

# AMERICAN CARPENTER <sup>AND</sup> BUILDER



THE WORLD'S GREATEST BUILDING PAPER



# A NEW PROPOSITION IN

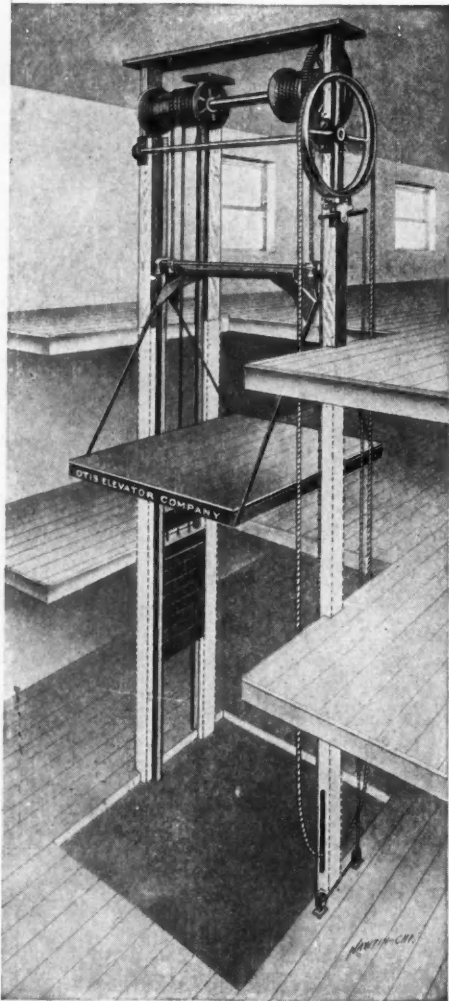
HAND POWER

## ELEVATORS

**\$75.00 TO \$95.00**

CAPACITIES—1500, 2000, 2500 LBS.

### SPECIFICATION



**PLATFORM**  
STEEL FRAME  
SAFETIES  
COUNTERWEIGHTS  
200 LBS IN EXCESS  
OF WEIGHT OF CAR  
GUIDE STRIPS

**WINDING MACHINE**  
CAST IRON DRUMS  
STEEL SHAFTS  
ROLLER BEARINGS  
GEARING  
ROPE OR PULL WHEEL  
BRAKE

#### ROPES

TWO  $\frac{1}{2}$  IN IRON LIFTING CABLES  
ONE  $\frac{1}{2}$  IN IRON WEIGHT CABLE  
ONE  $1\frac{1}{4}$  IN MANILA HAND ROPE  
ONE  $\frac{1}{2}$  IN BRAKE ROPE  
SUPPORTS FOR MACHINE  
DRAWINGS FOR SETTING UP

NOTE THE **STEEL FRAME PLATFORM**

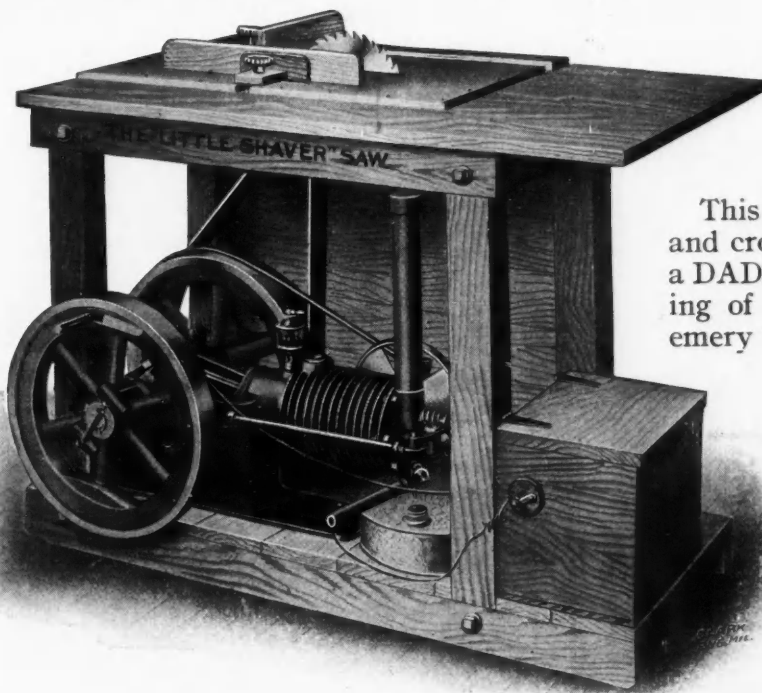
## OTIS ELEVATOR COMPANY

NEW YORK CHICAGO SAN FRANCISCO  
AND ALL PRINCIPAL CITIES

SEND FOR OUR NEW CATALOGUE

**STANDARD SIZES READY FOR SHIPMENT**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



## Do Your Own MILLWORK

This portable saw rig will rip and cross-cut 2½-inch lumber, has a DADO head which will do plowing of window and door frames, emery wheel for sharpening tools, strong 3-horsepower water-cooled engine, iron table fitted with gauges, the entire outfit strongly built, ready to start when it reaches you. Can be moved from job to job, total weight 615 pounds.

## THE "Little Shaver" Floor Scraper

has all the weight on the blade and not on the handle, as in other scrapers. Nothing but a large hand scraper.

A boy can do the scraping. Simplest and most satisfactory machine to work on the market.



### WRITE US

for folder and prices on these two time and money savers.

**Do it today**

**Inter-State Equipment & Engineering Co.,** Old Colony Bldg.  
Chicago, Ill.



## The American Floor Surfacing Machine

is the original and only two-roll, self-propelling, dust collecting machine, protected by U. S. and Foreign patents, and the only one that will satisfactorily surface any kind of a wood floor, and has been in general use by contractors, hardwood floor companies and others for over five years.

Its work is rapid, regular, smooth and even, because the power that drives the rolls propells the machine at the same ratio of speed.

Its work has established the standard for surfaced floors, and the only machine whose work is specified by leading architects and meets the requirements of contractors, owners and hardwood floor companies for finely finished, smooth, even floors.

It has surfaced and polished millions of square feet of the finest floors in America and Europe.

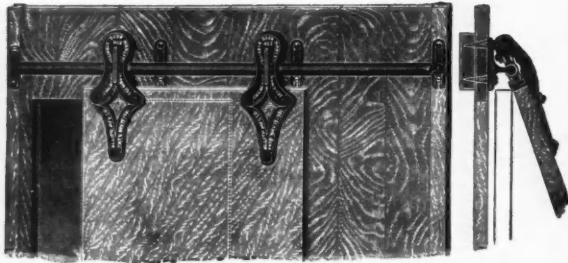
Don't be fooled with an imitation, but get a machine that does work in paying quantities, and can be operated in small rooms.

The only one whose construction is guaranteed and sold on its merits. Write for our book "Surfacing Floors as a Business."

Manufactured by

**The American Floor Surfacing Machine Company**  
TOLEDO, OHIO

## Allith "Reliable" Barn Door Hangers



**Simple, Efficient, Durable**  
**Frictionless**

The most Popular Outfit made.

Impossible to Derail, Easy Running, Great Strength.  
Other styles of Hangers for all kinds of Sliding Doors.

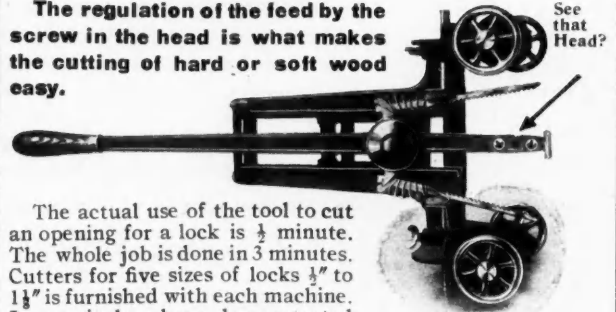
SEND FOR CATALOG "A"

**ALLITH MANUFACTURING CO.,**  
43rd and Taylor - - CHICAGO, ILL.

## Miller's Lock Mortiser

IS SCIENTIFIC

The regulation of the feed by the screw in the head is what makes the cutting of hard or soft wood easy.



The actual use of the tool to cut an opening for a lock is  $\frac{1}{2}$  minute. The whole job is done in 3 minutes. Cutters for five sizes of locks  $\frac{1}{2}$ " to  $1\frac{1}{2}$ " is furnished with each machine. Its merit has been demonstrated thousands of times. Sent on Trial.

## Butt Mortiser



Cuts the seats for butt hinges in doors, jambs and other work. It does the work in one-third the time and makes a neat, clean, accurate job. Price, including rule gauge, 75 cents.

## A. W. Miller Mfg. Co.

Western Office:  
RIVERSIDE, CALIF.

Main Office:  
CINCINNATI, OHIO.

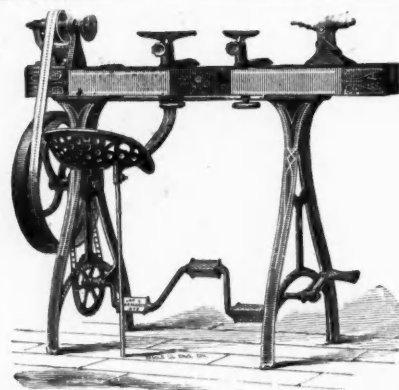
L. S. STARRETT SAYS:



**"If you find any tools better than Starrett Tools, buy them."**

Send for free Catalogue No. 186.

The L. S. Starrett Co., Athol, Mass., U. S. A.



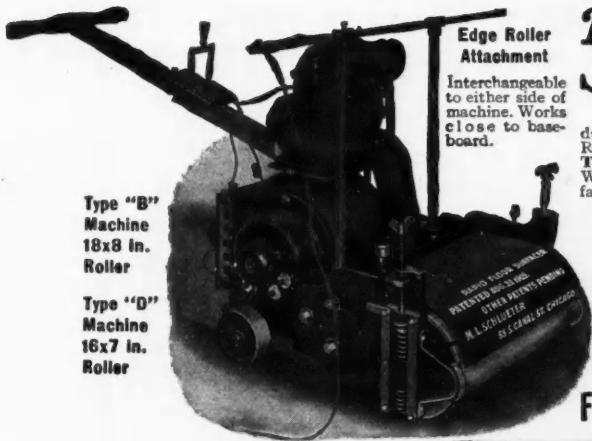
## COMPLETE OUTFIT

Hand and Foot-Power MACHINERY

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

Write for Particulars

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



Type "B" Machine 18x8 in. Roller

Type "D" Machine 16x7 in. Roller

Edge Roller Attachment  
Interchangeable to either side of machine. Works close to base-board.

## Perfect Results Easily Obtained Schlüter Rapid Floor Surfacer

Built on the only correct principle. Guaranteed to be **THE BEST** machine with which to produce an even, smooth surface on any kind of wood floor old or new, hard or soft, and in all buildings; Residences, Stores, Factories, Bowling Alleys, Roller Skating Rinks, Reception and Dance Halls, etc. **THE SCHLÜTER** will remove all joints or warped edges, and leave the floor perfectly smooth. Will remove shellac, varnish, oil, wax, lime stains or the "muck" from skate wheels in a most satisfactory manner.

**WE SELL MACHINE OR SURFACE YOUR FLOOR**

**EASY TO OPERATE. NO DUST.** Over 500 contractors are now using our Machines. Made in two sizes. We will surface your floor. Mail us size of floor, new or old, and kind of electric power. **In eight hours will sandpaper 4,000 to 5,000 sq. ft. once over.** Write for new prices, catalogue and our **FREE TRIAL** proposition.

**Sandpaper the Only Perfect Way**

The **SCHLÜTER RAPID FLOOR SURFACER** is so constructed that a roller, to which a sheet of sandpaper is quickly adjusted, is brought in contact with the floor surface while revolving at a speed of **600 revolutions a minute.** It is guaranteed to do the work cheaper and smoother than any other machine or method. This machine will surface from one to two thousand square feet in eight hours. Cost of sandpaper and electric power from \$1.00 to \$2.00 per day

**FREE** Illustrated booklet containing full information sent free to contractors. **M. L. SCHLÜTER** 28 S. Canal St. CHICAGO



**Fox Floor Scraper No. 1**

A Perfect Machine for Perfect Work.

# Remember—THE FOX PAYS FOR ITSELF

"Your hardware dealer will order it for you. They all handle the Fox Floor Scraper because it does better work and more of it in less time than any other machine on the market and is conceded by all to be the easiest running machine ever built."

Fox Cabinet Scraper works like a plane. A FINE TOOL for fine work. Price, express prepaid, **\$1.25.**

(Write us for Catalogue.)



Fox Cabinet Scraper



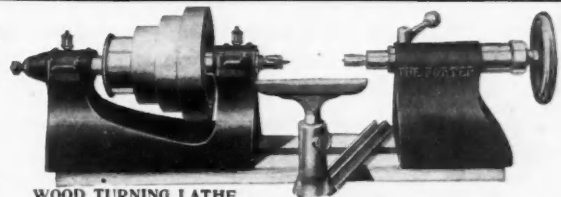
**FOX MFG. CO.**

Milwaukee, Wis.

## "THE PORTER" Wood Turning Lathes

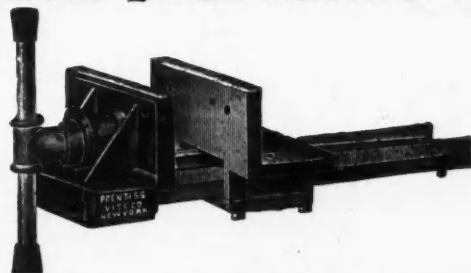
for wood turners and pattern makers. Furnished complete with countershaft, rests, steps, bolts, center and face plate. A high grade machine at a reasonable price. We also make Hand Jointers, Shapers, Swing Cut-off Saws, Pony Planers and Post Boring Machines. - - - Better get our Catalog.

**C. O. Porter Machinery Co., Grand Rapids, Mich.**



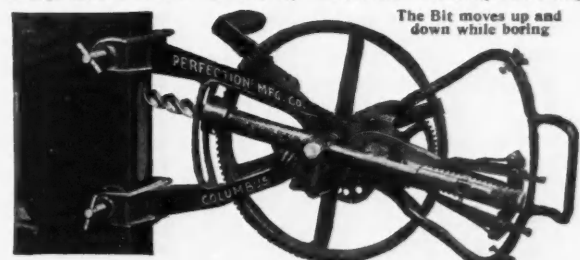
WOOD TURNING LATHE.

## BLAKE QUICK ACTING VISE



For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best  
Send for Catalogue of all kinds of Vises  
**PRENTISS VISE COMPANY, MAKERS**  
44 Broadway Street, New York, U. S. A.

## PERFECTION DOOR LOCK MORTISER



The Bit moves up and down while boring

Weight 12 lbs., unbreakable malleable iron, automatic, ball-bearing Carpenters and builders cannot afford to be without it. 11-16 inch bit with each machine; any size furnished. Set the cam for any size mortise wanted, clamp on door, turn crank until finished.

Price of machine can be saved on 50 doors.  
**PERFECTION MFG. CO.,** 48 W. Patterson Ave., Columbus, O.  
Rehm Hardware Co., 354 Blue Island Ave., Chicago, Ill.  
Lee-Laumer Lumber Co., Birmingham, Ala.

# ACKERMANN'S "MAKE GOOD" OFFER

**"More Work, Easier Work, Better Work than any Other Floor Scraper Made or the Entire Outfit is Free"**

You run no risk in ordering Ackermann's Rapid Floor Scraper sent on Free Trial. You don't have to pay a dollar down, not even the express charges.

Besides this you receive free with the machine, a complete Ackermann Knife Sharpening Outfit which insures the successful use of the machine by even an amateur. This knife sharpener practically works automatically and will put an absolutely perfect edge on the knife blade in less than two minutes without removing the blade from the machine.

**Ackermann's New Knife Sharpener works perfectly on the blade of any floor scraper. It cures all "Knife Troubles."**

Real success in the use of any floor scraper depends largely upon the cutting edge maintained on the knife blade that actually does the work. No machine will do the work well unless the blade is kept constantly sharp. Up to the present time the average operator of any floor scraper made, has had much trouble in doing good work, quick, because sharpening the blades was very difficult.

Send for Booklet and Information.

## Great Free Trial Offer

We will ship you on free trial, prepaying all charges, both the Ackermann Rapid Floor Scraper and Ackermann's New Knife Sharpener. If they prove satisfactory, you purchase the machine, and the knife sharpening outfit is given you free. If not, return both at our expense. It costs you nothing to find out whether or not our claims are true. Write today.

**J. B. ACKERMANN CO.,** 100 Pearl Street GRAND RAPIDS, MICHIGAN



**SELLING AGENTS**  
 Jos. Woodwell Co., Pittsburg, Pa.  
 Tallmadge Hdw. Co., Columbus, O.  
 John F. Baker, Dayton, O.  
 Crane & Bliss Hdw. Co., Newark, O.  
 Raymer Hdw. Co., St. Paul, Minn.  
 N. W. Farquet Floor Co., Minneapolis, Minn.  
 C. A. Baeuerlen Hdw. Co., Winona, Minn.  
 Saginaw Hdw. Co., Saginaw, Mich.  
 Stambaugh-Thompson Co., Youngstown, O.  
 Kelley Hdw. Co., Duluth, Minn.  
 Pinnel-Engler Lumber Co., Franklin, Ind.  
 W. F. Miller & Son, Barberton, O.  
 Holt Lumber Co., Oconto, Wis.  
 Warner Hdw. Co., Minneapolis, Minn.  
 Morley Bros., Saginaw, Mich.  
 Clements & Smith, Minneapolis, Minn.  
 Driscoll Bros. & Co., Ithaca, N. Y.

Machine in position, ready to Sharpen Blade

Arrows point to the Knife Sharpening outfit which fits compactly into machine, out of the way. Knife sharpener sold separately if desired. Price, \$5.00.

## PLATE GLASS Bath Room Fixtures

FOR RESIDENCES, HOTELS, OFFICE AND APARTMENT BUILDINGS

Absolutely sanitary, require no cleaning, never wear out or show the effects of use. Not affected by hot or cold water. The modern 20th century toilet and lavatory fittings.

### PLATE GLASS TOWEL BAR



Price \$1.50

No. 141 24 inches, adjustable. Also made in 30, 36, 42 and 48 inch lengths at slightly higher prices.

Round glass towel bars, \$2.00

Adjustable glass towel shelves, \$3.50, \$4.00, \$6.00

We also sell plate glass with polished edges for table tops, any size, and glass push plates for use in fine residences and apartments, manufacture and re-silver mirrors, etc.

CATALOGUE SENT FREE ON APPLICATION

## Geo. H. Anderson & Co.

Manufacturers and Jobbers of Plate Glass Specialties  
 281-291 W. Superior Street - - CHICAGO

## CUSTOM MADE FLY SCREENS

Our work is far superior to the usual output of local mills and has a style and finish not obtainable from those who do not make a specialty of fine screens.

Our screens have waterproof coped joints and the frames are weather proofed before the finishing coats are applied. Best grades of Wire Cloth, enameled, galvanized, genuine bronze, fastened by the most approved methods.

Intending purchasers may have free, by mail, samples of woods, finishes, wire cloth, and a copy of catalogue and price list. Agencies in nearly all large cities. Agents wanted in smaller cities.

Special terms to Contractors and Builders.

## A. J. PHILLIPS & CO.

FENTON, MICH.

25 Years' Experience

3 1/2 Acres of Floors

## PLUMBERS' SUPPLIES AT WHOLESALE



If you need anything in my line and wish to

**SAVE**

**20 to 40 Per Cent**

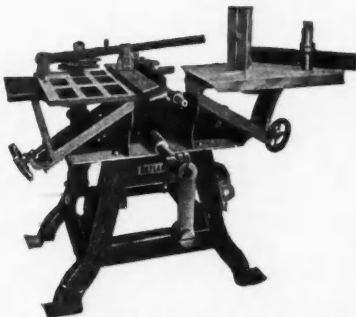
on every article, write for my free illustrated Catalog. Shipments promptly made from a very complete stock of guaranteed goods.

Small orders are as carefully handled as large ones.

