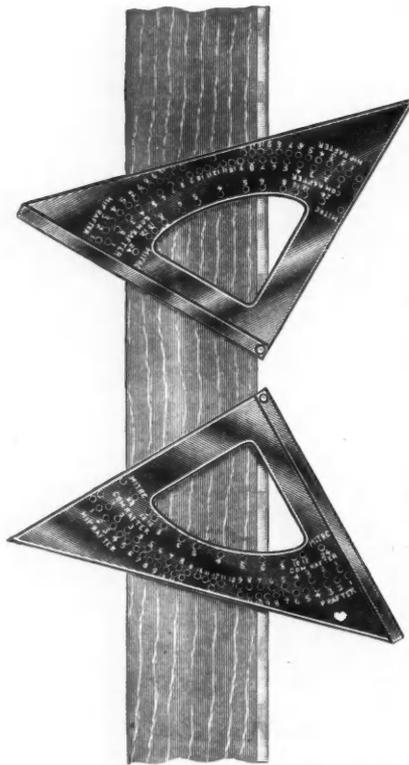
Through this department the editors aim to keep builders, contractors, carpenters and architects in touch with what their friends, the manufacturers, are doing for them in new or improved tools and machinery methods and materials—pertaining to building. Items for these columns must have real news value; 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.

New Tool Solves Rafter Framing Problems

The "Ideal" three-in-one rafter square, try square and mitre square was patented January 20, 1914. Its inventor and manufacturers know that they have produced a labor-saving tool that all carpenters have for years been wanting—a tool that will easily and accurately handle every kind of rafter cut—a handy tool taking up little space, and its use so easily understood that every carpenter armed with one of these tools doesn't have to take a back seat for even such an expert as A. W. Woods himself, with his well-known steel square. They have produced a practical instrument,

accurately and strongly made—a tool that they can sell at a moderate price, so that every builder can afford one.

The "Ideal" rafter square, try square and mitre square has been thoroughly tested, and during the past few months has come into general use in and around Middletown, N. Y., where it is being manufactured. The Ideal Tool Works now wish to introduce this helpful instrument into every building community. They want the carpenters and builders everywhere to test the use of the "Ideal" tool so that they can recommend it



"Ideal" Framing Tool in Two Positions for Marking Hexagon Cuts.

to other fellow workmen. For this reason they have reduced the price just one-half to introduce the tool; but as this price does not cover the actual manufacturing and shipping cost, they feel they can put out only 200 tools in each state at the half-price figure.

First come, first served, is their plan. So our advice to our ambitious men who want to get in on a good thing is to act at once. The advertisement of the Ideal Tool Works, Middletown, N. Y., appearing on another page of this issue will give you full particulars.

Free Instruction Book. The full possibilities and usefulness of the "Ideal" three-in-one square are made clear by looking over the free booklet of instruction sent with each tool. The markings on the face of the tool are arranged most logically, so that with a few moments' study one is able to "get the hang of it." Then, with practice, the handiness of the tool grows on one.

We all know the difficulty in mastering the ordinary steel square. As a framing tool it contains all knowledge locked up within itself, but only the experts possess the key. To be able to lay out all rafters is what qualifies a man to become a boss carpenter. For this reason the manufacturers of the "Ideal" rafter square figure that they will help to raise more wages through the wide distribution of this simplified tool than will be raised through any other source this year.

The "Ideal" can be used for general work, and for either mitre or rafter work at the same time, and is especially valuable in laying out 45 and 90-degree work; also all work where the angle is the same as the pitch of the roof such as gables, sheathing, siding, etc. It gives exact angles in every case.

For many-sided work, such as hexagon bay windows, etc., the "Ideal" does the work easily. A number is stamped at each hole in the mitre scale, giving the number of sides of figure a square will give when the locking pin is in that hole.

The illustration shows the tool in two positions marking for hexagon work.

The "Ideal" three-in-one square is made of tool steel accurately machined and stamped. It measures about 8 inches square. In addition to being a valuable help in obtaining complicated framing cuts it serves as an accurate try square and mitre square. All told, it seems a valuable addition to the tool kit of any builder. Turn to the announcement of the Ideal Tool Works, Middletown, N. Y., on another page for further particulars, or write the company direct for descriptive folder. The half-price introductory offer will not last long, so don't put this off until tomorrow.



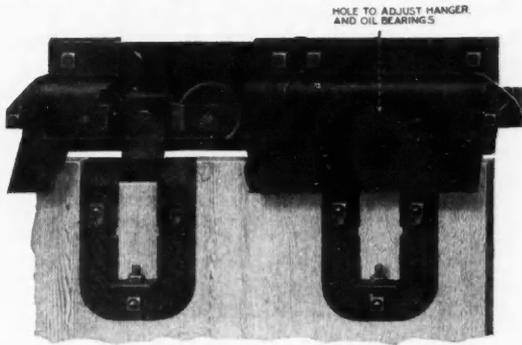
To the Carpenter and Builder in Those Localities Which Have No Sewerage

Now that the busy season is drawing to a close, you will be interested in a good money-making proposition for the winter months; and when the warm weather comes again you will be tickled to be able to add a good big sum to your usual earnings right along without loss of time. We want to call your attention to the proposition of the Hygienic Promotion Company, said to be the latest and best in the line of a chemical closet; a closet which is different and has the talking points. They say the price and discounts will surprise you. Get busy with your inquiry for particulars, and do it before the other fellow in your vicinity gets first call. Address the Hygienic Promotion Company, 279 John R. Street, Detroit, Mich.

New Barn Door Hanger and Rail

The accompanying illustration shows the new No. "88" adjustable storm-proof hanger and improved storm-proof rail now being placed on the market by the National Mfg. Co., Sterling, Ill.

Many of our readers are familiar with, and have used, the No. "66" Rigid and No. "77" Flexible storm-proof hangers made by this firm. The No. "88" Adjustable is similar in construction to the No. "77" Flexible, and in addition it has two adjustable features, vertical and lateral. The adjustable



New Barn Door Hanger and Rail Offered by the National Mfg. Co.

features are very simple in construction, easily operated and cannot get out of order. This hanger also carries the door up unusually close to the rail for an adjustable hanger.

The hanger is also flexible, and is conveniently packed one pair in a box with bolts for attaching the hangers to the doors; end-caps and lag-screws for the rail.

The storm-proof rail for use with these hangers has also been improved. The cover is now made to extend downward $1\frac{1}{4}$ inches further than formerly. This additional length gives full protection to the opening over the top of the door. The cover-splice over the joint has been eliminated, and the ends of the cover are dove-tailed together, giving a snug, weather-proof joint. A new style end-cap is furnished which securely closes the ends of the rail.

The company report this combination is being enthusiastically endorsed by contractors and dealers who have seen it. An illustrated circular will be mailed on request.



Time, Money and Men

Less time and the less men for every moving job mean better things for the contractor's pocket book and peace of mind. This is brought out in a striking way in a circular from the LaPlant-Choate Manufacturing Company, No. 604 Eastlack Court, Cedar Rapids, Iowa. Modern steel trucks and capstans will cut the time of labor cost and pay for themselves on a few jobs; and that is the kind of an outfit to have. The accompanying illustration is a portable capstan, one of the newest and latest capstans that they have put out. This capstan is described as follows:

The spool is all-steel, supported in a heavily braced and substantial frame. The lower flange of spool drum is fitted with ratchet teeth and the corresponding ratchet dog, which is in gauge the same and takes off the pull and prevents any accidents, such as broken clevises or broken sweeps.

The spool is fitted with a clutch release so that at the will of the operator the capstan can be disengaged from the main drum so that 100 or 200

feet of cable can be removed without unhitching team or pulling out sweep.

The clutch and eccentric lever is a wonderfully convenient arrangement where the team cannot make a full turn. A half turn can be made and the team can be driven back and another half turn can be taken.

This clutch device also allows the team to step over the pulling cable with light traces if the slope of the ground should happen to lift the cable high and it would be difficult to get over.

The frame is all steel, heavily braced. Hung in front by chain and raised and lowered by raising tongue and moving chain and angle plate at base of tongue. The frame is attached to rear axle by ratchet bars which easily raise and lower capstan.

The front running gear is detached when the capstan is in use. This gear makes a very quick puller and does away with the old, time-killing way of pounding and jerking with the chain.

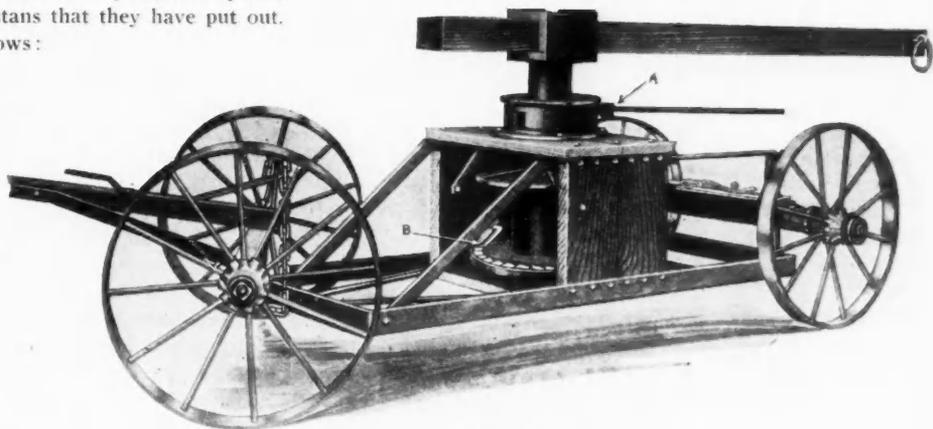
Three-story brick buildings weighing 2800 tons and over have been pulled with these capstans, as they give 45 horsepower with two horses. By the use of pulleys the power can be increased as much as desired.

Circulars fully describing and illustrating a full line of house moving apparatus manufactured by the LaPlant-Choate Manufacturing Company will be mailed on request. Please mention American Carpenter and Builder in writing for same. Official Test Shows Metal Lath Wall Fireproof.



Commercial Relations of the United States

The world's leading importers are the United Kingdom, Germany, and the United States, in the order named, France being fourth and the Netherlands fifth. The United States and the United Kingdom are the world's largest exporters, followed by Germany, France, and the Netherlands. The United States furnishes about 20 per cent of the total imports into the United Kingdom, 15 per cent of those into Germany, 10 per cent into France, 14 per cent into Italy, 65 per cent into Canada, 53 per cent into Cuba, 50 per cent into Mexico, 15 per cent into Argentina, and 15 per cent into Brazil. "The Commercial Relations of the United States," a volume of 272 pages, just issued by the Bureau of Foreign and Domestic Commerce, Department of Commerce, contains revised figures showing in detail for the year 1912 compared with the previous year, the articles entering into the trade of each country and the commercial transactions with the United States. This volume should prove valuable to those interested in the foreign trade of the United States and foreign countries. Copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 40 cents each.



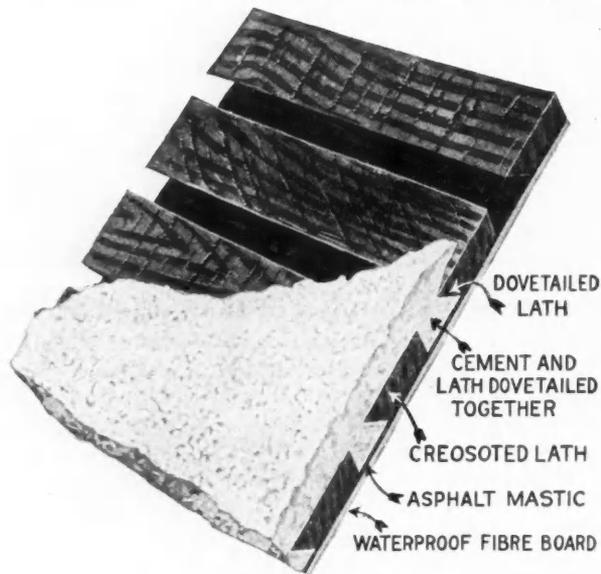
Modern Steel Truck and Capstan for Moving Buildings.

Bishopric Stucco Board

Mustering proof from the experiences of master builders of the ages, the Mastic Wall Board & Roofing Company, 601 Este Ave., Cincinnati, Ohio, are putting thunderous emphasis upon the durability of the Bishopric Stucco or Plaster Board. In practical tests it has been proved that all old objections to the construction of cement and plaster walls are wiped out by Bishopric Stucco Board, which gives a background that insures permanence.

Nailed to the studding, Stucco Board forms a rigid back in which ordinary plaster, or cement stucco is "locked in" for "keeps" by the lath dovetailed in the fashion that is found in houses which have stood for centuries.

Bishopric Stucco Board is a modern combination in which time-tried principles of successful wall building are applied. The lath themselves in the board, intended for exterior construction, are creosoted—a treatment which eliminates all possible chance of warping through dampness. This lath, im-



Detail of Bishopric Stucco Board.

bedded in toughened asphalt mastic, is thus further insured to last—moisture-proof and fire-resisting.

Builders everywhere are showing their interest in Bishopric Stucco Board and those who have not yet made a study of the material are invited to send for a sample. The illustration herewith gives a pretty fair idea of the way Bishopric Stucco Board is put together. The claim is made with all possible emphasis that Bishopric Walls "stay put." The use of Bishopric Stucco Board is urged on the grounds of both economy and service. It will pay any builder who wants to keep in touch with the best modern building methods to send for the handsome booklet "Durable Homes by the Bishopric System," which will be gladly sent on request to all those interested.

Irwin Bits for Hardwood

This year, Irwin bits are made in more sizes and varieties than they ever were. The Irwin company now makes 6,500 different sizes and styles of bits. The sizes are ordinarily graded by 1/16 inch, but half sizes or 1/32 are now carried in stock.

It does not seem to be generally known by mechanics that the Irwin Company make special styles of bits for boring very hard and knotty wood. The ordinary patterns of bits are not suitable for boring such hard woods as lignum vitae, etc. Recognizing this fact the Irwin Company makes special style bits for this purpose.

In boring hard woods the chips have a tendency to go to powder and this powder clogs the screw point, so that the ordinary bit will not bore. That's the time to use the Irwin Bit with the Mathieson Cutter. In this type of bit the screw is very much coarser and the cutters do not have an under cutter, or floor lip. After the screw is started no pressure is required in forcing the bit into the wood.

This style of bit can be obtained in any size in the ordinary length bit (8 to 12 inches long) or in the Car Bits (18 inches long). The catalog number of the former is 72 T and the latter 75 T. Any good hardware dealer will be glad to get these bits for you in any size, or if you have any trouble in getting them, write direct to The Irwin Auger Bit Co., Wilmington, Ohio.

Write For This

No tool a builder uses is more important than his plumb and level. The only thing that keeps us from building "Leaning Towers" is the accuracy of our faithful leveling and plumbing instruments.

All carpenters and builders will be interested to know that J. Sand & Sons, 1027 Rivard St., Detroit, Mich., have completed their new catalog (No. 10) featuring the well-known Sand's line of plumbs and levels. All styles are included, plain, brass bound and aluminum. This catalog is now being distributed. Write for a copy.

An Interesting Engine Catalog

Those who like to know all about how a gasoline engine or a piece of power machinery is made before they spend their money, will take a good deal of pleasure in the new catalog (No. 45) of the Witte Iron Works Co., 1779 Oakland Ave., Kansas City, Mo. This not only tells all about Witte engines, but also shows by means of very interesting photographs the complete manufacturing process from the smelting of the pig iron to the testing of each gasoline engine when it is finally completed and ready for shipment.

The Witte plan of selling direct from factory to user, all goods going out on a 60 day free trial offer and under a positive 5 year guarantee, is also fully explained. Contractors and builders are becoming great users of gasoline power, and doubtless many of our readers will want to write for a copy of this interesting and instructive gasoline engine book.

First Slate Shipment Via Panama Canal

What is probably the first shipment of slate to the Pacific Coast by way of Uncle Sam's new ditch was recently made by the Auld & Conger Roofing Company, of Cleveland, Ohio. Shipment was made from their quarries at Poultney, Vt., where their celebrated "Mammoth Vein Poultney Sea Green Slate" is produced.

Better Than Ever

The midsummer issue of that breeziest of instructive house publications, "Simonds Guide for Millmen," has been received and read through. We had an extra chuckle over Simonds "Alphabet," both verse and illustrations, which occupies all the first part of the booklet.

"A is for Andy, the handy young feller,

Who uses a Simonds Saw down in your cellar."

That's the way it starts, and keeps it up clear through to "Z stands for Zero;—there's nothing to it.

Any sawing you do,—let Simonds Saws do it."

It is refreshing reading, none the worse because it doesn't cost anything. If your name is not on the list to receive "Simonds Guide for Millmen" you are missing something. The Simonds Mfg. Co., Fitchburg, Mass., will put your name on if you ask them to.

Free! Free!! Free!!!

Just Out



Get These Pages to Work for You Now!

OVER 10,000 shrewd-buying carpenters and contractors always keep the pages of Gordon-Van Tine Company's latest 5,000 Bargains Building Material Catalog right before them for figuring daily orders.

No matter where you live we ship promptly — quality, quantity, and satisfaction guaranteed.

Small Orders and Big Orders given the same prompt, careful, expert service.

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Shrewdest Buyers Everywhere
10,000 Carpenters and Contractors
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Let this catalog—just out—simplify your profit making and work. Gives greater satisfaction to your customers. Quality for quality, our prices are lowest, no matter where you live. Our service is the quickest. Our stocks offer greatest selections. Our guarantee covers everything in your interest and protection.

GORDON-VAN TINE CO.
728 Federal Street, Davenport, Iowa

INDEX
136 Pages
(Color Illustrated)
Bargains

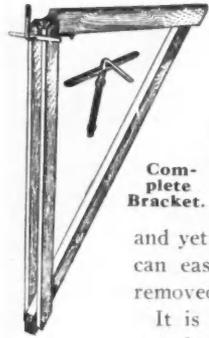
Gordon-Van Tine's direct-to-you wholesale prices right now are about 50 Per Cent Under the Market

Free Catalog illustrates prices and describes all building material—Doors, Windows, Casings, Mouldings, Hardwood Floors, Storm Sash and Doors, Roofing, Stair Work, Siding, Porch Work, Wall Board, Shingles, Paint, Builders' Hardware, etc. Save \$100 to \$300 on Lumber in carload lots. Freight only a trifle. For every nickel of freight cost—We Save You Dollars in Price.

WRITE!

The Rockford Folding Scaffold Bracket

An interesting scaffold bracket manufactured by the Rockford Bolt Co., Rockford, Ill., is illustrated herewith. Car-



Complete
Bracket.



Bracket Folded.

penters and contractors are finding these brackets very useful, as they are perfectly safe and strong, well able to carry any weight placed on the scaffolding, and yet the way these brackets are made one man can easily put them up alone and they can be removed without the use of a ladder.

It is claimed that these scaffold brackets will pay for themselves the first season. They fold into a compact form, so are readily moved from one job to another and can be stored away without taking up much room.

The Rockford Bolt Company offer to send one as a sample and will refund the price if not satisfactory.



Metal Work for Banks

A new catalog has just been issued by the Cincinnati Mfg. Co., Cincinnati, O., which shows practically everything in metal work for bank construction and furnishing. Bronze bank doors, bronze railings, wickets, grilles, and bronze cages for vaults are featured. There are also many designs in bronze, brass or steel grilles and enclosures of all descriptions. Bronze tablets and name plates are a specialty.

It is said that the Cincinnati Mfg. Co., do the metal work for more banks than any other concern in the United States.

At this time they are making the metal work for about twenty-five banks. Copies of this fine catalog will be sent to any contractor or builder upon application.



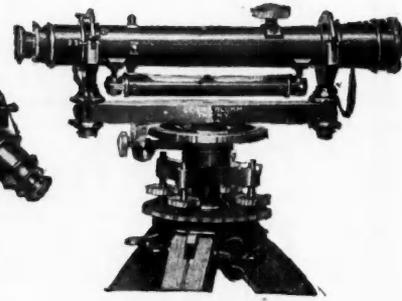
A Genuine Convertible Level

An illustrated booklet featuring the "G. & B." transit-level has just been received. This is said to be the only really convertible level on the market. The illustrations herewith show the same instrument in use as a builders' transit and as an architects' level.

The terms on which this instrument are offered are exceedingly reasonable, considering the splendid workmanship and service the instrument will give you on every job. Any person of ordinary intelligence can accomplish first-class work, no technical education in surveying is necessary, as instruments are simple in construction and operation, accurate, efficient and durable. Send for Circular "A," Geier & Bluhm, 672 River Street, Troy, N. Y.

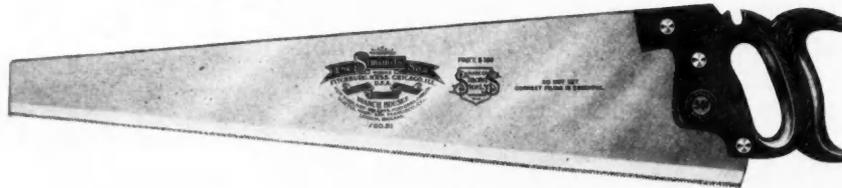


Builders'-Transit.



Architects'-Level.

Did You ever own a really smooth cutting saw?



SIMONDS No. 51 BLUE RIBBON **NO-SET HAND SAW**

A Saw that Does Not Need Setting

THIS saw cuts absolutely smooth. Cuts free and easy. Keen and sharp. It will cut any kind of dry wood. It is essentially a fine finishing saw and besides is a fast cutting, true running saw for almost any kind of work. No matter how many saws you own you need this saw.

Carved and polished apple wood handle. Large hand hole. Four brass screws. Simonds special Crucible Steel blade. Straight back.

Packed individually. Price, \$3.00 each. 26-inch, 10-point.

It will be the best \$3.00 you ever invested in a saw. At your hardware dealers, or sent direct on receipt of price, if dealer does not have this saw.

Simonds Manufacturing Company

FITCHBURG, MASS.

17th Street and Western Avenue, CHICAGO, ILL.

40 Murray Street, New York City

Quality
Is
Economy

UNIVERNISH

*has Qualities which make it
Especially Economical*

*Compared with Old-Method varnishes,
it is convenience and certainty.*

It means *one* finishing varnish
for the job, instead of two or three.
It does away with the extra cans
and the extra cleanings of brushes.
It avoids mistakes and accidents.
It is safe and sure and foolproof.

*Compared with other New-Method varnishes,
it is a vital improvement.*

It is *the* New-Method varnish
which does not thicken in the can
nor clog the Painter's brush.
It remains a clear, pure liquid.
It is easy-working and free-flowing.
It requires vastly less labor.
It gives a smooth, clean finish
which is especially beautiful
and durable.

We think we are quite conservative
in saying that it *saves 20%*
of the finishing cost.

The Varnish
That Lasts
Longest

Murphy Varnish Company

FRANKLIN MURPHY, President
Associated with Dougall Varnish Company, Limited
Montreal, Canada

NEWARK
AND
CHICAGO

Good Profits Are Easy with Kalamazoo Furnaces

**Please your customers more
—and save them money, too**

YOU deal direct with the manufacturers—you get a complete heating plant at a low price—you can make a good profit for yourself and still save your customer a good sum of money.

Kalamazoo Furnaces and heating systems are preferred everywhere. They are designed right—and are made of the right materials. You could not supply better.

**Let our heating experts work with you
—get plans and blue prints free**

You can guarantee every furnace job to be thoroughly satisfactory. The Kalamazoo Heating and Ventilating experts will guide you. They draw up heating plans and submit blue prints showing you the position for every pipe and register—the best position for the furnace—they show you every move. You can not make mistakes. You simply send us a sketch of the floor plans—mentioning prevailing winds, etc., and our experts work out the blue prints.

Write for the Kalamazoo Furnace Book and learn how you can do it easily. We make an absolute guarantee of quality and satisfaction with every Kalamazoo furnace. We back it with a year's approval test and a \$100,000 Bank Bond. We make liberal terms, too. **Write today for our Furnace Book.**



Ask for Catalog 947
Kalamazoo Stove Company
Manufacturers
KALAMAZOO, MICHIGAN

We make a full line of Ranges, Stoves, Furnaces, Metal Kitchen Cabinets and Gas Stoves. Mention which catalog is wanted.

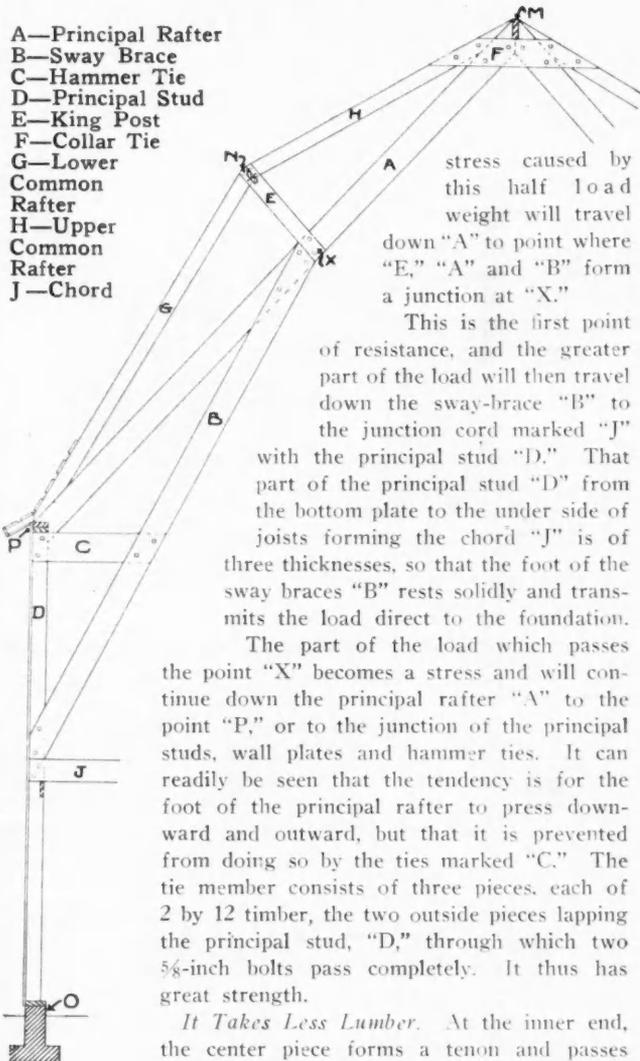
"A Kalamazoo
Trade Mark
Registered **Direct to You"**

A New Self-Supporting Truss for Barns

Mr. John H. Fleming, construction expert for the Hewitt-Lea-Funck Company has designed a new self-supporting truss for gambrel-roofed barns, which has several merits over the style of truss commonly used. The illustration herewith will make clear to any carpenter the workings of this new truss.

A barn frame must be strong enough to withstand wind, snow and the weight and strain of hay being carried into the barn. The picture shows that the whole load is carried on the upper part of the principal rafter marked "A," so that half the load is carried on each side of the roof, and the

- A—Principal Rafter
- B—Sway Brace
- C—Hammer Tie
- D—Principal Stud
- E—King Post
- F—Collar Tie
- G—Lower Common Rafter
- H—Upper Common Rafter
- J—Chord



stress caused by this half load weight will travel down "A" to point where "E," "A" and "B" form a junction at "X."

This is the first point of resistance, and the greater part of the load will then travel down the sway-brace "B" to the junction cord marked "J" with the principal stud "D." That part of the principal stud "D" from the bottom plate to the under side of joists forming the chord "J" is of three thicknesses, so that the foot of the sway braces "B" rests solidly and transmits the load direct to the foundation.

The part of the load which passes the point "X" becomes a stress and will continue down the principal rafter "A" to the point "P," or to the junction of the principal studs, wall plates and hammer ties. It can readily be seen that the tendency is for the foot of the principal rafter to press downward and outward, but that it is prevented from doing so by the ties marked "C." The tie member consists of three pieces, each of 2 by 12 timber, the two outside pieces lapping the principal stud, "D," through which two 5/8-inch bolts pass completely. It thus has great strength.

It Takes Less Lumber. At the inner end, the center piece forms a tenon and passes between the two sway braces marked "B," so that "B" and "C" are flush and they are fastened together with 5/8-inch bolts. Consequently, whatever pressure is exerted in an outward direction at "P" is immediately transmitted again to the sway brace, "B," and then to the foundation at "O."