B. B. KAROL, 233 W. Harrison St., Chicago, Ill.



# Head and Shoulders Over the Rest

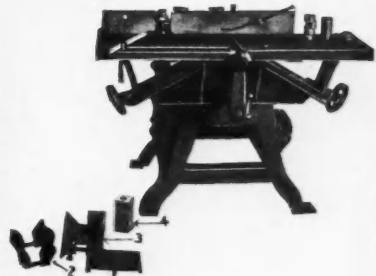
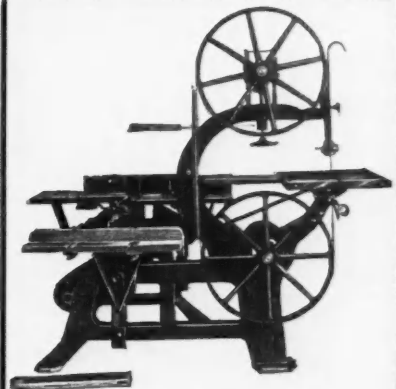


## A WORLD BEATER FOR THE Contractor and Builder!

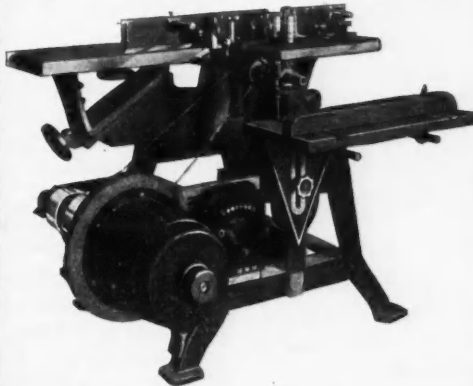
The five cuts illustrated on this page will give you a fair idea of the construction of the **Famous Universal Wood Worker,**

the only machine that has ever been placed on the market which will fill all the requirements of the contractor and builder. This machine was brought out after many years of practical experience in the contracting and building trade, and has all of the latest, up-to-date attachments useful for all kinds of work which needs to be done on all different kinds of jobs. In the surrounding cuts you will see the machine as a band saw, boring machine, jointer, two side molder, single end tenoner, planer, molder and matcher. We can also furnish with this machine a hollow chisel mortising attachment, which is one of the most useful attachments on this machine. If you will write us and state the kind of work you wish to do, we can equip you with a machine which will be successful in every way, and will give you an iron-clad guarantee with each and every one of these tools, that they must do as we represent, or we will refund you your money. We can furnish you a great number of testimonials from contractors and builders who are now using this machine, if you wish them.

Do not fail to install one of these machines for your summer work.



Write us at once for catalogue B, giving you a complete description of the **Famous Universal Wood Worker,** explaining all of the different attachments which we can furnish with this machine, some of which are shown on the cuts above. If you are a contractor or builder you cannot afford to do without a tool of this kind, the only thing on the market which will save you from 15 to 20% on every job you do and pay for itself the first season.



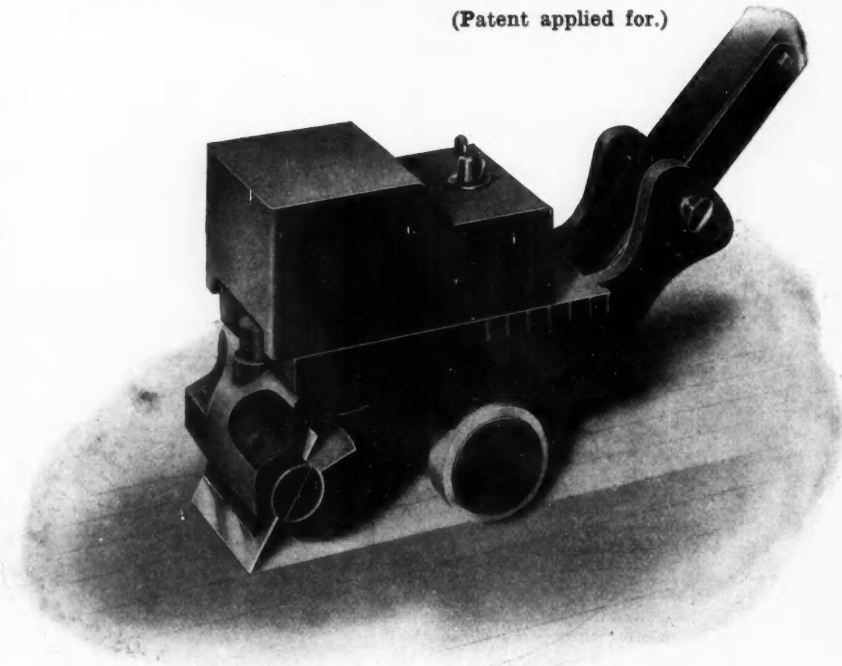
We should also be pleased to send you one of our catalogue E, illustrating and describing the machines shown in our general catalogue, consisting of **Band Saws, Saw Tables, Jointers, Shapers, Planers, Boring Machines, Turning Lathes and Saw Arbors.**

# SIDNEY TOOL CO.

## SIDNEY, OHIO.

# The Adjustable Floor Scraper

(Patent applied for.)



## Distinctive Features

Adjustment of Handle to height of operator.

Adjustment of Blade to any vertical or lateral degree.

Adjustment of Weight over Blade anywhere from 15 to 50 lbs.

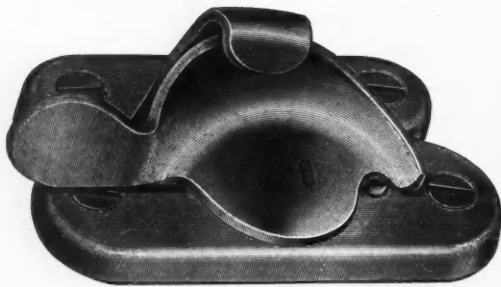
Adjusted Weight over Blade permanent; not governed by pressure upon the handle, insuring a uniform cut, absolutely free from "chattering."

Any workman can do, with ease, more and better work than with any other mechanical scraper, and several times what can be done by hand.

Let us tell you  
*more* about it.

LONG DISTANCE TELEPHONE MFG. CO., SOUTH BEND, IND.

## MONITOR SASH LOCKS



(PATENTED)

### NEVER BREAK

**BECAUSE THEY ARE MADE OF VERY HEAVY GAUGE METAL AND PERFECTLY CONSTRUCTED**

If the upper sash 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 can not be opened from the outside.

MADE IN TWO SIZES AND ALL FINISHES BY

**The Champion Safety Lock Co.**  
Geneva, Ohio

## GRAND RAPIDS

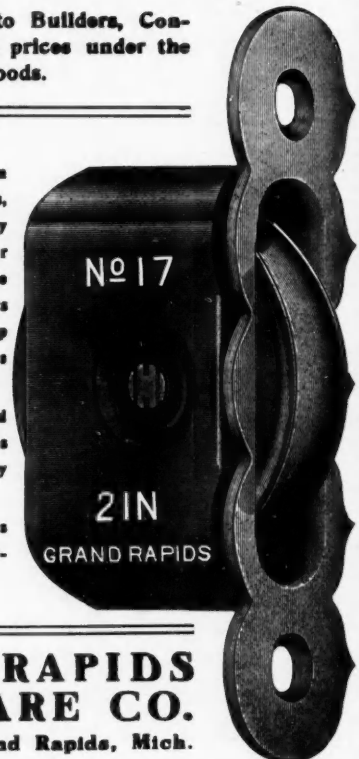
### All-Steel Sash Pulleys

Are sold **DIRECT** to Builders, Contractors and Mills at prices under the common ordinary goods.

If you make ten or ten thousand window frames, we can save you money and give you a superior sash pulley. We are the largest sash pulley makers in the world. We ship direct, or through dealers and jobbers everywhere.

Write for catalogue and free samples and prices on gross, barrel, or any quantity.

Direct from the makers to you. Inquiries welcome.



**GRAND RAPIDS  
HARDWARE CO.**  
34 Pearl St., Grand Rapids, Mich.



# "Little Giant" Floor Scraper

Sent on Free Trial  
20,000 "Little Giants" are in use

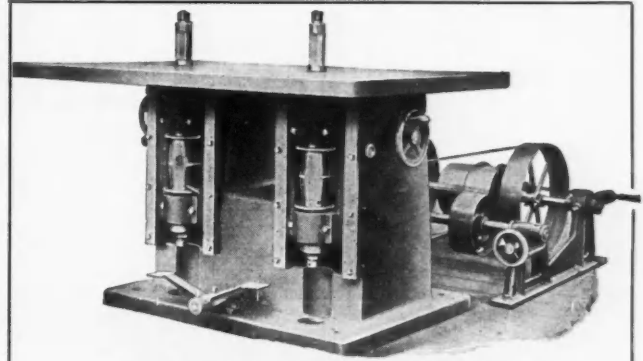
throughout this country and abroad. These were purchased because they were better; because they did more work—did it quicker, cleaner and cheaper—than any other machine made. So great is our faith in its ability to prove its worth to you that we are making the following liberal proposition.

## Special Terms

A request from you brings a "Little Giant" to your door—you send no money and we pay all expenses. After you have tested it as thoroughly as you know how, and have found it satisfactory, pay for it. If you don't consider it the best floor scraper in existence, return it at our expense. That's all. Won't you give it this chance today?

CATALOG AND FURTHER DETAILS ON REQUEST  
**HURLEY MACHINE COMPANY,**

155 South Jefferson Street, CHICAGO  
71 First Street, SAN FRANCISCO  
1010 Flatiron Bldg., NEW YORK

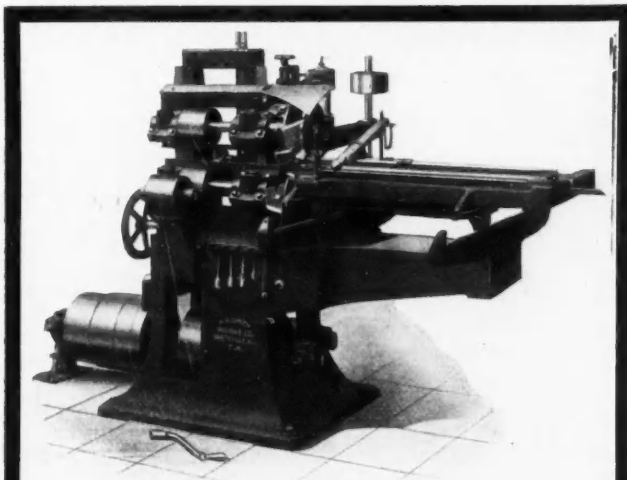
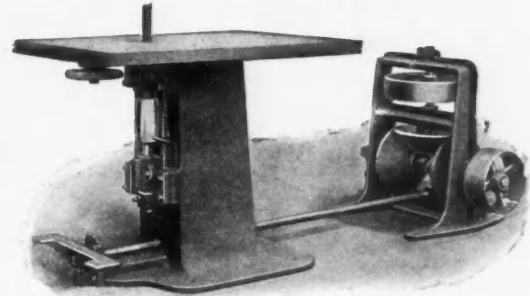


## GOOD SHAPERS

YOU never heard of a Cordesman-Rechtin shaper failing to produce good work and lots of it. You never heard of them giving any sort of trouble during the past fifty years. The reason is plain—they are BUILT RIGHT from the ground up—the spindles revolve at lightning speed, yet there is not the slightest vibration.

Good work and a large quantity of it must result.

The Cordesman-Rechtin Co., Cincinnati, O.  
Chicago Office, 2714 W. Lake St.



No. 225 C. E. Tenoner

**The Smith** Tenoner is today acknowledged the standard because of its rigid design, accuracy and simplicity. There is no vibration as the frame is heavy and cast whole. The carriage is mounted on rollers and can not be lifted or tilted, and you will find it an all 'round high grade machine. A postal request will bring circulars and prices.

**H. B. Smith Machine Company**  
Smithville, N. J., U. S. A.

NEW YORK CHICAGO ATLANTA MEMPHIS

Carry  
A Ton,  
Last  
A LIFETIME—

A pair of our smallest size  
**Wall Brackets.**

There isn't room here to tell you how cheap or how convenient they are.

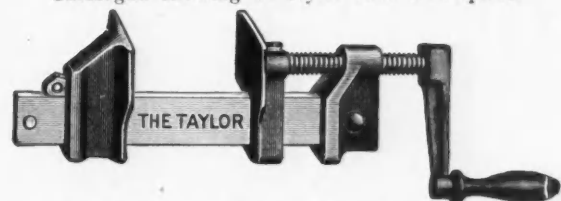
Write for Catalogue and Special Trial Offer.

## ARE YOUR CLAMPS GIVING BEST RESULTS?

Do you know about our improved gripping device?

**It Saves Time,**  
the special grade of steel we use?

Our Clamps are warranted unbreakable in use. Catalogue showing 19 styles sent on request.



**JAMES L. TAYLOR MFG. CO.**  
BLOOMFIELD, N. J. U. S. A.

# SARGENT'S IMPROVED STEEL SQUARE



The difference between good and indifferent Carpenters' Squares lies in something more than excellence of material and workmanship, which are, of course, among other "Sargent" features—it is in the qualities that increase its all-round efficiency. That is why the practical "Sargent" Standard Steel Square is the universal favorite wherever Squares are used.

Our latest model has the scales and markings which enable the carpenter to lay out all kinds of work and to calculate quantities with an ease and accuracy never before thought possible. "A practical treatise on Steel Square" is what several recipients have declared our little publication. Copy free simply by mentioning you saw this ad in the American Carpenter and Builder.

**Sargent & Company**  
1149 Leonard Street  
New York

# The Best Ever

You Will Never Regret Buying One



**Wide Heel Brick Trowel**  
Made of Best Quality Crucible Trowel Steel.  
Leather Handle.



**Philadelphia Pattern**  
Best Quality Crucible Trowel Steel.  
Wood Handle.

**Send For Catalogue**



**Send An Order**

**Genuine Marshalltown Trowel**  
Straight Edges Always. Best Quality Spring Steel Blade. Hardened Mounting Ten Rivets. Imitated because they are good.

**Marshalltown Trowel Co., - - Marshalltown, Iowa**

## Use a Transit or a Level and Save Money



**"Sterling" Builders' Level.**  
Price, \$50.00.

**"Sterling" Builders' Transit.**  
Price, \$90.00.

The best made and their cost can be saved in one season! Let us tell you about them and how you can save time and do better work by their use.

*Our Circulars and Instruction Book sent on request.*

**ISZARD-WARREN CO., Inc.**  
1122 Vine Street, Philadelphia, U. S. A.

## LUFKIN STEEL TAPES and RULES



ARE INDISPENSABLE FOR ACCURATE WORK

MADE BY  
**The Lufkin Rule Co.**  
Saginaw, Mich., U. S. A.  
New York London

For Sale Everywhere.  
Send for Catalogue.

# Floor Scraper Satisfaction

A floor scraper isn't an article you buy every day—in fact, one of them ought to last you a life-time. And a good one will.



If there is one thing I'm proud of, it's the fact that I can look squarely in the eye of any man I ever sold a Weber Double Acting Floor Scraper and tell him it's a good one. But I don't have to—the machine told him that long ago.

And I tell you, I've sold a good many of them in my time, too.

I'll let you try one of them **free of all charge**—all you have to do is to give me your dealer's name, and if he does not handle them I will ship direct to you.

You're under no obligation to buy—I'm willing to let the scraper convince you.

Write me today telling me that you wish to try a Weber Floor Scraper **FREE**. But don't forget the dealer's name.

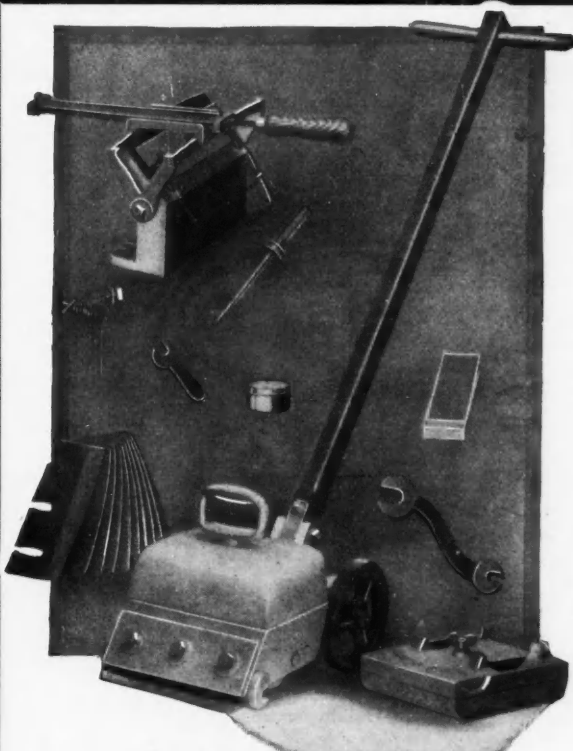
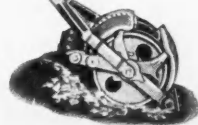
Send for the 1909 price list of our 10 different priced machines, weighing from 78 to 112 pounds.

**JOHN F. WEBER, President**

**WEBER MFG. CO., 670 - 71st Avenue, West Allis, Wis.**



**THE WEBER CABINET SCRAPER and SANDPAPERER**  
PRICE \$1.50. If your dealer doesn't handle them, send for one direct.



The Acme Floor Scraping Outfit consists of the Floor Scraper, Blade Sharpener, Sander, One Dozen Blades, File, Gauge, Oil Stone, Two Wrenches, Two Bolts, Burnisher and Box of Tallow

## Lack of Investigation

is generally the cause of a poor investment. It is too late to investigate after your money has been spent. The time to do so is before you invest. Apply this rule when you are in the market for a floor scraper and you will then be sure of getting the best.

I don't want your money unless you are entirely satisfied with the **ACME FLOOR SCRAPING OUTFIT**, and in order to give you an opportunity to fully investigate into the merits of the **ACME FLOOR SCRAPER**, **ACME BLADE SHARPENER** and **SANDER**, I offer to send these machines to you on **ONE WEEK'S FREE TRIAL**.

I do not ask you to deposit any money, neither do I expect you to pay any charges. Simply write me if you want to try the machines and I will ship them to you at once. Does this sound fair to you?

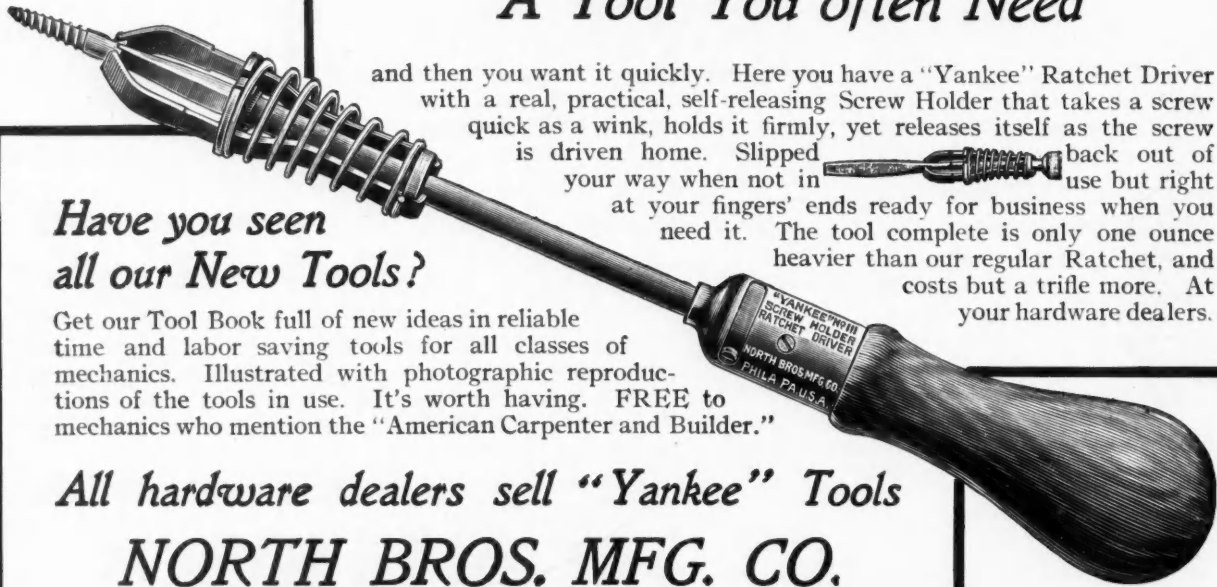
Further information and booklet mailed on request.

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

3 Styles

# "YANKEE" Screw Holder

## A Tool You often Need



*Have you seen  
all our New Tools?*

Get our Tool Book full of new ideas in reliable time and labor saving tools for all classes of mechanics. Illustrated with photographic reproductions of the tools in use. It's worth having. FREE to mechanics who mention the "American Carpenter and Builder."

and then you want it quickly. Here you have a "Yankee" Ratchet Driver with a real, practical, self-releasing Screw Holder that takes a screw quick as a wink, holds it firmly, yet releases itself as the screw is driven home. Slipped back out of your way when not in use but right at your fingers' ends ready for business when you need it. The tool complete is only one ounce heavier than our regular Ratchet, and costs but a trifle more. At your hardware dealers.

*All hardware dealers sell "Yankee" Tools*  
**NORTH BROS. MFG. CO.**  
**PHILADELPHIA, PA.**

## PHOENIX INSIDE SLIDING BLINDS

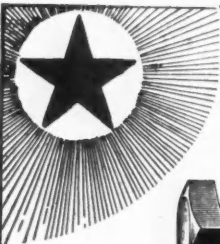
WILKES BARRE, PA.

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.  
O. W. MILLER.

**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.



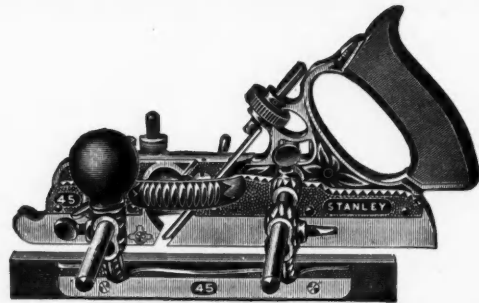
## EXPANSION BOLTS



**FOR** Quick, Labor-Saving Fastenings that **HOLD** in Brick, Stone and Masonry. Drill hole, place **STAR SHIELD** within, then put lag screw thro' material to be attached and into **STAR SHIELDS** and fasten tight. A positive inside lateral expansion insures a fastening **PERMANENTLY DEPENDABLE**. Catalog, Samples and Prices upon request.  
**STAR EXPANSION BOLT CO.**  
Cor. Cedar and Washington Sts. New York City

## STANLEY Adjustable

### Beading, Rabbet and Matching Plane



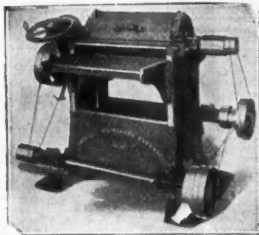
This Plane embraces (1) Beading and Center Beading Plane; (2) Rabbet and Filletster; (3) Dado; (4) Plow; (5) Matching Plane; (6) Sash Plane; and (7) a Superior Slitting Plane

No. 45 Nickel-plated, with Twenty Tools, Bits, etc., each.....\$9.00

For full description, write for Catalogue No. 34

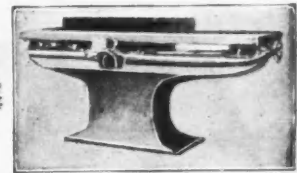
SOLD BY ALL HARDWARE DEALERS

**Stanley Rule & Level Co.**  
**New Britain, Conn., U. S. A.**



Chicago No. 35 Pony Planer

# Machines for Contractors



Chicago Hand Jointer  
8, 12 and 16 in.

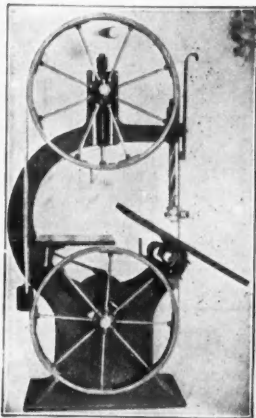
Every carpenter and builder can afford to invest in one, or more, of these machines. From our stock of 500 new and rebuilt machines contractors can obtain sufficient machinery to make them independent of local mills and their attendant delays and high charges.

Stop paying somebody else profit—put it in your own pocket. Be in a position to estimate under competitors. You can do this by installing your own machinery. All our machinery is of special construction to secure fine finished surfaces and to reduce sandpapering to a minimum.

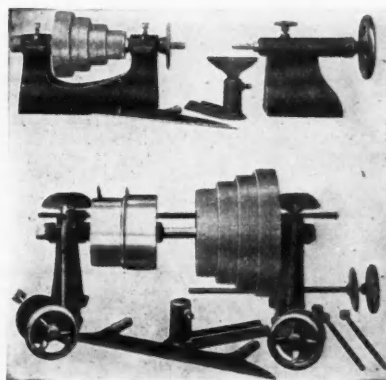
Prices are lower than you think. Send today for our monthly list of rebuilt machines (free to carpenters and builders).

## Chicago Machinery Exchange

7-11 No. Canal Street, CHICAGO



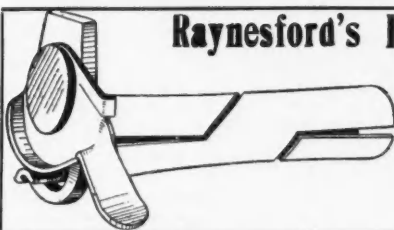
Chicago No. 1 Band Saw  
27, 32 and 36 in.



Wood Turning Lathe and Countershaft  
16 and 20 in.



Chicago No. 10 Tilting Table  
Improved Variety Saw Bench



### Raynesford's Improved Bench Stop

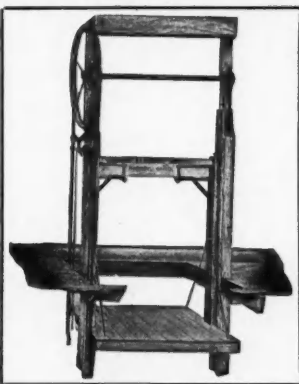
will hold any thickness of work equally well from  $\frac{1}{4}$  inch up to 2 inches and hold it firmly. Can be operated more quickly than the wooden plug you are used to. Does not stick out to get broken off, to hurt you, or tear your clothes.

Try one and be convinced.  
Write for circular or sent Post Paid for \$1.00.

RAYNESFORD & SONS, Ellis, Kan.



Raynesford's Improved Bench Stop at Work



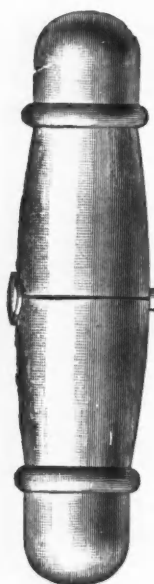
## PERFECTION ELEVATORS

ARE  
"BEST BY EVERY TEST"

For PASSENGER or FREIGHT SERVICE in Factories, Stores and Dwelling Houses.

Our Elevators are noted for their Easy Running and Serviceable Qualities. They are practically self contained and can be erected by any carpenter in a few hours. We furnish Plans for erecting. When writing, state your requirements.

Sidney Elevator & Mfg. Co., Sidney, O.



# Here is a Gimlet

Equal in quality and usefulness to any Brace Bit

HANDLE OF  
SELECTED  
COCOBOLO  
WOOD

THREE SIZES ONLY  
Cutting 4-32, 6-32, and 8-32 Holes

Price Postpaid **15 cents** each

## H. H. MAYHEW COMPANY

SHELBURNE FALLS, MASS.



### GRILLES

### COLUMNS AND

### CONSOLS

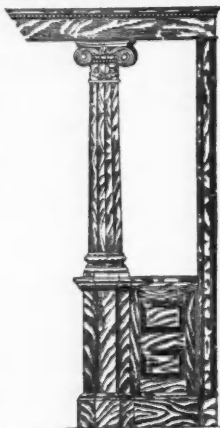
In quality and price our work is not surpassed.

You will make no mistake in writing us before ordering elsewhere.

Send for 48 Page Catalog No. 15

It contains many fine designs of modern Grilles, Columns and Consols.

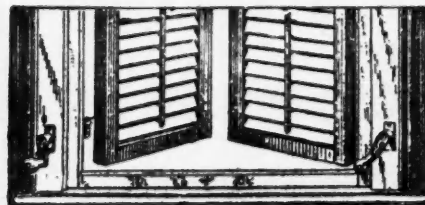
Illustration at right shows half-section of Column design No. 552.



### Northwestern Grille Works

CHRISTENSON BROS., Props. 1452 Milwaukee Ave., Chicago

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Standard  
Shutter  
Worker

New and improved patterns and designs.

Opens and closes the blinds without raising the window. Automatically locks the blinds in any position desired. Made of gray and malleable iron. The best and most durable blind hinge. Incomparable for strength, durability and power. Can be applied to old or new houses of brick, stone or frame. Send for Illustrated Circular. If your hardware dealer does not keep them send direct to

MALLORY MANUFACTURING CO.  
204 Flemington National Bank Building, FLEMINGTON, N. J.

DON'T PUT SASH WEIGHTS IN YOUR WINDOWS—THEY ARE OUT OF DATE

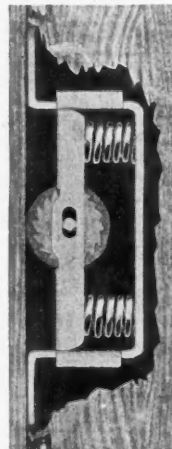
### The "AUTOMATIC" SASH HOLDER

The "Automatic" Sash Holder is the new, modern, up-to-date device that dispenses with cumbersome sash weights, kinking cords or ribbons, useless weight pockets, misfit pulleys and reluctant balances, and saves all the time, labor and expense of fitting them in place.

Prevent rattling and permit the window to be moved up and down with ease. Hold it safely at any point desired.

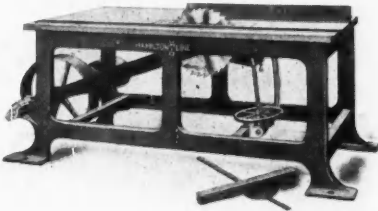
A sample set of four sent, postpaid, for \$1.20. Ask your dealer, or write to us direct.

Automatic Sash Holder Company  
277 Broadway, New York City.

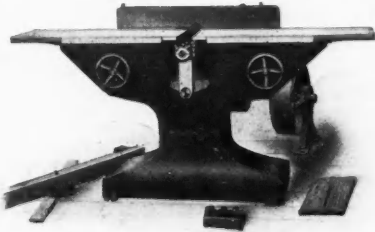




Hamilton Hand Planer or Jointer No. 32



Hamilton Iron Frame Rip Saw No. 91



Hamilton 9-inch Economy Wood Worker No. 9

## HAMILTON—OHIO—LINE WOOD-WORKING MACHINERY

ESPECIALLY ADAPTED FOR  
Furniture, Cabinet and Coffin Factories, Plan-  
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Wheel Factories, Spoke, Hub and Handle  
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Schools, Pattern Shops, School Desk, Piano  
and Organ Factories, etc.

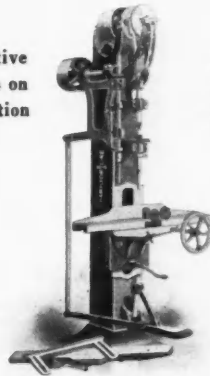
INCLUDING

Planers, Matchers, Jointers, Molders, Universal  
Wood-Workers, Mortisers, Tenoners, Shapers,  
Friezers, Boring Machines, Sawing Machines,  
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Write for prices or additional information wanted.

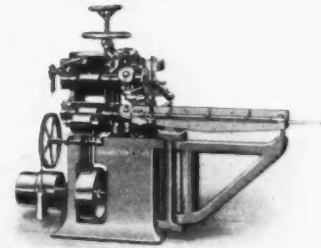
**The Bentel & Margedant Company**  
Hamilton, Ohio, U. S. A.

Descriptive  
Circulars on  
Application

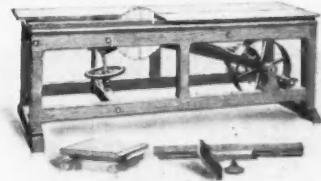


Hamilton Mortiser No. 155

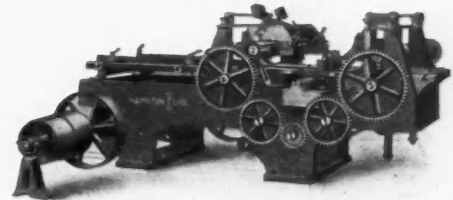
Mention  
American  
Carpenter  
and Builder



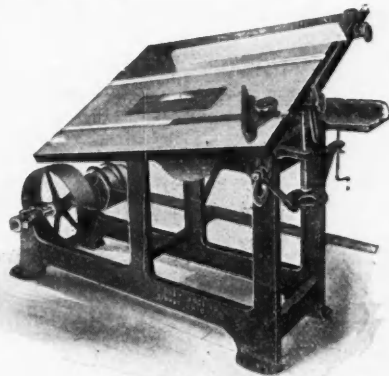
Hamilton Medium Tenoning Machine No. 166



Hamilton Rip or Edging Saw No. 95



Hamilton Four-Roll Double Planer and Matcher No. 73



Combination Saw Table

## SAVE TIME, WORRY AND MONEY

Do your own mill work. Let us tell you how good and  
cheap we can fit you out with machinery to do your  
work. Large stock of **New** and **Second-Hand Wood-  
working Machines** to select from. Catalog and  
Monthly Stock List Mailed on request.

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160-162 W. Larned Street

DETROIT, MICHIGAN

FAR AHEAD for Smooth, easy work and holding edge will be YOUR VERDICT ON TRYING

## CHAPLIN'S IMPROVED PLANES

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We invite the  
Severest  
Comparative  
Tests



We want you to have a copy of  
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"A 'Plane' Talk About  
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Tower & Lyon Company, 95 Chambers Street, New York

**GEO. H. BISHOP & CO.,** Lawrenceburg, Indiana, U.S.A.

Makers of

**Fine Hand Made Hand Saws**

**["The Purest of Quality Our"]  
"GREYHOUND" ["Hand [Saw]**



**I**N introducing our "GREYHOUND" brand of Saws to the trade, we have departed from our usual custom in naming instead of numbering the saw. This saw will be known as our "GREYHOUND" and will be the only Bishop brand of saw known by name.

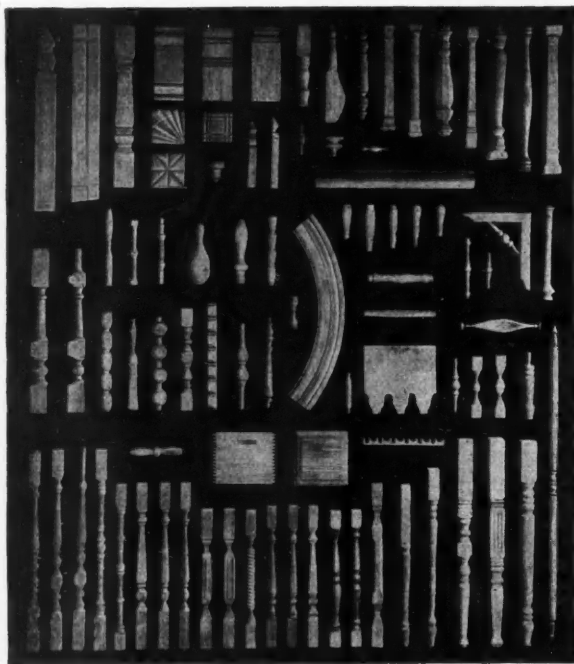


We have had a Chemist experimenting for years to originate a purity of steel with a fine grain and tough body that would stand up under such a fearless warranty as we place on our "GREYHOUND" brand of saws. We now have it. We know its worth as well as its value. As workers of steel we understand it. We had to name it and we have christened it Bishop's Refined "GREYHOUND" Steel, associating our trade mark with its name. We have in this "GREYHOUND" Saw blade a purity of steel that is tough, tempers accurately and even—together with the special way it is made—enables us to guarantee that this "GREYHOUND" brand of Saws will cut faster and run easier in all kinds of wood, hold its sharpness and set longer than any other makes of good Saws in the world. **We Refund the Money** if 30 days' trial does not prove our guarantee. Our pride is quality with an honest opportunity for the purchaser to judge. Each Saw is tagged with our warranty on it. No expense has been spared to make this Saw the most perfect in the world. We invite correspondence with anyone who has our "GREYHOUND" brand of saws in use.

Made in both straight and skew back. Packed One in a Box.

In workmanship this saw possesses all the skilled mechanical features known to the art of saw making. The hang of the blade has been carefully studied and adjusted, to suit the fancy of the most critical.

If this saw cannot be found in the Hardware Store and they will not order it for you, write to us. Price for 26 in. saw, \$3.00 delivered. We make anything in Carpenters' Saws.



**MADE ON OUR  
Universal Turning and Variety Machine**

It is the wide range of its work that makes this machine, wherever sold, one of the busiest and most profitable in the shop. It will quickly pay for itself in making balusters and other turnings at a big saving in cost, and as a general handy machine its variety feature gives it a value that only use can thoroughly demonstrate.

May we show you, without obligation on your part? Then we have a proposition to submit—when you are ready.

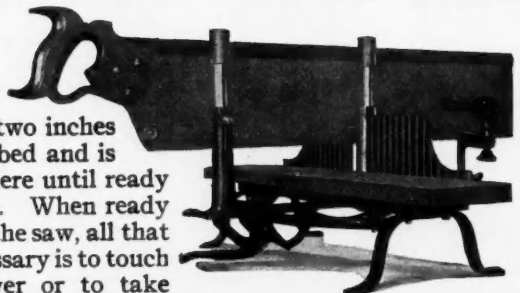
**C. MATTISON MACHINE WORKS,  
879 FIFTH STREET, BELOIT, WIS.**

**THE TRUE MITER BOX**

Cut shows saw raised

about two inches above bed and is held there until ready for use. When ready to use the saw, all that is necessary is to touch the lever or to take hold of the handle and the saw will drop down to the stock.

This miter box is so constructed that any piece broken or stolen can easily be replaced  
**NICHOLLS MFG. CO., OTTUMWA, IOWA**



**Ball-Bearing Spring Hinges.**

**THAT ARE PRACTICAL**

The Shelby Chief Double Acting Floor Hinge has solved the problem of easily get-at-able, hinges, impervious to water and dampness.

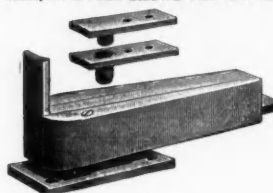
Doesn't go in the floor but rests on top. Easily applied, and very economical.

The labor saving feature is being appreciated by carpenters and builders everywhere.

Send for our free catalog which contains some sensible hinge talk, and also shows our full line of Double Acting Ball-Bearing Spring Butts and Builders Hardware. Free on request.

Write Today.

**The Shelby Spring Hinge Co.,  
Shelby, Ohio**

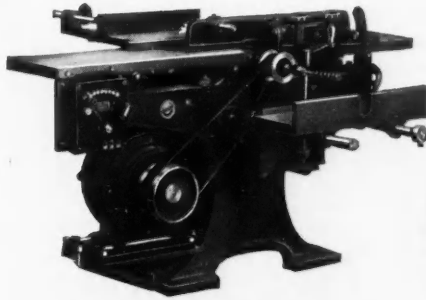






# FOR THE WOOD WORKER

The Crescent Variety Wood Worker is the machine you need to help you **earn more money**. It is the most substantial combination machine ever offered at a popular price. **With it you can do sawing, jointing and boring** without making a single change in the machine.



Crescent Variety Wood Worker, showing Jointer and Borer



Shaper



Crescent Variety Wood Worker, showing Jointer and Saw Table

Send for special circular giving complete description of this machine, also ask for complete catalog describing Band Saws, Saw Tables, Joiners, Shapers, Borers, Swing Saws, Disk Grinders, Planers, Planer and Matchers, Band Saw Blades.