It will be noted that the lip on the under side of the principal rafter extends down and presses fairly on inner surface of principal stud, the center piece of hammer tie being framed to permit this. Another important member is the collar tie, "F," a piece of 2 by 12 or 2 by 10 extending to the back line of the common rafter, "H," and bolted securely to head of both common rafter and principal rafter, "A."

The two common rafters over each principal cut are spiked directly over the center of the principal rafter, "A," thus with the king post, "E," forming a completed truss, with the 2 by 8

-If You Want To Cut Coal Bills $\frac{1}{2}$ TO $\frac{2}{3}$

Yes, Sir! Right Square in Two or Better—Read This Now!

When your coal bills climb and the temperature in the house has that "way down feeling," then you will remember that the Williamson Underfeed will give you *more* heat at *less* cost than any other heating system in existence. *Performance is proof!* When 25,000 users of an article—people who have spent their own good money for it—endorse that article, you can bank on its superior value.

The houses shown on the left, with the letters under each, are typical of thousands we have received. Shall we send you the names and addresses of over 2,000 Underfeed users—some right in your neighborhood—who *know* by experience that *clean, even, economical* heat is obtainable *only* with the Underfeed?



Detroit, Mich.—I have been using the Williamson UNDERFEED Furnace for 7 winters. We are freer from dust or soot than with any other furnace we ever used.
C. E. SMITH, 25 Josephine Ave.

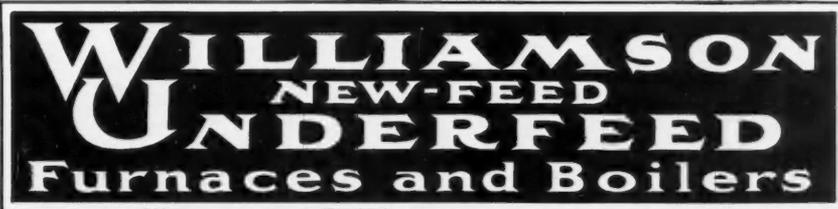


Danville, Ill.—My Williamson UNDERFEED Heater has been in use for eight years and heats a 9-room residence. My coal bills for the year have ranged from \$35 to \$38.
R. B. HOLMES.



Christman, Ill.—Am well pleased with the UNDERFEED Furnace. Heats eight rooms, two halls, bath room and sewing room. Coal bill for 1913-14, \$41.70.
W. E. HOLDEN.

There are over 25,000 Underfeeds in successful use today



Cut Coal Bills $\frac{1}{2}$ to $\frac{2}{3}$

With the Underfeed, coal is fed from below. All the fire is on top, causing perfect combustion. Smoke and gases are burned up, making more heat with *no* smoke, smell, clinkers and very little ashes. You can use cheap slack soft coal or pea and buckwheat hard coal and secure same heat as highest priced coal. Every Underfeed is substantially built. Mr. J. C. Garland, Dubuque, Iowa, writes that his Underfeed has saved him \$70 a season for *nine* years. Adapted to warm air, steam and hot water systems in buildings of all kinds, large and small.



Cut-out View of Underfeed Furnace

50% Saving in Coal Bills Guaranteed

Every Williamson Underfeed Furnace or Boiler, when properly installed and operated, is guaranteed to effect a saving of 50 per cent in coal bills. This is backed by a \$1,000,000 corporation. The strongest guarantee ever put behind any heating system is behind the Underfeed. You take no chances in putting in an Underfeed. If it doesn't make good we will.

This Brings The Evidence

THE WILLIAMSON HEATER CO.
463 W. Fifth Street, Cincinnati, Ohio

I would like to know **how** to cut my coal bills from one-half to two-thirds with an Underfeed.

Warm Air.....Steam or Hot Water.....
(Mark an X after System interested in.)

Name

Address

My Dealer's Name is.....

Are You Going to Build?

If you are, then investigate the Underfeed. If you are tired of paying big tribute to the coal trust—if you want to slash your big coal bills in two, then mail the coupon for the startling "show how" evidence. (46)

The Williamson Heater Co.
(Formerly The Peck-Williamson Co.)
463 W. Fifth St., Cincinnati, Ohio

purlin, "N," extending from end to end of the barn and carrying the common rafters.

The system of construction outlined above requires less lumber, yet results in greater strength, because each piece has a definite work to perform. This means much less expense in building the barn, without in any way impairing stability.

The new truss is described in full in an article, entitled "How to Build a Barn," by Mr. Fleming, in the new Barn Builder's Guide, recently published by the Hewitt-Lea-Funck Company. This book shows accurate pictures and floor plans, together with all necessary information, including posts, of many barns which were designed by the company's architects after ideas submitted by practical farmers. The book will be sent to any one who encloses four cents for postage and writes the Hewitt-Lea-Funck Company, 408 Crary Building, Seattle, Wash.



Improvements in the Slate Business

The last few years has made a marked change in the slate business, the quarries in general in the Slatington, Penn., region are quarrying better slate, owing to the depths of their quarries, and better equipments to finish the slate after they are quarried.

Among the quarries that have kept pace with the times are the Blue Valley Slate Mfg. Co., Ltd., Slatington, Pa., one of the largest and oldest quarries in the region. They have lately erected two new factories, one for roofing slate and the other for structural slate, electrical slate and blackboards. Both of these factories are equipped with up-to-date machinery, run by individual electric motors, which gives them quite an advantage over the ordinary equipment, to produce better slate of every kind than heretofore and at short notice.

Money in Vacuum Cleaners



Popular Cleaner

What looks like a good money-making opportunity for carpenters and builders is being offered by Jos. A. C. Barnett & Co., Riverside, Iowa. It is to act as agent for the Barnett Vacuum Cleaner. This sells at a low price and is said to take with housekeepers everywhere. The small illustration herewith gives an idea of what the outfit is like. A good many of our readers are already handling this proposition, and we are informed a few more good men can be used.



Metal Batten Strips

Another item has just been added to the line of the Milwaukee Corrugating Company—metal batten strips. These are made of galvanized steel and come in 8 and 10-foot lengths. Metal battens are becoming widely used for vertical barn siding. They cover the cracks, being nailed on with small nails. The battens are formed so as



Metal Batten Strip.

to provide for contraction and expansion. Thus, there is no trouble with these battens slipping or drawing away from the boards, and they will not warp like wooden strips. They make neat waterproof as well as ratproof joints.

In addition to the use of metal batten strips for barn buildings, the Milwaukee Corrugating Company point out that they can also be used to advantage for lining grain bins or wagon boxes. Write for samples and prices addressing the company at Milwaukee, Wis.



This Attractive Building Is Trimmed With Midland Stock Terra Cotta

"WRITE FOR A PORTFOLIO"

MIDLAND TERRA COTTA COMPANY

1120 CHAMBER OF COMMERCE :: CHICAGO, ILLINOIS



Famous Master-Builder Hammer, ideal hardness, oval-faced head and a claw that grips. Handle of second growth hickory, natural finish, octagon shape to prevent slipping. Perfect in hang and balance. Made in three sizes, No. 745, 11-oz., No. 746, 16-oz., & No. 747, \$1.00 20-oz. Each **1**



Famous Master-Builder Broad-Hatchet. Swelled bit throws chips and prevents wedging; rounded blade cuts at moment of contact. Octagon handle prevents slipping. No. 761, Size 1, & No. 762, \$1.25 Size 2. Each **1**
No. 763, Size 3, and No. 764, Size **1.50**
4. Each . . . **1**

**GERMANTOWN
MASTER BUILDER**

THE making of Germantown tools is a matter of tradition. They are being hand-forged today by the second and third generations of men who made the first models fifty-seven years ago. The Germantown Tool Works has been concerned all these years about nothing but how to produce the best hammers and hatchets in the world. This specializing has naturally evolved a number of processes and advantages of construction exclusive with their product, which in a great measure are responsible for its marked superiority.

Each Master Builder Hammer and Hatchet is a one-piece, hand-wrought tool of the finest steel obtainable, individually tempered and individually subjected to a series of tests that make ordinary usage seem insignificant by comparison.

Sold by all good dealers, also sent, if necessary, by parcel post direct from the shop.

FREE--- With each Master Builder Hatchet, metal guard to protect cutting edge.

**Germantown Tool Works
PHILADELPHIA**

Branch: 62 East Lake Street - - - - - Chicago

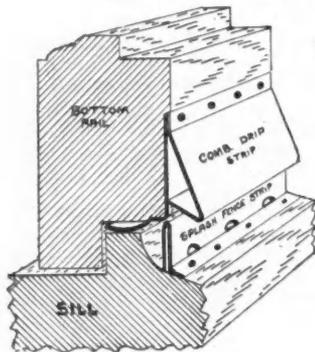
DIAMOND FLEXIBLE WEATHER STRIPS

ALL METAL

FOR ALL STYLES OF WINDOWS AND DOORS

CASEMENT WINDOWS

that open in are successfully stripped with our equipment.



EQUIPMENT No. 2

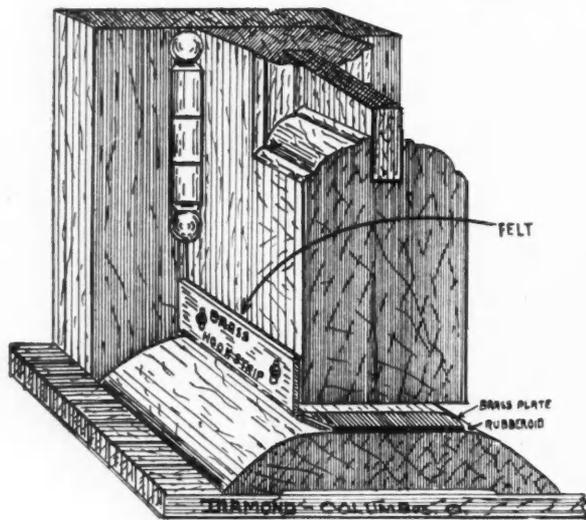
Top, Front and Back—Spring bronze Strip.
Middle—Spring Bronze Inlay Strip.
Bottom—Comb. Drip and Inlay Strip
Splash Fence Strip—Prevents Water From Rebounding over Sill Strip.

They will stop the wind, dust and deaden the noise. The manner of stripping the bottom of sash and sill has been found to be the most effective way to prevent leakage.

Owing to the various designs of casement windows we are prepared to furnish special strip to meet all requirements.

Send us the details of top, sides and bottom of casements and we will send you detail drawings, show how to strip it. Put your troubles up to us, we will work them out for you.

Diamond Brass Sill Plate



Operates on **inside** of door, when door is closed the brass hook locks under sill plate making a perfect tight joint.

Snow and ice do not interfere with it.

Heavy articles can be rolled over it without danger of mashing down. In combination with our spring bronze door strip a door can be made practically air tight.

We have some fine territory open for live agents. Contractors, Carpenters and Order-Getting Salesmen should investigate our Agency Proposition.

The Diamond Metal Stamping Co.

626 Kerr Street

::

Columbus, Ohio

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Brass Screw Holes

A practicing architect of nearly 25 years' experience, having been annoyed all that time by perishable screw holes that continually had to be plugged, has invented and is now manufacturing and placing on the market, screw holes made of brass. They are driven in with a hammer and are always on the job, doing effective service.

"Plug no more screw holes" is the slogan of the manufacturers—The Stine Screw Holes Company, Decatur, Ill. A sample of these screw holes will be mailed free of charge to any one of our readers writing the company. This is something distinctly new, and it ought to find large use among carpenters, builders, cabinet makers, etc. In connection with storm sash and screens these permanent screw holes will be indispensable. Write today for sample and price.



Improved Gray Finish of Neponset Paroid Roofing

Neponset Paroid roofing is now being manufactured with a new improved gray surfacing. This has been improved in two ways—first, in appearance, and secondly, in permanence. The old style surfacing of Paroid was considered to be the most permanent finish that could be applied; but it is believed that this new finish will out-last the old gray finish by years.

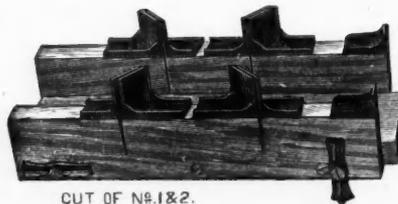
The United States Government has just purchased 172,000 square feet of Neponset Paroid roofing, making a total of over 1,500,000 square feet which it has used at Panama alone. These orders are only some of the many others which the Government has placed for this roofing.

The secret of the success which Neponset Paroid roofing has had is due to the care with which it is made. It is made of only high grade materials and constructed with one idea foremost—permanence. It is made from start to finish by Bird & Son, East Walpole, Mass., and it is made slowly. A slowly made roofing is a slow wearing roofing. When you buy a "hurry-up" roofing, you save money on its first cost only. In every climate, under all sorts of conditions, Neponset Paroid roofing has been tested.

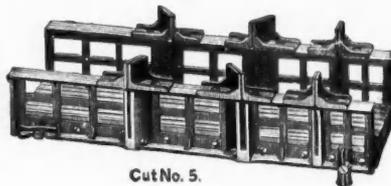


Olmsted's Improved Mitre Boxes

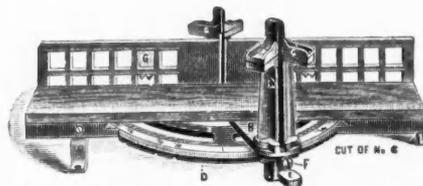
Anyone who wants a good mitre box will find it worth



CUT OF No. 1 & 2.



Cut No. 5.



CUT OF No. 6

while to write L. H. Olmsted's Son, Hasbrouk Heights, N. J. A number of very popular improved models are offered. Three of these are illustrated herewith. The first illustration shows styles No. 3 and 4, two sizes of the box having hardwood frame and iron saw guides. Style No. 5 has iron frame and saw guides and style No. 6 is a universal mitre box made of iron and steel.

The catalog of this concern gives full information on mitre boxes, together with several other useful tools for carpenters.

BUILD WARM



Patent Pending

The double dead-air space keeps warmth in and cold out

Build warm! That's the way to make friends and boosters of the people you build for. We make it easy for you to build warm and make it inexpensive for the builder, with H.-L.-F. new stud and wall board construction (patent applied for). We ask no royalty, and sell you the material at our usual low prices.

H.-L.-F. stud and wall board costs 25% to 50% less than back plaster

And it's *better* than back plaster. Back plastering simply makes the outer wall warm. H.-L.-F. construction *makes your house* twice as warm by providing two dead-air blankets to keep out cold. H.-L.-F. stud and wall board construction is easy to use. Studs are accurately milled to take the wall board and the wall board is especially made exact size required. Slip it into place, raise your wall, and there you are. No fuss, no muss, no delay—and, best of all, absolute insurance against cold. Get a price on this construction for the houses you are figuring on. It will help you get the jobs.

No advance in lumber prices Send lists quick for prices

Until further notice, summer prices, which have brought us four times as much business this summer as last, will continue. No telling what the war will do to prices later on. Get your orders in *early*. We have sold several thousand cars of lumber in less than three years, because our prices are right, our lumber is right and our treatment of the carpenter and the builder is right. Our price is low because through our officers we own and control forests, saw mills, logging railroads, and millwork plants, and sell direct at one small profit. Find out how much we can save you. Send your lists of schedules quick, for freight-paid quotations at the low price.

Double quick shipments from big stock

Orders are filled by us within 48 hours. Delivery is a matter of only 2 or 3 weeks. A. W. Prust, Wilton, N. D., wrote us July 29th, 1914: "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 yards do not have the lumber on hand and they hold up the job." Hewitt-Lea-Funck Co. will save you money and guarantees you clean, good lumber. We let you see lumber before you accept, and guarantee satisfaction, or money refunded. Get our prices on your lumber. Use the coupon. Write today.

Send coupon for Prize Plan Book

Gives pictures, floor plans, accurate descriptions and guaranteed costs of 100 good practical homes. Will save you a thousand dimes and get you business. Yours for ten cents, and the coupon.

Barn Builder's Guide

Gives pictures, floor plans, full information including guaranteed costs of barns designed by H.-L.-F. Co.'s expert architects. Shows and explains Mr. Fleming's famous gambrel-roofed barn—no posts or tie rods. Sent for 4c.

H.-L.-F. Silo Folder

Here's a double wall silo originated by H.-L.-F. Co., that means no freezing of silage and costs 50% less than stave silos. Already hundreds of farmers have ordered the silo.

It's a big winner. Send coupon, get this folder, then go out and get the orders.

Hewitt-Lea-Funck Company 208 Crary Bldg.,
Seattle, Wash.
Capital \$1,000,000



Hewitt-Lea-Funck Company,
208 Crary Bldg., Seattle, Wash

Gentlemen:—Please send me the following:

- Approximate cost of H.-L.-F. stud and wall board construction for house I intend to build. Width of house _____ ft.; length _____ ft.; height of walls _____ ft.; number of outside doors _____; number of windows _____
- Prize Plan Book (send 10c) Barn Builder's Guide (send 4c)
- Delivered, freight-paid price on enclosed list of materials (no charge)
- Lumber Price List and Millwork Catalog (free)
- H.-L.-F. Silo Folder (free)

Name _____

Street or R. F. D. No. _____

Post Office _____ State _____

Business _____



Featuring "Morgan" Exterior Doors
Craftsman B
Are made from any kind of wood

Copyright 1914 Morgan

SAFE TO SPECIFY

Hardwood Doors bearing the famous "MORGAN" trade-mark represent the highest possible attainment in construction and beauty. They are *safe* to specify and install, for they are sure to satisfy. And because

MORGAN DOORS

are sure to *satisfy*, they are *sure* to *strengthen* the success of architects and contractors who recommend them—for *success* is *founded* on *satisfaction*.

"The Door Beautiful" for 1914 is a handsomely illustrated catalogue and contains complete "Layout" of every door shown in book; also the glass sizes for all sash doors and sidelights. Send for it—it's *FREE*.

MORGAN SASH AND DOOR COMPANY, Dept. C 28, CHICAGO

Factory: Morgan Company, Oshkosh, Wis.

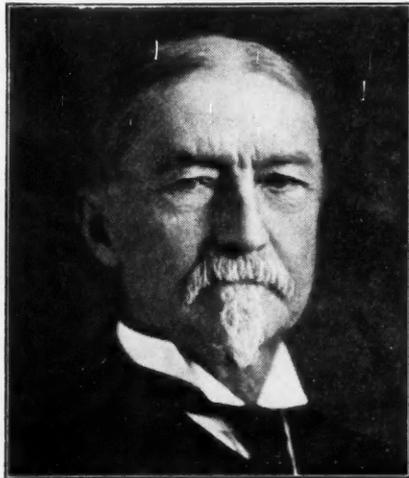
Distributed by Morgan Millwork Co., Baltimore, Md.

New York Office: Craftsman Bldg., No. 6 E. 39th St., New York City.

Architects see Sweet's Index, page 972-973

E. C. Simmons Celebrates 75th Birthday

Edward C. Simmons was born in Frederick, Md., September 21, 1839, just three-quarters of a century ago and is today a living exception to that Bible generalization which denies



E. C. Simmons.

to those of three-score-and-ten the mental vigor and acumen of youth. At the age of fourteen he found his true calling in the hardware business; he rose rapidly from a clerkship to that of partner, and finally to the presidency of Simmons Hardware Company, in 1874. Today it has six local houses, judiciously placed, in distributing centers in different

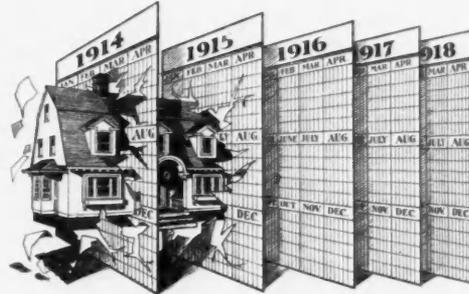
parts of the country and a business that goes to the four quarters of the globe. He has always held in his own words, "that business is a thing of ideas," and has illustrated his own aphorism by the force and originality of his methods.

He has a fashion of ignoring unessentials and going straight to the heart of the matter, as was early shown in his perception of the all-prevailing importance of the sales end of every business. This was sometimes considered a paradox, but now a matter of universal recognition. To this he has added the rare faculty of inspiring enthusiasm among his people, so that the esprit du corps prevailing in his company is a matter of national note and comment. His early and vigorous methods startled the conversationality of that day and were regarded as "unsafe." Time has proven that instead of unsafe, his ways were far-sighted as evidenced by the fact that his was the first mercantile firm to be incorporated in the United States. He has built his great business upon his underlying knowledge of, and sympathy with, human nature, and in few things has this been more evident than in the inspiration which created the famous "Keen Kutter" brand and his motto, "The recollection of quality remains long after the price is forgotten." His whole life has been devoted to practicing what he preached in one of his well known sayings, that "a jobber's first duty is to help his customer to prosper."

Among the many remarkable things done by this man, who has frequently been called "the leading merchant of the United States," was his far-sighted act in resigning the Presidency and all active management of the Simmons Hardware Company in 1897, when his oldest son, W. D. Simmons, was elected President, which office he still holds. Two other sons—Edward H. Simmons and George W. Simmons—are Vice-Presidents.

Other American merchants would do well to follow Mr. Simmons's lead in turning over to the younger generation the responsibilities of business before the older head is taken away. He is giving, in an advisory capacity, the benefit of half a century's experience, but allowing the younger men to go on and gain an experience of their own, and he is now happy in the assurance that when the time comes for him to relax even a guiding hand, he can do so with the knowledge that the business is to go on, under competent management, along the lines upon which he built it, and adhering to the principles which will in all probability assure its remaining

The Paint on Your House Will Go Through More Years of Wear if Applied in the Fall—NOW



ALL authorities agree that Fall is the best time to paint, because the wood is then in proper condition. Paint penetrates deeper—gets a firmer hold—covers the surface better and lasts longer.

And your house needs protection more in Winter than any other season of the year.

Paint Your Buildings this Fall with



and preserve them from the hard Winter storms. Likewise eliminate expensive repairs in the Spring—an item always more costly than a coat of paint.

BRIDGEPORT STANDARD PREPARED PAINT is always uniform—easy and free flowing—covers a given area with the least number of gallons—and far outlasts cheap adulterated paint or plain "lead and oil."

Don't put off painting. It's too costly. Remember, it is cheaper to paint than not to paint—if Bridgeport Standard is used.

TODAY—Send for color card and "Modern Painting For Beauty and Protection"—full of money saving paint information.

SOLE MANUFACTURERS
THE BRIDGEPORT CO.
WOOD FINISHING
Box 105 NEW MILFORD, CONN., U.S.A.
NEW YORK CHICAGO BOSTON

for many years to come, as it has been for many years past, the largest concern of its kind in the world.

Edward C. Simmons was recently selected by President Wilson for the position of Governor of the Federal Reserve Board, under the new Currency Act, but felt it necessary, on account of his advanced years, not to undertake that great work. Such a service—second to none in importance to the commercial interests of the country—would indeed have been a fitting climax to the successful career of this man, who typifies the highest ideals in American business life.



Bangor Slate Business Good

The Bangor Slate Mining Company of Bangor, Pa., report that they have enjoyed a very good business so far during the year 1914. They have recently acquired two large structural mills in addition to their extensive roofing slate quarries, and the trade has steadily increased on their already well known product, "West Bangor Deep Beds."

James Masters, the general manager of the company, recently succeeded in purchasing the interests of Albert Strunk and Arch M. Jones, which is said to be the largest slate deal ever consummated in Bangor.

This company make a specialty of roofing slate, and have recently roofed some of the most prominent buildings in this country with "West Bangor Deep Bed" slate.

In addition to this, they manufacture structural slate of all kinds, such as urinals, showers, mausoleums, vaults, tanks, sinks, blackboards, etc.

This large business has been built up by giving the trade a dependable article, and selling it for just what it is. The enlarged plant and organization enable them to give prompt shipments, and all customers are treated with the utmost courtesy.

"Lignine" Ornaments

Ornamental Products Company of Detroit, Mich., in connection with the designs shown in catalog No. 7, are manufacturing a line of Adam characteristics, true to period, which are shown on blueprints. These Adam characteristics consist chiefly of festoons, rosettes, drops and urns and are made in oak, mahogany and walnut. They are fine in detail and low in relief, and are reproductions of the designs used by the great interior decorator, Robert Adam.



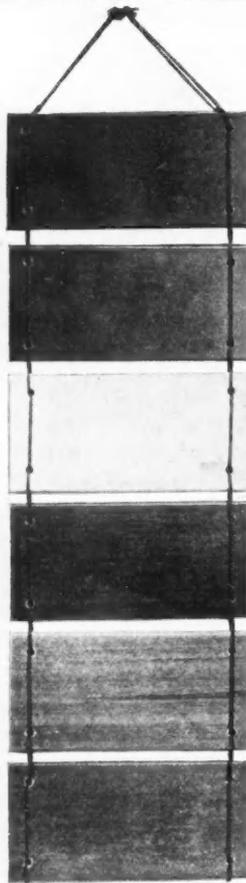
One of Many Designs.

The Ornamental Products Company wish to place their catalog and a sample of "Lignine" in the hands of every carpenter and builder.



Interesting Power Catalogs

We have recently received a very interesting set of catalogs and pamphlets from the Detroit Engine Works, 495 Bellevue Avenue, Detroit, Mich., describing their extensive line of kerosene engines and power machinery, including their "Contractor's Economy Portable Variety Woodworker," contractors' pumps, hoists, etc. It is evident from looking over the engine catalog that the "Detroit" is being widely used by contractors and builders. Independent electric lighting outfits for theatres, hotels, tent shows, factories, night building operations, etc., are a special feature with this company. They will send any of these catalogs to our readers who will write them.



Better Building

is the result of a careful study and selection of materials. Our service is designed especially to help the contractor and builder. We will send you:

Six Birch Panels

each 3 x5 inches in size, as here illustrated, carrying the following reliable stains:

Silver Gray

Filipino

Brown Mahogany

Light Oak

Dutch Brown

Medium Mahogany

"Birch Interiors"

a new 40-page book just off the press filled with beautiful illustrations of modern halls, stairways, living rooms, dining rooms, fireplaces and floor plans. You will find ideas in it that you will always be thankful for.

Write today for Birch Book "C" and Panels.

The Northern Hemlock & Hardwood Manufacturers Association

Please Address Department C.

Wausau, Wisconsin

Do You Want to
**Be as Busy
This
Winter
as You
Were Last
Summer?**

Join our army of floor layers and overcome winter's dullness.

Scores of Buildings in your town need new floors. To get orders for these floors and to lay them will keep you busy during the coming winter.

This work will keep you in touch with people who want things and who can afford to have them.

Get the flooring jobs and you will get many other odd repair and improvement jobs. While putting in the floor you will have a chance to talk screen repairs, new screens, and other repair and alteration work.

Get this work and get it out of the way before the spring rush sets in. Then when spring work opens up you will have time and men to attend to your share of it.

BEFORE YOU START! Send for booklet telling how to get orders for Maple, Beech and Birch floors, sent free on request.

Maple Flooring Manufacturers' Association

Stock Exchange Building

CHICAGO, ILLINOIS



Simple Tests for Pure Paint

Pure white lead may be reduced by heat into the pure, metallic lead from which it is made.

Place a small quantity of the paint or lead in a hole in a piece of charcoal and direct the flame of an alcohol lamp against it with a blow pipe. If the white lead or paint is pure, bright globules of metallic lead will quickly form.

Another and equally reliable way is to place a piece of lead a little larger than a pin-head on a match about one-half inch from the head, then light the match. Hold one or two more lighted matches directly under the lead. If it is strictly pure you will notice a number of small, bright beads of lead.

If the lead or paint contains as much as 5 per cent. of any other material it cannot be reduced to metallic lead by either of these methods.

Cracked and scaled paint or any old paint can be tested. Shave off a splinter the size of a match, where the paint is thick. Light one end and let it burn. If small, bright beads of metallic lead cannot be seen on the charcoal, something besides pure white lead was in the paint.

To determine whether one white lead is whiter than another, spread the two side by side on a piece of clear glass. Turn the glass over and you can tell in an instant which is whiter. The whiter the lead, the better—whiteness indicates perfect corrosion, good working qualities, covering capacity, durability.

If you have no Carter handy to test, a tube taken from regular stock will be sent on request.

The Paint Information Bureau
Carter White Lead Co.
 Chicago, Ill.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

A Unique Steel Ceiling Catalog

The new No. 19 catalog describing the well-known "Classik" line of steel ceilings manufactured by the Berger Mfg. Co., Canton, O., is one of the finest productions of this kind that has ever come to our attention.