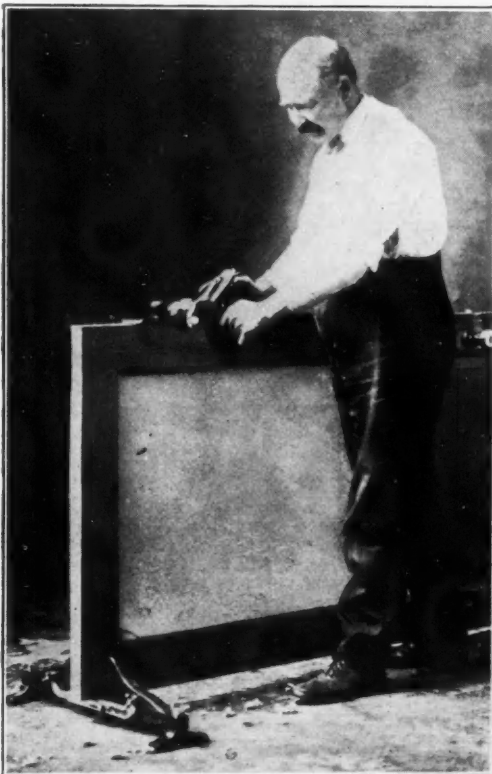


Pole Rounder



Emery Grinder

**THE CRESCENT MACHINE COMPANY**  
224 Main Street LEETONIA, OHIO U. S. A.



## THE "DUTRO" Sash and Door Holder

A Practical Tool for Practical Men

*Will hold any Sash or Door in an absolutely rigid upright position.*

**WILL NOT SLIP. EASILY ADJUSTED.**

**ALWAYS READY. FITS ANY TOOL CHEST.**

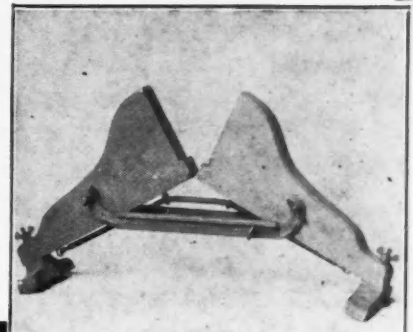
The "Dutro" will not mar any highly finished door or floor, as the jaws and feet are rubber lined. Will pay for itself in the saving of broken glass alone or in fitting and hanging 25 doors.

If your dealer does not handle them send us

**\$3.00**

and we will deliver one, on Our Money Back Offer.

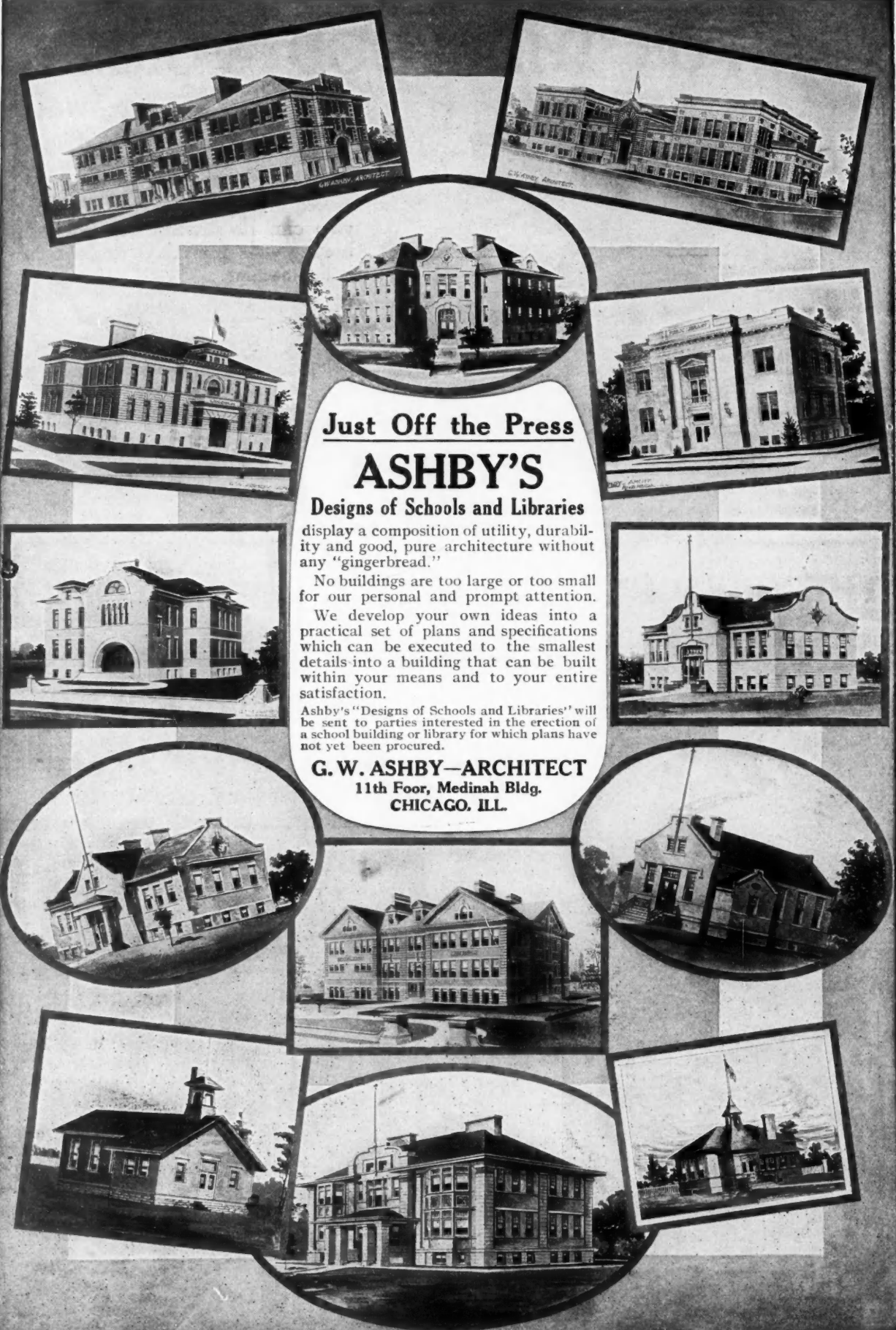
Send for Booklet anyway.



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**Designs of Schools and Libraries**

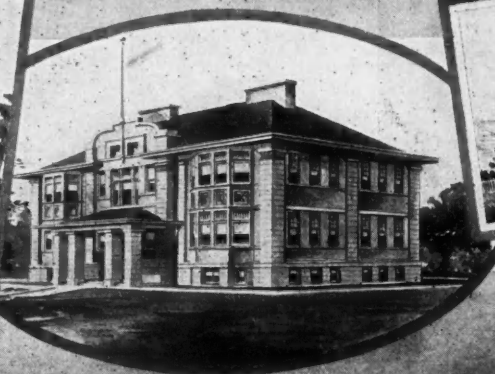
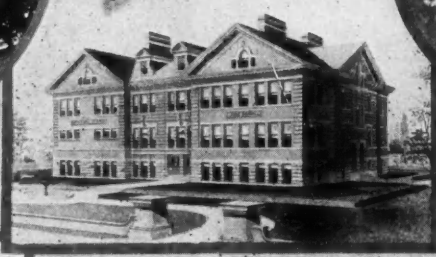
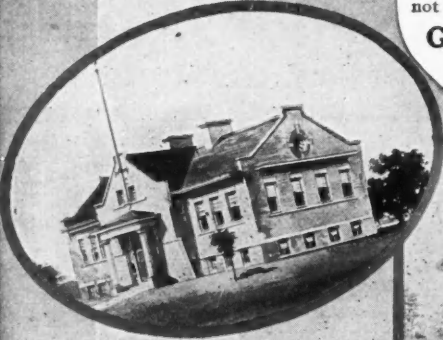
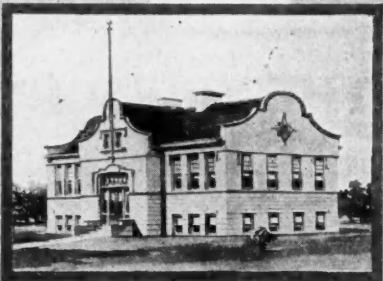
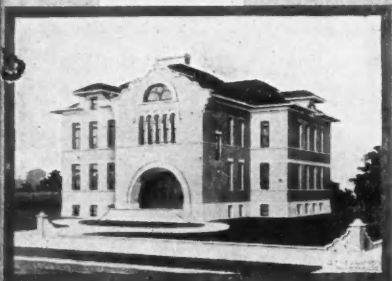
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We develop your own ideas into a practical set of plans and specifications which can be executed to the smallest details into a building that can be built within your means and to your entire satisfaction.

Ashby's "Designs of Schools and Libraries" will be sent to parties interested in the erection of a school building or library for which plans have not yet been procured.

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# SAWS



The Largest Saw Manufacturing Plant in the World and its Trade Mark—

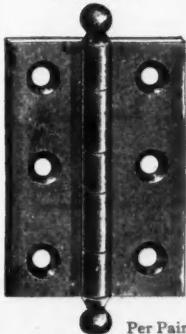
## EMBLEMATIC

of the Principle Upon Which the High Reputation for Quality, Workmanship and Utility has been built.

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Per Pair  
 3 1/2 x 3 1/2, Japanned .09  
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 Packed with Screws

**Rehm Hardware Company**  
 420 Blue Island Ave. Chicago

## JOIST HANGERS

For Wood Timbers, Concrete Blocks, or Iron Beams

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Special Shapes to Order

Steel Post Caps Wire Floor Clips  
**STRAPS, BOLTS, PIN ANCHORS**

**BLACKSMITH WORK AND IRON FOR CARPENTERS' REQUIREMENTS**

Telephone Yards 408

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## Henderson's Straight-Edge Level



Have you ever used a straight-edge level? If not, you should use Henderson's. For running levels, in fireproof buildings, setting frames, plumbing partitions and leveling up foundations in frame buildings, these levels are the best.

The simplicity of adjustment is the main feature of these levels; they can be removed and replaced as often as desired with only the first adjustment, and it will not throw them out of true, making it the most convenient tool of its kind in use.

**Price, \$1. No Stamps**

We have a proposition for you. Drop us a postal.

**Henderson & Co., 204 N. Main St., Memphis, Tenn.**

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 183 J.

**JOSEPH DIXON CRUCIBLE CO.,**  
 JERSEY CITY, N. J.

No. 201

GOODELL-PRATT



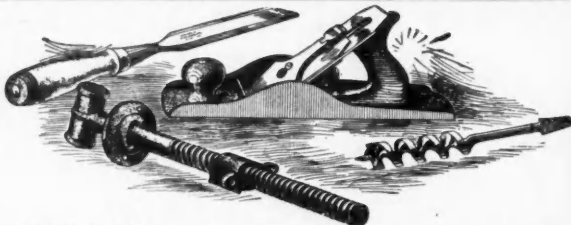
Saw Set

This is one of our newer tools, but is nevertheless of very high merit. The Frame and Handles are of malleable iron with an inserted anvil of hardened steel and jaw of the same material. It is so constructed that Saws of any width can be set and the guide is adjustable so that the amount of set can be easily adjusted. This Saw Set is of sufficient strength and power so that Cross-Cut Saws can be set with it. Finished in Dull Nickel.

GOODELL-PRATT COMPANY

*Toolsmiths*

GREENFIELD, MASS., U. S. A.



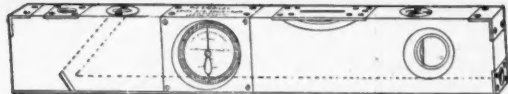
"OHIO" TOOLS are the product of nearly a century of active experience and progress in the edge tool business. Carefully made from the best materials, treated by the most improved methods, they are Economical Tools for the User.



Every tool covered by a broad guarantee. Write for Catalogue No. A.

Ohio Tool Company, Columbus, Ohio

THE AMERICAN Combined Level and Grade Finder



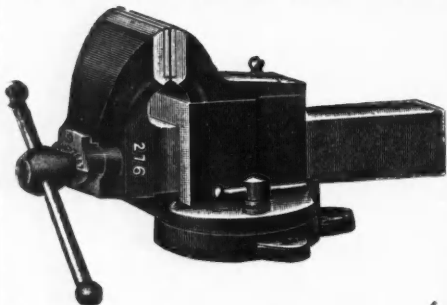
All Progressive and Up-to-date Mechanics as well as Manufacturers having use of a Level, are getting one

An instrument with which at one glance you can get the true slant on any line or grade either in degrees, inches or percentage, or all at the same time, and will at once give the exact distance need to plumb up to a true level.

A Civil Engineer that you may have with you at all times. The most practical, durable and convenient instrument of the day. The longitudinal recess which is shown in cut is well worth the low price of the instrument.

Write at once for large list of testimonials from all over the United States, and special introductory price given only to first applicants with privilege of taking agency. Address Edward Heib, P. O. Box No. 55, Railroad, Pa.

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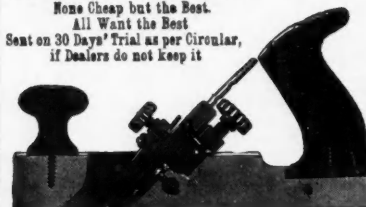
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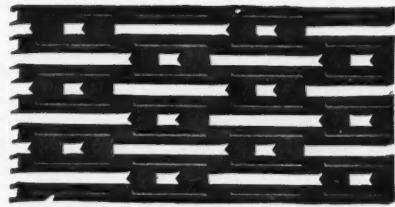
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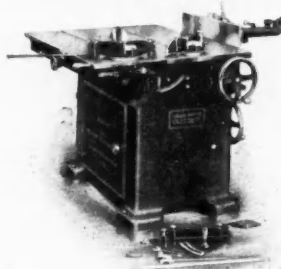
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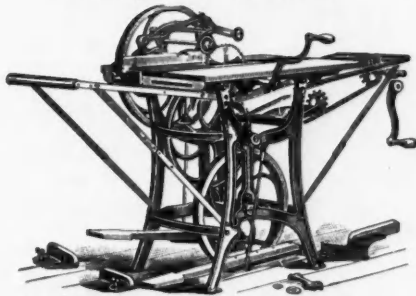
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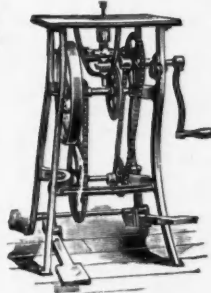
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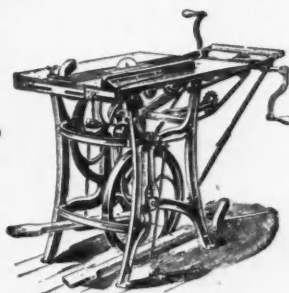
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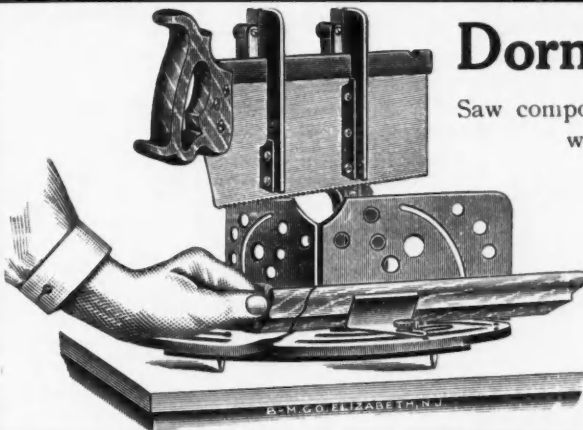
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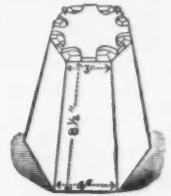
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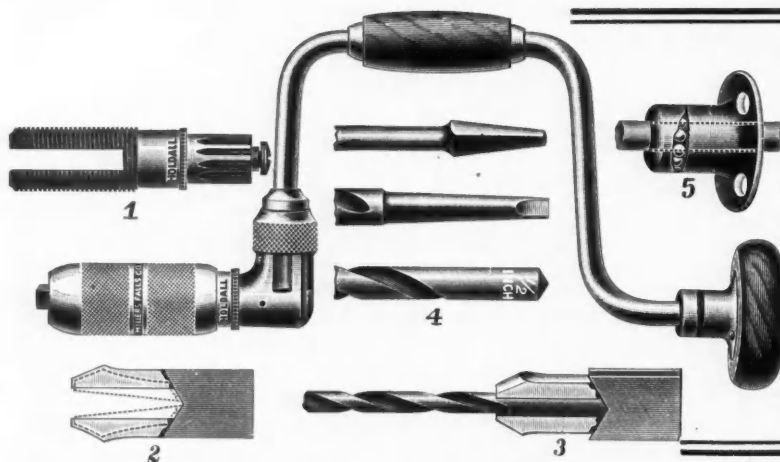
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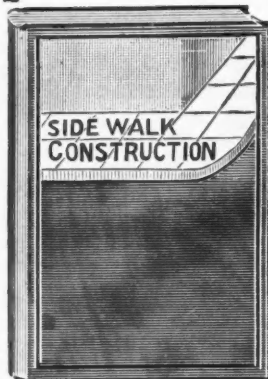
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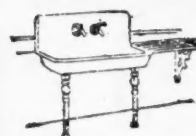
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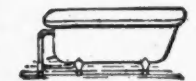
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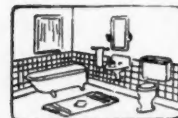
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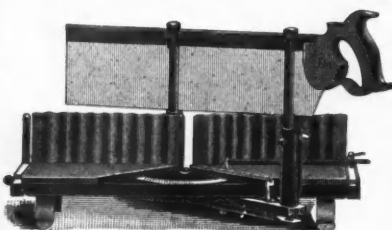
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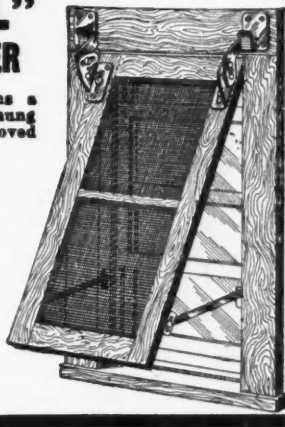
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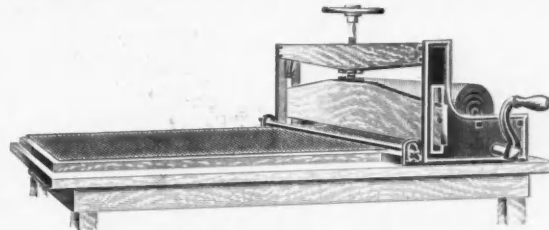
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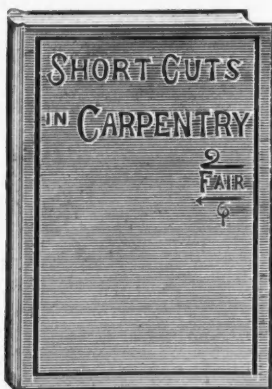
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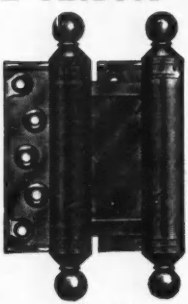

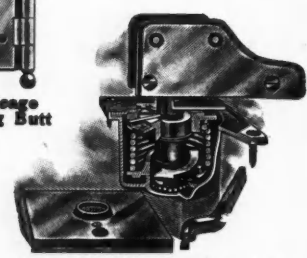
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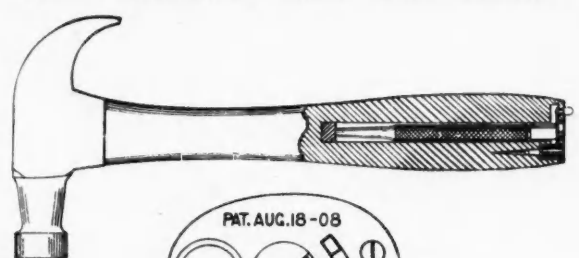




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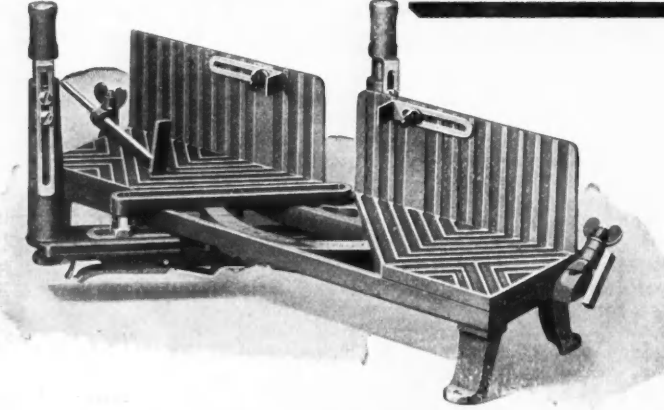
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## American Carpenter and Builder

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

Published monthly by

American Carpenter and Builder Company  
185 JACKSON BOULEVARD, CHICAGO.