As a matter of fact, this handsomely bound and profusely illustrated volume is something more than a mere catalog, because it gives valuable information of a general character relative to metal ceiling application, in addition to complete particulars of the many exclusive points which distinguish the "Classik" line.

The book contains 128 pages of heavy art paper bound in heavy antique paper covers of a dark brown color, richly embossed in red and gold, and one of its most pleasing as well as most useful features consists of numerous large and remarkably beautiful illustrations of the many unique patterns of "Classik" ceilings, cornices, mouldings, etc., reproduced by the highest type of halftone process.

Additional interest is provided by the pictures of interiors of theatres, banks, churches and other large and important buildings in which Berger's "Classik" steel ceilings have been installed.

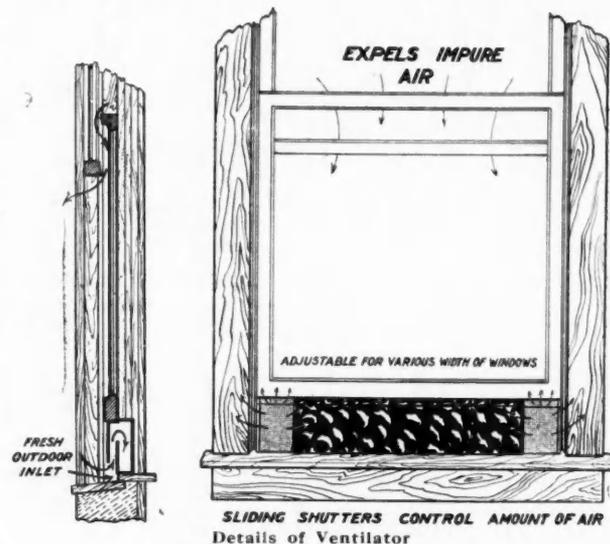
The Berger Mfg. Co. have recently effected a considerable reduction in the cost of erecting their ceilings by the introduction of their new close-fitting bead and countersunk self-centering nailing point, which practically eliminates calking of the joints.

Details of this feature are also contained in the catalog. We understand that our readers may obtain copies of this book by addressing the Berger Mfg. Co.



Fresh Air Ventilator

The Fresh Air Ventilator Company, Grand Junction, Iowa, have developed an inexpensive, efficient, durable window ventilator as illustrated herewith. This is known as the "Fresh Air" ventilator. Each ventilator is equipped with screened openings and sliding shutters to control the amount of air. One set of openings directs the air upward to the ceiling and is for use during the winter months. Another set of openings brings the air more directly into the room and is for use during the summer months when the occupant wants fresh



air without the inconvenience of dust or direct wind.

These ventilators come in three sizes and are easily adjustable to any window from 24 to 52 inches wide. In appearance they are attractive, finished in oxidized copper. Write for full description and particulars of special proposition to our readers.

You Save One Dollar

Half Price to Introduce

THE IDEAL

Rafter Square, Try Square and Mitre Square

To the first 200 men in each state sending in the coupon we are going to send, carriage prepaid, this \$2.00 tool at half price, \$1.00. This does not cover our cost of manufacture and shipping, but we want a few builders in every locality to personally examine and use this wonderful, labor-saving tool so that they can recommend it to their fellow builders.

The IDEAL Three-in-One Square

The merits of this tool can be readily seen. With it any man can lay out accurately cuts for any style rafter—Common—Hip—Valley—Jack or Cripple, a thing that takes years of study by the steel square method. Here it is, laid down in scales right on the square. Just shift movable bar into hole marked which shows number of inches rise to the foot and mark off your cut. With it you can cut 3-4-5-6-8-10-12- or Mitre Work. Tool also makes all backing cuts—Hip—Valley, and when folded fits into a space only 8 inches square.



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 screw. Bar is shifted by springing from one hole to another in every scale. Pin loosened only to change scales.

Ideal Tool Works

The Ideal will cut all forms of Rafters—Common—Hip—Valley—Jack or Cripple, having a rise from one inch to 12 inches per foot. Scale is double for right and left hand work. Number is stamped by each hole showing exactly where bar is to be set to give any desired cut. Pin locks bar fast. Full instructions for finding lengths of all Rafters—Hip—Valley—Jack, etc. Has Simplicity, Speed and Accuracy

Middletown
New York



Showing Method of Cutting Plate and Ridge Cuts of Rafter.

Remember, Only 200 in each State—First Come, First Served. Just Pin a Dollar Bill to this Coupon and Mail.

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

"Birch Interiors"

The versatile secretary of the Northern Hemlock and Hardwood Mfg. Ass'n has just completed a new birch book for the instruction and use of carpenters, builders and architects. It is mostly a picture book; contains many large half-tone plates of beautiful residence interiors where birch has been used. The real useful ideas contained in these photographs are many. Anyone who wants to live in a beautiful home filled with the most up-to-date interior finishing features, and anyone whose business it is to produce beautiful up-to-date homes for others will find this new book worth its weight in gold.

In addition to the many large half-tone plate illustrations, there are some practical paragraphs about the use of birch for interior finish, including standing trim, panels, doors, built-in work, flooring, furniture, etc. Proper methods of staining and finishing birch are described. In all, it is a book of forty pages, size 9½ by 12 inches. Each page is surrounded by a broad border which reproduces exactly the natural birch grain. This is printed in a soft grayish green, which sets off the illustrations wonderfully well.

The book is being distributed free of charge by the Rotary Birch Club, Wausau, Wis., through the secretary of the Northern Hemlock and Hardwood Mfg. Ass'n, Mr. R. S. Kellogg.

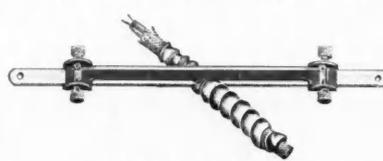


Inexpensive Scaffold Brackets

The American Steel Scaffold Company announce a new bracket considerably cheaper than their well-known "Wheeler" Safety Scaffold Bracket. These brackets will give good service, being strongly built, safe, and easily erected. Address Dept. 7, American Steel Scaffold Company, Detroit, Mich., for full particulars.

Depth Gauge for Hack Saws

A depth gauge for any hack saw blade, ½ inch or narrower, is offered by the Millers Falls Co., Millers Falls, Mass. It is made of pressed steel, heavy rigid stock, No. 14 gauge. At each end are thumb screws having their points shaped to



Depth Gauge No. 53.

overlap and firmly hold the saw blade to the gauge. The length of the gauge is 7½ inches. Workmen will find such a gauge very useful for cutting the walls of flexible conduits for electrical wiring without cutting into and injuring the interior insulation. Many other uses will suggest themselves to hack saw users.



The Development of the Door

When the demand arose for hardwood doors, the manufacturer was confronted with a serious problem. He knew that a door made from solid pieces of hardwood would be heavy and unwieldy; would warp, twist, open at the joints and cause an endless amount of trouble. The Morgan Company, Oshkosh, Wis., with their forty years of door experience were among the first to solve the problem and began building hardwood veneer doors, which would be light, strong, durable, weather and wear-proof, and at the same time have all the exquisite beauties of the hardwood grain.

One of the secrets of the excellence of Morgan doors is, that every piece of wood going into the door is made absolutely dry. After having once been dried, this wood is kept in rooms heated to a high degree of temperature so that no moisture can re-enter the doors. After a thorough preparation in this manner, the cores or foundations are built up of narrow strips of pine with edges of hardwood glued together with the very best of veneer glue, brought

INTERNATIONAL Asphalt Shingles

Durable—Rich in Color—Economical—Fire-resisting

A practical roofing material that will make a satisfactory roof for the Mansion—Residence—Bungalow. Wherever you want a real roof that will stand up under all sorts of adverse weather conditions.

Easy to Lay—once laid will not leak, curl or warp. Add Tone and Dignity. Harmonize with the architecture and above all please the owner.



Made of the Best materials obtainable by a special process. Will resist Heat, Cold and are absolutely Waterproof. Made in standard size, 8"x12½", packed in cartons. Because of their fire-resisting qualities, they go a long way in lessening fire insurance premiums.

We want all builders to have our complete line of samples and prices. Write Now.

SEVEN STYLES

Costs Less than Wood Shingles

INTERNATIONAL ROOFING & MFG. CO.

5305 to 21 So. Western Ave.

CHICAGO



Four Facts
Every Builder Should Know
About

Arkansas Soft Pine

Why to use it: Because nails do not split this wood nor is the surface broken or marred when the nails are set. (*See illustration.*) Because it may be finished with paint, stain or enamel; because the wood is light and easy to work.

How to use it: It should be used in the manner and for the purposes for which it is recommended. For cornice work, porch work, siding and the interior trim and woodwork it has no superior.

When to use it: When you want results that satisfy you, the builder, and please the owner; when you want the structure to serve as an advertisement of your skill, use Arkansas Soft Pine.

Where to use it: Keep a "bone dry" supply for jobbing work, insist on Arkansas Soft Pine framing and trim for small frame buildings, and insist on Arkansas Soft Pine Trim when something extra fine is wanted.

Get a copy of our "Use Book" and learn all about the modern method of ceiling and finishing porches. It will be sent free on request. ::

Arkansas Soft Pine Bureau
1738 Transportation Bldg. :: CHICAGO, ILL

Quartered Oak Wall Board

We are now making NEPONSET Wall Board in an improved quartered oak finish, this, in addition to our original finishes. We should like to send samples of this to any carpenter or builder who will write in for them.

Neponset Wall Board

is the most practical wall board on the market for you to handle. It is the only wall board which requires no further decoration, that has surfaces waterproofed to prevent absorption of moisture and buckling.

As far as appearance goes if you do not think *it is 100% better looking* than any other substitute for laths and plaster on the market write in for a sample.

NEPONSET WALL BOARD

BIRD & SON

Established 1795

EAST WALPOLE :: MASS.

NEW YORK CHICAGO
WASHINGTON SAN FRANCISCO

Canadian Plant and Office, HAMILTON, ONT.

BIRD & SON

210 River Street, EAST WALPOLE, MASS.

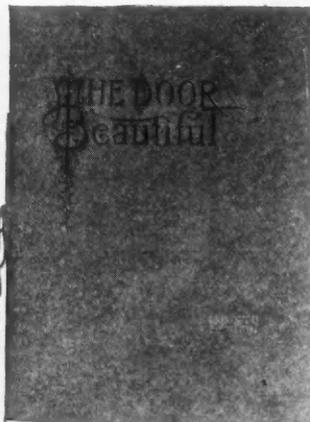
Please send your prices on NEPONSET Wall Board, also a sample of the new quartered oak finish.

Name

Address

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

together by powerful hydraulic pressure and kept in pressure retainers for many hours, which makes an absolutely perfect and durable joint. After this operation the cores are planed to an even thickness, then the face or surface veneers are applied, and again subjected to tremendous hydraulic pressure for many hours. The grain of the core or center piece is always placed at right angles to the grain of the veneer.

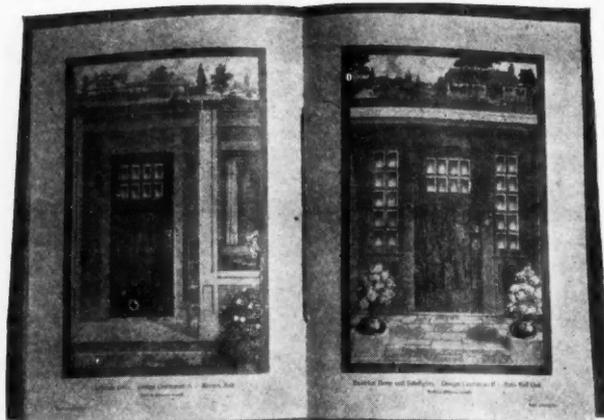


Send for Free Copy of This Book.

This increases the strength and makes swelling, shrinking or checking impossible.

For flush or sanitary doors, design M-115, shown on page 35, in their new book, "The Door Beautiful," Morgan Company have a special dowel construction. The core of Morgan sanitary doors is built of pine with 6-inch stiles and 12-inch cross rails. Not only the stiles are doweled, but the cross rails as well. After the core or frame of this door has been put together and re-dried, it is then planed and sanded to an even thickness. After this operation, cross banding of 1/16-inch is put on, after which the face veneer of 1/8-inch is applied, and then hydraulic pressure of 300 tons is used, which gives a uniform pressure on the entire surface, irrespective of size. Such a construction permits the Morgan Company to build flush or sanitary doors which can be guaranteed to be perfect doors. The Morgan Company is most particular in the selection of the veneers for their doors. Only the best grained and the best quality of veneers are used, and the different designs of plain oak, brown ash and birch doors pictured in their new catalog show the beautiful figure of each wood. The mahoganies and quarter oaks are always selected for color and figure.

Morgan doors are designed and built along original ideas. The Morgan Company has a history of forty years of door making. Morgan doors have always been good doors, the best of their days. They have a distinction and a suggestion



Two Sample Pages in "Door Beautiful."

of superiority. The Morgan door factory is a progressive factory. The latest and most modern models of door making machinery are installed, and much of the process is absolutely original with Morgan. Each door coming from the Morgan factory and bearing the Morgan name stamped on the top rail, is guaranteed to be absolutely perfect in every respect, and this guarantee means that, should any defect be found, a Morgan door will be immediately replaced by a new one, free of charge.

BEAVER BOARD

Walls & Ceilings



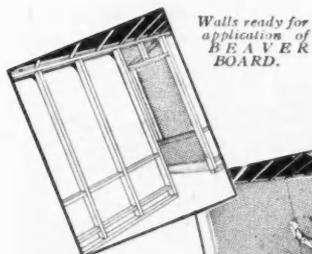
Read the Instructions and You Can't Go Wrong

BEAVER BOARD must be put up right in order to get the finest results. The few simple instructions make everything clear. They are a big help to the carpenter who wishes to share in the tremendous growth of BEAVER BOARD, by knowing it as thoroughly as he does any fine lumber.

Every community with a BEAVER BOARD dealer is looking for the carpenter who knows BEAVER BOARD thoroughly. There are 9,000 dealers, and opportunities for three times as many carpenters.

With BEAVER BOARD you do the whole job yourself. You don't have to wait for the plasterers to get out. Construction goes right ahead with no delay.

But it's necessary to know every phase of construction. Write today and learn how our Builders' Service Department makes it easy for you to work with BEAVER BOARD.



Walls ready for application of BEAVER BOARD.



Nailed to intermediate studding first, then all edges.



Cut with a saw like any fine lumber.



Support to hold ceiling panel in position while nailing.

The Beaver Board Companies

United States: 335 Beaver Road, Buffalo, N. Y.
 Canada: 535 Wall St., Beaverdale, Ottawa
 Great Britain: 4 Southampton Row, London, W. C.

Mr. Belleville at St. Louis has BEAVER BOARD in every room. One of them is shown below. It's a case of good designing and first-class workmanship.

Send us your Name

Our Builders' Service Department will gladly put your name on the permanent mailing list to receive all literature issued by the Department. It keeps you posted on the fine points of BEAVER BOARD designing, construction and decoration.

Always paint before paneling.

Decorative strips are stained before being nailed over edges.



Work for the Winter

An extremely valuable and practicable offer of assistance is made by the Maple Flooring Manufacturers' Association in this issue.

Briefly stated the idea is to aid the contractor and the carpenter to secure orders for new floors for old buildings, to be laid during the winter months when the carpenter usually loses a great deal of time.

This work should serve as a filler-in during the long winter months. It should not require great effort to start the custom of replacing wornout softwood floors with substantial hardwood floors.

This is a step in the right direction by the manufacturers of maple, beech and birch flooring, the standard one-piece hardwood floor, and it will be a step in the right direction for the carpenters and contractors to confer a benefit on their customers and a profit on themselves by starting a demand for modern floors in their localities.

Maple, beech and birch floors are sanitary, warm, dry and, above all, they probably are the greatest labor savers that have been offered as a boon to the housewife.

Complete information and valuable assistance can be secured from the Maple Flooring Manufacturers' Association, Stock Exchange Building, Chicago, Illinois.

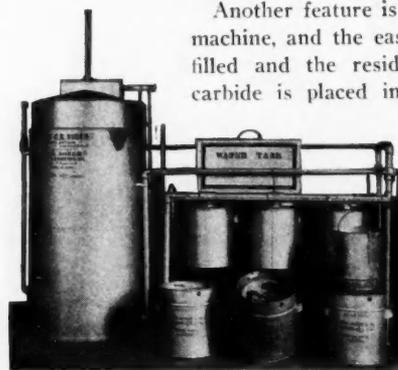


Quick Blue Print Service

Carpenters and builders who are in a hurry for blue prints can send their orders to the Peerless Blue Print Co., 341-347 Fifth Ave., New York, who guarantee to ship all orders same day as received. This company has a large catalog illustrating their entire line of architect's and draftsman's supplies, levels, transits, drawing and tracing papers, etc. A copy can be obtained by writing the company.

The C. K. Sober Acetylene Generator

The Sober acetylene gas generator has been in actual and daily use for a number of years in hundreds of homes and business places in this country, with the greatest success. This generator requires very little attention. Once charged, it is self-acting, the quantity of gas produced being regulated automatically and with absolute precision by the quantity of gas required. The retorts may be recharged in a few seconds with perfect ease and safety. Anything in the nature of an explosion is practically impossible, while water seals prevent even the slightest leakage of gas.



C. K. Sober Acetylene Generator.

Another feature is the cleanliness of this machine, and the ease with which it is refilled and the residue carried out. The carbide is placed in the retorts, and the residue is then carried out without transfer to another receptacle. It cannot spill, or blow about, or soil the clothes or hands.

The Sober gas generator is manufactured by C. K. Sober, Lewisburg, Pa. Mr. Sober has given this subject

a great deal of study and care, and has prepared a booklet that every builder should have. Write for it. The manufacturer is also looking for responsible agents, and special prices can be secured by carpenters and builders.

Stop the Leaks!

A leaky and damp basement has no practical value. It is waste space. A Ceresitized basement is a business asset, because it is always **dry**.

Tell your customers about



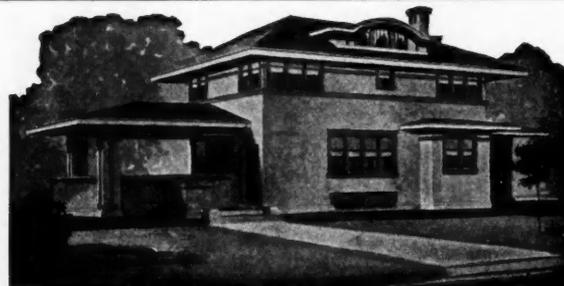
Tell them how simply and inexpensively **you** can make a workable room out of their musty, unsanitary basement.

But first post yourself by writing for our "Book of Evidence" and prices. It means money for you and satisfaction for your customers.

Ceresit Waterproofing Co.

910 Westminister Bldg. CHICAGO, ILL.

FACTORIES: Chicago Una, Germany
Paris London Vienna Warsaw



Cement Houses and How to Build Them

This large book of 176 (8 x 11 inch) pages contains illustrated details of cement construction—standard specifications for cement—concrete blocks—general information concerning waterproofing, coloring, aggregates, mixtures, paving, reinforcing, foundations, walls, steps, chimneys, floors, etc., together with perspective views and floor plans of 87 stucco and concrete block houses.

The illustrations show the houses exactly as they will look when built. All the floor plans are shown, giving the location and dimensions of all rooms, closets, porches, etc.

This Book Sent Free

Send in your subscription today and receive one of these books by return mail. **Free**, postage paid. Regular subscription \$2.00 per year.

American Carpenter and Builder

1827 Prairie Ave.

CHICAGO, ILLINOIS

Who will fill these orders?

I AM receiving inquiries every day in response to our national advertising. Most of these inquiries we refer to the local builders who use and specify our wall board. But many we are obliged to fill direct from the factory because they come from localities where we have no local representative. Probably some of these sales are made in your own town. It is more than likely that we are now in correspondence with somebody in your locality who wants to finish a new house or to remodel an old house with



ROBERDS *Ideal* WALL BOARD

I want you to get the benefit of these sales, Mr. Carpenter. I don't want to sell at retail. I want to have you make a profit on this material and another profit on the job of applying it and if you will co-operate with me I will help you to do so. Roberds never sells direct to the consumer in territory where he has a local agent.

My wall board is easier to sell than any other substitute for lath and plaster because it is better value and the price is right. And my method of working for and with my agents and dealers is making my business grow by leaps and bounds, while it is also putting profits into the bank accounts of the contractors who are availing themselves of the opportunities offered by the company of which I am the head.

Right now I am assigning territory for the coming year. If I have not already secured a satisfactory representative in your town I will make you a proposition that you simply cannot afford to ignore. But quick action is important. Mail me the coupon today.

Roberds Manufacturing Company

J. W. Roberds, President

100 Railroad Street

Marion, Indiana

Roberds Manufacturing Co., Marion, Indiana.

Send me your proposition.

Name..... P. O..... State.....

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



Con-ser-tex solves all roofing problems

What is Con-ser-tex? It is a canvas roofing, chemically treated to preserve the fibre from the mildew and the detrimental action of the oil in paint.

What Are Its Uses? It is used for Porch and House roofs, piazza floors, sleeping balconies, bathroom walls and floors, kitchen floors and all other places where a serviceable fabric is required.

Does It Do the Work? It never rots or stretches. It hugs the porch or roof surface tightly. Neat and artistic in appearance. It deadens sound, is water proof and weather proof. Defies treading, coal gas, or any other wearing influence.

Does It Cost Much? Con-ser-tex is very inexpensive. Cheaper than most other roofing materials. It is easy to put on—thus saving time and eliminating trouble for the carpenter.

Anything Else? Yes, we will send you a sample of this wonderful fabric. A moment's investigation will show you its superiority over Cotton Duck and other roofing fabrics. We will also send you descriptive folder and price list.

Wm. L. Barrell Company
8 Thomas Street New York City

Chicago Distributor: Geo. B. Carpenter & Co., 430-40 Wells St.

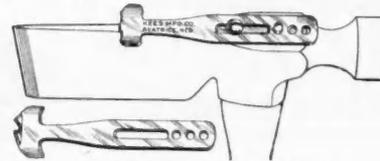
California Distributors:

Waterhouse & Price Co.,
Los Angeles

The Pacific Building Material Co.,
San Francisco

Kees Shingling Gauge

A businesslike little shingling gauge that can be easily and quickly attached to any shingling hatchet has been brought out by the F. D. Kees Mfg. Co., Beatrice, Neb. It can be quickly adjusted in seven different positions by quarter inches from 4½ to 6 inches. While light in weight, it is strong and



Hatchet With Shingling Gauge.

accurate, is not in the way and does not spoil the balance or swing of the hatchet. It works equally well right or left hand. It is claimed that Kees shingling gauge does away with measuring, chalk lining, straight edges, etc. A man can shingle without an assistant and take care of as many rows as he can reach. The gauge is made of No. 14 cold rolled stamped steel, polished and nickel plated. The price is a mere trifle.

✦ Diamond Edge Steel Levels

This line, sold by the Shapleigh Hardware Company, of St. Louis, has proven very popular.

They have found it necessary to increase their number of patterns from six to seven different styles of levels. Their latest is No. DE400 masons' six-vial level. It has the level incline and four plumb vials.

The Diamond Edge are made throughout of the best quality cold rolled steel. All parts assembled with brass rivets. All webs of the stocks are oxidized copper finish.



Steel Level.

The flanges are handsomely nickel plated and polished and the end pieces are full finish.

The vials are provided with the new adjustment. They can be easily placed in any position and securely fastened by the two smaller screws which connect with the steel nut that is fastened to the stock beneath the vial ring. A slight pressure with a small screwdriver releases or fastens the vial ring. It is metal to metal, and is entirely reliable.

Each glass in both plumb and level is set in plaster and enclosed in a metal case, held in place at end by an adjustable screw. A very delicate adjustment is thus obtained.

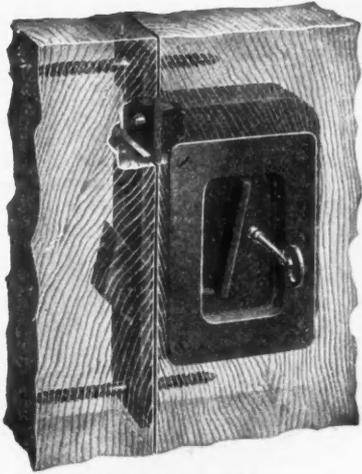
The glasses in all Diamond Edge levels are thoroughly tested before placing in the vial. More accurate than the wood level and lighter than the iron level. It has proven a wonderful success from the start.

✦ Recent Developments with Roberds "Ideal" Wall Board

Only a few years ago the first acceptable substitute for lath and plaster was offered to a sceptical public. Because of their very manifest economy, not only in first cost but also in time and labor involved in applying them there was a fairly generous market for these goods from the very start.

The conservative builder, however, was not induced to accept the new product for the better class of work until it had proven its merit and its permanency by years of actual service. So universal has been the satisfaction afforded by the better grades of wall board that there is probably not a community of any importance in the United States in which this commodity is not recognized and regularly used by the architects and builders. There is not a community of this kind in which there are not frequent calls on the part of the consumers for wall board.

One of the first manufacturers to enter this field and to produce an absolutely reliable and high-grade board was the Roberds Manufacturing Company of Marion, Ind., whose



No. 525 R-W Sliding Door Lock

R=W Locked

**A Building is a Box without a
Good Secure Lock**



Some Door Arrangements call for a Lock to meet their peculiar case.

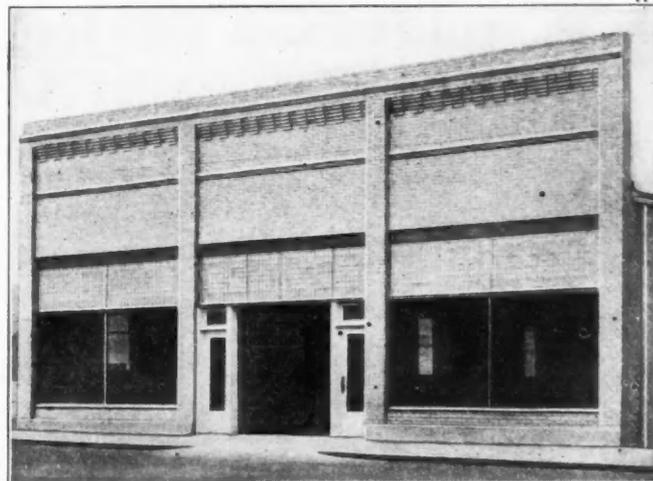
By using R-W Locks you always get the right article.

**Ask Your Dealer
for R-W Locks**

"A Hanger for any Door that Slides"

Richards-Wilcox

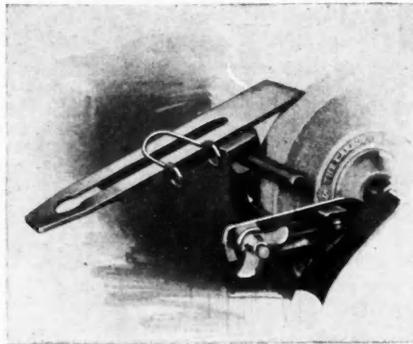
MANUFACTURING CO.
AURORA, ILL. U.S.A.



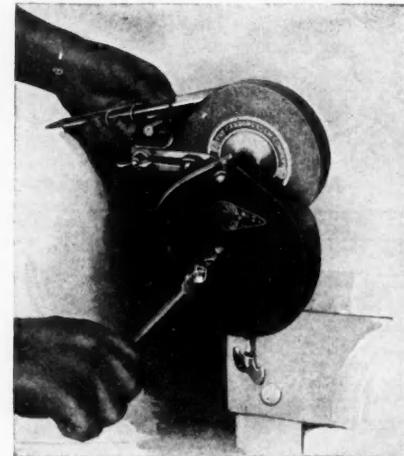
product is well known to most readers of this paper. Roberds "Ideal" wall board has been an evolution from comparatively light weight board to its present form, consisting of four thicknesses of fiber board united by three layers of asphalt cement. This board is unusually strong, tough and uniform and has been found to be perfectly satisfactory as a substitute for lath and plaster and for purposes of sheathing frame buildings.

Among recent improvements in Roberds "Ideal" wall board is the development of a special finish which reproduces the natural grain and color of golden oak, quarter sawed. In this form it meets a growing demand as it can be used for wainscoting, paneling and interior finish, giving an exact imitation of selected hard wood. A single coat of varnish is all that is required to finish a job of this kind so perfectly that it will defy detection by any but the most skilled eyes.