VOL. VII

MAY, 1909

No. 2

The AMERICAN CARPENTER AND BUILDER is issued promptly on the first of each month. It aims to furnish the latest and the most practical and authoritative information on all matters relating to the carpentry and building trades.

Short practical letters and articles on subjects pertaining to the carpentry and building trades are requested.

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## Help Stamp It Out

**W**E WANT to call the attention of every reader of this magazine to what Dr. John E. White, medical director of the Woodmen Society tent-sanitarium at Colorado Springs, has to say in this number concerning the prevention, treatment and cure of tuberculosis. This is a matter of especial importance to carpenters and builders; for it touches them directly in a number of ways.

In the first place, tuberculosis, or consumption, is a disease of the masses; it levies its greatest toll on the workingmen and their families. Statistics compiled by the United States Census Bureau show that one out of every six of our people dies of tuberculosis. So self-preservation demands that every workman give the prevention and cure of this dread disease his careful study, taking it to himself as a personal matter.

In the second place, it has been conclusively proved that proper ventilation—*fresh air*—both in our homes and in our workshops is consumption's greatest foe. The carpenters and builders must see to it that proper arrangements are made to this end in every building they put up. Prevention is better than cure; carpenters and builders, using their influence wherever possible, can do an immeasurable amount of good in this way and so protect the whole people from the terrible ravages of this disease.

More specifically, however, Dr. White describes the benefits to be had from the now well-known "tent", treatment and cure of tuberculosis, and points out the astonishing opportunity it offers. The great fraternal organization whose tent sanitarium he describes has found that it is not only *good fraternalism* but also *good business* to cure its afflicted members. An actual saving of money has been made by fighting this disease. His suggestion that all labor organizations, fraternal societies, churches, clubs, benevolent societies, life insurance companies, municipalities, etc., should seriously take up this question deserves consideration.

With a view to making this article as practical and valuable as possible we have had prepared, and are publishing, drawings which show the construction and

arrangement of one of these sanitarium tents of the approved type. It is said that the "tent" treatment is exceedingly beneficial in any climate. Carpenters will do well to recommend it in special cases in addition to the wider organized movement. The work can be carried out following these plans or along the lines described in our January number—"A Successful Open-Air Sleeping Room." We must all work to help stamp out this terrible disease.



### For Machine Woodworkers

**A**FTER a machine is bought, the price fades from memory to some extent, and nothing remains but the machine and its work. If the work is not satisfactory, no matter how much of a bargain the machine may have been considered, there is dissatisfaction as long as the machine lasts. This is one of the strongest of arguments for buying only what you are sure you need, regardless of the price, and not get a machine at the least price per pound when you start in. And, it is as well to remember that it is still an open question which is worse, to put a good man at a poor machine, or to put a poor workman at a good machine. Of course, the good man will win out in the end, no matter where he is placed, but these sort of economical experiments don't make any money with the machine, and it is supposedly the making of money that induces the buying of a machine.



### Crisp and Sharp

The successful business-getter  
 Never writes a lengthy letter,  
 Curbs his speech with prudent fetter,  
 Well boiled down!  
 He refrains from needless shouting,  
 Empty, effervescent spouting,  
 Senseless blowing, silly touting,  
 Cuts he out!  
 But to facts adheres he closely,  
 To the point, but not jocosely,  
 Fraught with wit, but not verbosely,  
 Crisp and sharp!  
 Thus the sapient business-getter  
 Writes a strong, convincing letter,  
 Goes his rival many better—  
 And wins out!



### Whetting Your Wits

**D**ID it ever strike you that it is just as important to keep your wits sharp as it is to keep your tools with keen edges? Every man knows two or three old and true sayings about the importance of sharp tools, and there being no time lost in whetting. We might turn around and apply these same things

equally well to the whetting of our wits. To apply them, of course, calls for a different set of appliances. It is the difficulties you meet in your business that furnish the abrasive material, and it is persistence that turns the crank and furnishes the motive power to do the grinding and whetting.

Nobody likes a quitter; yet there is a long stretch of difference between the quitter and the extreme of dogged persistence. This dogged persistence which pulls you through difficulties will not only keep your wits sharpened, but it has probably made more successes than genius alone ever made. In other words, the man who has a fair share of talents and genius can, by dogged persistence, attain prominence, and the man who has nothing but persistence is really better off than the one who has an abundance of genius and no sticking qualities.

To get started straight on this idea, take into consideration the various annoyances you have and the difficulties that obstruct your way from time to time all through the year; difficulties of every kind, including cranky people to work for, as well as the things you call "bad luck." If you will take these things and look at them from the right angle they should add zest to life instead of bringing discouragement. There is a sort of keen pleasure in being able to finally please the crankiest man in the community whom no one else has been able to do things for satisfactorily. You have got to whet your wits and keep them in action; but the more trouble it takes, the more satisfaction there will be in the end. It is the easy road that leads to indolence, both mentally and physically. If we don't have to overcome difficulties of one kind and another, fight against bad luck, and try to please people who don't know what they want, there are many of us who never would amount to anything in the world.

So try getting in the habit of regarding all the difficulties that come your way as simply abrasive material with which to whet your wits and keep them sharp; apply enough dogged persistence to furnish power to pull you on over these things; and you will find in the end that there is a great deal more satisfaction in life because of these things than there would have been without them. Instead of getting discouraged and calling it bad luck every time the cranky customers come your way and everything seems to be against you, just keep at it and keep smiling. Keep taking a cheerful view of life and you will find in the end that these things are the means of assisting you on the way to greater attainment. The more difficult things you hold your edge against the better off you are, just as the harder the wood your tool holds an edge against the better the metal in the tool. And just as you do with the tool when you have some hard work to do—that is, whetting it to put a keen edge on it—get busy and whet your wits to meet and overcome difficulties. The better you are prepared in advance the less worry you will have.

Signs of Spring



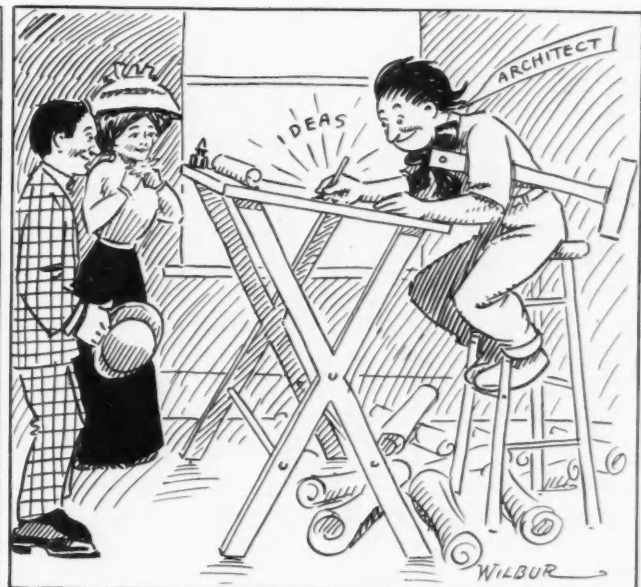
Spring House Cleaning



The Gardener



Gathering May Flowers



The Real Spring Poet



May 1st with the Man who Rents and—



The Man who Owns his Home



**T**HIS month we are showing the four sets of house plans placed highest by the committee of judges in our recent prize competition for house and bungalow designs. After careful study and deliberation, the committee made the awards as follows:

COMPETITION—CLASS A, HOUSES

First prize, \$50—A. G. Donaldson, Flint, Mich.

Second prize, \$25—H. A. Creager, Grand Rapids, Mich.

Third prize, \$15—Ira F. McMinds, Urbana, Ill.

Fourth prize, \$10—W. I. Bell, Jamaica, N. Y.

Just as with the prize-winning bungalow designs, published last month, the central idea of these house plans—and the feature of greatest weight in the judg-

ing of them—is in answer to the question, "Is it practical?" All of these designs solve the problem of the complete, compact and convenient house at moderate expense. In exterior appearance they have a distinctive character, attractive and pleasing, without being over-ornate. Complete specifications and detailed estimates of cost, in each case, showed the construction practical and the design capable of being carried out at the figures stated. It is a matter of regret to us that limitations of space have prevented our giving everything connected with each of these prize-winning designs—details, specifications, bill of material, itemized estimate. Sufficient material has been selected from the exhibit of each design, however, to properly show what it is; also different features have been emphasized in each.

## First Prize—House to Cost \$2,800

Designed by A. G. Donaldson, Flint, Mich.

**A** BRIEF specification of this house, arranged alphabetically, is as follows: Basement is to be divided by rough partitions of 2-inch boards on 2 by 4 inch studs and sills; rough doors.

Exterior; rough cast dark gray below belt course; grout wall rough finish to sill. Stained shingles, extra Star A Star in quality, above belt course, weathered gray finish. Roof green. Wood trim, belt course,



Front Elevation.

window and door frame. Porch finish outside ivory white, barge board and show rafters.

Interior; oak finish and floor in hall, living-room and dining-room, also stair. Hall rack built in. Floors

combination fixtures. Piped for fuel gas in kitchen.

Plumbing; white enamel bathroom fixture, all vented. Laundry tubs, kitchen sink white enamel or cast iron. Coil in furnace connected tank in basement.



Side Elevation.

natural finish in living-room and hall, flemish green. Dining-room silver gray. Kitchen natural finish, yellow pine, maple floor. Rear hall same as kitchen.

Interior finish upstairs; white enamel paint, yellow pine floors. Walls finished tinted above picture mold.

Estimate of Cost

Excavation .....	\$ 52.50
Foundation (and wall above grade).....	235.52
Masonry (chimney and footing).....	58.00
Carpentry (material) .....	946.00



First Floor Plan



Second Floor Plan

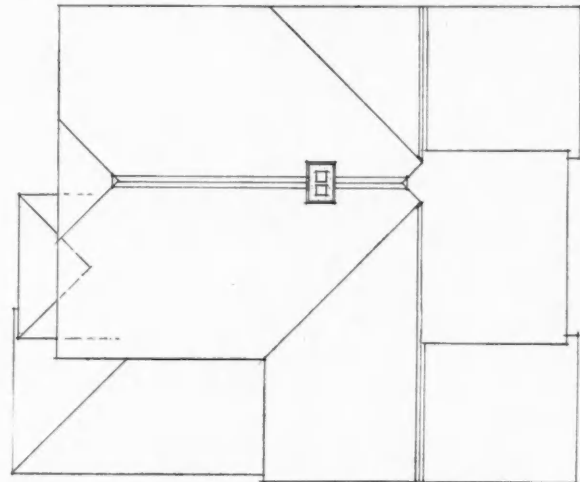
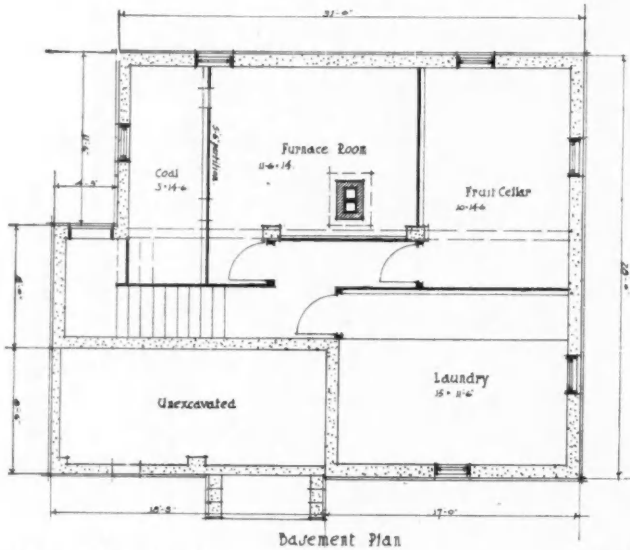
Cartridge paper and burlap finish below.  
 Hardware dull throughout. Glass American plate.  
 Heating, hot-air furnace.  
 Lighting; combination gas and electric, dull brass

Carpentry work .....	678.20
Plumbing (including bath fixtures, hot-water tank and coil, eaves trough, drain).....	203.24
Plastering (lathing included).....	224.00

Painting (including stain for shingles) . . . . .	92.80
Furnace . . . . .	175.00
Wiring . . . . .	24.00
Gas piping . . . . .	18.00

Painters 25 to 35 cents per hour.  
 Excavation 25 cents per cubic yard.  
 Decorators 30 to 40 cents per hour.

These figures include contractor's profit and there is still a remainder of about two hundred dollars for the



Decorating (tinting) . . . . .	46.64
Fixtures . . . . .	41.00

Total . . . . . \$2,795.72  
 Labor costs used for these figures are as follows:  
 Carpenters 25 to 30 cents per hour.  
 Masons 40 to 60 cents per hour.

incidentals that are always to be counted on. Figures are based on local costs with a considerable allowance, as local costs seem to be quite a bit less than those of neighboring places.

The estimator is certain that the house could be built and well finished for the above cost (ready for occupancy).

## Second Prize—House to Cost \$2,700

Designed by H. A. Creager, Grand Rapids, Mich.

**T**HE cellar of this house is to extend under the whole house and contains furnace-room, fuel-room and fruit cellar. Concrete foundations are to be made of 1 part Portland cement, 2½ parts sand and 5 parts gravel. Two courses of paving brick are to be laid at grade line. Exterior of building is to be covered with expanded metal lath and plastered with Portland cement and lime mortar in rough sand finish.

Framing timber and sheathing is to be of hemlock; shingles red cedar; exterior finish and window frames of cypress. The kinds of lumber used in interior finish are indicated on the floor plans. The dining-room is to be provided with a neat molded plate shelf 4½ inches wide. The kitchen dresser is to be provided with flour bin, drawers and cupboards. The mantel is to be built as shown on plans and detail.

The exterior finish of first story is to be painted two coats of lead and oil; color ivory white. All woodwork above second story is to be stained dark brown.

The interior finish of the entire house, except kitchen, is to be stained, shellaced and waxed; this includes the floors. The kitchen finish is to be filled with pine wood filler, shellaced and varnished.

Exposed plumbing is to be installed with suitable fixtures as called for on plans. A boiler is to be placed in cellar and connected with coil in furnace with hot and cold water to each fixture. The house is to be

pipled for gas but no fixtures to be installed.

A suitable furnace is to be installed, capable of warming the house to 70 degrees in any temperature.

Hardware trimmings to cost \$45.00.



Front Elevation



**Estimate of Cost**

Excavating .....\$ 37.00  
 Concrete work (cement and gravel \$100, labor \$75) ..... 175.00

Interior plastering (lime, sand, lath, etc., \$73, labor \$94) .....\$ 167.00  
 Exterior plastering (cement, sand and lath \$140, labor \$52)..... 192.00

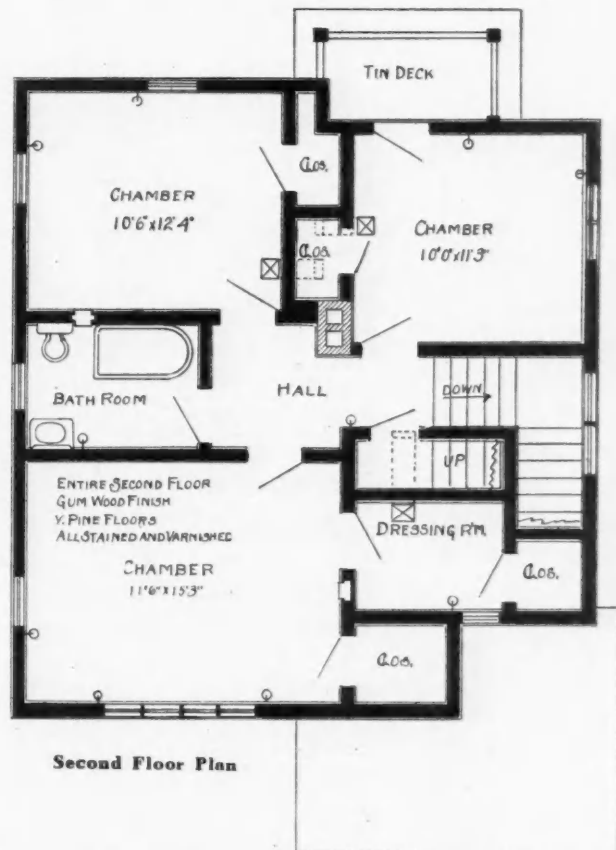
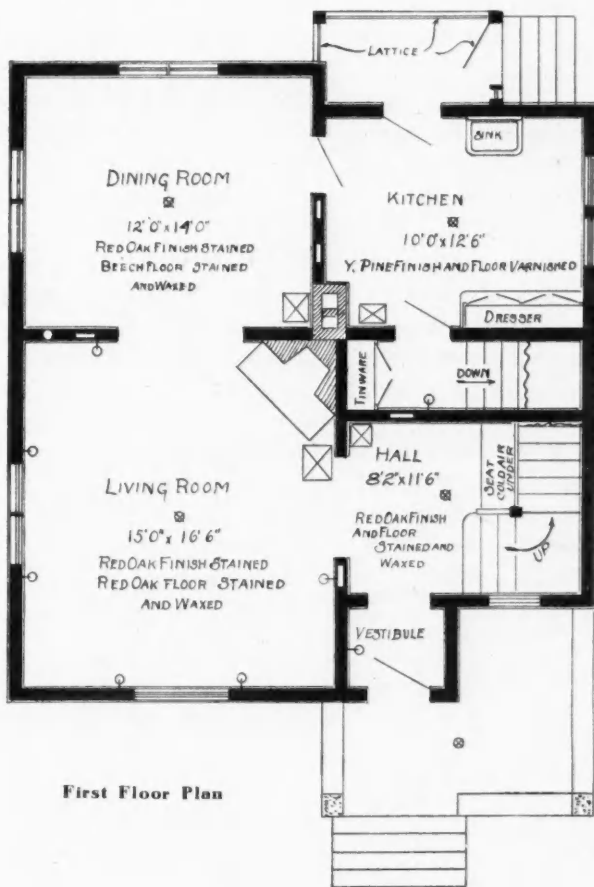


**Side Elevation**

Carpenter work (rough lumber, shingles, flooring, etc., \$494, labor \$210) ..... 704.00  
 Millwork (doors, mantle and trim \$500, labor \$200) ..... 700.00  
 Painting (lead, oil, stain, etc., \$60, labor \$50) ..... 110.00  
 Plumbing (materials \$190, labor \$90).... 280.00  
 Furnace ..... 115.00  
 Hardware ..... 95.00  
 Glass ..... 40.00  
 Tinning ..... 40.00  
 Porch and cellar floor (cement and sand \$30, labor \$22)..... 52.00  
 Total cost of house. . \$2,685.00

Chimney, etc. (brick, lime and sand \$50, labor \$28) ..... 78.00

The above prices are based on the following schedule of labor prices per hour: Carpenters, 35c; brick ma-



sons, 50c; plumbers, 40c; laborers, 20c; plasterers, 50c; painters, 40c; concrete workers, 30c.

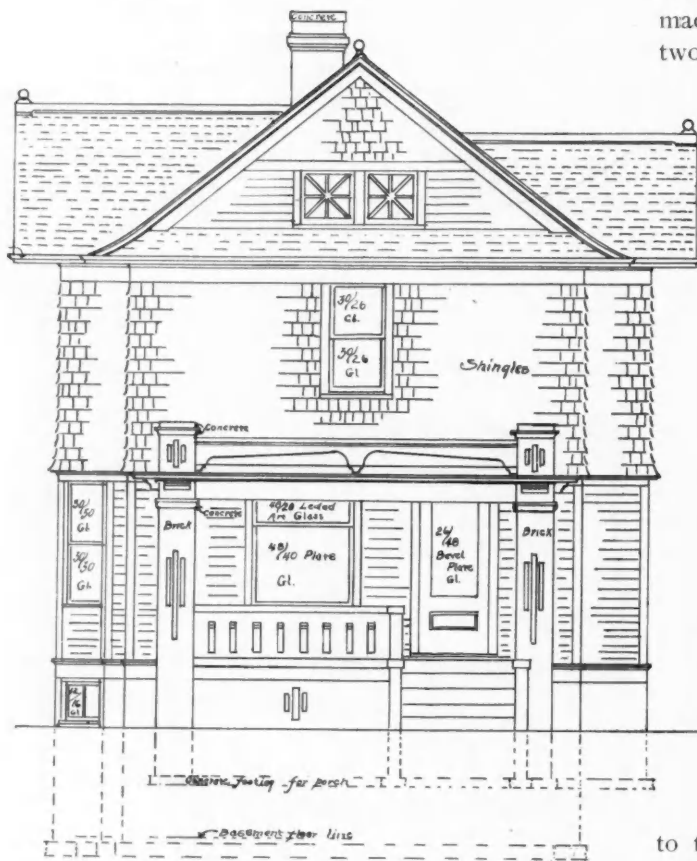
## Third Prize—House to Cost \$2,900

Designed by Ira F. McMinds, Urbana, Ill.