There have recently been some important changes in the organization of the Roberds Manufacturing Company and Mr. Roberds announces that arrangements have been made to increase their output enormously for the coming year. In order to take care of this increased product Mr. Roberds is making a very interesting proposition to contractors and builders. See their ad.



New Tool Holder and Guide for Carborundum Grinding Machines.



A Practical Tool Grinding Guide

One of the simplest yet most practical tool grinding guides offered to the public is that manufactured by the Carborundum Company, Niagara Falls, N. Y. This guide consists simply of a flat base or plate of steel which slides back and forth on a guide-rod or support. The plane bit or chisel is securely held to the base or plate of the device by means of a strong clip or spring. There is positively no chance for the tool to slip as it is always held in the position desired by the operator. By a simple movement of the hand of the operator the tool can be tilted to any desired angle to get

Agents Wanted

The Stransky Mfg. Co., Dept. V, 20 Warren St., New York City, want agents and distributors everywhere to sell their chair tips, or gliding casters. They are cheap and there's a neat little profit in it. Write these people for their proposition to carpenters. They also send a sample set free of charge.

the required bevel. The tool always moves parallel to the axis of the wheel and there are no set screws or any other complicated adjustments to the attachment. The simplicity of its operation can be noted from the accompanying illustrations.

How About 2014?

Will the houses you are building today last one hundred years?

NEW YORK CITY has over a score of frame houses built before 1800.

"Well built," you say. True, but well painted, too, and almost uniformly with

Dutch Boy White Lead

and Dutch Boy linseed oil. Such paint, tinted any color, is so fine that it sinks into every joint and wood pore. It is

Write for
PAINT FOLDER B

Tells how to mix materials for any surface or weather condition; how to choose look-best and last-longest colors; how to estimate quantity of paint and probable cost.

just elastic enough to prevent cracking, to keep the wood thoroughly covered and hence perfectly preserved.



NATIONAL LEAD COMPANY

NEW YORK BOSTON BUFFALO CHICAGO CINCINNATI
CLEVELAND ST. LOUIS SAN FRANCISCO
John T. Lewis & Bros. Co., Phila. Nat'l. Lead & Oil Co., Pittsburgh

SEND FOR OUR CATALOG. "HOME HEATING"

HOT-WATER HEATED \$198

by **ANDREWS SYSTEM** EACH



14 ANDREWS HEATERS IN ONE BLOCK

AVERAGE PRICE \$198.00

IT IS WELL WORTH READING

A Heating System Especially Well Adapted to the Work of Contractors and Most Profitable to Them

The Andrews Method of building heating plants complete in Andrews' factory and shipping them all ready to screw together by any man handy with tools has proven the finest kind of a proposition to contractors and builders. A great many of the Andrews Systems which are now working in 2274 towns and cities of this country have been put in by contractors. Most of these contractors have come back with repeat orders—the surest kind of satisfactory evidence.

The Andrews Heating Systems are the very best that can be built. Andrews Steel Boilers have all kinds of advantage over cast iron boilers—greater durability, more heating surface, easier to keep clean, more economical of fuel. The Andrews piping design is very simple and so arranged as to permit every room to heat up evenly. The materials used are all strictly high-class.

A contractor's helper can easily screw together an Andrews System, following the very complete and understandable directions given with each outfit.



360 Days Free Trial Guaranteed by Bond

As an evidence of our faith in our systems—of our knowledge in their real worth, we give this very broad guaranty. In other words we take all the risk of the plant's success in each job. The contractor has nothing to lose.

Send for Our Free Estimate On Your Next Job

The best way to get in close touch with Andrews' methods and facilities is to get our estimate on the next job you figure on. Send us architect's plans or rough diagrams of each floor plan and basement, showing all sizes, etc., and our engineers will prepare a complete estimate of the plant, cut-to-fit and ready to screw together, delivered, freight prepaid, at your nearest freight station.

Most Economical & Efficient Sewage Disposal System

For Districts Having No Sewers

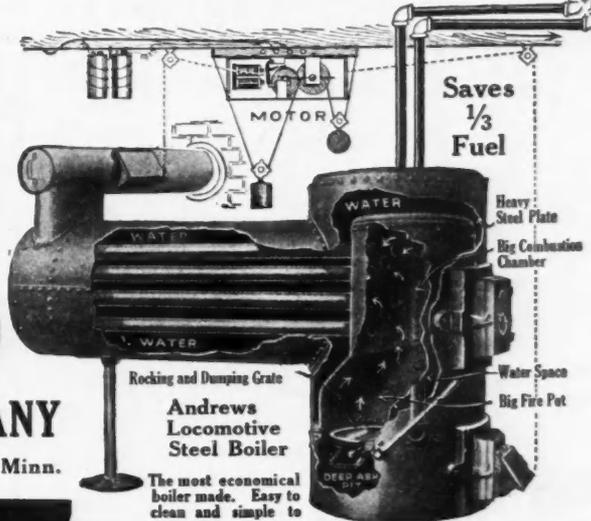
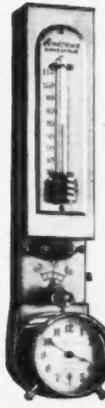
This system costs only a little more than a cess-pool and, aside from being perfectly sanitary, it will last as long as the house. Practically no attention is required in its maintenance and no chemicals are used. The sewage from the house is reduced by bacterial action to liquids and these are distributed over a surface or sub-surface bed of some porous material like gravel, cinders, etc. Here they are fully purified by bacteria and oxygen from the air. No odor, no water contamination, no trouble from climatic or soil conditions. Solves the sewage problem for country homes. Write for special booklet.

Install "Hired Man" Thermostats and Make Good Profit

This dependable temperature regulator should be installed in every house you build this year. It automatically operates the dampers on any style of heating plant, saves fuel and does away with the worry and work of damper tending. Our special price to contractors makes the "Hired Man" a very profitable article to handle. Any helper can easily install it in new or old houses. Write for our proposition.



Why Put In a Short-Lived Cess-pool When a Permanent Andrews Septic Tank Costs Only a Trifle More



Saves 1/3 Fuel

Rocking and Dumping Grate
Andrews Locomotive Steel Boiler

The most economical boiler made. Easy to clean and simple to operate.

ANDREWS HEATING COMPANY
1453 Heating Building Minneapolis, Minn.



For Hard Service KisselKar Trucks Are The Best

DEALERS in building material must seek the utmost sturdiness and reliability in the motor trucks they buy.

They find that KisselKar Trucks live longer than other trucks and are laid up less frequently. They find too, that they are easier and less expensive to operate.

KISSELKAR TRUCKS

KisselKar Trucks are built to fit the particular service expected of them. Individual conditions are studied, and the size, capacity, body construction and other details made accordingly.

There are six sizes of KisselKar Trucks—1500 lb. 1, 12, 2½, 3½ and 6 ton capacities.

KisselKar Trucks are used in more than 200 lines of business. Send for illustrated portfolio showing 350 of them in action—its convincing.

Kissel Motor Car Company

546 Kissel Avenue - - Hartford, Wis.
New York, Chicago, Philadelphia, Boston, St. Louis, Milwaukee, Minneapolis, St. Paul, San Francisco, Kansas City, Los Angeles, Dallas and 300 other leading American and Canadian points.

Detachable Auto Top for Winter Use

The new KisselKar "36" which has just made its appearance, features something entirely new in the shape of a detachable Sedan top for Winter use.

This detachable top is a logical evolution of the successful two-door body design introduced by the Kissels with the Series B 48—"Six," and is now announced that this body will be optional to purchasers of any KisselKar model for the 1915 season.

The top fits snugly and perfectly over the touring body, and is so simple in construction that two inexpert men can make the changes with a screw driver and a wrench. Six bolts and sockets, three on either side, and four top irons, one at each corner, are the only fastenings, and these are neatly hidden under the leather lining. The electric wiring connects automatically as the upper and lower halves meet. To convert the touring car it is necessary to remove only the windshield, Summer top and moulding, then to screw a metal plate over the door latches.

The point is emphasized that no sacrifice is made in looks, comfort or convenience, no unsightly obstruction of any kind appearing. The door hinges are entirely concealed, and all the refinements and niceties of the finest closed cars are preserved.



Combination Pocket Rule and Level No. 2062

This article is a 2-foot folding boxwood rule fitted with a spirit level. The three 8-inch rule sections are each 1 inch wide, 3/16 inch thick and united by substantial brass joints. The rule is fully graduated entire length both sides, one side inches to eighths, other side to sixteenths. The spirit level is neatly set into and flush with the upper edge of the middle section of the rule where most convenient for use and securely protected by the two outer sections of the rule which



Lufkin Rule with Spirit Level.

fold against it on either side when closed for carrying in the pocket. The combination rule and level being light and but 8 inches long when folded, is conveniently carried in the pocket. Closing pins especially designed for the purpose, hold the sections of the rule in proper alignment, insuring a perfect bearing surface.

The accuracy of the rule and level is guaranteed. The article is new in every sense of the word and both as rule and level a practical tool. The Lufkin Rule Company, of Saginaw, Mich., are its manufacturers, and patents are pending.



Bovee's Economy Furnaces

The Bovee Furnace Works, 50 Eighth Street, Waterloo, Iowa, are now offering their furnaces at manufacturers' prices, which they claim saves the purchaser about 50 per cent.

The Bovee furnace is well known to our readers as an honest, well-built furnace, designed for efficient heating service. The illustration on page 110 shows very clearly just how their furnaces are built.

These furnaces start with a clean heating surface at the ashpit. They have a heavy cast-iron firebox, made in two sections, surmounted by a combustion chamber eighteen inches high and almost one foot larger than the firepot. This large combustion chamber adds greatly to the capacity of the fuel,

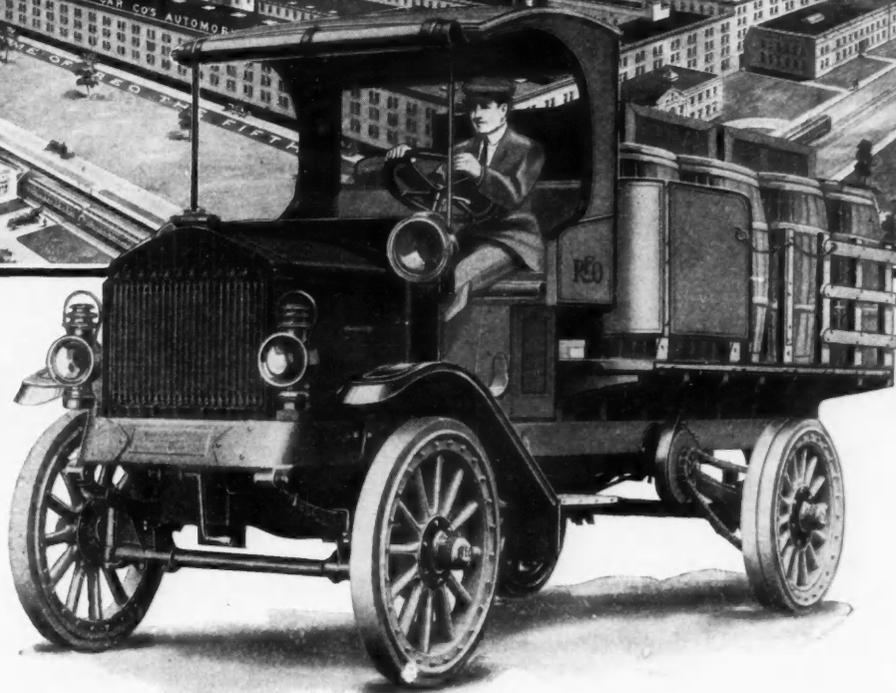
The Reason for the Price



\$1,650

Chassis with
Driver's Cab
Body Extra

**Model J, Two
Tons**



How Can the Motor Truck of Acknowledged Leadership Be Sold at the Lowest Price in the Two-Ton Field?

Whenever superior quality is encountered, it is customary to meet a high price. The Reo Model J, two-ton truck, which knows no equal in quality of construction, superiority of design, and the evidence of perfect performance, is sold at a price which comparison will show to be the lowest in the two-ton market.

The reason for this lies in the immense Reo organization—the same great concern which builds and sells Reo the Fifth, the famous pleasure car.

Raw material, parts, accessories, etc., for Reo Motor Trucks are bought on the basis of the great Reo Motor Car production; the output has reached a point where each workman is a specialist; in selling trucks the immense Reo sales force of more than 1100 dealers is in a position to handle the trucks without additional selling cost. So it is apparent that the manufacturing and selling costs, the overhead and the buying cost are naturally lower than any other

two-ton truck builder enjoys; and that is the reason why the price of the Reo Model J. is only \$1650, whereas the average price of 54 competing trucks is \$2701.

Motor trucks are not made in the great quantities which characterize the pleasure car business, and the small truck maker whose total annual output may possibly run up to 500 or 1000 trucks, finds it a physical impossibility to compete with a factory that manufactures 20, 30 or 40 machines to his one. This in a measure accounts for the fact that during the past year the Reo Truck has forged into the lead and today is the largest selling two-ton truck in America.

Call the nearest Reo dealer and let him tell you about the Reo Motor Truck and explain Reo Service. Reo Motor truck catalog sent on request. Write for it today.

Reo Motor Truck Co.
Lansing, Mich.



Specifications

Wheel base, 130 or 146 inches.
Motor, cushioned on sub-frame, away from road shocks and vibration.
Unit power plant.
Hydraulic governor prevents "racing" the motor.
Radiator built of 24 independent, interchangeable units.
Right hand center control.
Left side drive.
Impregnable armored frame.
Four speeds.
Multiple disc clutch.
Four brakes.
Positive oiling system.

also to the durability. It makes the furnace practically indestructible and furnishes a balmy atmosphere.

The furnaces are supplied with Bovee's Hot Blast Ventilating System, as can be seen by examining the picture. This takes the air from the air chamber inside of the casing and discharges it over the fuel, thoroughly mixing the air and oxygen with the gases and smoke passing off of the fuel and causing it to burn, thus securing a great deal of heat that in other furnaces and stoves is lost. With most fuel this adds fully one-fourth to the heating capacity, and with some kinds it adds even more to its value, and always insures absolutely pure air in the entire house without opening doors and windows.

Above this large combustion chamber there is a return circulating radiator which carries the heat clear around, with a sheet of flame between two sheets of cold air and sheet of cold air between two sheets of heat, which secures the greatest possible amount of heat before reaching the chimney.

They have heavy, independent, rocker shaker grates, and are very easy to fire and operate.

Builders should get better acquainted with Bovee's Economy Furnace and with the proposition the Bovee Furnace Works are making at this time. Write them today for full particulars.



Bovee Furnace, Cut Away to Show Construction.

Something New in Porch Ceilings

Sometimes the way that seems the easiest actually is the most difficult. One man blazes a trail and countless thousands follow after him. But one day the right road is found and that road becomes the great thoroughfare.

Well, how about porch ceilings?

What is the custom of your town? To run the ceiling joist from the house to the outer plate and put the ceiling on lengthwise of the porch?

Why not lay the ceiling joist the same way as the flooring joist on all porches not exceeding 20 feet in length? On longer porches the joist may be stripped with 1 by 3. Then order ceiling of exactly the right length. You will find it will go together better, will lie straighter, that ceiling the porch will be a one-man job, that you will save money and get better results all around.

Order perfectly milled Arkansas soft pine stock, which shows good figure, and instead of painting or oiling the ceiling give it a coat of forest green or russet brown stain and cover with a suitable varnish.

The Arkansas Soft Pine Bureau is fathering this idea and is pushing it for the benefit of builders. That businesslike organization desires to see its products used in the manner and for the purposes for which they are best adapted to the end that the contractor and the owner will derive the greatest possible benefit from the use of good material.

The idea of preserving for the owner the beautiful figure of Arkansas soft pine is one that should appeal to every contractor. If paints are used a light color, white or pearl gray, is recommended.

This is one of the practical features of building discussed in a pamphlet now ready for distribution, entitled "Uses of Arkansas Soft Pine for Building." Copies will be mailed to all who ask for them. Address the Arkansas Soft Pine Bureau, 1738 Transportation Building, Chicago, Ill.

VULCAN-TILE

The New Vulcanite Roofing

Here is a high grade, fire-resisting durable asphalt roofing, combined with the beautiful patterns and soft natural colorings of slate and tile at a cost of roll roofing.

MAKES HOMES BEAUTIFUL

Every roll of Vulcantile is made to meet all sorts of adverse and extreme conditions, whether it be Fire-Cold-Hail or tempests. This is accomplished by using only the best Vulcanite Asphalt to saturate the all-wool felt which forms the base of Vulcantile. The figures and patterns are part of the crushed granite rock surface and are as durable as the roof itself. Pattern illustrated is Style "P." Vulcantile comes in one square rolls, five soft rich colorings, including red and green.

Send for our samples and catalogues, telling how we assist, by advertising helps, such as individual letters, general publicity, etc. Address

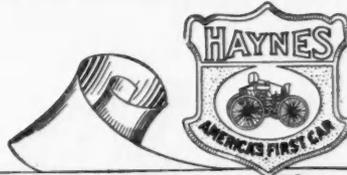
Patent Vulcanite Roofing Co.

Birmingham, Ala. Cincinnati, Ohio San Francisco, Cal.
Kansas City, Mo. New York City, N. Y.

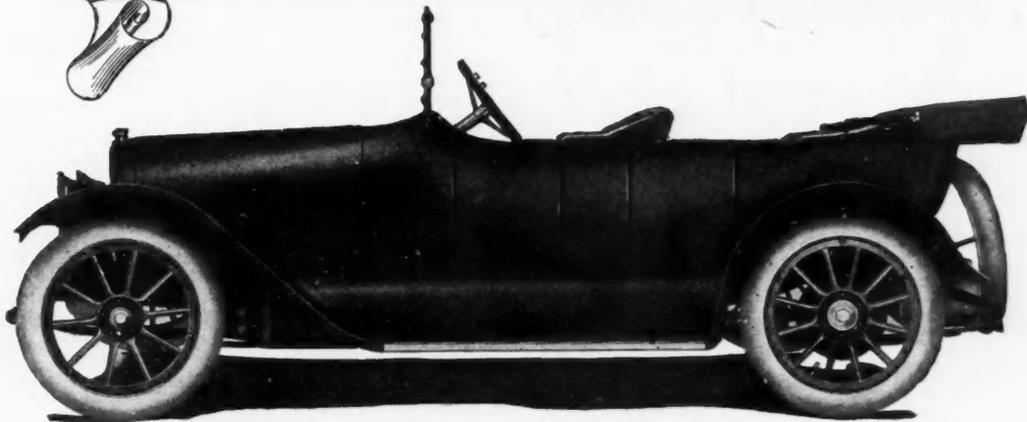
CHICAGO, ILLINOIS

Durable
Ornamental

*The result of
22 years' successful
experience in
building motor cars*



America's Greatest "Light Six" \$1485



*Five Passenger Touring Car
Two Passenger Roadster*

The Man Who Cares for His Own Car

—will now find a car on the market which was primarily designed to meet his requirements.

Nothing has been sacrificed from an engineering standpoint. Practically all working parts are completely enclosed. Yet *accessibility* is one of the chief features of its construction. This car is

THE
HAYNES

America's Greatest "Light Six"

The grease cups and oilers may be easily reached; the carburetor is conveniently located; the valves are readily adjustable; the motor and generator are very accessible; storage battery conveniently placed—in fact, every part and every unit has been carefully considered from the standpoint of the *owner*, making this car particularly well suited to the man who prefers to care for his own machine.

In addition to these desirable features this car represents a sterling value in a high-grade, light-weight, economical "six" with ample power.

We also build Model 31, "Big Six" with 65 brake horsepower and 130-inch wheelbase—\$2,250; Model 32, Haynes "Four" with 48 brake horsepower and 118-inch wheelbase—\$1,660.

WRITE FOR NAME OF NEAREST DEALER

THE HAYNES AUTOMOBILE COMPANY
14 South Main Street
KOKOMO, INDIANA

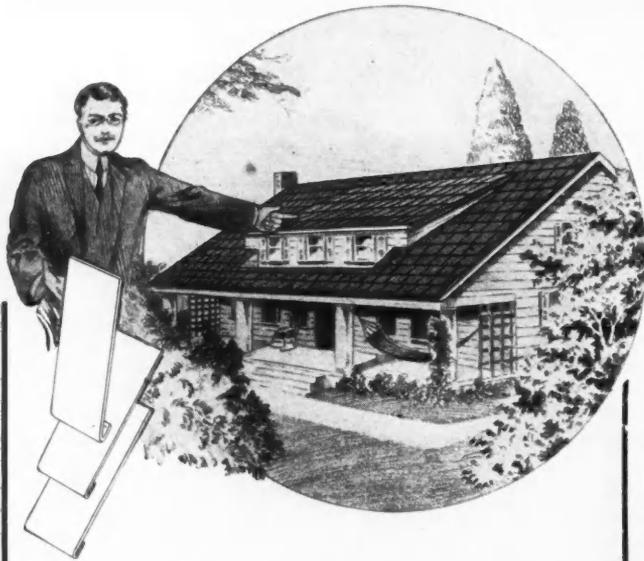
**This Coupon will
bring you our
latest
Catalog**

Write NOW to
**THE HAYNES
AUTOMOBILE CO.,**
14 South Main Street,
Kokomo, Ind.
Please send me your 1915
catalog with full particulars in
regard to America's Greatest "Light
Six."

Name.....

Address.....

I expect to buy a car about.....



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.
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.

Arlington Richtone Flat Enamel

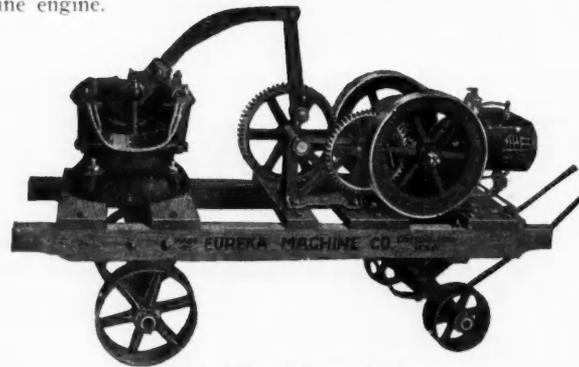
This last year a new inside wall finish was introduced and has become an immense success—Arlington Richtone flat enamel. That is a flat enamel with a base of French zinc. It is not one of the customary flatted out lead and oil paints. The special excellence claimed for "Richtone" is that it is not only waterproof, but germ-proof, and will not soften up and become absorbent in hot weather, thus making it particularly useful for the interior finishing of hospitals, schools and public buildings. It contains absolutely no poisonous ingredients and so can be used where ordinary paints are prohibited.

The Arlington Mfg. Co., Technical Paint Makers, Canton, O., will furnish AMERICAN CARPENTER AND BUILDER readers complete information on "Richtone" upon request.



Eureka Pumping Outfit

The illustration shows a recent addition to the "Eureka" line of contractors' equipment—a gasoline engine pumping outfit. It is claimed that this little rig will pay for itself in ten days on the job. Pumps 35,000 gallons of water a day at an operating cost of only 25 cents. Mounted on trucks as illustrated, the shipping weight is 700 pounds. The outfit may also be had mounted on skids, weight 550 pounds. The equipment in either case is a 1½ H.P. "New Way" gasoline engine.



Contractors Power Pump.

The outfit is built to stand the wear and tear of everyday use. The pump is one of the simplest made—merely two valves and a strong rubber diaphragm. It has a 3-inch suction, capacity 3500 gallons an hour. Start this outfit working and it requires no attention except to keep it supplied with gasoline and oil. It will do as much work as eight men with two hand pumps, and will work continuously, day and night, without kicking, balking or soldiering. Address the Eureka Machine Co., 12 Cass St., Lansing, Mich., for complete specifications and prices.



New Patterns from Kalamazoo Stove Factory

The stove trade is not to be forgotten when it comes to getting new patterns or new styles. Two of the most handsome designs known in the stove business for some time past are this year featured by the Kalamazoo Stove Company. They are the new 1915 mission range and mission heater.

You would read through many catalogs and visit many local stores before you would find anything as artistic as these new designs. They are remarkably practical, too. The lines are smooth—the surfaces are plain, easy to keep clean and shining bright. Nowadays when mission furniture is so popular, these new models from the Kalamazoo factory will find an immediate welcome in thousands of homes.

The Kalamazoo Stove Company has long been noted for being the leader of progress in improvements in quality and manufacturing popular designs. Here is what is said

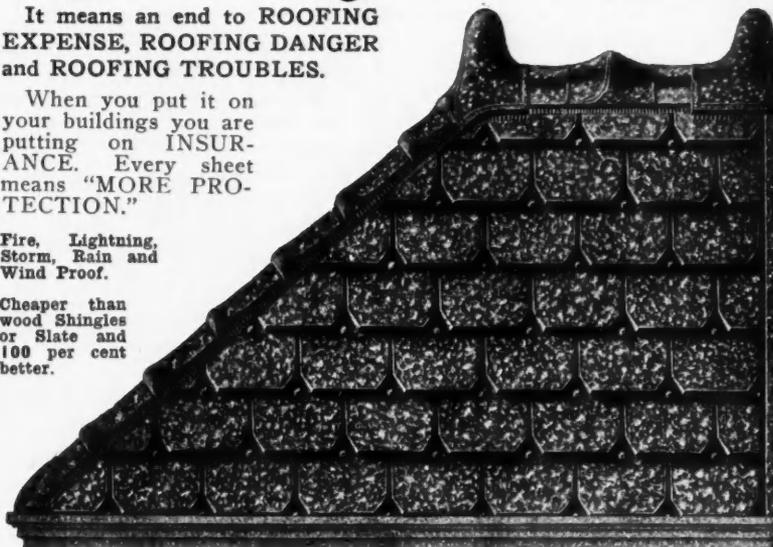
Quality The Distinguishing Trade Mark DICKELMAN EXTRA Metal Tile and Shingles

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.



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-crimped 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 guarantee.

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.

The Dickelman Manufacturing Co., Department "C" Forest, Ohio

FLEX-A-TILE

Asphalt Shingles

You can recommend Flex-a-Tiles with confidence—because they always make good. Zero cold, burning sun, heavy rains, sleet or snow—Flex-a-Tiles never fail in any weather.

The Flex-a-Tile "Giant" is the heaviest, stiffest asphalt shingle ever made—wears best. Let us send you a specimen for comparison. Write today.

THE HEPPE'S COMPANY

Manufacturers also of Asphalt Paint, Asphalt Roofing in any Finish and Utility Wall Board.

1010 S. Kilbourne Ave. Chicago, Ill.

Modern Building Roofed with Montross Metal Shingles



34 YEARS

in service and still giving satisfaction is one of the many testimonials we have received to the durability and ruggedness of

Montross Metal Shingles

They are made of the best tin, heavily galvanized after embossing have a water-tight telescope joint along all vertical seams, which automatically adjusts itself to all temperature changes. All nail heads are covered by adjoining shingles making an absolutely water-tight roof. Our Metal Shingles are non-conductors of heat and cold—Fireproof—Lightningproof and are practically immune to corrosion and rust. Write for hand-book on roofing, giving illustrations, testimonials, and other valuable information.

MONTROSS METAL ROOFING CO., 110 Erie Street, CAMDEN, N. J.

Bureau of Fisheries, Baird, Cal., June 15, 1914.

"The Montross Metal Shingles that Mr. James N. Logan of Redding, Cal., put on the Government residence at this station, are giving perfect satisfaction, and in this climate where we have six months hot weather without rain, followed by a six months rainy season, they have proved to be much superior to the best wood Shingles. They were laid over the old Wooden Shingle roof and have proven cool in summer and warm in winter."

Yours very truly,
G. H. Lambson, Superintendent.

"The roof of my dwelling house, put on with Montross Metal Shingles 25 years ago, has never shown a leak or break."

J. Hop Woods, (Attorney-at-Law)
Philippi, W. Va.



The Popular Kalamazoo Furnace.

to be the largest direct dealing stove manufacturing plant in the world. During the past few years its growth has been phenomenal. It is in every sense of the word a wholesale headquarters for stoves, ranges, base burners, hard and soft coal heaters, etc., gas stoves, furnaces, and kitchen cabinets and kitchen tables which have just been added to the line they manufacture.