**E**XCAVATING for this house is to be made  $4\frac{1}{2}$  feet deep. The dirt is to be retained on the lot, and after masonry is completed and mortar has set, the dirt is to be graded around to the wall. The wall shall be made of concrete up to the grade line, and brick from grade line to top of wall.

*Chimney.*—Make where shown on plans an 8 by 16 inch flue of good flue brick. Same is to be lined with good earthen flue lining. Top to be a cement cap and projecting brick courses as shown in elevation. Provide same with clean-out hole in basement with cast iron door, and a large flue thimble to connect furnace pipe into.

*Concrete Work.*—The whole of the cellar floor shall



Front Elevation

be laid with a 3-inch concrete floor and also in grade entrance way. Concrete steps to front and back porch as shown.

*Carpenter Specifications.*—The whole of the timber used in and throughout the building is to be the best of its respective kind, free from large or loose knots, shake, sap or other imperfections impairing its durability or strength. All sills to be made of what is termed "box sill," using a 2 by 8 inch wall plate and 2 by 10 inch on edge, set flush with face of wall plate. All frame lumber must be of good yellow pine. Sizes

are to be: First and second floor joist, 2 by 10 inch; attic floor joist, 2 by 6 inch; studding and rafters, 2 by 4 inch; sheathing for roof work, 1 by 4 inch; storm sheathing, 1 by 8 inch. All joist and studding shall be spaced 16 inches on centers. Rafters shall be spaced 20 inches on centers. All joist, studs, rafters and sills shall be well fitted and spiked in place with No. 16 common nails.

Double studs shall be placed around all window and door openings. All doors and windows 4 feet wide and over shall be trussed over with 2 by 4 inch studs, triangular shape. All partitions paroled with joist, same shall be doubled.

All first and second floor joist having spans over 7 feet shall have one row of cross bridging cut to fit, made of 1 by 4 inch strips nailed at each end with two 8-penny nails, and all spans over 14 feet shall have two rows of bridging. All joist must be brought to line at place of nailing of bridging.

Cover the entire first floor with No. 2 6-inch D. P. M., laid at an angle of 45 degrees with joist, and joints must be made on joists and nailed at each bearing with two 8-penny nails after floor has been driven tight together. The attic floor shall be laid with joist, nailed at each bearing with two 8-penny nails, joints being made on joist only.

The entire outside wall surface is to be covered with No. 2 8-inch decking boards, laid at an angle of 45 degrees with the studs and making a brace for each corner, making a joint up the center of each span, nailed with three 8-penny nails at each bearing and drawn tight together at all joinings.

Cover the entire roof surface with 1 by 4 inch strips laid with 3-inch cracks. All joinings must be made on rafters and nailed with two 8-penny nails. Cover with best red rosin-sized paper before laying shingles. Same to have at least 3-inch lap. Then cover the main roof with best 5 to 2-inch red cedar shingles laid 5 inches to the weather, nailed with two 3-penny galvanized nails to each and every shingle.

The main cornice shall run around the entire house and shall project 24 inches from main wall to outer edge of fascia; the gable cornice is to be same width as main cornice; the cornice across at base of gables to be shingled and the gable cornice set on, gables to be sided and shingled as shown on elevations.

*Interior Finish.*—Front room and dining-room to be finished in red oak, also stairway to first landing. Finish in the front and dining-room to be molded cap and round edge side casings with base blocks at doors, base to have mold at top, and shoe at floor base will be of three members  $9\frac{1}{2}$  inches high. There is to be a beam

ceiling in sitting and dining room. Oak floor in sitting and dining room made of  $\frac{3}{8}$  by  $1\frac{1}{2}$  inch matched flooring well nailed and polished to a smooth surface.

inch bevel plate glass door 3 feet by 7 feet 6 inches,  $1\frac{3}{4}$  inches thick, glass size 26 by 48 inch and one panel below glass. Back porch and grade entrance doors to be made of good solid stock white pine,  $1\frac{3}{4}$  inches

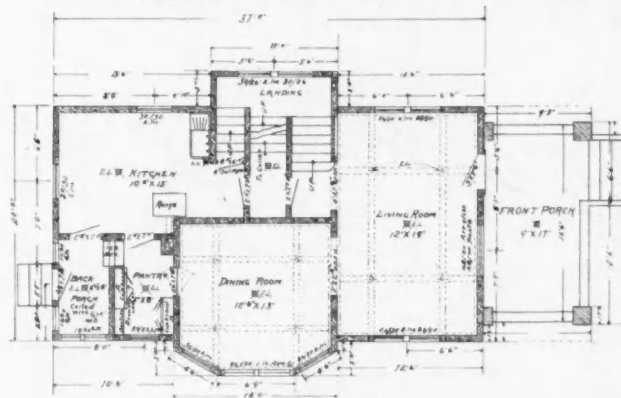


Side Elevation

*Windows.*—All double hung windows to be filled with D. S. American glass, unless otherwise specified or marked on plans. Transom sash at front and stair window, also one-light windows in dining-room to be art glass set in copper. All double hung windows to be fitted with balance sash weights hung by good braided sash cord, fitted with good sash locks and lifts. All single sash windows, other than those in

thick, and have one light 26 by 36 inch D. S. glass. All other doors throughout to be 5 cross-panel doors  $1\frac{3}{8}$  inches thick. All doors shall be No. 1 white pine unless otherwise specified. All doors and windows must be placed where marked on plans.

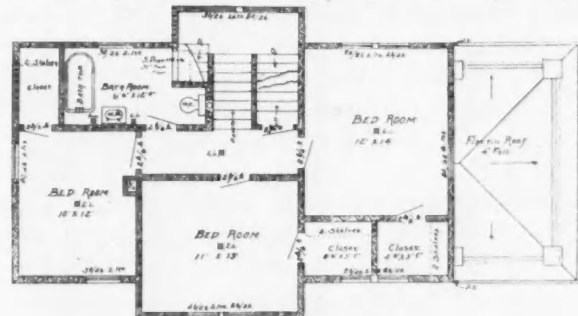
*Bathroom.*—The bathroom shall have three large drawers where marked on plans, 7 inches deep, and as long as will go in the space. The wall shall be plastered with Keens cement 4 feet 6 inches high from the floor and a molded strip put over the joining of



First Floor Plan

dining-room to be hinged and locked. Cellar sash to be hinged at top and fastened at bottom with a good French window catch to fasten at bottom of sill. Front window to have plate glass in bottom sash, same to be 48 by 40 inch. Sash to be stationary.

*Doors.*—Front door to be of oak veneer with a 2-



Second Floor Plan

the cement plaster and other white mortar, the rock wall plaster making the first coat for all.

*Painting.*—All woodwork shall be kept primed as fast as put in place. Window and door frames must be primed before set in place, also corner and outside base boards must be primed before siding is put on.

After all work is up and prime coat has been on

at least seven days, the second coat may be applied. This coat must stand ten days before last coat is applied. All outside paint must be good white lead and linseed oil paint well brushed out on the surface when applied.

All shingles shall be stained with a dark green creosote stain by dipping the shingles in the stain to a depth of 13 inches from the butt of the shingle and allowed to dry before applying to roof and wall surface.

All inside work except oak floors to have one coat liquid filler and two coats interior varnish. The filler coat must be well sanded after it has dried for two days. Then apply the first coat of varnish. The first coat of varnish must be thoroughly dried before the last coat is applied to insure a good gloss finish.

The floors, where of oak, to have one coat of filler and two coats of floor wax applied with a cloth and polished with a heavy polishing brush, giving time between coats so that the first coat is hard before the second one is applied.

*Inside Hardware.*—All 1¾-inch doors are to have three 4 by 4 old copper finish butts; all 1¾-inch doors to have two 3½ by 3½ inch old copper finish butts; all attic and cellar windows and doors to be hung with good japanned steel butts, 2 by 2 for window sash and 3½ by 3½ for doors.

All windows double hung to have old copper sash locks and lifts, also of pressed steel. All door locks to be metal knobs and long escutcheons making both knob and key plate, all to have brass striking bolts and key bolts, all to be old copper finish, except front door lock, which is to be a good front door lock with night lock attachment, also of old copper finish. All cupboard and wardrobe hooks to be made of copper.

*Tin Work.*—All gutters where marked on plans to be of galvanized iron. All coping and hip shingles to be of good galvanized iron, also ball ornaments as shown on elevations. All valleys to be of tin 14 inches wide, painted on both sides before laid in place. All flashing tin to be of same quality, front porch roof to be laid with same grade tin and painted on the under side, before laid, also cover roof with felt paper before laying.

*Electric Wiring.*—Wire the house for electric lighting, putting drops where marked on plans "E. L." Put two 3-wire switches to operate the center light in living-room and hall light upstairs. Put a switch at front door to turn on porch light, also living-room light on beams; also a switch to operate lights attached to ceiling beam crossings, both in living-room and dining-room, both to be on separate switches; a switch in dining-room to operate main light. All other lights to turn on at light only, all switches to be flush switches in steel boxes. All wiring to be in accord with underwriters' specifications.

*Plumbing.*—The plumbing is to be according to layout furnished by architect. Soft water is to be provided at the sink in kitchen. There is to be a force

pump to take water from cistern and force same to a supply tank in the attic; then the soft water is to be carried to bath tub, lavatory in bathroom, and also sink in kitchen. The soft water is to be attached to range boiler in basement, and hot water carried to both tub and lavatory in bathroom and to sink in kitchen. City water is to be brought from street and run to sink in kitchen, and to toilet and washstand in bathroom; a faucet in the basement and a sill cock with hose attachment to be located to suit owner.

The sewer is to be brought from street main to within 4 feet of the foundation wall and then connected to the drain with 4-inch cast iron soil pipe and same run to toilet in bathroom. This pipe is to extend through the roof for vent stack. The cellar drain is to connect to main sewer tile. Same to have bell trap in concrete floor and a large S trap before reaching sewer tile. The main sewer is also to have a house trap just inside basement wall. All fixtures are to be vented and same carried to main vent stack, which will connect above closet in bathroom to main soil pipe.

There shall be a 5-foot bath tub C. I. porcelain lined, 2½-inch roll rim; lavatory 24 by 18 inch, 15-inch high back, oval bowl, 5-inch curtain cast in one piece and porcelain lined. Toilet to be a low-down tank, siphon washdown stool. All of the above to have nickeled trimmings; and S trap to lavatory, and a drum trap to bath tub. Sink in kitchen to be 18 by 30 inch, 15-inch high back. Back may be separate, but a drain board must be provided for at end of sink, all to be porcelain lined, cast iron. Use an S trap to sink. All faucets at sinks and lavatories to be self-closing patterns and nickel finished.

**Estimate of Cost**

165 yards excavating at 20c.....	\$33.00
225 lineal feet concrete footing, 6 by 15 inches .....	17.00
987 square feet concrete wall.....	130.00
Brick work .....	99.20
690 square feet basement floor.....	37.75
Front porch floor, caps and steps... ..	32.35
Total for excavating and concrete, cementing and masonry .....	\$ 349.30
Tin work .....	64.39
Rough hardware .....	\$25.05
Shelf hardware .....	26.84
Total for hardware .....	\$ 51.89
Lumber bill .....	592.44
Millwork .....	359.01
Carpenter work, 982 hours at 40c.....	398.40
Plastering, 720 yards at 30c.....	216.00
Plumbing .....	250.00
Electric work, wiring for lighting.....	35.00
Painting, 505 yards at 27c.....	136.35
Heating, hot-air furnace .....	225.00
Incidentals, 5 per cent.....	123.84
Total .....	\$2,807.62

# Fourth Prize—House to Cost \$3,000

Designed by W. I. Bell, Jamaica, N. Y.

**A** BRIEF specification for this design includes the following: Foundation walls and porch piers, up to level of first beams, are to be local stone 18 inches thick, laid up in Portland cement mortar.

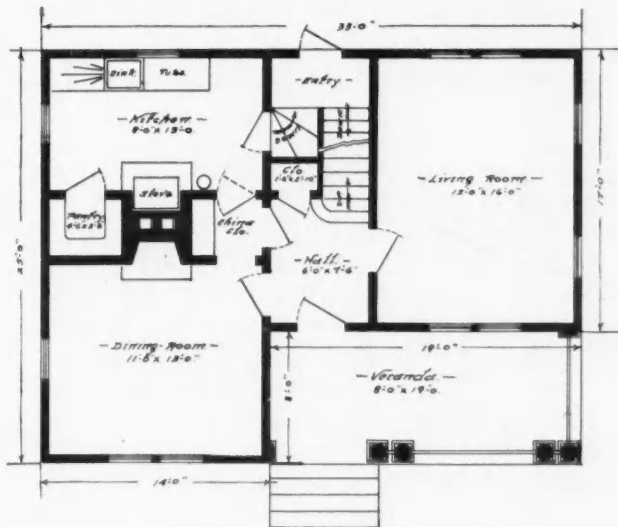
table to belt course, 6-inch beveled siding; shingles, from belt to roof, cypress shingles; floors,  $\frac{7}{8}$  by  $3\frac{1}{2}$  inch tongued and grooved N. C. pine; exterior trim, all cypress (as detailed); interior trim, all cypress (as



— Front - Elevation —

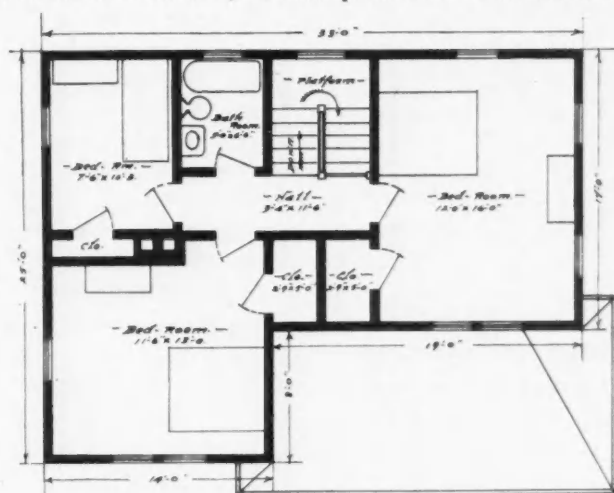
Cellar floor to be 2-inch Portland cement.  
 Chimney to be brick lined with 1-inch fire clay tile.  
 Framing timber is to be all spruce, as follows:  
 Girders, 8 by 12 inch; sills, 4 by 6 inch; first and second floor beams, 2 by 10 inch; studs and second floor

detailed); dining-room mantel, to be Colonial brick.  
 Plastering to be good grade hard wall plaster.  
 House to be heated with hot-air furnace having separate pipe to each room.  
 Plumbing.—Bathroom to have basin, closet and bath.  
 Kitchen to have sink, two-compartment stone tubs and



— First - Floor - Plan —

ceiling beams, 2 by 4 inch; hips and ridge, 2 by 10 inch; rafters, 2 by 6 inch; sheathing,  $\frac{7}{8}$  by 6 or 8 inch tongued and grooved spruce; siding, from water-



— Second - Floor - Plan —

small range. All fixtures to be porcelain enamel. Boiler to be 35-gallon galvanized iron. Water system throughout to be of  $\frac{3}{4}$ -inch galvanized iron pipe.

*Gas Fitting.*—House to be piped with 1/2-inch pipe with outlet for each room and cellar.

*Metal Work.*—All roof shingles to be metal of standard approved make. Gutters to be galvanized iron troughs with adjustable hangers. Leaders to be 3-inch corrugated galvanized iron.



— Side - Elevation —

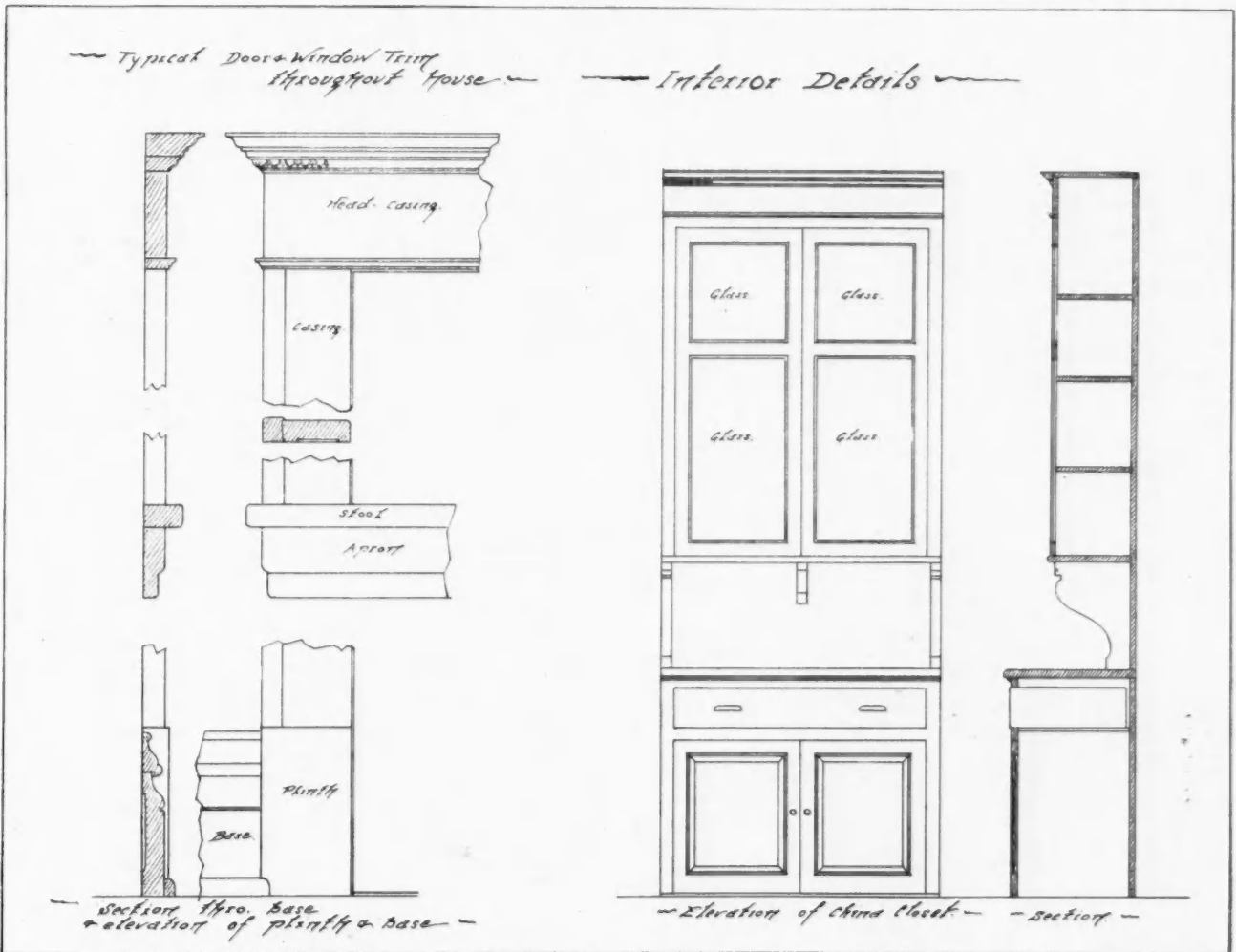
All exterior woodwork (except wood shingles and soffits of roof) to have three coats of paint. Wood shingles to be stained. Soffits of roof to be varnished with two coats of spar varnish. Metal shingle roofs to have two coats of paint of dark tile color.

**Estimate of Cost**

	Labor	Material	Both
<b>Excavation—</b>			
150 cu. yds. at 30c.....			\$ 45.00
<b>Footings—</b>			
(Concrete) 10 cu. yds.;			
Proportion 1:2:4. Bbls. ce-			
ment in 1 cu. yd., 1 1/2.....		\$3.00	
Bbls. sand, 3.....		.75	
Bbls. gravel, 6.....		2.00	
Cost of 1 cu. yd.....	\$5.75		\$ 57.50
Labor, at \$1.08 per cu. yd..	\$ 10.80		68.30
<b>Stonework—37 perch.</b>			
1 perch stone.....	\$1.25		
1/2 bbl. cement, at.....	1.00		
1/6 load sand, at \$1.75.....	.29		
Material cost 1 perch.....	\$2.54		93.98
1/3 day, mason.....	\$1.83		
1/4 day laborer, at \$2.00.....	.50		
Labor cost of 1 perch.....	\$2.33	86.21	180.19

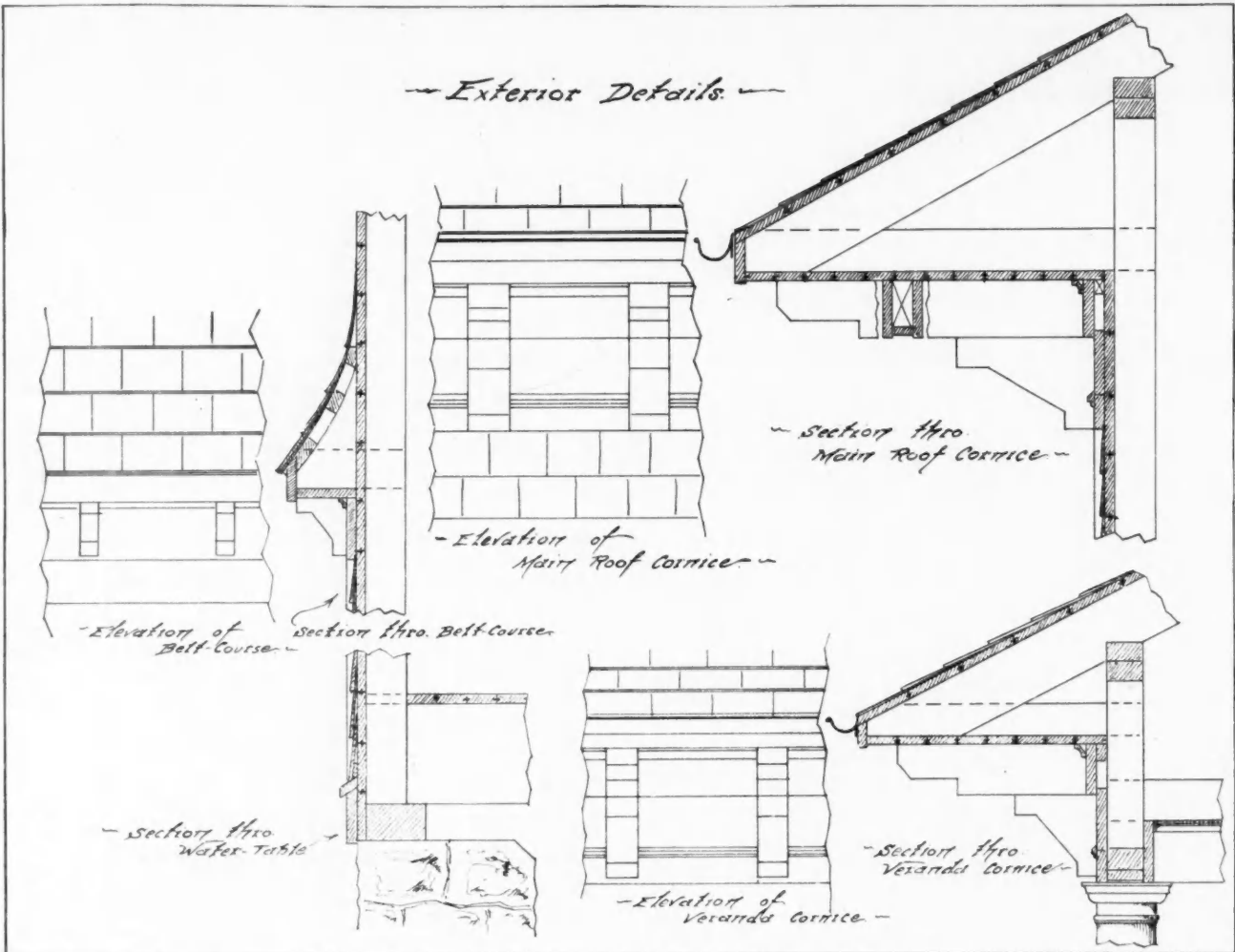
	Labor	Material	Both
<b>Bluestone—</b>			
5 window sills 4 feet by 4			
by 10 in., at 60c per			
ft. ....	\$12.00		
1 window sill, 2 ft.			
by 4 by 10 in., at 60c			
per ft. ....	1.20		
	\$13.20		13.20
Labor setting, at			
10c a ft.....	2.20		15.40
<b>Chimney—</b>			
4,000 brick.			
Cost of labor			
per M ....	\$9.00	36.00	39.32
60 ft. 8 by 12 in.			
flue lining at 22c	2.00	13.20	
Chimney cap ..	1.00	6.00	
Colonial brick			
mantel .....	9.00	20.00	126.52
<b>Cellar Floor—</b>			
(Portland).			
56 sq. yds., at			
60c .....	11.20	22.40	33.60
<b>Girder Columns—</b>			
4 3-in. concrete			
filled pipe col-			
umns .....	3.00	6.40	9.40
<b>Lathing and Plastering—</b>			
586 sq. yds., at 40c.....	147.00	88.00	235.00
<b>Sheet Metal—</b>			
105 ft. 3-in. leader at			
15c .....	\$15.75		
5 elbows, at 30c....	1.50		
50 conductor fasten-			
ers .....	1.00		
136 ft. galvanized			
iron gutter .....	24.00		
75 shanks and			
troughs .....	4.00		
Nails .....	1.75		
	\$47.95	30.00	47.95
Flashing .....	5.00	5.00	
Metal shingles, 12 sq., at			
\$5.00 .....	\$60.00		
130 ft. hip and ridge			
roll, at 7c.....	9.10		
	\$69.10		69.10
Labor, at \$2.25 per sq....	27.00		184.05
<b>Heating—</b>			
Steel furnace .....	\$50.00		
Piping, cold-air box			
and registers .....	40.00		
	\$90.00	90.00	
Labor .....	30.00		120.00

	Labor	Material	Both		Labor	Material	Both
<b>Plumbing and Gas Fitting—</b>				<b>Floors—Cost of a square of</b>			
Gas fixtures . . . . .		\$25.66		flooring—Joists 2 by 10 in.,			
1 2-section stone tub . . . . .		25.00		16 in. o. c. equals 127 bd.			
1 range with 24-gal-				ft., at \$30. . . . .		\$ 3.75	
boiler . . . . .		60.00		Labor, per sq. 100 ft. . . . .		1.50	
1 18 by 24 inch por-				Nails . . . . .		.10	
celain enamel sink				Bridging . . . . .		.50	
with drain board. . . . .		27.00		Flooring, 100 ft. N.			
1 porcelain enamel				C. pine at \$50. . . . .		5.00	
basin . . . . .		20.00		Waste, 1/3 of stock. . . . .		1.67	
1 porcelain enamel				Labor . . . . .		1.50	
siphonic closet . . . . .		23.00		Nails, 5 lb., at 4c. . . . .		.20	
1 4-ft. 6-in. porcelain				Total, per sq. . . . .		\$14.22	
enamel bath tub. . . . .		30.00		Total squares first and sec-			
Pipes and fittings. . . . .		40.00		ond floor, 10 sq., at \$14.22. . . . .	30.00	112.20	142.20
		\$250.66	250.66	Porch floor, 1 1/2 sq. . . . .	4.50	16.83	21.33
Labor . . . . .	125.00		375.66	Roof—Cost 12 sq. . . . .	70.00	96.80	166.80



<b>Carpenter Work—</b>				<b>Sidewalls—</b>			
34 ft. girder, 8 by 10 in.,				18 sq., at \$9.55. . . . .	54.00	117.90	171.90
114 bd. ft.; 113 ft. sill, 4 by				Siding and Paper—			
6 in., 226 bd. ft.; 113 ft.				9 sq., at \$7.22. . . . .	20.00	45.00	65.00
plate, 4 by 4 in., 151 bd. ft.;				Shingles and Paper—			
8 posts, 4 by 6 in., 22 ft.,				8 sq., at \$6.50. . . . .	17.60	34.40	52.00
352 bd. ft. Total, 843 bd. ft.				Inside Studding . . . . .	16.00	20.00	36.00
843 bd. ft., at \$30 per M. . . . .		24.50		Millwork—6 Cellar Windows	3.00	17.10	20.10
Labor, at \$12 per M. . . . .	10.20		34.70				

	Labor	Material	Both		Labor	Material	Both
Windows—First and second floors. Window frame.		\$1.20		Porch stairs	5.00	7.00	12.00
Sashes	1.75			Porch columns, 4 at \$8.	8.00	24.00	32.00
Weight	.38			Porch pilasters, 2 at \$6.	4.00	8.00	12.00
Sash cord	.20			Porch balustrade	3.50	3.50	7.00
Sash fast	.25			Porch ceiling	8.00	7.00	15.00
Inside casing	.70			Porch cornice, 39 ft. at 75c.	8.00	22.00	30.00
Stop beads	.28			Main roof cornice	23.00	64.00	87.00
Labor, 8 hrs., 43 <sup>3</sup> / <sub>4</sub> c.	3.50			Belt course, 85 ft. at 15c.	5.00	7.75	12.75
Cost window in place.		\$8.26		Water table, 85 ft. at 15c.	5.00	7.75	12.75
22 windows, at \$8.26	77.00	104.72	181.72	Lattice, 42 sq. ft., at 15c.	3.30	3.00	6.30
				Corner boards	5.80	5.00	10.80



Doors—Cost per door.

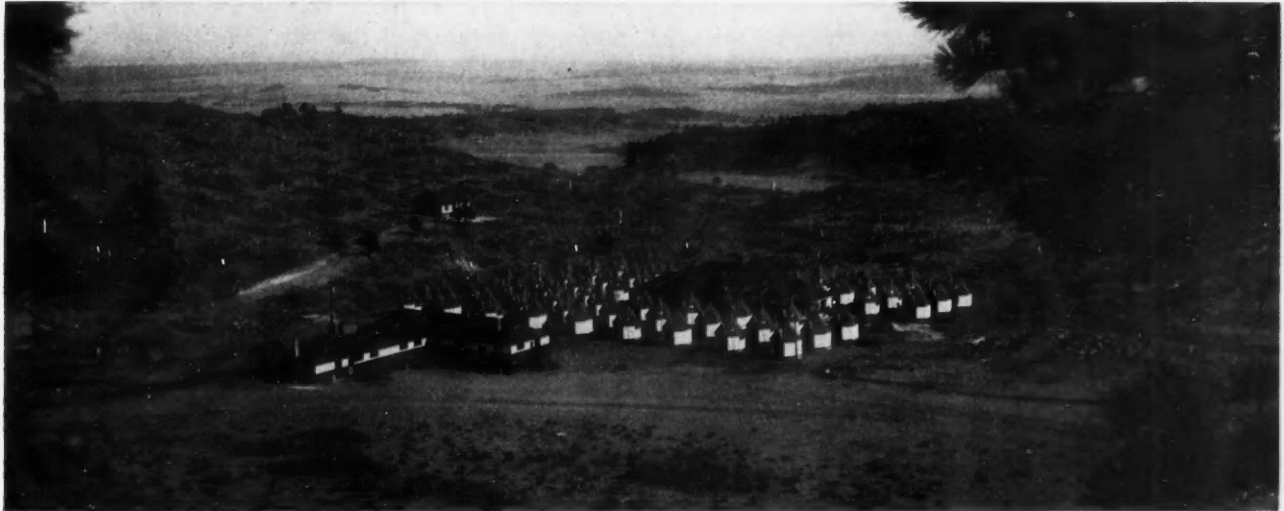
Door, 2 ft. 6 in. by 6 ft. 8 in. by 1 <sup>1</sup> / <sub>2</sub> in., price.	\$2.40		
Frame	1.00		
Casings	1.33		
Threshold	.15		
Nails	.05		
Hardware	1.25		
Labor, 8 hrs., at 43 <sup>3</sup> / <sub>4</sub> c.	3.50		
Cost of door in place.	\$9.68		
15 doors, at \$9.68	52.50	82.70	145.20
Front Door—	4.00	18.73	22.73
Cellar stairs	5.00	7.40	12.40
Main stairs	15.00	20.00	35.00

China closet	10.00	10.00	20.00
Picture mold, 225 ft. at 5c.	3.00	9.25	12.25
Base, 300 ft. at 10c.	15.00	15.00	30.00
Painting	160.00	40.00	200.00

**Summary**

Excavation	\$	45.00	
Masonry		433.41	
Carpentry and hardware		1,406.93	
Sheet metal work		184.00	
Plastering		235.00	
Plumbing and gas fitting		375.66	
Heating, hot-air		120.00	
Painting		200.00	
<b>Total cost</b>		<b>\$3,000.00</b>	





## The Tent Cure for Tuberculosis

WHAT ONE ORGANIZATION IS DOING FOR ITS STRICKEN MEMBERS—WHAT OTHER ORGANIZATIONS SHOULD DO—CHEAPER TO CURE PATIENTS THAN TO LET THEM DIE

By John E. White, M. D.

**T**HE fight against consumption, tuberculosis, the white plague, or whatever name you may choose to call it—it is equally destructive and horrible by any name—has always been considered well-nigh hopeless and any money spent in that direction has been charged to pure benevolence—in which the giving is its own reward. It now appears, however, that, with our modern knowledge and methods, what was formerly judged just good fraternalism now proves to be good business.

Tuberculosis can be cured. Moreover, the cure is economical—actually cheaper than to let the patient die.

About two years ago the Modern Woodmen of America conceived the idea of building an up-to-date tent sanatorium, with the thought that money could be saved by preventing deaths from tuberculosis. Investigation of their records developed the fact that during the last eighteen years they have paid 5,280 death claims on account of this disease. This society has, in other words, paid out over \$10,000,000 to tuberculosis. The disease has constituted 14.1 per cent of all their deaths. In the way of explanation it should be stated that these figures are very low as compared with other societies. The general statistics of the United States Census Bureau states that over 16 per cent or one-sixth of our people in the United States die of tuberculosis.

These figures of the Modern Woodmen of America attracted the attention of the executive council of that order and they decided to build a sanatorium at Colorado Springs. The subject was fully discussed and finally the council was authorized to take from the general per capita fund ten cents per member per year to build and maintain this sanatorium. Something like \$80,000 had already been voluntarily contributed. With these funds a tract of 1,380 acres was procured about nine miles from Colorado Springs, Col. The

first colony was ready for the reception of patients January 1, 1909, and was equipped to care for 60.

A very good idea of the lay-out and the construction of this camp may be gained from the photographs and plans. The tents are octagonal structures, 12 feet wide and 6 feet to the eaves, with shingle roofs, canvas sides, hardwood floors on solid cement foundations. They are equipped with all modern and sanitary conveniences, and each tent will accommodate one patient. Each tent, completely equipped, represents an expense of \$250. An administration building



One of the Tents

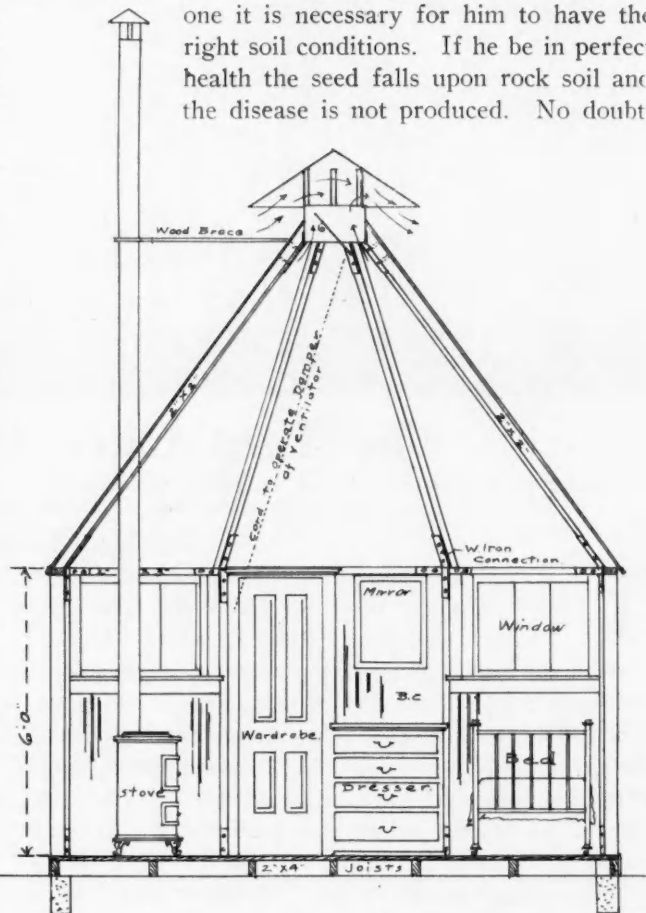
for physicians, nurses, dining-hall, baths of all kinds, etc., stands in the center of the colony. During the past eight months a great deal of work has been accomplished. Water works have been constructed, roads built, and much general work done. On January 1st the first colony of 60 tents was opened and rapidly filled. Other colonies will soon be constructed, as it is the hope to carry the building up to a capacity of 500 beds.

In the last few years humanity has become better acquainted with tuberculosis in its various phases, its almost universal prevalence and its fearful death loss. We have come to realize that it is the disease of the masses. It is especially the poor man's most frequent and most fatal disease. Individually the poor man has but small chances of curing it for it takes money to get well of tuberculosis. Someone has said that there is but one cure for consumption and that is gold. By this is meant that when one has the disease he must stop work (which usually means the income stops) and devote all his time to the treatment of his disease. He must have the best of food; in fact, he must be put on Easy street and make a fight for his life. How many wage earners can meet these requirements in establishing a cure?

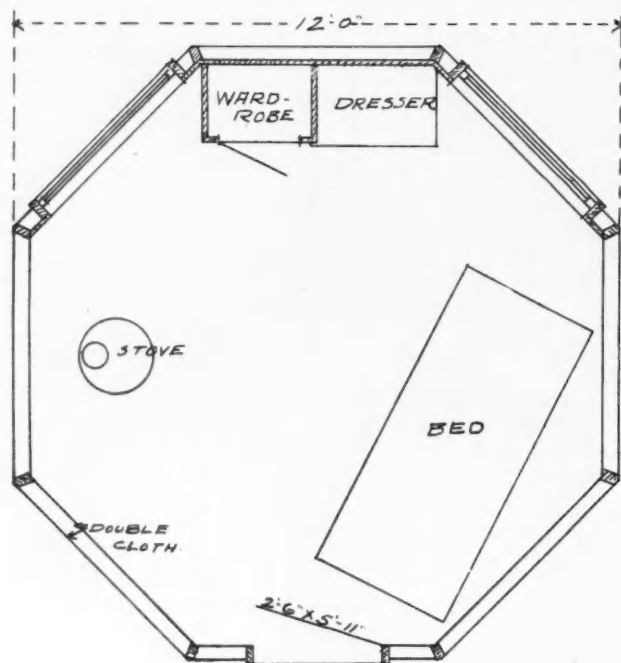
In order to contract tuberculosis two factors are necessary, the seed and the soil. The seed is the germ called the tubercle bacillus. It is a very small microscopical parasite. Ten thousand placed end to end measure approximately one inch. This parasite is man's greatest destroyer, killing in the United States one person every minute and 38 seconds, or 200,000

liver, lung, kidney or, in fact, in any part of the body with the exception of the hair. We then speak of the disease as tuberculosis of that part.

In order to have the germs produce the disease in one it is necessary for him to have the right soil conditions. If he be in perfect health the seed falls upon rock soil and the disease is not produced. No doubt,



Section Showing Interior



Floor Plan of Tent

we all inhale the tubercle bacilli, but many of us throw it off and it does not implant itself. But suppose the soil conditions are favorable, what do we find? In the wage earner we find him very often overworked, poorly nourished and with the home lacking in fresh air and sunlight. Anything, in fact, that tends to reduce the vitality of the individual invites the implantation of the germs of consumption.