Heating Plans Free. The best furnace on earth cannot give satisfactory service unless it is installed properly. The

Kalamazoo people saw to it that Kalamazoo furnaces would be installed so that they would give the service they were intended for. They engaged the services of a staff of engineers whose work it is to draw heating plans for their customers *without cost.*

Customers send in rough sketches of their floor plans and get plans or blue prints showing the best position for every pipe and register. This skilled service insures maximum heating efficiency and economy of fuel—something few local men can compete with. Many people would rather buy Kalamazoo heating system even at dealers' prices, just to get the benefit of the Kalamazoo heating and ventilating engineer's services and be *sure* that their furnace was installed right.

Four Catalogs. Any one of their four catalogs is practically an encyclopedia on the subject it covers. Their stove catalog shows you over 500 styles and sizes to select from. It discusses the stove proposition in every way that you would be apt to think of. Just to run through it is to know a whole lot more about stoves in general. Even though you never intended to buy your new stove from them, it would be well worth your while to read their catalog for ideas.

The same should be said for the Furnace Catalog. If there is any side to the heating problem left untouched by this catalog it is because it is not worth mentioning. If you have any notion whatever of installing a heating system, by all means ask for a Kalamazoo Furnace Catalog.

Their Gas Stove Catalog, and Kitchen Catalog, too, are especially interesting to the housewife who wants to eliminate work and worry from the kitchen. Any or all of these catalogs will be mailed to any AMERICAN CARPENTER AND BUILDER reader writing the Kalamazoo Stove Company, Kalamazoo, Mich.

Your Roof Won't Leak, Crack or Burn

and lasting service is assured, if it is made from



C. B. OPEN HEARTH
1 C
32 POUNDS COATING

Copper Bearing Open Hearth Roofing Tin

This Roofing Tin owes its constantly increasing demand to its lasting and protecting qualities, neat appearance, easy application and reasonable cost. Made from Copper Bearing Open Hearth Steel. Every sheet stamped "C. B. Open Hearth" as indicated above.

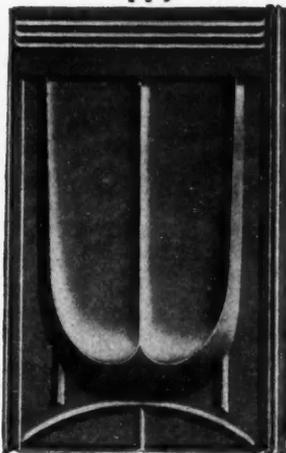
Write for booklet "Copper—Its Effect Upon Steel for Roofing Tin"

American Sheet and Tin Plate Company
General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES:

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis
Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City
Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle

Here's Our Latest Addition - It's A "Baby"



The big Edwards' Metal Shingle family is growing fast. Our latest arrival is the best yet. Look it over. Did you ever see a more handsome, novel design, or more clean cut embossing? We've christened this "Baby" after our own great State—

Edwards "Ohio" Metal Shingle

This stunning pattern is made in one size only, 14 x 20 inches. Manufactured from the best quality Worcester Grade Terne Plate, painted or "Tightcote" galvanized. Every good Edwards Shingle feature—and there's a big bunch of them, including our famous patent interlocking device—is in the "Ohio," of which we are justly proud.

Let Us Send Samples and Agent's Proposition

The high quality of the former will please you and the low prices will surprise you. You ought to see the "Ohio" and you ought to see it now. Act!

THE EDWARDS MANUFACTURING COMPANY

"The Sheet Metal Folks"

401-417 Eggleston Ave., Cincinnati, O.

Largest Manufacturers of Metal Ceilings, Metal Shingles, Steel Roofing and Siding in the World.

NEW YORK OFFICE: 81-83 Fulton St.

BRANCH OFFICE AND WAREHOUSE: 1625-27 Pacific Ave., DALLAS, TEXAS

Reshingle this Fall with "CREO-DIPT" Stained Shingles



"CREO-DIPT" Shingles on Roof and Side Walls, Hornell Country Club, Hornell, N. Y.
An example of good protective covering with color stain that harmonizes well with surroundings. These shingles will last a lifetime.

YOU can save the cost and muss of staining on the job. You can put on a roof and cover the side walls with most pleasing color effect. You save the expense of painting.

They Last A Lifetime

14 Grades, 16, 18, 24-inch. 25 Different Colors

"CREO-DIPT" Shingles come in bundles ready-to-lay. We select Red Cedar shingles, dip them in creosote and stain them any color desired. No poor shingles—no wedge-shaped shingles. They lay faster and look better.

Write for FREE "CREO-DIPT" Booklet Today. It shows different types of "CREO-DIPT" houses selected from all parts of the country.

STANDARD STAINED SHINGLE CO.

1028 Oliver Street,

NORTH TONAWANDA, N. Y.



DURABILITY

combined with Beauty and Low Cost make

HUDSON Asphalt Shingles

the logical roof. Made of best Felt covered with high grade Asphalt and surfaced with either Red or Green Crushed Slate. A Hudson Asphalt Shingle Roof is practically three thicknesses thick and is not effected by heat or cold. Absolutely Fireproof and Watertight.

FREE We will send you absolutely FREE a full line of our Samples; includes our Shingles and Roll Roofings. Send us your name.

ASPHALT READY ROOFING CO., 9 Church St., New York, N. Y.





Contractor Agents Make Big Money!

Every country home, church, school and store, old as well as new, needs a JENNE Lighting Plant. Oil lamps, with their soot and smoke and smell, their trouble, inconvenience and danger, no longer satisfy intelligent people. Lighting plants installed inside the house are always dangerous and seldom efficient. This is why our contractor agents are coining money selling the

JENNE ACETYLENE LIGHT PLANT

"Sunlight from a Cistern"

Installed outside the house in the ground with pipe connections to every room, this system is absolutely safe. Its construction of steel and reinforced concrete (patented) appeals to everyone, for it makes the plant practically everlasting. The careful design, liberal dimensions, and the simplicity of the JENNE make it most economical and dependable.

It is easy to install. It is guaranteed for 15 years.

The modern JENNE System has NONE of the trouble, inconvenience and danger of other lighting systems, be they acetylene, electric, gasoline or kerosene, and it has all their advantages. There are no "come backs" when you install a JENNE. Thousands in use and every JENNE user is a booster.

Passed by the National Board of Fire Underwriters.

Will you act as our salesman? We sell a complete, guaranteed lighting system; we carry the account; we offer terms that will suit your customers; we pay you a liberal commission.

Write for our Contractor Agent Proposition at once

The Jenne Acetylene Gas Machine Co.

313 N. PENNA ST., - - - INDIANAPOLIS, INDIANA

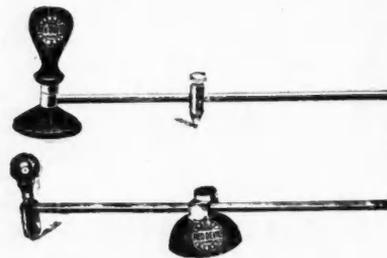


Two New "Red Devil" Circular Glass Cutters

Since the advent of the automobile with its numerous and varied head-lamps of all sizes, the demand for circular glass lights for these has increased to a surprising degree.

For the enterprising and economical motorist who wishes to replace his broken lights himself, the Smith & Hemenway Co., Inc., makers of the widely known "Red Devil" glass cutters and electrical hand tools, have just brought out a most effective and handy circular glass cutter at a popular price. It will cut circles cleanly and neatly from 2 to 20 in. in diameter—a larger size will cut up to 40 inches. The illustrations shown below will give a general idea of this practical little cutter. It is simple, but very effective.

To meet the demand for a better tool of this class, Smith & Hemenway are offering a circular cutter, style 263, with hand honed wheels which will cut sharp, clean circles from 2 to 22 in. in diameter. This is a high-class tool in every respect;



Two Styles of "Red Devil" Circle Glass Cutters.

the strong metal base around which the cutter revolves, is lined with rubber to prevent slipping—no unusual deftness is required to cut perfect circles with this tool.

It would seem to us that the automobile trade and hardware houses carrying automobile supplies, as also the glass houses, would find a ready outlet for a tool of this character.

Both cutters are supplied, of course, with the celebrated "Red Devil" cutting wheels, on the high qualities and wonderful cutting powers of which the Smith & Hemenway Co. have largely based the business success which is their's today.



American Bell & Foundry Co. Rushed with Orders

Word comes from Northville, Mich., that the American Bell & Foundry Co. are very busy with orders for their famous little one radiator furnace for small and medium sized dwellings, containing from five to eight rooms. These furnaces are making a great hit. There is one large register directly above the furnace, which means no lost heat. The living rooms of the house get the benefit of every bit of fuel that is burned. For such a simple heating plant the price is, of course, low.



Of Interest to Barn Builders

In these days of big crops and high prices the farmer is the richest man in the whole country. War time prices on food stuffs don't bother him for the simple reason that he is not buying but selling. For the most part Nature has been generous this season, producing big crops of almost every sort, and now in spite of the big crops, very high prices rule.

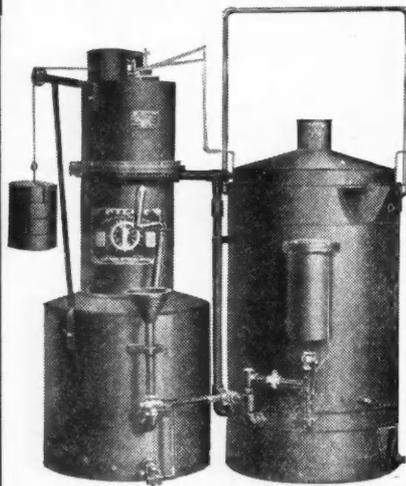
This means prosperity on the farm, and it means that many farmers will be building new barns and remodeling their old ones this year or next.

The best work for all builders for some time to come will be country work—dairy barns, stock barns and storage barns, farm houses, and miscellaneous farm building of every kind. With prosperity on the farm the mind turns to labor-saving equipment to help the farmer do his work more easily and better. Overhead litter and feed carriers are without question the greatest help a farmer can have installed in his barns to help him care for his live stock.

Winter Profits for You

There are hundreds of home owners right here in your vicinity that want an Acetylene Lighting Plant and are waiting for YOU to sell it to them. Your work is slack during winter months. You can easily sell

PILOT GENERATORS



The Pilot

World's standard of merit in Acetylene Generator construction. Adaptable for church, school or home.

More than 250,000 country homes are enjoying city lighting and cooking service, furnished the PILOT way. Make the winter season profitable—Keep the dollars rolling in.

Write us today for our proposition and we will show you how

OXWELD ACETYLENE COMPANY
Jasper Place Chicago, Illinois

10% Larger Bedrooms SAME COST

BY USING

THE BATTS System Built-In Wardrobes



Batts System "New Way" Built in Wardrobes

Why waste valuable space on large old-fashioned closets when you can have double the garment hanging capacity by building in the BATTS "New Way" built-in wardrobes — which will enable you to enlarge the bedrooms at least 10% or you can plan your building smaller, which of course will cost less money and have the same amount of floor space as if you made it larger and included old-fashioned closets.

We do not sell wardrobes. They are built into the house by your carpenter. All we furnish is the telescopic extension carriers and garment hangers to fit the wardrobes with, which enables you to extend your garments right out into plain view where you can get each one separately and in the very best condition possible.

Batts System Built-in Wardrobe

Send for free and full detailed information showing how to plan your house with these built in wardrobes. Also illustrated price list of the extension carriers and garment hangers required to equip them with.

John Thomas Batts, Grand Rapids, Mich.

Dependability

That's what you get when you buy **PLASTERGON**



That's why it is invariably selected for the most difficult work by particular contractors. They know it will stand up under a greater number of adverse conditions than other boards.

PLASTERGON TREATED WOOD FIBRE WALL-BOARD

"THE STANDARD BY WHICH OTHERS ARE JUDGED"

If you have not used Plastergon, do so on your next job. It will set an entirely new standard that no other board will reach

IT COSTS NO MORE THAN OTHERS

You should have our samples and literature for your own use and to distribute to your trade.

Send today, they're free

The Plastergon Wall Board Co., Dept. A, Tonawanda, N. Y.

CORTRIGHT METAL SHINGLES

TWO great questions with the prospective buyer of roofing are—"How long will this roofing last?" and, "What will be the cost for repairs?"

Frankly, we don't know just how long Cortright Metal Shingles will last. A great many Cortright Roofs, put on twenty-seven years ago, are as good as ever today, and have cost nothing for repairs or replacements.

We have a great number of letters from contractors and builders, telling of the satisfaction Cortright Metal Shingles have given customers during the ten, fifteen, eighteen, or twenty years they have been handling them.

Our illustrated catalog and special proposition to contractors and builders should be in your hands. Write now.

Cortright Metal Roofing Co.

PHILADELPHIA AND CHICAGO

NEVER NEED REPAIRS

The greatest incentive a farmer can have for building a new barn or remodeling an old one is to equip it with these modern labor-saving litter and feed carriers. Builders can immediately interest farmers by talking labor-saving barn equipment. In fact, it is the surest and quickest way of turning a prospect into an actual builder of a new barn.

Looking through the new "Louden" Barn Book we see so many illustrations, plans and details suggestive of modern convenience and efficiency in barn building that it seems to us every one of our readers who has anything to do with farm business should secure a copy. It is published by the Loudon Machinery Co., Fairfield, Ia., and they have generously offered to send a copy free of charge to any one of our readers who will write them. Also in addition to this book about Loudon Carriers they have some very valuable books of information together with building details which they will send to Our Folks who are interested in barn building.

The Loudon Machinery Company are the manufacturers of the well-known "Louden" line of improved barn equipment, including overhead feed and litter carriers, hay carriers, sanitary cow stanchions and mangers, barn door hangers, etc. For 48 years Wm. Loudon and his associates have labored to produce the goods that farmers, dairymen and all barn builders need. They have taken the advanced position that it is not enough merely to manufacture and sell their merchandise, but that they should furnish real service besides—service of suggestions and help on all barn planning problems.

Get acquainted with the Loudon Machinery Company today by writing them a letter and asking for their barn book. They will send it to you without charge and will assist you in every way in lining up more building business among the farmers. Their address is Fairfield, Ia.

"Majestic" Built-In Garbage Receiver

A new thing for modern, efficient and sanitary kitchens



Modern Kitchen With Garbage Receiver.

is the built-in garbage receiver offered by the Majestic Company, 505 Erie Street, Huntington, Ind. Write at once for free descriptive booklet that illustrates it in detail and explains its many advantages. This garbage receiver can be easily installed in any house in course of construction, or with very little trouble can be built into any completed house. The photograph reproduced herewith gives an idea of how this feature appears in a kitchen and how it is used.

No "Comebacks" Here

"Comebacks" are good things sometimes, but not always—and one of the places where they don't belong is double swinging doors. Ever since builders commenced installing such doors between kitchen and pantry, and pantry and dining room, as well as on public buildings, the need of a way to control them has been most urgent.

Think back over a few cases that have come to your own notice. Pass through the door, pushing it open before you, but pausing a second too long with your hand on the frame, Slam! It is closed with all the force of its own weight and

ADAPTABILITY—the Keynote of the Lansing "Broncho" No. 7

It's particularly adaptable to the concrete work that building contractors have to do—you couldn't get a better mixing outfit. Easier to transport than a mixing box, and so much more economical than hand mixing that there's no comparison. Has a daily capacity of 70 yards and *saves \$1.00 per yard in time and labor*. Mixes all kinds of concrete and mortar, has a low-charging height, easily discharged, and is constructed entirely of iron and steel.

Always Ready

Ready for mixing directly the engine is started—no setting up, no platforms, no lost time. And the efficiency of the mixing principle is surprising.

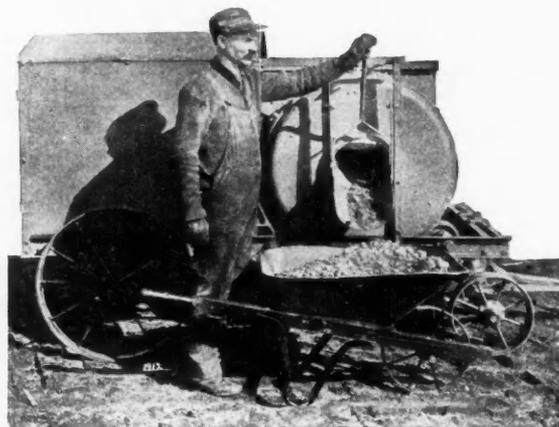
Write today for literature, investigate this money saving (in first and ultimate costs) mixer; your business needs it.

LANSING COMPANY

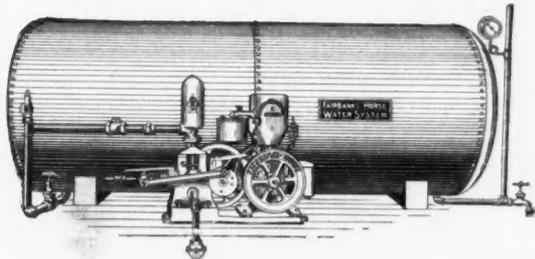
782 Cedar Street Lansing, Michigan

Branch Houses: New York Boston Philadelphia
Minneapolis Kansas City Chicago San Francisco

We also manufacture Block and Brick Machines, Hand Mixers, Wheelbarrows, Carts.



Water When You Want It
Where You Want It
"Equal to City Service"



Your recommendation of a private water system bears weight with the house owner. Your reputation depends on **how well** he is satisfied.

A recommendation of Fairbanks-Morse pneumatic water systems is an endorsement of *standard* equipment made with parts combined to fit exactly the conditions found. Each outfit is especially arranged, yet sold at a price possible only where all parts are made in quantities.

Let us give you particulars.

Fairbanks, Morse & Co.

Chicago New York San Francisco
(61C-1409)

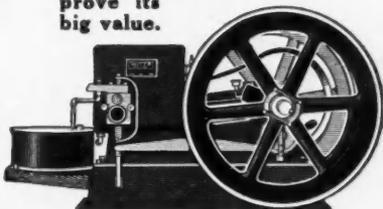


Get My Latest Engine Offer

Let a WITTE earn its cost while you pay for it. Take full 60 days' Free Trial to prove its big value.

Five-Year Guaranty

I unqualifiedly guarantee every WITTE engine for five years against defects, and consequent faulty operation. I carry the risk, as I have done for my thousands of customers during 27 years.
Ed. H. Witte.



WITTE Engines

Kerosene, Gasoline, Gas, Distillate

All styles, 2 to 22 H. P. Used and recommended by shop, mill, and factory men all over the earth. All my life I have been a shop man, making my own engines. I sell only what I make. That is why, for 27 years, WITTE engines have always made good and stay good.

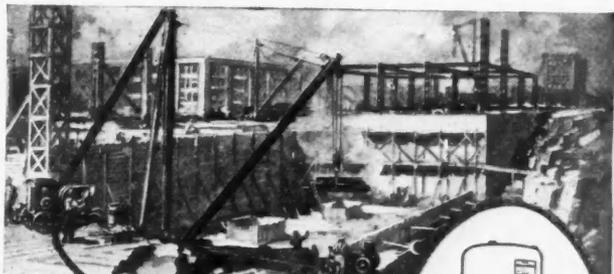
Look at These Prices!

- 2 H. P., \$34.95
- 4 H. P., 69.75
- 6 H. P., 99.35
- 8 H. P., 139.45
- 12 H. P., 219.90

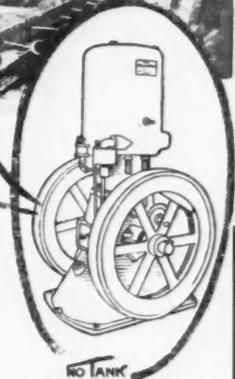
Other sizes proportionately low. WRITE FOR MY FREE BOOK, and all about my New Liberal Offer BEFORE you arrange to try any engine. I save you money, besides giving you the easiest chance to get the best engine service. Write me to show you.

Ed. H. Witte, Witte Iron Works Co.
1779 OAKLAND AVE., KANSAS CITY, MO.

On account of war conditions prices subject to change without notice.



WHY the growing popularity of NOVO?



NO LANK
NO FAN
NO FREEZING
TROUBLE

A big proportion of gas engines on construction work today are NOVOS. Every year the proportion is bigger.

No kind of work shows up a poorly designed and meanly built engine so quickly as do contracting jobs. NOVO Engines and Outfits best stand this grueling test because best in Design; staunchest in Construction; most Reliable in their ability to tirelessly deliver power to *any* job in *any* weather.

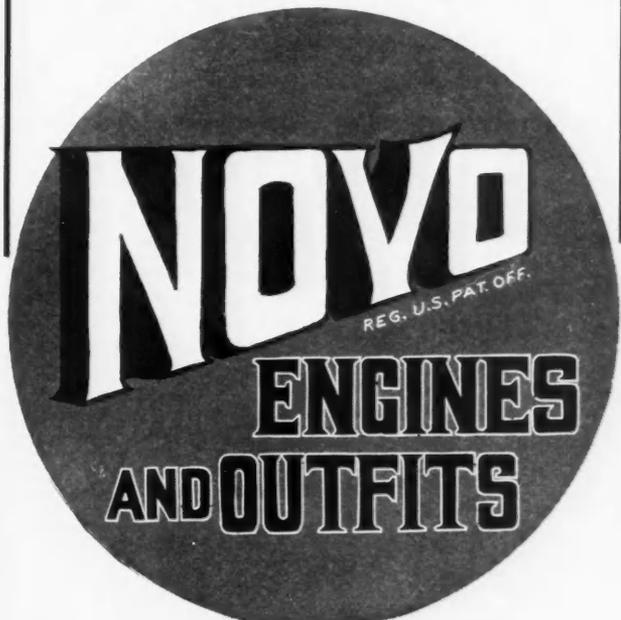
Ask any user of NOVO power why he likes the NOVO.

"It's the most reliable power I can get."
"A NOVO bid is a safe bid because I never knew a NOVO Engine to lay down on any job." Answers like these easily explain the growing NOVO popularity. NOVO Engines can be furnished for operating on gasoline, kerosene, alcohol, or distillate. Just request us on your letterhead to send you

"Reliable Power"

These NOVO Outfits will save you time and money: Novo Suction and Force Pumping Outfits, Novo Centrifugal Pumping Outfits, Novo Diaphragm Pumping Outfits, Novo Hoisting Outfits, Novo Air Compressor Outfits, Novo Saw Rigs.

NOVO ENGINE CO. 442 Willow St., LANSING, MICH.
CLARENCE E. BEMENT, Secretary and Manager



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.

Durametal Weatherstrip Co.
10 E. Austin Ave. CHICAGO, ILL.

Two Profits

You
can make
Two Profits
handling

PULLMAN Metal Weather Strip

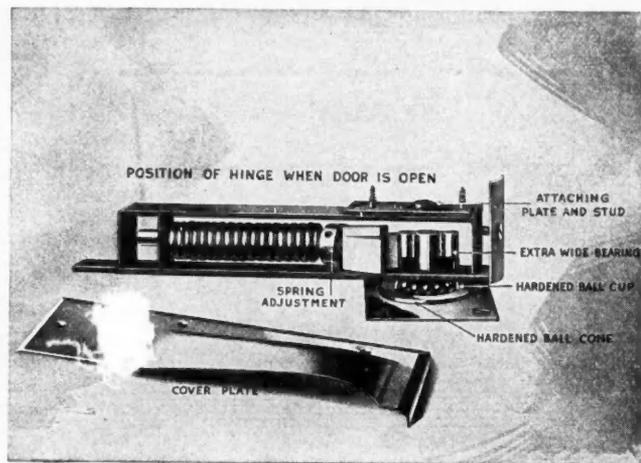
By becoming our Agent you can get Pullman Metal Weather Strip at Factory Price. Selling Pullman Metal Weather Strip gives you one Profit and installing it gives you a second Profit.

NOW is the Time

Cold weather is coming and weather strip is in great demand, cuts down fuel bills and maintains even temperature. Pullman Weather Strip is all metal, easily installed and gives best results.

*We give all our Agents exclusive Territory.
Write NOW and secure yours. :: ::*

Pullman Metal Weather Strip Co.
22 York Court :: YORK, PENNA.



Detail of Floor Hinge with Cover Plate Removed.

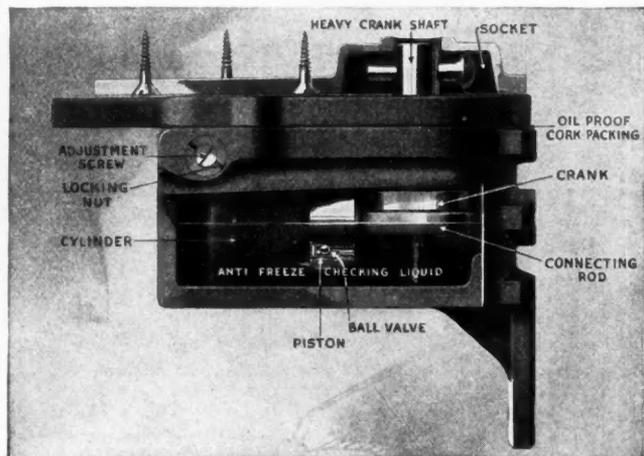
the spring on your wrist, your hand or your fingers.

Perhaps the door has been pushed open by a little child—a mere toddler making slow progress. The uncontrolled spring door makes no account of who it is—there's plenty of room for serious accident to children in houses fitted with doors of this type.

Or perhaps it is the housewife or the maid, passing through with both hands filled—more occupied for the moment with what she is carrying than in the speed she is making, only to get caught in the return swing of the door. The result may be the upsetting of a tray of food, the dropping and breaking of dishes, or the spilling of soup or gravy over somebody's best dress.

Whatever the nature of the accident, or even though there are no accidents at all, the uncontrolled spring door in any home is a decided nuisance. The protection and welfare of the family demand that it be dispensed with.

The Shelby "Chief" double-acting surface floor hinge and



Detail of Liquid Door Check Which Forms Hinge or Pivot at top of Door

check will put any double-swinging door under perfect control, closing it at such speed as you may desire, and operating it in either direction, going or coming, or both. There is no sudden slamming or jarring with the "Chief"—a door with this equipment closes with a gentle but steady sweep, and stops at center.

The Shelby Spring Hinge Company, Shelby, Ohio, will send full information in regard to their double-acting floor hinge and check as well as their extensive line of builders hardware to any of our readers who will write them.

We Want Live Carpenters to Handle the Golden Metal Weather Strip

The season is now on for taking up the agency of the Weather Strip business. By the time you get the minor details straightened out and get nicely lined up you will find the Weather Strip season on you in full force and people clamoring on all sides for better protection from the cold blasts of the fall winds, and the Carpenter is the man invariably selected for this work.

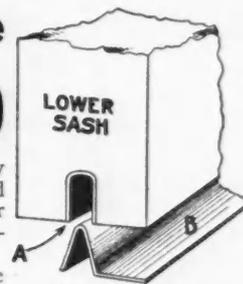
There are millions of feet of Golden Metal Weather Strip now in use in some of the largest and finest office buildings, schools, hospitals, residences, etc., in the country.

The standard metal for sliding windows excepting the meeting rails is made from zinc. The Meeting Rail strip, Casement Window strip and all strips used for Doors are made from tempered Spring Bronze. These two metals are indestructible and will last a lifetime.

Golden Metal Weather Strips are easily applied, are weather, wind, soot and dust proof. They allow for shrinkage, swelling and warping of sash without binding, are invisible and prevent windows from rattling. They save from 25 to 40% annually on fuel bills.

Only one agency will be established in any one section, so write at once or your competitor may get in ahead of you and secure the agency for one of the oldest and most reliable Metal Weather Strips on the market, one that has stood the test of time for over 12 years. This is one of the best money getters and money savers in the field today and we feel you cannot afford to let this opportunity get away from you.

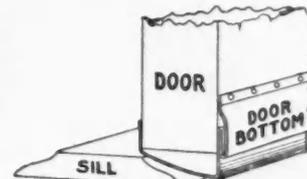
Write for samples or further information



Golden's Sill Strip

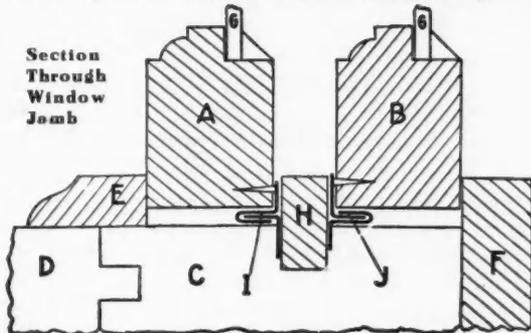


Meeting Rail Strip



Door Bottom

Section Through Window Jamb



MICHIGAN ENGINE VALVE CO., 115-117 W. Columbia, DETROIT, MICH.

SLATE

"The Old Reliable"

West Bangor Slate

There are all kinds of patent roofings on the market, claiming all the advantages of slate. Some are composition, some are surfaced with Slate or Stone but they are not **absolutely immune** to Deterioration and Decay as Slate **IS**. There is nothing in Slate to Decay—nothing to peel off or crack or warp under extreme heat or cold. Slate retains its Beauty and will outlast the building itself.

Slate the Standard Fireproof Roofing Material

Investigate the Merits of Slate. We will gladly send you **FREE SAMPLES** and Prices. Send us your name and address.

Bangor Slate Mining Co.

Trust Building
BANGOR, PENNA.



More than Just Profits

are in store for the roofer who gives his customer Genuine Bangor Slate. He is sure that no competitor can offer better slate; that his shipment will arrive in good condition; that the slate will work up without breakage or waste; that it will build up his reputation and secure for him better prices for material and labor. Else why do most of the leading roofers use our Genuine Bangor Slate? Why do so many sellers of slate imitate the name? Genuine Bangor Slate can be used for flat roofs as well. Send the attached coupon for information that means money to you

Oct., 1914

Genuine Bangor Slate Co.
Easton, Pa.

Please send information.



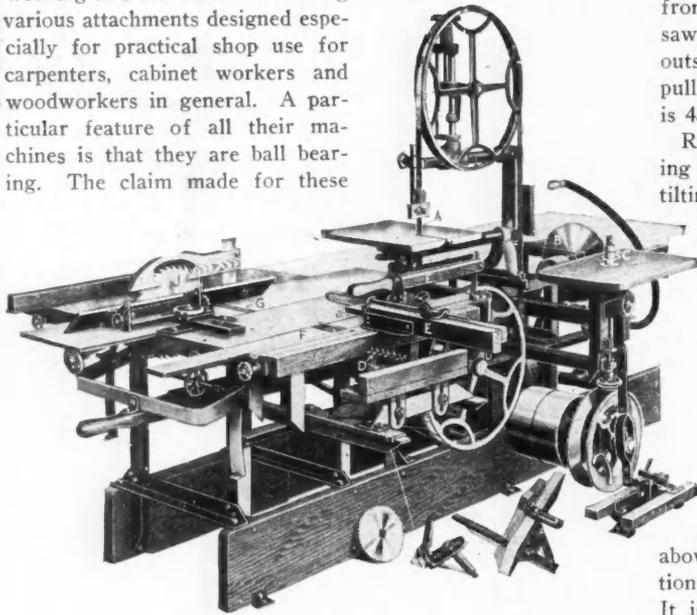
Genuine Bangor Slate Co.,
Easton, Pa.

Signed.....
Address.....
City..... State.....

The Parks Ball Bearing Woodworkers

One of the most complete lines of woodworking machines manufactured is that made by the Parks Ball Bearing Machine Company of Cincinnati, Ohio.

This company now build foot, hand and belt power woodworking and saw machines having various attachments designed especially for practical shop use for carpenters, cabinet workers and woodworkers in general. A particular feature of all their machines is that they are ball bearing. The claim made for these



Parks Heavy Double Table Combination Woodworker.

ball bearing machines is that they save about half the power. The machines will stand a high speed under heavy pressure. Shown here is the Parks heavy double table circular saw,

6-inch or 12-inch jointer and 22-inch band saw with reversible spindle shaper, swing cut-off saw, 3-inch jointer or moulder, groover and tenoning and boring attachments.

This is, of course, a belt power driven equipment. It embodies eight machines ready for instant use and additional attachments if wanted can be added. General dimensions: from front edge of jointer plates to rear end swing cut-off saw, measurement of 9 feet 4 inches. The total width from outside edge of shaper table on left, including tight and loose pulleys on right side is 65 inches. The width of table proper is 43½ inches.

Regular equipment includes circular saw raising and lowering mandrel, band saw, 3-inch jointer, 6 or 12-inch jointer, tilting guide, tenoning guide, boring attachment, swing cut-off saw, reversible spindle shaper.

The complete line of Parks ball bearing woodworking and saw machines is illustrated and detailed fully in an attractive 64-page catalog issued by the company. This catalog can be had by addressing the Parks Ball Bearing Machine Company, Fergus Street and C. H. & D. Ry., Cincinnati, Ohio.



"Garage Door Equipment"

The Richards-Wilcox Mfg. Co., of Aurora, Ill., announce the publication of a new catalog under the above title. It contains much valuable and authentic information on the hanging and locking of garage doors of all types. It is a book that every architect, contractor and carpenter should have for reference on garage door problems. The book illustrates and describes the complete Richards-Wilcox line of garage door hangers, tracks, locks, guides, etc. One valuable feature is that for each style door outfit is given a full list of hardware, showing just what to specify and order.

Look for the Word "IRWIN"

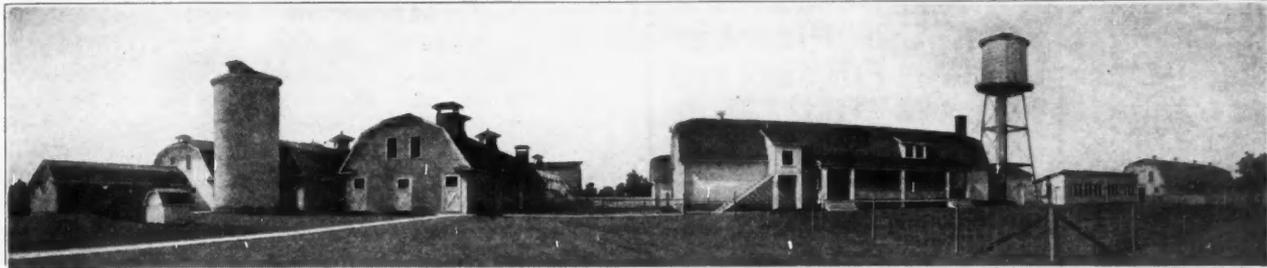
The IRWIN Bit

is imitated as regards pattern, but Irwin Quality cannot be imitated. Look for the trademark (illustrated below) stamped on the shank of every genuine Irwin Bit.

The IRWIN Bit
Reg. U.S. Pat. Office

WHEN you ask the hardware man for a genuine Irwin Bit, look at the shank of the bit he offers you—see if our trademark (illustrated at left) is stamped there. If so—you're safe. Don't be misled by "pattern" but insist on getting your money's worth by buying a genuine Irwin. For years past we have had the reputation of being the leading Bit Makers; "Irwin" and "Quality" are inseparable. The hardest woods or toughest knots have no terrors for the Irwin Bit-user. Breakage is a thing practically unknown with genuine Irwin Bits, for they are drop-forged from tip to shank, out of one solid piece of steel. You have a right to have the best going and we'll do our part to see that you *do* get it. So if your dealer cannot supply you write us at once.

THE IRWIN AUGER BIT COMPANY
WILMINGTON, OHIO



(Louden-Planned Barns at Moline, Illinois)

GET INTO THE BARN BUSINESS

While city folks are worrying about the High Cost of Living, the farmer is smiling over the High Price of Farm Products, and telling Mary that "We'll build that new barn now".

WHAT ARE YOU DOING?

The Louden national advertising Campaign is interesting thousands of farmers in new barns, Modern Barns—**Louden Barns.**

GET BUSY BUILDING BARNs!

We've been specializing on barns for nearly half a century, and never before has there been such an opportunity for the carpenter of the small town as there is right now.

Write and ask us how to get into this money-making field. Let us help convince your farmer friend that what he needs is a Modern barn—a Money-Making barn—a barn that will be a constant pride as well as economy. As for you—

Build a Modern barn under Louden guidance and you will build a monument that will stand as a LIVE, FORCEFUL advertisement of your Ability as a Builder.

Fill in the attached coupon with names of farmers you think will build or SHOULD build, and We'll start things MOVING.

STEEL STALLS—
LITTER AND
FEED CARRIERS—
BARN DOOR
HANGERS—
HAY TOOLS.

Louden Machinery Company

(Est. 1867)

5500 Fourth St. FAIRFIELD, IOWA

Louden Machinery Co.,
5500 Fourth St., Fairfield, Iowa.

Please give me full information regarding your Barn Building Proposition.

I believe the following named persons are prospective barn builders:

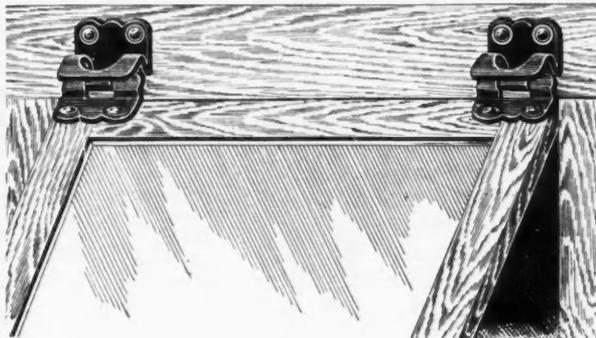
Mr.
P. O. State

Signed

P. O. State

WRITE FOR FREE SAMPLE

WATROUS SAFETY SCREEN OR STORM SASH HANGER



And see why it will give better satisfaction and service to your customers. Its simplicity of construction makes it easy to hang.

**Costs Less—Lasts Longer
Gives Better Service**

No screws used. Barbed car nails make it easy to hang and save time.

SOLD BY ALL DEALERS

Watrous-Acme Mfg. Co.

Des Moines, Iowa

Chicago Sales Office: 180 N. Dearborn Street

There's a ROYAL

Ventilator made for every building. All sizes and shapes to meet all conditions. "ROYAL" Ventilators are specially adapted for Schools, Barns, Hotels, Theatres, Factories, etc.

Note the Illustration. Take note of the sharpened bottom cone; this is why our ventilator exhausts more impure air per minute and why it offers the least resistance to natural or forced draft.

"ROYAL" Ventilators are made of Galvanized Iron, Copper, etc. They are absolutely Storm Proof and Provide a **STRONG, STEADY PULL.**

Write for catalog giving full particulars.

ROYAL VENTILATOR CO.
417 Locust St., Philadelphia Pa.

ABSOLUTELY STORM PROOF





Even the Plumber Dislikes Fussing with Faucets that Drip

Leaky faucets are a perpetual nuisance and expense. They require continual washer renewals; they stain the sink, basin or bathtub; they waste water and create unnecessary noise.

You can please your clients and save them all this annoyance, discomfort and expense by recommending the

J-M WASHERLESS FAUCET

It cannot leak because it is made with a conical valve that bears directly on a spherical seating. This metal-to-metal line contact is absolutely perfect. **NO WASHER IS EVER NECESSARY.** Nothing to get out of order. No water hammer or whistling.

Thousands in use for the past ten years have proved it to be the most efficient faucet ever invented.

GUARANTEE—If any J-M Washerless Faucet seating, in ordinary use, fails to give satisfactory service at any time within 10 years from date of purchase, we will furnish a new seating **FREE.**

Write our nearest Branch for Booklet.

H. W. JOHNS-MANVILLE CO.

Atlanta
Baltimore
Boston
Buffalo
Chicago
Cincinnati
Cleveland

Columbus
Denver
Detroit
Galveston
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Los Angeles



Milwaukee
Minneapolis
Newark
New Orleans
New York
Omaha
Philadelphia
Pittsburgh
Portland
St. Louis
Salt Lake City
San Francisco
Seattle
Toledo

The Canadian H. W. Johns-Manville Co., Limited. 2508A

Toronto

Montreal

Winnipeg

Vancouver

A Free Book of Money Saving Ideas For Dairy Barn Builders



You will be interested in reading "Helpful Hints to Dairy Barn Builders." It tells many of the things learned by W. D. James—America's foremost dairy barn designer. It will help you make more money.

It tells about the new plank frame construction, the famous King system of ventilation, perfect lighting, proper width and arrangement. It tells about

stable floors, site, size, appearance, design, drainage and equipment. And it shows four floor plans of barns that have attracted widespread attention.

You can obtain a copy of this valuable, helpful book **FREE.** Merely answer these few questions and the book will come by return mail. For whom do you expect to build or remodel dairy barns? (Give name and addresses.) When? For how many cows? Address

James Manufacturing Company
8675 Cane St., FT. ATKINSON, WIS.

Special Offer Of Blue Prints

Mr. James wants to make you a special offer of complete working blue prints of modern dairy barns of different sizes and types. Also ask how to secure free help from our agricultural department. Write today.



Thatched Effect

Thatch was once the rule rather than the exception. In the country places and small hamlets of England the old primitive thatch may still be seen. For modern, permanent homes, however, thatch will not do. Where the real English style of architecture is desired, true to the last detail, the thatched effect has to be obtained through the use of other more modern materials.

To meet the demand for such English style roofs the Standard Stained Shingle Co., North Tonawanda, N. Y., have produced a special form of their "Creo-Dipt" shingles. The accompanying photograph is a typical illustration of the soft, rounded, artistic effect produced. This is one of the great many fine homes in all parts of the country roofed with "Creo-Dipt" thatching shingles.

Builders unfamiliar with this work have often wondered how the thatched effect is produced. In the first place, the whole roof is given a slightly convex surface by furring on each rafter from 4 to 6 inches in the center of the roof and diminishing the furring to nothing at the ridges and eaves.



Soft Graceful Lines of Thatched Roof Produced with "Creo-Dipt" Shingles.

The furring strips are laid horizontally about 4 inches apart. To produce the rounding effect at the gables the furring is brought well forward to the verge board and then returned against it, forming in section the arc of a circle. As a rule this rounding of the gables is greatest at the peak, diminishing toward the eaves. In addition to this curving, the shingles themselves are sawed out at the factory with wavy butts. They are also bent at the factory both with the grain and against the grain, for use on hips, eaves and valleys.

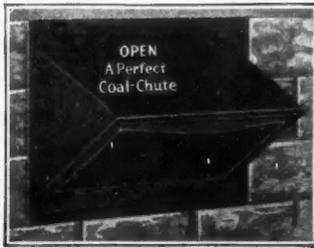
It has been found impossible to bend the shingles satisfactorily on the job. These factory-bent shingles retain their shape for years, and being thoroughly creosoted and stained, they make an enduring roof.

Along the horizontal course of shingles long, irregular waves are made by laying the course with an exposure varying from 1 to 5 inches. Every eight or ten courses a regular square butt course is laid to keep the laying from being too regular.

The construction of the furring is of the greatest importance. If this is clumsily or cheaply done no dexterity in laying the "Creo-Dipt" shingles will bring successful results. Every valley must be rounded, every ridge softened—absolutely no angles in the entire roof surface. The modern thatched effect roof is undeniably handsome.

In addition to the wavy cut and curved shingles the Standard Stained Shingle Co. offer a very complete line of "Creo-Dipt" stained shingles of regular pattern. Fourteen grades and twenty-five different colors to choose from are offered.

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 World's
Best

Write for
Booklet C



A Light Basement

HOLLAND FURNACE CO. :: Holland, Mich.

World's Largest Direct Installers of Furnaces.

The New Home and the Garbage Can

Include it in your plans. No new home or bungalow complete without the **Majestic Built-In Garbage Receiver**. Keeps the can in the kitchen but out of sight. Saves hundreds of steps. Is handy, clean, odorless, convenient, and sanitary—fly and insect proof. Can is removed and emptied from outdoors.

MAJESTIC Built-In Garbage Receiver



There is nothing like it. Absolutely sanitary because every time used a supply of disinfectant automatically is sprinkled over contents. Has vent pipe connection. Container is substantially built of cast iron. Can is durable galvanized iron sheeting. Investigate, get particulars and low price.

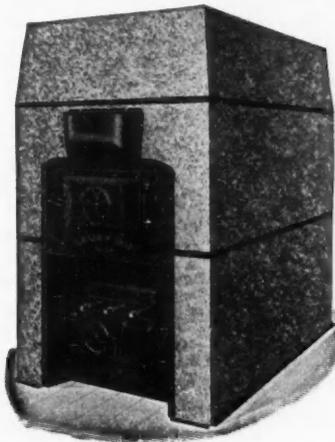
FREE BOOKLET

Write at once for descriptive booklet that describes it in detail and explains its many advantages. It can be easily installed in any house in course of construction or with little trouble can be built into any completed home.

WRITE TODAY

THE MAJESTIC CO., 505 Erie St., Huntington, Ind.

The Hess Furnace is a Health Furnace



It is admitted that any heating method which moves and circulates the air rapidly brings about a more healthful condition in the home atmosphere than a method in which the air remains stagnant. All furnaces move the air more rapidly than hot water and steam radiator systems, but many furnaces fail in other essentials.

The Hess Furnace is peculiarly a *health furnace*, because, with every seam welded, it is impossible for gas or dust to escape, and thus vitiate the air.

Again, the very large expanse of radiating surface, moderately heated, in the Hess Furnace, is more desirable from a health standpoint than the small surfaces, intensely heated, of the ordinary cast iron furnaces.

Humidity, or moisture in the air, has a most decided influence on health, and the Hess furnace covers this point exactly, by a method of evaporating moisture which we have not seen in other furnaces, and which results in moisture distribution equal to all health requirements, and which cannot be obtained by the ordinary water pan as it is placed in other furnaces.

Our 48 page booklet on Modern Furnace Heating describes these and other features at length. It will interest any man who cares for home sanitation, and it is yours, free for the asking.

A rough sketch of your house, sent with your inquiry, will bring to you a plan for heating it and an estimate of cost, without expense or obligation on your part. Why not send us the sketch?

Hess Warming and Ventilating Co., 1220 Tacoma Bldg., Chicago

We make special rates to contractors. If you are a contractor, be sure to mention it when you write.

These shingles are Washington red cedar preserved with creosote and stained with finest earth pigments. Address the company at 1028 Oliver St., North Tonawanda, N. Y., and ask for large detail sheet showing how to lay the wavy thatched effect roofs; also for pad of colors on wood. One of their specialties, too, are the 24-inch stained shingles for side walls.



Artistic Treatment of Cement Surfaces

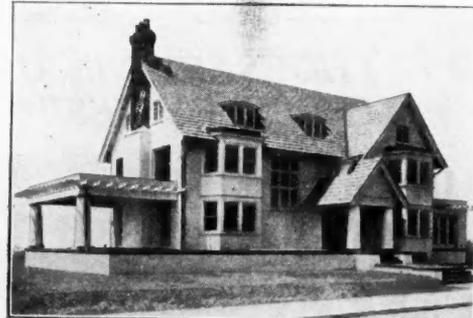
By A. M. MacMurray

The concrete contractor who has had difficulty in waterproofing his buildings will appreciate the merits of Bay State Brick and Cement Coating as manufactured by Wadsworth-Howland & Co., Inc., 82-84 Washington Street, Boston, Mass., and described in their Booklet 30. This booklet contains a great many photographic reproductions of buildings in which this waterproofing has been used, together with a long list of buildings in practically every state in the Union.

It also contains a color card, showing the various colors in which it can be obtained and from which practically any desired shade can be made.

The object of Bay State Brick and Cement Coating is to decorate and protect concrete, cement, stucco and brick surfaces. It overcomes the dull, monotonous color of ordinary Portland cement, and prevents such surfaces from showing any spots, blotches, discoloration or damp-

ness after a storm. By filling all of the pores in the surface, it prevents hair cracks and other disfigurements. When metal lath is used with stucco, this compound is claimed to prevent any moisture getting to the lath and so prevents the deterioration of it. By excluding dampness, it preserves all of the building materials, as well as insures a dry inside wall. Bay State Brick and Cement Coating can be used not only on the exterior, but on the interior, where it gives the soft, velvety effect of water color. As it is unaffected by dampness, it has great durability, and it can be washed without injury. It is one of the few compounds which bears the label of the



Residence at Atlantic City, N. J., Before and After Being Treated with "B. S. B. & C. C." Druckenmiller, Stackhouse & Bickley, Archts., Phila., Pa.

National Board of Fire Underwriters, and when used on wood tends to lessen the fire risk.

The accompanying views illustrate very clearly the outward and visible possibilities of Bay State Brick and Cement Coating.



No Sewerage? Install HYPACO ASEPTIC CLOSETS

We want the live Carpenters and Builders in all localities where there is no sewerage system to act as our Representatives and handle the **HYPACO Chemical Closets**. Now that the busy season is drawing to a close you will be interested in a good money-making proposition for the winter months that will net you a good big sum along with your usual earnings, without loss of time.

The **HYPACO Chemical Closet** is a boon to any community without sewerage facilities. Once introduced, it will sell itself, and you, as our sole agent, will handle all the business. This closet is different and its merits make real talking points.

Write today and get your exclusive territory. We give special prices and large discounts to you as our Agent, enabling you to make a large profit. Write for particulars.

THE HYGIENIC PROMOTION CO.

279 John R. Street

Detroit, Mich.

A Master Shingle--for the Master Workman

One that will appeal to men who recognize the difference between good and medium quality.

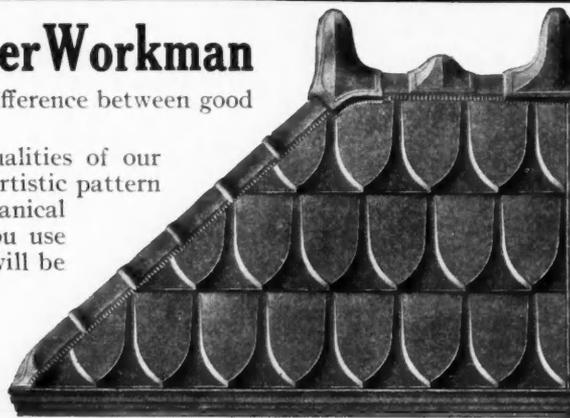
We could tell you volumes regarding the good qualities of our "Safe-Lock" Shingle—the depth of its embossing—the artistic pattern—the efficiency of its locking device—the perfect mechanical construction—the low cost, etc., but we prefer that you use your own judgment as the good impression obtained will be more permanent and lasting.

Ask for samples and prices and you will be pleasantly surprised. Do it on the impulse—No time like "Now."

The Canton Metal Ceiling Company
1947 Harrison Avenue

::

CANTON, OHIO



MAKE MORE MONEY

by selling

Fire Places, Tiles and Mosaics FOR FLOORS AND WALLS

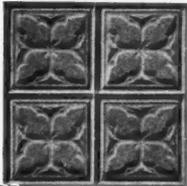
Our large illustrated new catalog just off the press comprehensively describes the most complete and latest Fire Places in Tile, Wood and Brick, Andirons, Gas Logs, Consoles, Colonnades and Mantels. Send for your copy *today*. Write for Discounts to Carpenters and Builders.

CHAS. F. LORENZEN & CO.

103 North Clark Street

:: ::

CHICAGO

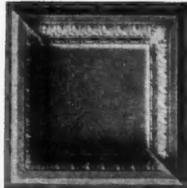


Foster Metal Ceilings

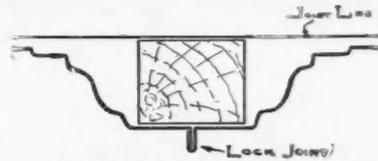
When you need metal ceilings, remember us. Our prices are so reasonable that it is worth while to buy from us. Our metal ceilings are right up to date in design and workmanship. The patterns are deep stamped and clear; the metal of excellent quality and primed ready for painting. Foster Ceilings are easily placed and very neat.

Give us a chance to quote prices on your next job. We can save you money, and that's important to you. Write us.

Foster Sheet Metal Works
530 North Tenth St. SPRINGFIELD, ILL.



METAL CEILING



See that Joint?

The Acme of perfect construction. Don't nail or slip the joints. Lock them. Full information in catalogue E.

S. KEIGHLEY METAL CEILING & MFG. CO.
PITTSBURGH, PA.

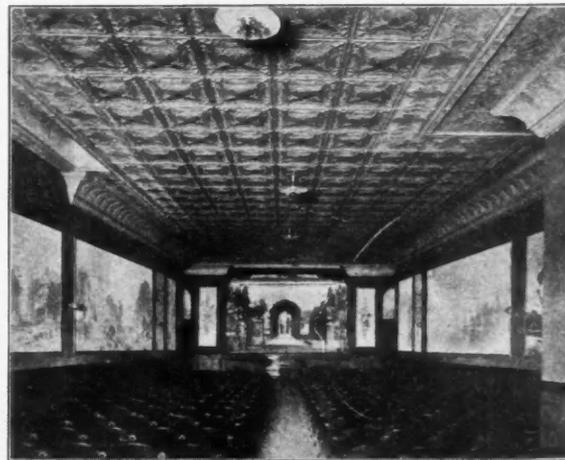
Northrop's Stamped Steel Ceilings



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.

NORTHROP, COBURN & DODGE CO.
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.

Klauer Manufacturing Co.
Dubuque, Iowa

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.

Metal Weatherstrips at Reduced Cost

In 1911, J. D. Pierce of the Durametal Weatherstrip Co., inaugurated a new method of selling metal weatherstrips which promises to completely revolutionize that important industry.

This plan has widened the field of distribution so that the use of this important modern improvement, metal weatherstrips, is no longer confined to large cities but is placed within the reach of every home owner in the smaller cities and towns everywhere. It is a curious fact that while there is hardly a good residence, a good apartment building, office building or hotel in Chicago which is not equipped with metal weatherstrips, and while every architect in Chicago recommends and approves of them, yet there have been thousands of smaller cities and towns where they were entirely unused and unknown. This condition is now changing very rapidly and the AMERICAN CARPENTER AND BUILDER is glad to have had a part in the education of up-to-date carpenters regarding metal weatherstrip through its news department and advertising columns.

Mr. Pierce's method of selling metal weatherstrip has been to instruct skillful carpenters everywhere about the installation of the equipment. This has been done by means of his book of instructions for installing, said to be the first ever written or printed in the history of the industry. This book has demonstrated that any good carpenter can soon learn to install metal weatherstrip and thus start a profitable business for himself, buying the metal weatherstrip by the foot and taking contracts for the equipment of buildings in his home town.

Carpenters looking for something to keep them profitably employed during the coming winter months, will do well to communicate with the above company at 8 East Austin Ave., Chicago.



Necessity of Using a Typewriter

Today a typewriter is absolutely essential in writing business letters of any nature. It is an injustice to any business man to correspond with him in long hand.

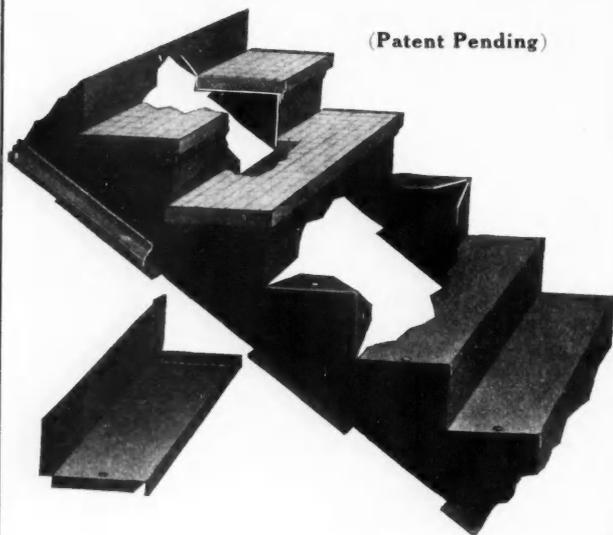
Even though you write only one or two business letters a week, these letters should be typewritten. We all now-a-days have lost the ability to write in the beautiful flowing copper plate style of writing of our grandfathers; and the modern hand-written letter is responsible for an enormous number of mistakes of all kinds; some of them costing far more than the price of a typewriter.

The man who is satisfied to write business letters with any old kind of a pen, or possibly with a lead pencil, has only himself to blame if he is considered a tenth-rate proposition. He knows that the man or business house who has to puzzle his letters out will not pay very much attention to him.

Most people, even completely recognizing the fact that business correspondence should be typewritten, find that an expense of \$100 for a typewriter is beyond their reach—even though they realize that it is expensive and undignified to try to get along without one.

There is an enormous demand today for a thoroughly reliable and satisfactory typewriter, at a price within the reach of the man having even only one or two letters a week to write; a machine that anyone using the complete and detailed instructions furnished with each typewriter can operate to produce perfect work with half an hour's practice. Harry A. Smith, realizing this demand for a machine that can be relied on to do perfect work and give satisfactory service, is offering in this issue a typewriter that will write a clean cut and perfect letter and stand up under the hardest kind of usage, at a price making it possible for everyone to enjoy this convenience and business necessity.

Pittsburgh Adjustable Stair



(Patent Pending)

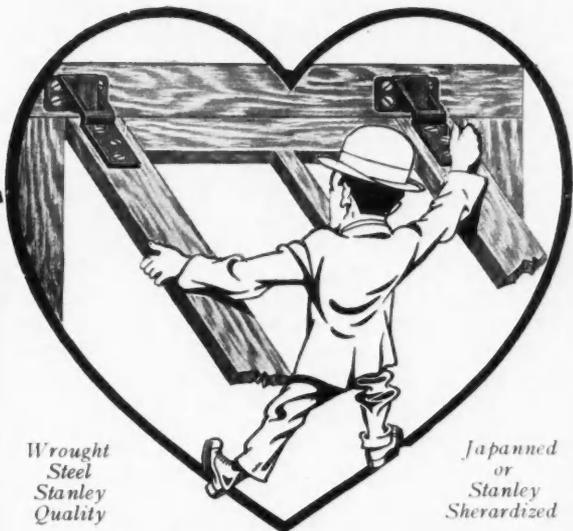
Pressed Steel construction. The cheapest metallic stair made. Strong in detail. Can be utilized for concrete form. May be embellished with marble, mosaic, bronze or other finish. Low in cost and easy to erect. Perfect in construction.

Write for full Particulars

MILLER & COULSON

1204 Diamond Bank Bldg.

Pittsburgh, Pa.



Wrought
Steel
Stanley
Quality

Japanned
or
Stanley
Sherardized

"PEERLESS"

Storm Sash Hangers and Fasteners

No. 1717 Hangers. No. 1719 Fasteners.

The No. 1719 Fastener is made in 5-inch and 10-inch sizes. The 5-in. for 4-ft. windows and smaller; and the 10-in. for windows over 4 feet.

Just the hardware you want for your Storm Sash. Once applied, no tools are needed to take down or put up the sash. Full length screens can be hung on the same hooks. The Fasteners hold the Sash firmly in place, either open or closed.

Write for Circular "A." It tells the whole story

THE STANLEY WORKS

New York

New Britain, Conn.

Chicago

**You'll Find
This Saw a Corker**

For the fine cutting edge, fit for any saw job you can think up—a job that will try the bite of the teeth, the temper of the steel, the swing in the blade, you need a

KEEN KUTTER

saw with the gumption, the quality and the rigid guarantee that has stood back of all Keen Kutter tools and cutlery for forty-six years. The dealer is authorized to return the money for any unsatisfactory piece.

If not at your dealer's, write us.



Simmons Hardware Company

St. Louis New York Philadelphia Toledo
Minneapolis Sioux City
Wichita



Hand Saw No. K08/26. Price \$2.00.



This is the
Standard
Take Down
Square.

It makes
good with
the user.

Send and
know
more about it.

Southington
Hardware Co.
Southington, Conn.

**You Take No Chances
When You Put on Guaranteed
Queen Cupolas**

They are made right from heavy galvanized steel. Put together by experts. They look right because they are thoroughly finished. They give service and satisfaction. Last a lifetime without painting or repairs.

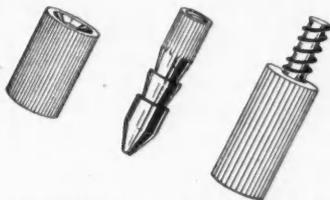
Don't Experiment—Get the Cupola That Has a Reputation Back of It

On the market 15 years. Thousands now in use. That's the kind for you to use. To prove that the Queen is the best we will ship you one for examination and 30 days' trial.

WRITE FOR CATALOG AND PRICES

Find out what we have and you will not be satisfied with ordinary kind. Address

QUEEN CUPOLA CO., 405 Peck St., Cresco, Ia.



Get a
FREE
Sample of

STINE SCREW HOLES

We want to acquaint all Carpenters and Builders with this new invention, so we will send without obligation a free sample to those sending us their name and address. Make your own demonstration; we know you will be satisfied with the result. We have solved the Screw Hole Problem. Send today.

STINE SCREW HOLES CO., Review Building, Decatur, Illinois

WANTED—LUMBER AGENTS

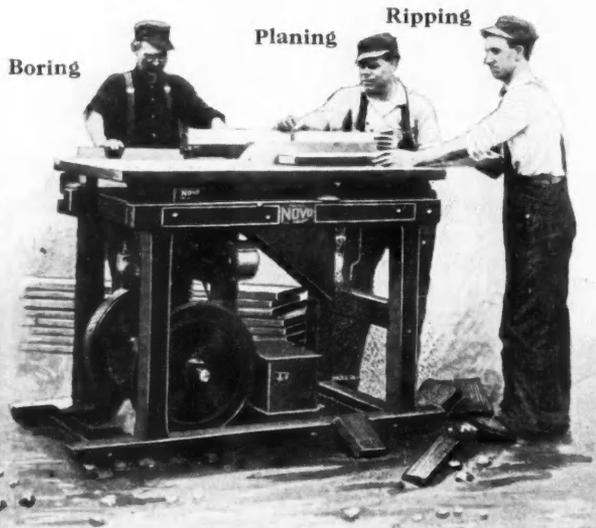
CONTRACTORS—You can build up a profitable business in your locality by selling lumber and millwork from a Western mill. Low price and guaranteed quality will enable you many times to get the lumber order, even if you do not get the job. Our agents are doing this.

Only reliable men wanted. References required.

Address Lock Box 14 Tacoma, Wash.

Novo Saw Rig Making Good

In the August AMERICAN CARPENTER AND BUILDER the first announcement was made of the Novo saw rig. The Novo Engine Company had been long known as the manufacturers of Novo gasoline engines, a thoroughly trustworthy and efficient outfit. Thousands of Novo engines were in use all over the country on concrete mixers, hoists, woodworking



Three Men and a Novo.

machines, etc., and their value was thoroughly established. The Novo Engine Company, appreciating the fact that the engine is the heart of any power machine, determined to build a saw rig of their own so that every particular would

be up to the standard of the Novo engine. Accordingly, they developed the Novo saw rig, offering it in two sizes of three and four horse power.

The Novo saw rig made good at once. Contractors all over the country gave it a hearty welcome, and reports reach us that some great work has been done the past two months by these saw rigs.

The versatility of the machine is one thing that builders like. Three men can be doing work on it all at the same time without interfering. The boring, planing, and ripping operations can all be carried on at once, as in the case of the photograph reproduced herewith. To have a machine arranged so that one workman doesn't have to wait for another, but three can be busy at one time, and also to have ample power to run the machine to such full capacity is a satisfaction to any building contractor. He knows his portable power woodworker is making money for him and doing good work.

The Novo Engine Company, 400 Willow St., Lansing, Mich., will be glad to send full specifications of their machines and engines to anyone of our readers who will write them.

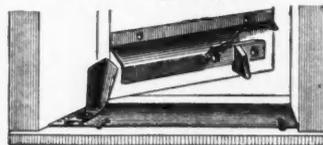


Death of Frank A. Schwertner

Mr. Frank A. Schwertner, for many years treasurer and purchasing agent of the Berger Mfg. Co., died on the morning of Aug. 12, at his home in Canton, O.

Over 1,000,000

Here's What People Want **The Axtell**

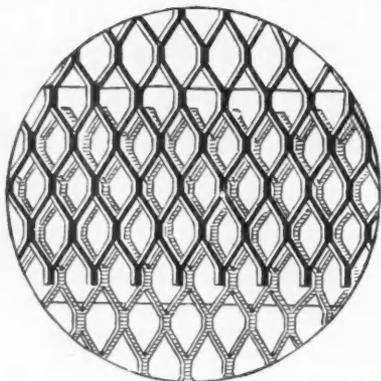


A perfectly tight All-Metal Weather Strip for bottom of doors and swinging windows. Saves sill from wearing and can be put on any door in 5 minutes at 200% profit. Sells at sight wherever shown. Our prices will interest you. Write us.

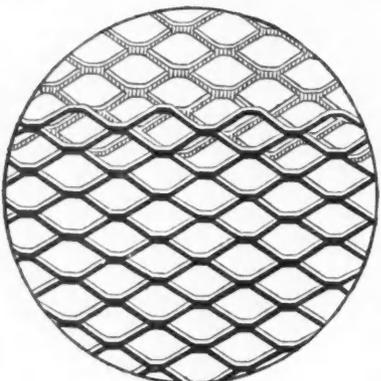
E. I. Church & Co.

West Hanover, Massachusetts

In Daily Use



Method of Lapping—at end of sheet



Method of Lapping—at sides of sheets
(Lower sheet over upper)

Two Interesting Features of Metal Lath Construction

Shown and described in our instructive folder, "Metal Lath Details". It treats of its subject in a thoroughly interesting and educational manner and explains in detail the various phases and methods of Metal Lath Construction, as applied to wood buildings.

Kno-Burn Expanded Metal Lath

Will Not Sag—Resists Fire—Prevents Cracks

The perfect permanent base for plastering or stucco and the choice of careful builders and contractors. Constructed with a mesh that is certain to grip the plaster firmly at all times and under the most adverse conditions. It is made from U.S. standard gauge sheets, the *thickest* gauge used in metal lath construction. It is absolutely rigid and is shipped in sheets that are easy to apply. Send a post card for your copy of "Metal Laths Details" *today*.

Northwestern Expanded Metal Co.
903 Old Colony Building Chicago, U. S. A.

IVES PATENT WINDOW STOP ADJUSTER
Prevents Drafts, Dust and Window Rattling



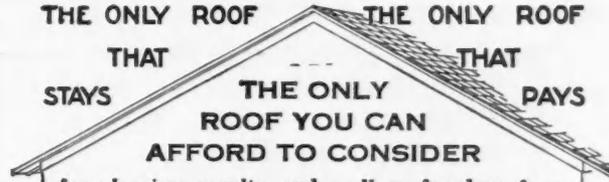
The only stop adjuster made from one piece of metal with solid ribs and heavy bed that will not cup or turn in tightening the screw

Descriptive circular mailed on application

THE H. B. IVES CO.

Manufacturers of Builders' Hardware
NEW HAVEN CONN., U. S. A.

THE ONLY ROOF THAT STAYS THE ONLY ROOF THAT PAYS THE ONLY ROOF YOU CAN AFFORD TO CONSIDER



for pleasing results and endless freedom from roof troubles and costly repair bills is

RED GREEN **SHELDON'S SLATES** PURPLE BLACK

The use of any artificial substitute means endless expense and dissatisfaction. Our booklet "The Reason Why," tells every reason why SHELDON'S SLATES ON YOUR ROOF WILL PUT DOLLARS IN YOUR POCKET. Post a postal and get posted.

F. C. SHELDON SLATE CO., Granville, N. Y.

AGENTS \$45 TO \$80 A WEEK



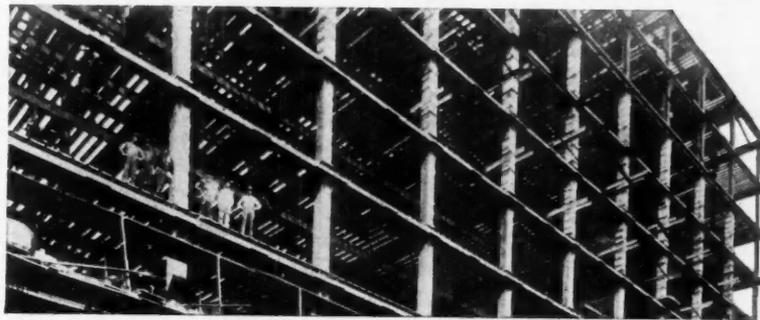
Thousands of dollars paid to agents already in the field. Smith, Ohio, got 18 orders first week; Meyers, Wis., \$250 profit first month; Newton, California, \$60 in three days. You should do as well. 2 SALES A DAY MEANS \$300 A MONTH. The work is very easy, pleasant, permanent, fascinating. It means a business of your own. We want good agents in every

county in the United States, Canada and Mexico. **NEW INVENTION** Just out. Nothing like it. FOLDING BATH TUB. Gives to every home a complete bath room in any part of the house—without expense. Biggest, quickest, surest money maker of the century for agents. Territory being rapidly assigned. Send your application today. **100% PROFIT** We back you with our capital and experience. We give you complete instructions, assistance and co-operation. No charge for territory. Don't delay. Send your name at once. Write plainly and give name of your county. Complete particulars FREE. Write today. **ROBINSON CABINET MFG. CO., 467 Factorles Bldg., Toledo, O.**

PROFITS
will be large and sure if you are using an **IRELAND GEARED HOIST**

An Ireland Geared Hoist does the work of several men, more efficiently at a fraction of the cost. In these days of strong competition and high labor costs, a contractor has to use up-to-date-money-saving equipment. In this rank, the Ireland Geared Hoist requires the best investment and pays the biggest dividends in the way of increased profits.

Let us acquaint you with facts. Write
Ireland Machine and Foundry Co.
31 State St., NORWICH, N. Y.



11 Floors of Metal Lumber

The erection of the new eleven-story Renkert Building in Canton, Ohio, marked a new epoch in the history of skyscraper construction, as Berger's pressed steel joists were used throughout for the floor construction and installed in seven weeks.

The total area was 112,000 sq. ft., and the building since completion has been regarded by architects, contractors and engineers as a model for strength and fire-proofing qualities.

Berger's Metal Lumber

Do you know that Berger's Metal Lumber pressed steel members withstand greater loads under high temperature than rolled steel members of greater sizes and weight?

Do you know that Metal Lumber costs considerably less than any other system of fire-proof construction and affords greater fire resistance?

Why not send today for our catalog and look into our Metal Lumber Construction? The facts will interest you.

The Berger Mfg. Co., Canton, Ohio

For best service address nearest branch.

New York Philadelphia Minneapolis Boston San Francisco St. Louis Chicago Cincinnati

Also manufacturers of Prong Lock Studs and Furring, Rib-Truss, Ferro-Litic and Multiplex Reinforcing Plates, Steel Ceilings, Expanded Metal Lath, Sidewalk Forms, Raydiant Sidewalk Lights. Etc.

Export Department, 11th Ave. and 22d St., New York City



Silentflow

A Noiseless Water Closet

IN THE TOILET
 Adjoining the sick room
 one of the distressing noises
 can be eliminated by installing the
 "Silentflow."

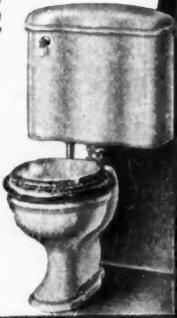
This closet was not put on the market until it was proven perfect in construction, design and workmanship.

SPECIFY WOLFF H-7005 FOR RESIDENTIAL USE

L. WOLFF MANUFACTURING COMPANY
 Manufacturers of
Everything in the Plumbing Line
 The only complete line made by any one firm.

General Offices, 601-627 W. Lake St. Showrooms: 111 No. Dearborn St., CHICAGO
 Pottery: Trenton, N. J.

BRANCHES: Denver, Colo.; Omaha, Neb.; Minneapolis, Minn.; Dallas, Tex.; Rochester, N. Y.;
 St. Louis, Mo.; Washington, D. C.; Cleveland, O.; Cincinnati, O.; Kansas City, Mo.;
 San Francisco, Cal.



Copyrighted by the L. Wolff Mfg. Co.

HESS MEDICINE SANITARY LOCKER

The Only Modern, Sanitary STEEL Medicine Cabinet



or locker, finished in snow-white, baked everlasting enamel, inside and out. Beautiful beveled mirror door. Nickel plate brass trimmings. Steel or glass shelves.

Costs Less Than Wood
 Never warps, shrinks nor swells. Dust and vermin proof, easily cleaned. Should be in Every Bath Room. Four styles—four sizes. To recess in wall or to hang outside. Send for illustrated circular.

HESS, 920L Tacoma Bldg., CHICAGO
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A HOT AIR FURNACE

For Less Than \$50 Complete

For 5 and 8 Room Dwellings

An Unheard of Price and a most Remarkable and Indestructible Furnace.

No Pipes No Lost Heat

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on every article, write for my free illustrated Catalog. The only house that sells first-class guaranteed goods at wholesale prices direct. Shipments are promptly made from a very complete stock.

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"BULL DOG" HOIST

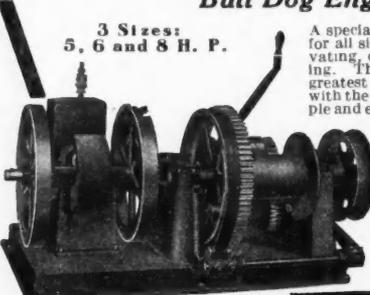
a builders special hoist equipped with a Bull Dog Engine

3 Sizes: 5, 6 and 8 H. P.

A specially strong piece of equipment for all single or double platform elevating, direct hoisting and pile driving. This Hoist can be used for the greatest variety of work. Equipped with the Bull Dog Engine which is simple and easy to understand. Every engine guaranteed to develop ample power at all times. The Bull Dog Engine assures complete freedom from engine trouble.

Progressive Builders should write for Catalog 21 of up-to-date machinery and equipment. It is sent FREE.

BATES & EDMONDS MOTOR CO.
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the only five-ply

Wall Board

Boost your cold weather income—go after Utility Wall Board business. Utility is applied with equal satisfaction—no delay—in winter or summer, damp weather or dry.

Five-ply Utility—meaning 5 layers of fibre board cemented with 4 layers of asphalt—is heavier, stiffer and much more enduring. Let us send specimens. Write today.

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Manufacturers also of Flex-a-Tile
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How to Offset the Winter Slump

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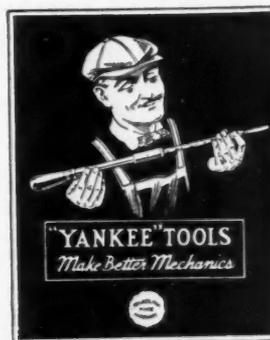
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Figure on the durability, waterproofness and general appearance of Bayonne as against any other porch or deck covering and you will end by specifying Bayonne.

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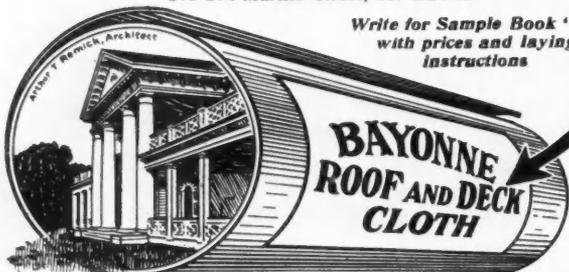
The first cost of a porch roof or deck covering is not the only cost.

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Write for Sample Book "N"
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a record of 15 years' proven satisfaction. Other Contractors and Builders have made money selling the Davis.

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DAVIS ACETYLENE CO.

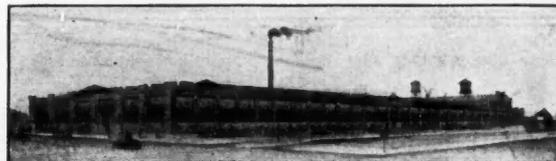
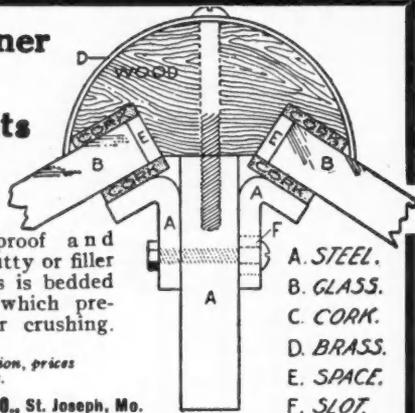
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make a strong, handsome and practical joint. They are waterproof and dust-proof and never rot. No putty or filler is used. The glass is bedded on Spanish cork which prevents cracking or crushing. Not expensive.

Write us for description, prices or estimates.

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Add this extra money to your season's profits. Before winter sets in you can make \$1000 extra by our Co-operative Plan. We don't ask you to take time from your regular work. Our carefully thought-out plan makes that unnecessary and yet gives you a big chance to make extra money.

BUILDERS

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THE ONLY DERRICK OF ITS KIND ON THE MARKET

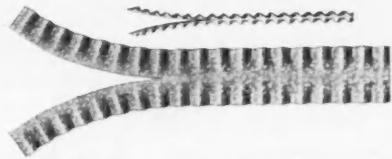
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**TWO OF YOUR NEEDS
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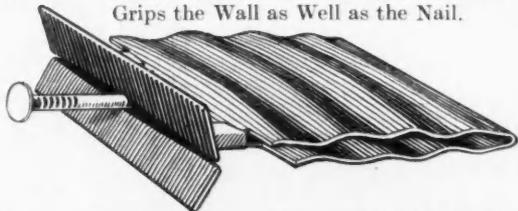
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BOSTWICK METAL WALL PLUG

Grips the Wall as Well as the Nail.

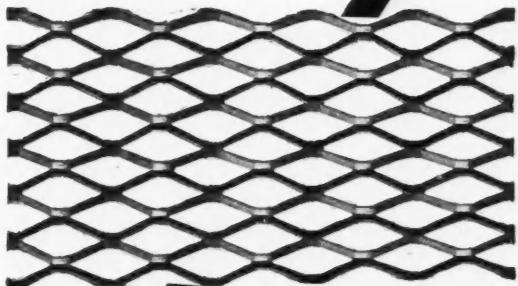


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Expanded Cup Lath

The Self-Furring Kind with Anti-Rust (Oil) Coating, Painted Black or Galvanized

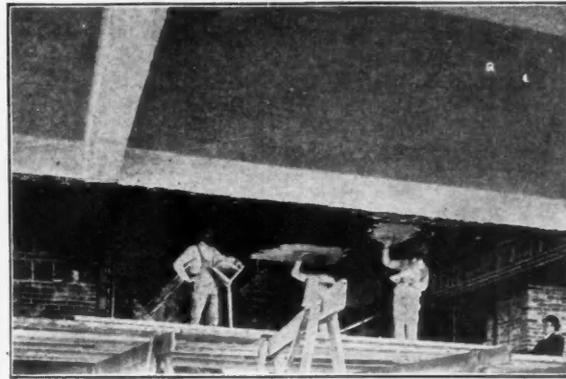


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For All Stucco Work

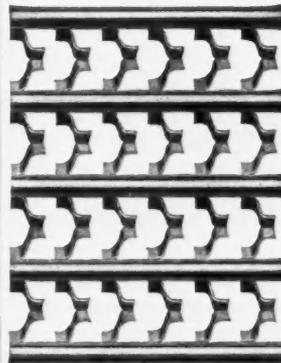
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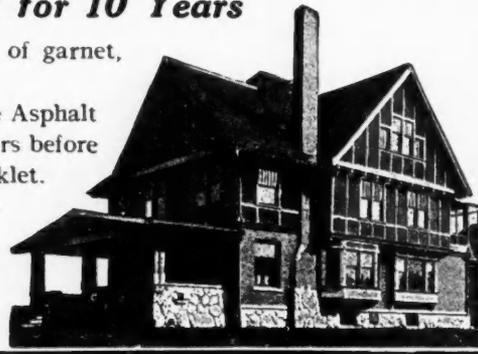
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"Fire Resisting—Approved by National Board of Underwriters"

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 DOOR HANGER

for TUBULAR GIRDER TRACK is adjustable to and from the building, and up or down as necessary. Has flexible engine track 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.
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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.

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Iron & Wire Works Co.
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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.

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It will come right to your door, quick, by insured parcel post, all prepaid for only \$5.00.

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 In Sheets, Plates, Rolls

CORRUGATED COPPER CONDUCTOR PIPE

Copper Nails, Copper Rivets, Conductor Pipe, Eaves Trough, Elbows, Shoes, Mitres, Soldering Coppers, Gaskets, Etc.



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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.

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GOTHIC—Style "F"

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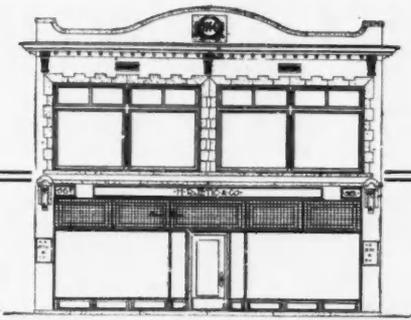
No buildings are too large or too small for our personal and prompt attention.

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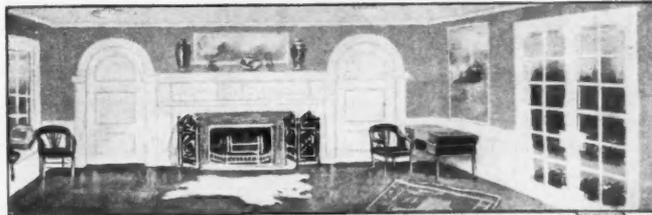
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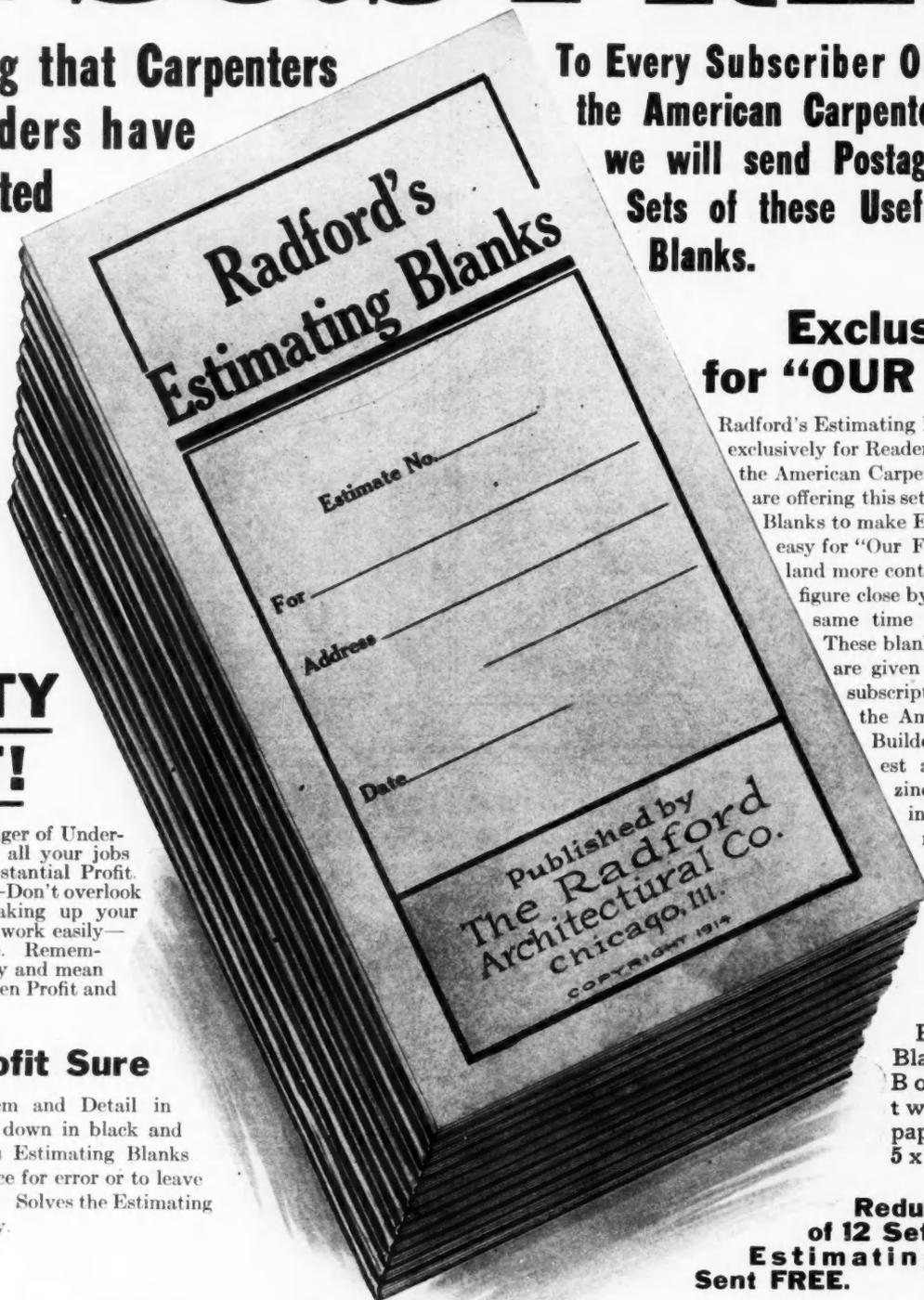
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A Few Items Covered in Radford's Estimating Blanks

Partial Table of Items Covered in Radford's Estimating Blanks

- Preliminary Work—**
Preparation of Site; Clearing Ground; Laying Out; Teams, Scrapers, etc.
- Excavation—**
For Foundations; for Areeays; for Cisterns; for Out-buildings; for Walks, Driveways, Curbs, etc.; Drilling; Blasting; Shoring; Grading; Drains, etc.
- Concrete Work—**
Footings and Foundations; Piers; Steps; Floors; Waterproofing; Forms; Reinforcing; Block Work; Wall Ties; Drain Tile; Sidewalks; Driveways; Posts, etc.
- Stone Work—**
Footings; Foundations; Retaining Walls; Water Table; Sills; Trimmings; Chimneys; Walls; Mortar; Staging; Damp-proofing; etc.
- Brickwork—**
Common; Face; Arches; Piers; Chimneys; Fireplaces; Firebrick; Mortar; Staging; Pointing, etc.
- Terra-Cotta and Tiling—**
Tile Floors; Structural Tile Walls; Hearths; Wainscoting; Marble and Mosaic Floors, etc.
- Framing—**
Walls; Sills; Studding; Joists and Girders; Roof; Porches; Windows; Stairs, etc.
- Sheathing and Siding—**
Walls; Roof; Porches; Cornice; Building Paper; Shingle Siding, etc.
- Roof Covering—**
Wood Shingles; Metal Shingles; Asphalt Shingles; Asbestos Shingles; Ready Roll Roofing; Tin; Slate; Tile; Flashing; Skylights, etc.
- Exterior Trim—**
Water Table; Door and Window Frames; Porch Trim; Cornice Work; Blinds; Lattice Work; Gutters, etc.
- Interior Trim—**
Doors; Thresholds; Windows; Floors; Panels; Wainscot; Mouldings; Stair Work; Mantels; Window Seats; Buffet; Bookcases; Closets; Cupboards, etc.
- Sheet Metal Work—**
Cresting; Finials; Skylights; Cornices; Conductors; Flashings; Valleys; Corner Beads; Soldering; Scaffolding, etc.

- Steel and Iron Work—**
Angles; Brackets; Channels; Columns; Coal Chutes; Fencing; Fire Escapes; Floor Plates; Joist Hangers; Handling and Erecting; Painting, etc.
- Plastering—**
Furring; Grounds; Wood Lath; Metal Lath; Lime Plaster; Cement Plaster; Coloring; Ornamental Work; Scaffolding, etc.
- Painting and Decorating—**
Priming; Filling; Exterior and Interior Work; Varnishing; Staining; Enameling; Calcimining; Paperhanging, etc.
- Plumbing—**
Roughing In; Bath Tubs; Fixtures; Laundry Tubs; Piping and Fittings; Septic Tank; Solder; Lead; Traps; Valves; Testing, etc.
- Hardware—**
Hinges; Bolts; Locks; Door Knobs; Nails; Sash Hardware; Window Fasteners, etc.
- Lighting and Wiring—**
Conduits; Cord; Cutout Boxes; Switches; Gas Piping; Acetylene Lighting; Insulators; Sockets, etc.
- Heating—**
Warm Air; Steam; Hot Water; Pipes and Ducts; Radiators; Registers; Regulators, etc.
- Miscellaneous Fixtures and Equipment—**
Awnings; Board Walks; Coal Bin; Door and Window Screens; Shutters; Gates; Storm Doors; Vacuum Cleaner; Grading; Sodding, etc.
- Outbuildings—**
Barns; Sheds; Cyclone Cellar; Feeding Floor; Garage; Hog House; Hen House; Milk House; Stables; Silos; Tanks; Feed Troughs; Windmill, etc.

- General Expense—**
Board; Bond; Depreciation of Plant; Fences; Insurance; Permits; Protection of Work; Storage of Materials; Telephone; Temporary Light, Heat, etc.; Timekeeping; Water Supply; Watchman, etc.
- Summary of Estimate—**
Totals of estimated costs under each main head.
- Quotations on Materials—**
Record of market prices.
- Comparison of Estimate and Actual Cost—**
- Profit on Contract—**
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means dirtied lawns, dirtied and marred foundations, probably broken windows and coal dust everywhere. Avoid all this by installing

CANTON Coal Chutes

Here is a Coal Chute, rugged and substantial, built for long service. By closing the Hopper it locks itself on the inside. Can't be jimmyed or pried open, making it absolutely

BURGLAR PROOF

The Chutes are easily installed and make a neat appearance. If so desired these chutes can be locked on the outside, doing away with a trip through the cellar.

Made in 3 Sizes

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Canton Foundry & Machine Co.

CANTON, OHIO

"OTTOMATIC" COAL CHUTE

Fireproof Burglar-Proof Fool-Proof

Only One Operation Required

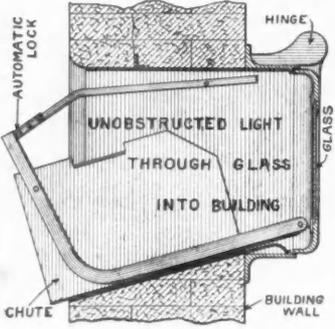
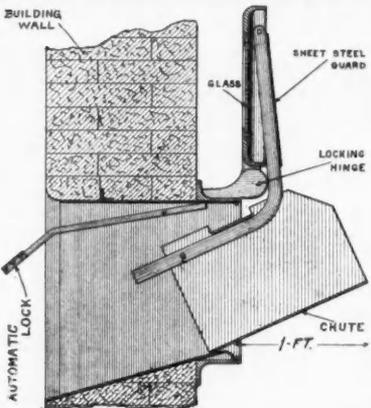
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The "OTTOMATIC" Coal Chute comes in two sizes. Size No. 1 measuring outside of the frame 17x24 inches. Size No. 2 measuring 22x33 inches outside the frame.

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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.

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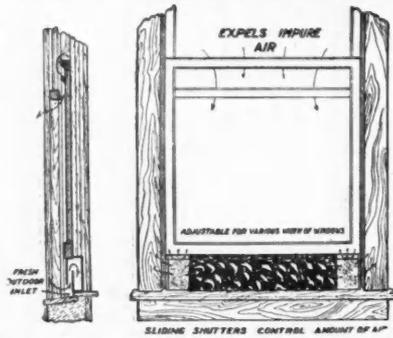
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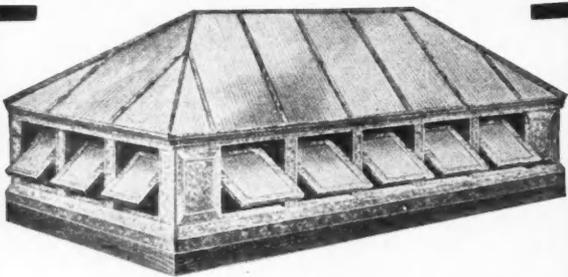
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INEXPENSIVE, BEAUTIFUL, STRONG
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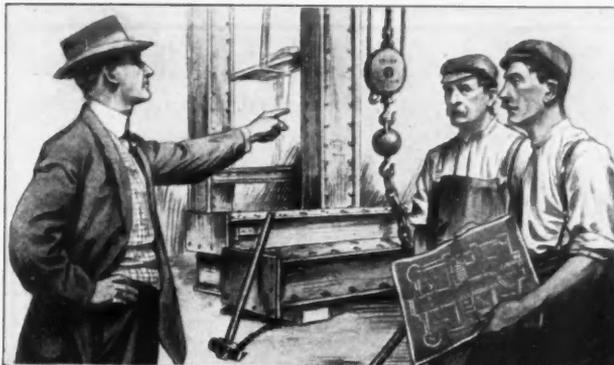
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Structural Eng.	Mechanical Eng.	Advertising Man
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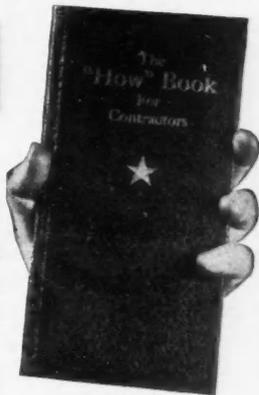
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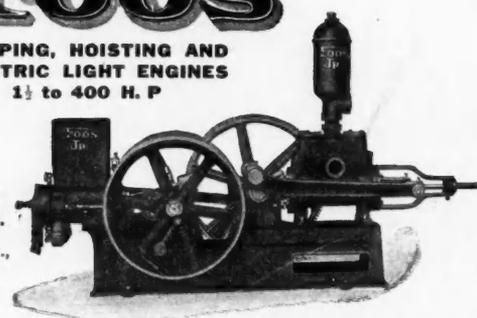
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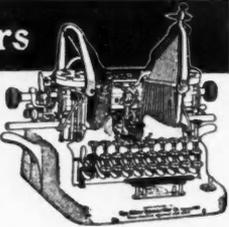
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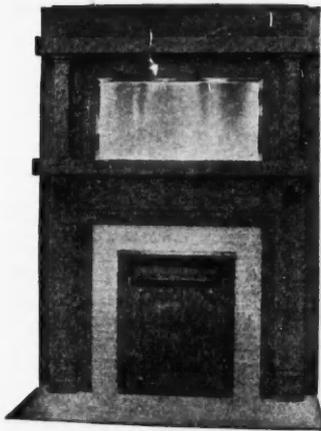
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The pedestals are 4 feet high, 10-inch face and 18 inches extension from jambs, adjustable shelves, panel back and leaded glass doors. 6-inch square columns, beveled edge taper. Castings and cap trim not included.

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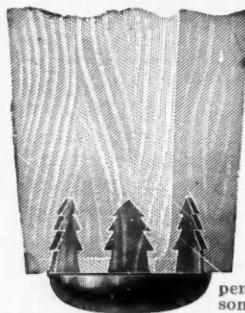
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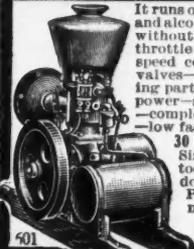
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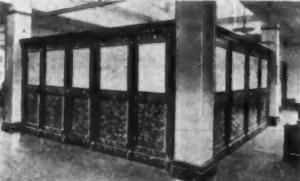
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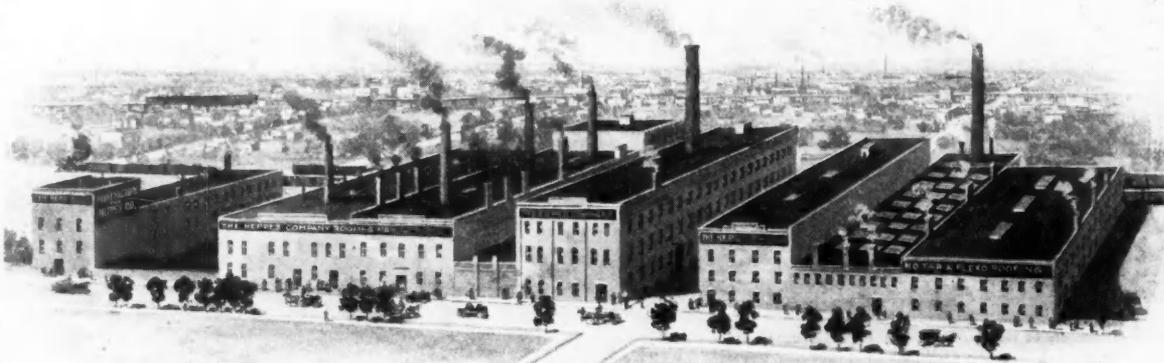
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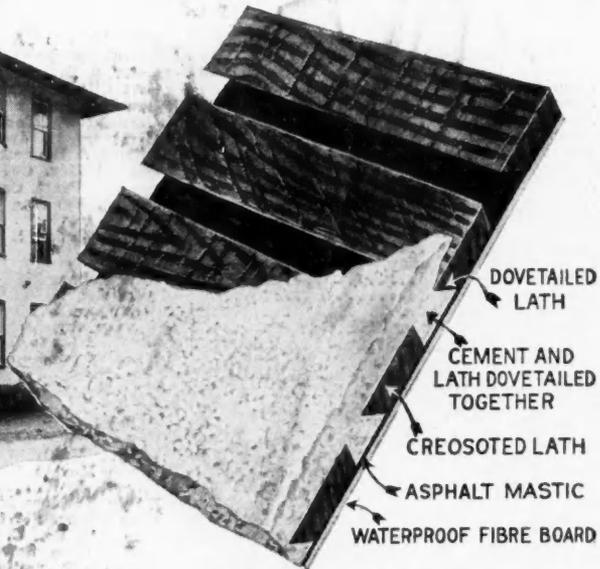
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INDEX TO ADVERTISEMENTS, OCTOBER, 1914

Page		Page		Page
25	Aloe Co., A. S.	150-151	Gage Tool Co.	139
142	Alpha Portland Cement Co.	143-144	Galesburg Sheet Metal Works	19
132	American Bell & Foundry Co.	25	Geier & Bluhm	151
6	American Elevator Co.	134	Gem City Acetylene Generator Co.	151
4	American Floor Surfacing Machine Co.	121	Genuine Bangor Slate Co.	3
150	American Mantel Tile & Grate Co.	89	Germantown Tool Works	116
29	American Pulley Co.	150	Gerstners Hardware Store	150
18	American Saw Mill Machinery Co.	149	Gilbert & Bennett Mfg. Co.	150
114	American Sheet & Tin Plate Co.	28	Goodell Mfg. Co.	19
7	American Steel Scaffold Co.	24	Goodell Pratt Co.	110
107	Andrews Heating Co.	83	Gordon VanTine Co.	136
8	Archer Iron Works	150	Gover, George	149
99	Arkansas Soft Pine Mfrs. Assn.	18	Grand Rapids Hardware Co.	149
138	Ashby, Geo. W.	10	Hall Holmes Mfg. Co.	24
115	Asphalt Ready Roofing Co.	151	Hardin Co., John	117
19	Atlantic Engine Co.	139	Hartmann Sanders Co.	21
14	Atlas Engineering Co.	111	Haynes Automobile Co.	26
150	Auld & Conger Co.	147	Heitland Grate & Mantel Co.	150
151	Automatic Sash Holder Mfg. Co.	20	Henderson-Traylor Mfg. Co.	120
133	Automatic Sealing Vault Co.	113-133-152	Heppes Co.	129
		125-132	Hess Warming & Ventilating Co.	150
		91	Hewitt-Lea-Funck Co.	28
		125	Holland Furnace Co.	109
		18	Holmes, Wm. J.	136
		147	Hornet Mantel Co.	105
		22	House Movers Supply Co.	103
		151	Hower, J. K.	131
		145	Huber Builders Material Co.	30
		29-145	Hunt, Helm, Ferris & Co.	123
		136	Hussey & Co., C. G.	150
		30	Huther Bros. Saw Mfg. Co.	150
		126	Hygienic Promotion Co., The	149
		4	Ideal Floor Sander Co.	21
		97	Ideal Tool Works	34
		144	Indianapolis Corrugating Co.	134
		145	International Correspondence Schools	151
		98	International Roofing Mfg. Co.	4
		131	Ireland Machine & Foundry Co.	33
		122	Irwin Auger Bit Co.	6
		131	Ives Co., The H. B.	23
		8	Jaeger Machine Co.	32
		124	James Mfg. Co.	131
		116	Jenne Acetylene Gas Machine Co.	25
		20	Jennings & Co., C. E.	134
		124	Johns-Manville Co., H. W.	6
		26	Johnson, E. J.	15
		149	Johnston, J. D.	129
		86	Kalamazoo Stove Co.	84
		132	Karol, B. B.	10
		30-149	Kees Mfg. Co., F. D.	137
		127	Keighley Metal Ceiling Co., S.	148
		32	Keystone Grinder & Mfg. Co.	23
		108	Kissel Motor Car Co.	146
		127	Klauer Mfg. Co.	151
		12	Knickerbocker Co., The	129
		24	Kolesch & Co.	6
		118	Lansing Co.	32
		127	Lorenzen & Co., Chas. F.	33
		123	Louden Machinery Co.	5
		139	Lowe Bros. Co.	11
		21	Lufkin Rule Co.	20
		150	Maacks Academy of Architecture	115
		146	Mack & Co.	23
		31	Mack Iron & Wire Works	148
		125	Majestic Co., The	20
		95	Maple Flooring Mfrs. Assn.	148
		154	Mastic Wall Board Rfg. Mfg. Co.	20
		142	Maximilian Co.	135
		36	Metallic Batten Co.	137
		150	Metallic Sign Letter Co.	151
		121	Michigan Engine Valve Co.	148
		88	Midland Terra Cotta Co.	20
		150	Milburn Co., Alexander	135
		12	Miles Mfg. Co.	146
		128	Miller & Coulson	137
		151	Miller-Laut Co., The	7
		21	Miller Mfg. Co., A. W.	136
		27	Millers Falls Co.	113
		137	Milwaukee Corrugating Co.	147
		7	Miotke, Jos.	92
		136	Moeschl-Edwards Corrugating Co.	36
		113	Montross Metal Shingle Co.	133
		147	Moorman & Otten Co.	85
		92	Morgan Co., The	136
		36	Morrill, Chas.	106
		133	Mullins Co., The W. H.	156
		85	Murphy Varnish Co.	137
		136	Myers & Bros., F. E.	4
		106	National Lead Co.	147
		156	National Mfg. Co.	133
		137	National Sheet Metal Roofing Co.	94
		4	Nicholls Mfg. Co.	12
		147	Nickerson Mfg. Co.	127
		133	North Bros. Mfg. Co.	146
		94	Northern Hemlock & Hardwood Mfrs. Assn.	130
		12	Northfield Iron Co.	10
		127	Northrop, Coburn & Dodge Co.	119
		146	Northwestern Compo-Board Co.	6
		130	Northwestern Expanded Metal Co.	139
		10	Northwestern Steel & Iron Co.	139
		119	Novo Engine Co.	139
		139	Oak Flooring Bureau	139
		151	Ohio Tool Co.	151
		151	Olmsted's Son, L. H.	151
		3	Ornamental Products Co.	151
		116	Oshkosh Mfg. Co.	151
		150	Oxweld Acetylene Co.	151
		150	Parker, C. L.	151
		150	Parkhill, John	151
		19	Parks Ball Bearing Machine Co.	151
		110	Patent Vulcanite Roofing Co.	151
		136	Pearson Mfg. Co.	151
		149	Peerless Blue Print Co.	151
		149	Pennsylvania Saw Co.	151
		24	Phoenix Sliding Blind Co.	151
		117	Plastergon Wallboard Co.	151
		21	Prentiss Vise Co.	151
		26	Progressive Mfg. Co.	151
		150	Pullman Automatic Ventilator Mfg. Co.	151
		120	Pullman Metal Weatherstrip Co.	151
		129	Queen Cupola Mfg. Co.	151
		150	Realty Book Co.	151
		28	Rehm Hardware Co.	151
		109	Reo Motor Truck Co.	151
		136	Reynolds Asphalt Shingle Co., H. M.	151
		105	Richards Wilcox Mfg. Co.	151
		103	Richards Mfg. Co.	151
		131	Robinson Cabinet Mfg. Co.	151
		30	Rockford Bolt Co.	151
		123	Royal Ventilator Co.	151
		150	Rubber Roofing Mfg. Co.	151
		149	Samson Cordage Works	151
		21	Sand & Sons, J.	151
		34	Sargent & Co.	151
		134	Sasgen Derrick Co.	151
		151	Sayre & Son, L. A.	151
		4	Schlueter, M. L.	151
		33	Schrautger & Johnson	151
		6	Sedgwick Machine Works	151
		23	Shapleigh Hardware Co.	151
		32	Shelby Spring Hinge Co.	151
		131	Sheldon Slate Co., F. C.	151
		25	Sherman Mfg. Co., H. B.	151
		134	Schultz All Steel Corner Post Co.	151
		6	Sidney Elevator Mfg. Co.	151
		15	Sidney Tool Co.	151
		129	Simmons Hardware Co.	151
		84	Simonds Mfg. Co.	151
		10	Sioux City Engine & Machinery Co.	151
		137	Slatington Slate Co.	151
		148	Smith, Harry A.	151
		23	Smith & Hemenway Co.	151
		146	Sober, C. K.	151
		151	Southern Cypress Mfrs. Assn.	151
		129	Southington Hardware Co.	151
		6	Spidel, J. G.	151
		32	Stamping & Tool Co.	151
		33	Standard Mfg. Co.	151
		5	Standard Paint Co.	151
		11	Standard Scale & Supply Co.	151
		20	Standard Screen Co.	151
		115	Standard Stained Shingle Co.	151
		23	Stanley Rule & Level Co.	151
		129	Stanley Works, The	151
		29	Star Expansion Bolt Co.	151
		26	Starrett & Co., L. S.	151
		129	Stine Screw Holes Co.	151
		151	Storm Mfg. Co.	151
		148	Stransky Mfg. Co.	151
		20	Swan Co., Jas.	151
		135	Sykes Metal Lath & Roofing Co.	151
		21	Syracuse Twist Drill Co.	151
		27	Taylor Mfg. Co., Jas. L.	151
		134	Temple Mfg. Co.	151
		150	Tirrill Gas Machine Lighting Co.	151
		6	Triple A. Machine Co.	151
		135	Trussed Concrete Steel Co.	151
		146	Typewriters Distributing Co.	151
		143	United Electric Co.	151
		20	VanDoren Mfg. Co.	151
		150	VanGuilder Hollow Wall Co.	151
		128	Wagner Mfg. Co.	151
		6	Warner Elevator Mfg. Co.	151
		24	Warren Knight Co.	151
		24	Warren Profile Co.	151
		9	Waterloo Cement Machinery Corp.	151
		142	Waterloo Register Co.	151
		123	Watrous-Aeme Mfg. Co.	151
		7	Weber Mfg. Co.	151
		151	Webster Cement Co., W. F.	151
		139	Wells Lumber Co., J. W.	151
		129	Western Lumber & Millwork Co.	151
		25	White Co., David	151
		30	White Co., L. & I. J.	151
		150	Wilhelm, H. B.	151
		87	Williamson Heater Co.	151
		144	Willis Mfg. Co.	151
		119	Witte Iron Works Co.	151
		132	Wolff Mfg. Co., L.	151
		151	Woodwell Co., Jos.	151
		151	Worcester Mfg. Co.	151
		6	York Automatic Dumb Waiter Co.	



THREE FAMILY APARTMENT
 Built with Bishopric Stucco or Plaster Board
ED. F. FREEMAN
 Owner and Builder
 Roxbury, Mass.



Bishopric STUCCO or PLASTER BOARD

Built on the Wisdom of the Ages

A modern combination of materials and principles that ages of actual use have proven the most efficient in building construction.

The Dovetailed Lath

Centuries ago the artisan recognized the utility of the dovetailed joint in building construction; and since then every master builder has used the dovetailed joint where a permanent, lasting and efficient joint was desired.

The cement, stucco or plaster dovetails into the Bishopric Stucco or Plaster Board and is held absolutely firm, so that cracking or crumbling is impossible. The covering becomes a part of the board and will last for ages.

The Creosoted Lath

Creosote is a wood preservative. It is customary to creosote wood that is exposed to severe weather conditions—railroad ties, for instance. The lath in the Bishopric Stucco Board are creosoted.

The Asphalt Mastic

Covering one side of the card board is the toughened Asphalt

Mastic in which the lath are imbedded. Asphalt Mastic is moisture-proof, fire-resisting and a wonderful preservative. Asphalt was the important element used by the ancient Egyptians to preserve their mummies.

The Heavy Fibre Board

Paper and paper board is so extensively used in building construction that its advantages need hardly be mentioned. It forms a very important part of the Bishopric Stucco Board, not only for its protection against heat and cold, but also because it is a sound deadener.



Plaster and cement walls cannot crack if Bishopric Stucco or Plaster Board is used.

—because Bishopric Stucco Board is right scientifically. It is built on principles that have been tested and proven the best, not for years, but for centuries.

—because Bishopric Stucco Board is right in practice. Years of severest tests under all conditions prove absolutely that in actual use Bishopric Stucco Board is unequalled.

Better Walls — Less Money

Write at once for **FREE SAMPLES OF BISHOPRIC STUCCO OR PLASTER BOARD** and our illustrated book "*Durable Homes by the Bishopric System*" illustrating buildings of all kinds on which Bishopric Stucco Board has been used. This book also contains letters from Builders, Architects and users of Bishopric Stucco Board and furnishes facts and figures to prove that it cuts the cost 25%.

The Mastic Wall Board and Roofing Company
 603 Este Avenue, CINCINNATI, OHIO

CENTRAL DOOR AND LUMBER CO., Portland, Ore., Licensed Manufacturers and Distributors for Pacific Slope.

Building Principles that have been Tested for Ages

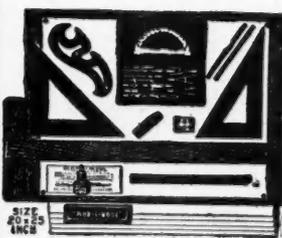


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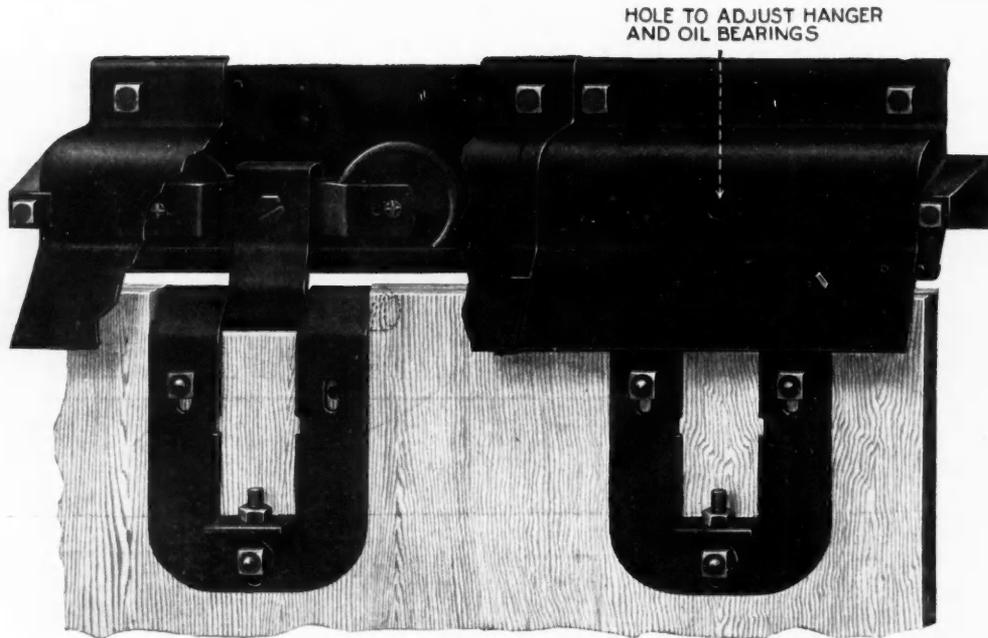
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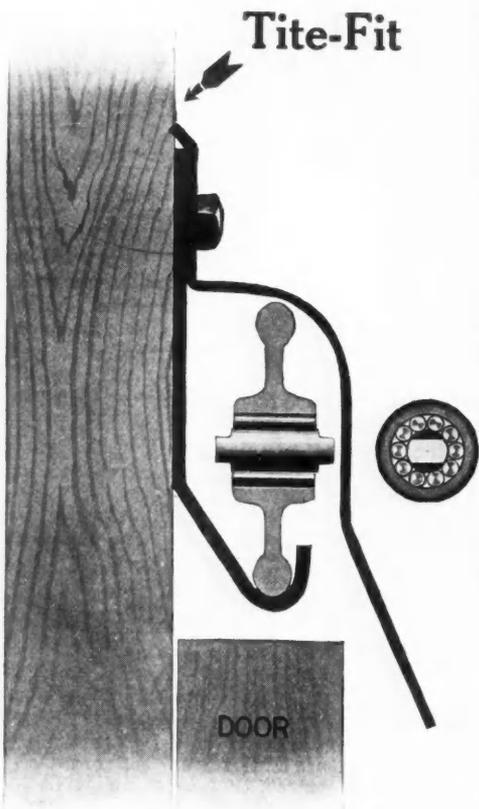
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No. "88" ADJUSTABLE.



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