It has been known for several years that tuberculosis was preventable; preventable by education as to how the disease is spread from one to another; how it is avoided by making the consumptive in the home careful of what he raises or spits out, and destroying it by fire and not letting it dry; for then it can be blown about more easily. It is still further preventable by teaching the great value of fresh air, first, last and all the time, especially in the workshop or factory and in the bedroom where he sleeps. The windows should be wide open in the sleeping-room, not just a few inches top and bottom, but wide open summer and winter.

We are told that tuberculosis is decreasing, that it has decreased something like 15 per cent in the last 15 years. New York City reports that the disease has been reduced 40 per cent; Boston reports a reduction

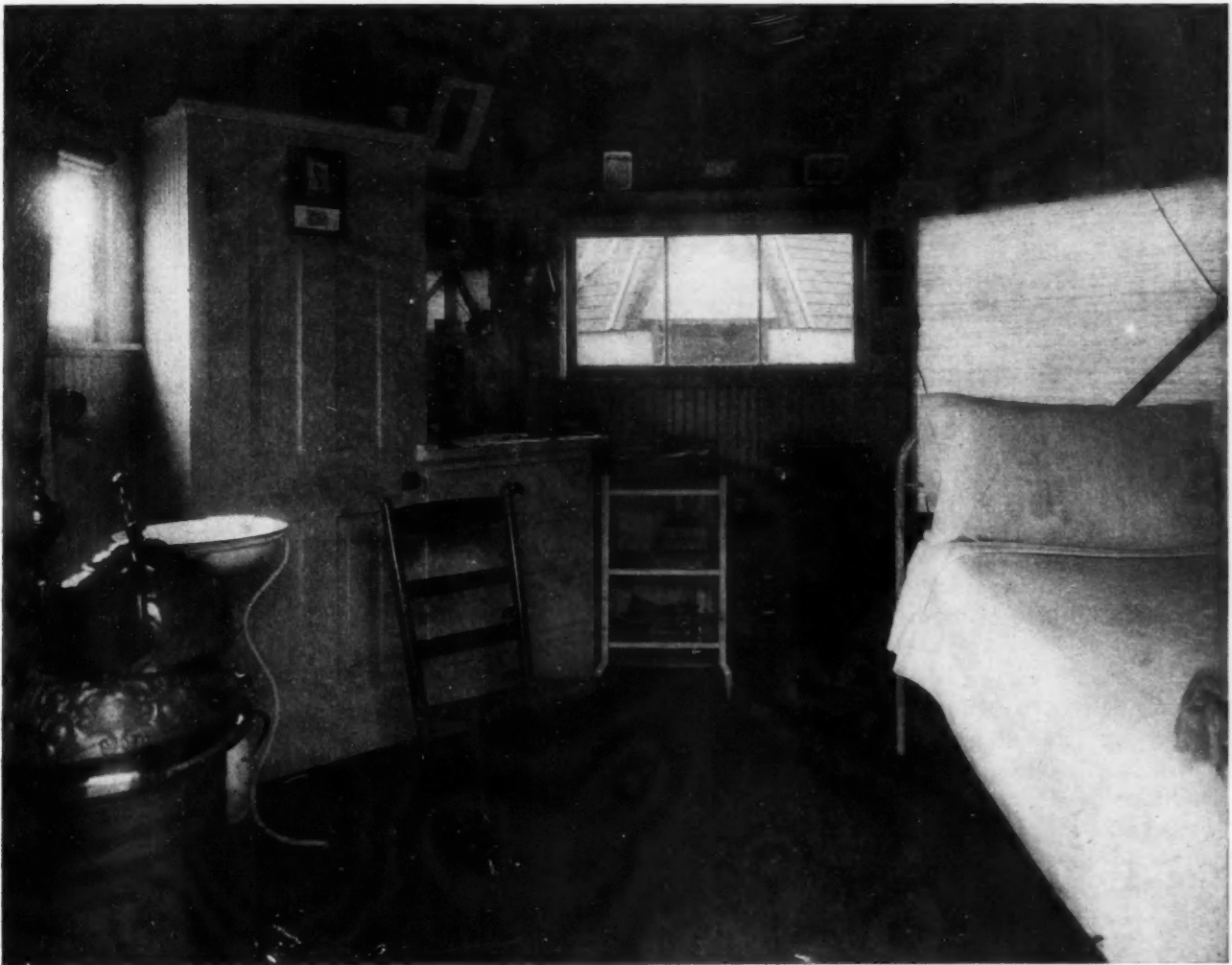
each year. Tuberculosis is nothing more nor less than an implantation of this vegetable parasite within some part of the body. Any part of the body may become infected. The parasite may lodge in the skin, bone,

of 45 per cent in 15 years. Much of this can be credited to the improved living conditions of workmen, both at work and in their homes. Shorter working hours, better pay, better food and more intelligent living have had their beneficial effects.

Carpenters, builders and other progressive workmen of this country stand today in a position to do much good in the crusade against the "Great White Plague." They must be more fully informed how to prevent this disease. Every man should become personally interested in the crusade. He must see to it that he has more fresh

It is very difficult to cure a patient in the home, and for this reason sanatoria have become a necessity. We have already stated that the average wage earner cannot successfully combat this disease because he has not the means. Our only hope for these unfortunates is in giving them organized help. The burden upon any one individual in thus helping his fellowman will be very light, while an immense amount of good will be done toward the complete stamping out of this scourge.

Which prompts this question: If the Woodmen society finds it to be "good business," as well as good fraternalism, to fight consumption in this way, why



Interior of Tent with Furnishings

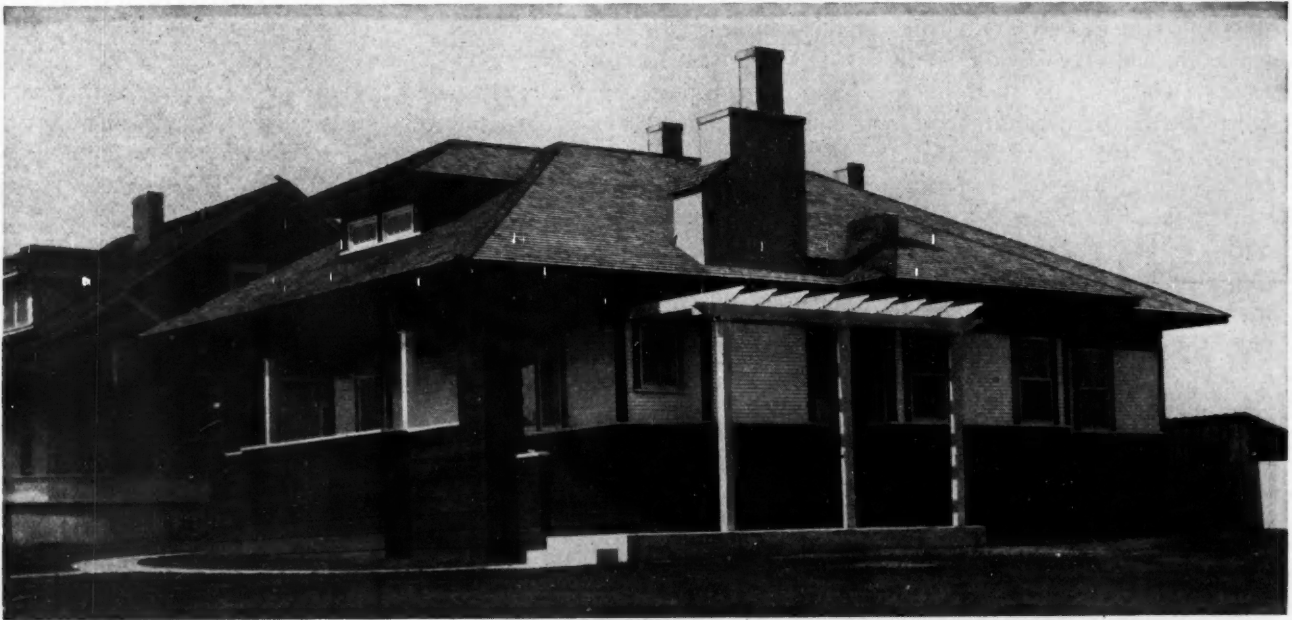
air. Air costs nothing. He must have more nourishing food. In order to have workmen understand these plain facts they must be told, they must be educated upon this tuberculosis problem.

It is a live question. Prevention is of far more importance than cure, but since we have so many among us that have already contracted the disease and want to get well we must take that side of the question.

Consumption is curable in the earlier stages. This fact cannot be denied. Every sanatorium in the country will testify to this fact. Sanatorium care is rather expensive, but such institutions are practically the only place where a goodly percentage of cures can be made.

should not other fraternal societies, life insurance companies, labor organizations, the national and international church bodies, etc., find it profitable, from the viewpoint of business or benevolence, or both, to take such action?

Each life saved to the Woodmen society, by means of this sanatorium, will, it is stated, represent a saving of \$1,700—the average amount of the Woodmen policies in force—at an expense for treatment of approximately one-twentieth of that sum. In the broader sense, each life saved means the preservation to the family of its head and bread-winner, and to the state of a useful, self-sustaining citizen.



## An Artistic Bungalow for \$2,900

FINE EXAMPLE OF WHAT SKILLFUL DESIGNING, GOOD TASTE, AND A SMALL AMOUNT OF MONEY CAN DO IN PRODUCING A MODERN COTTAGE

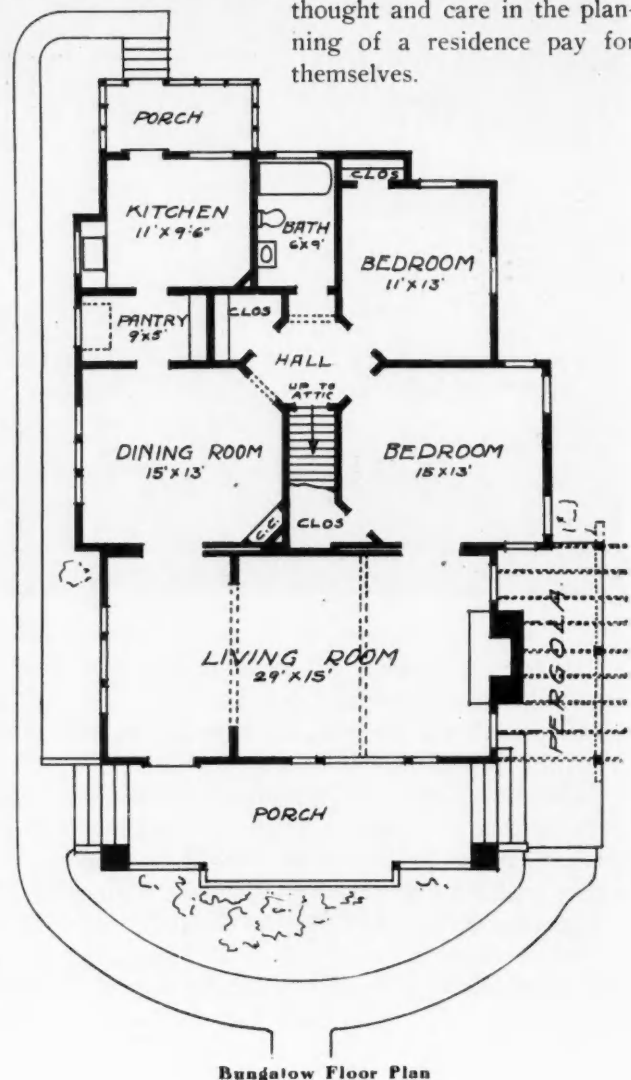
**T**HIS exceedingly attractive bungalow was designed by Charles P. Rawson, architect, for his own use and was erected under his personal supervision at Fort Worth, Texas. The exterior of the house up to the window sills and above the windows is covered with rough boards laid 10 inches to the weather and stained a rich brown, the space between the windows being filled with narrow siding, painted white. All chimneys are finished in cream-colored plaster. The pergola at the side has a floor of red brick.

The interior of the house is unusually attractive. The living-room is of ample size and is finished in yellow pine stained green; it has a beamed ceiling and a brick mantel; and an imported, hand-colored, landscape frieze running around the entire room. The walls below this frieze are of plain rich blue, and the panels of the ceiling cream or light yellow. The dining-room has a high wainscot capped with plate rail and is finished throughout in browns and yellows, and has a built-in china closet with leaded glass doors. The bedrooms are in white enamel, with the walls hung with rich flowered paper.

Two bedrooms are provided, each with a good-sized clothes closet. There is also a closet for table linen, extra bedding, etc., off the back hall. So the charge that is sometimes brought against the bungalow—that it gives no chance to lay anything away—does not hold good in this case.

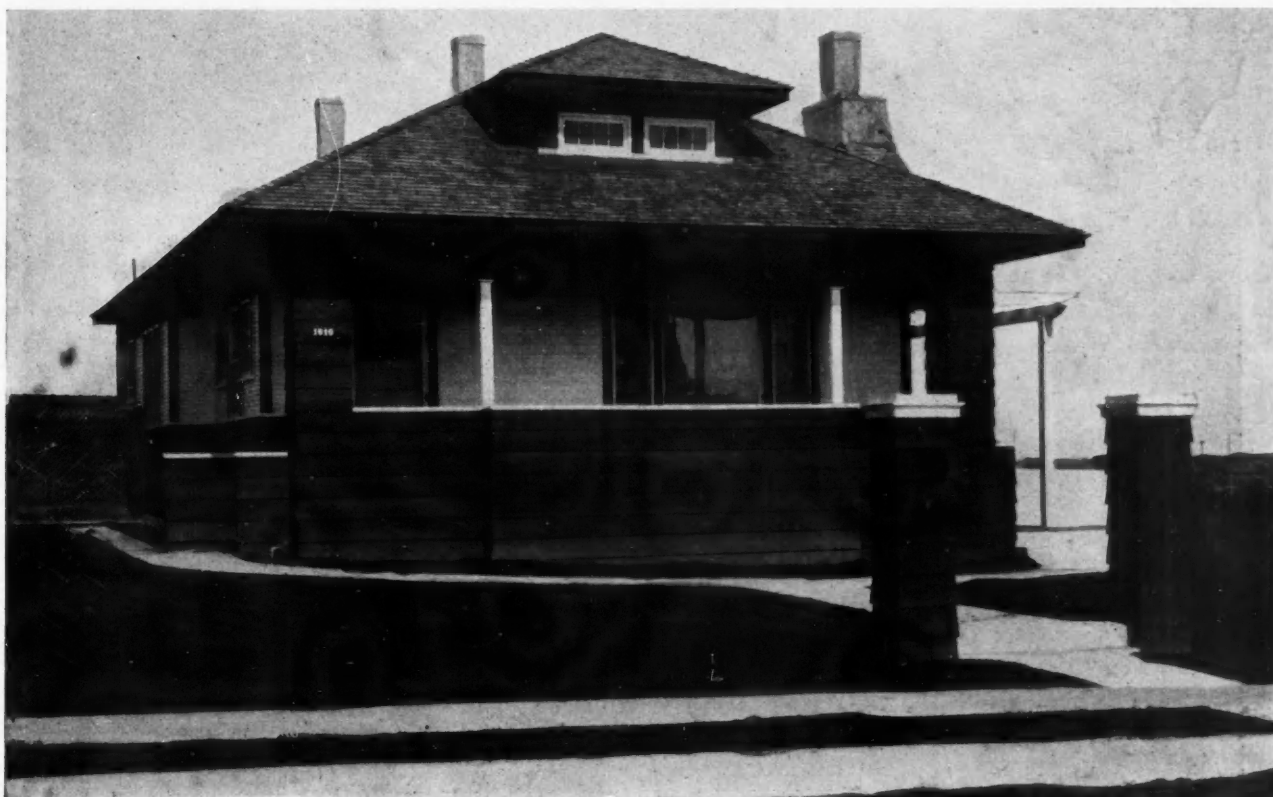
The arrangement of the rear portion of the house is unusually convenient, and the large attic gives plenty of space for storage. This house is an unusually good example of what can be done in an artistic way without excessive expense, as the total cost of the house and decorations did not exceed \$2,900. Just to show that to build such a bungalow

as this is not a bad investment it might be stated that it was sold recently for \$4,000. Thus special thought and care in the planning of a residence pay for themselves.

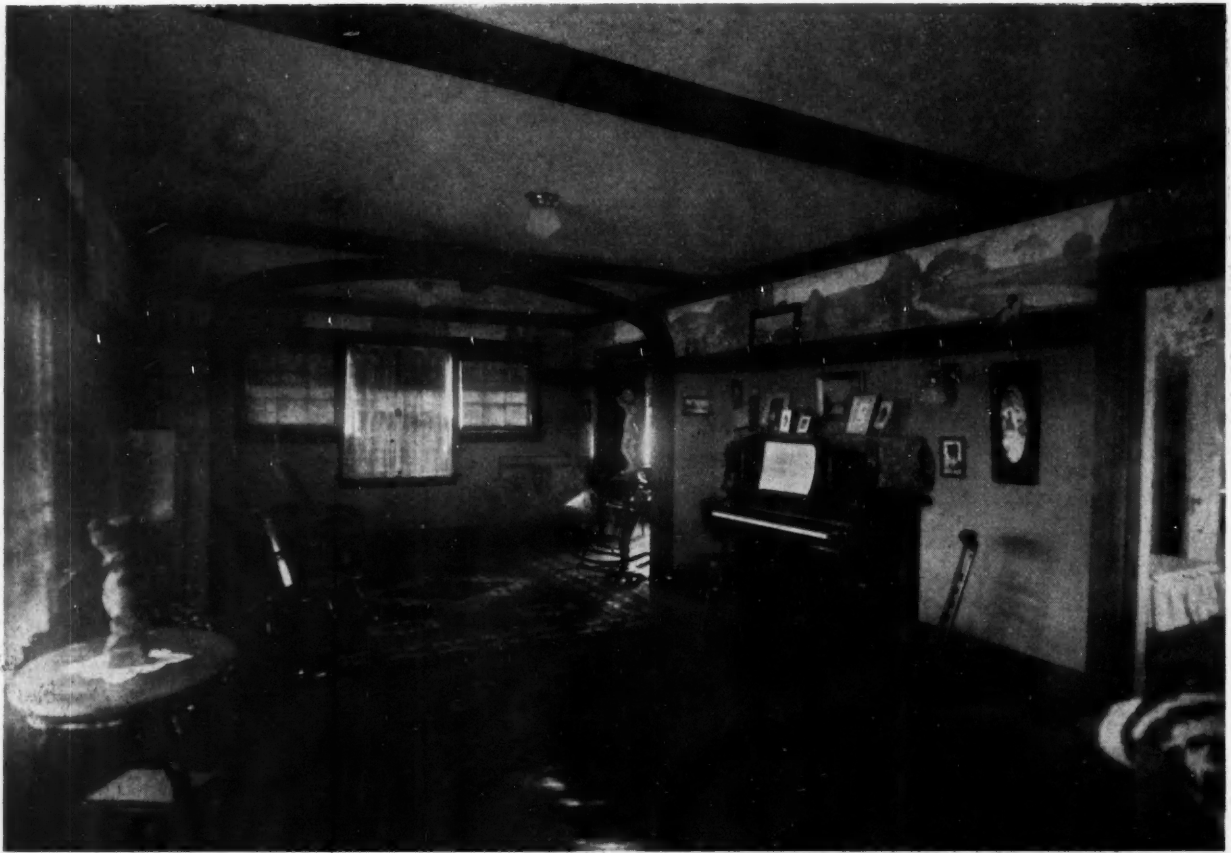




The Living-room — Looking Toward the Right



Very Artistic and Homelike Five-room Bungalow



The Living-room—Looking Toward the Left



A View of the Dining-room

# STEEL SQUARE

ALFRED W. WOODS

## Possibilities of the Steel Square

USEFUL THINGS TO KNOW—HOW TO RECKON THE CONTENTS OF BOARDS—HOW TO DRAW CIRCLES, OVALS, ETC., ALL BY MEANS OF THE STEEL SQUARE

**M**OST all of the steel squares manufactured nowadays contain a board measure stamped on the blade; but very few carpenters ever think of referring to it, and a larger portion do not even know how to use it. Be that as it may, here is a board measure based on the square that is not generally known, and is more complete than any stamped on the blade. It is as follows:

Draw a line, A-B, as shown in Fig. 243. On this line place the square as shown. Now suppose the board we wish to measure is 17 feet 9 inches long. Draw a line from

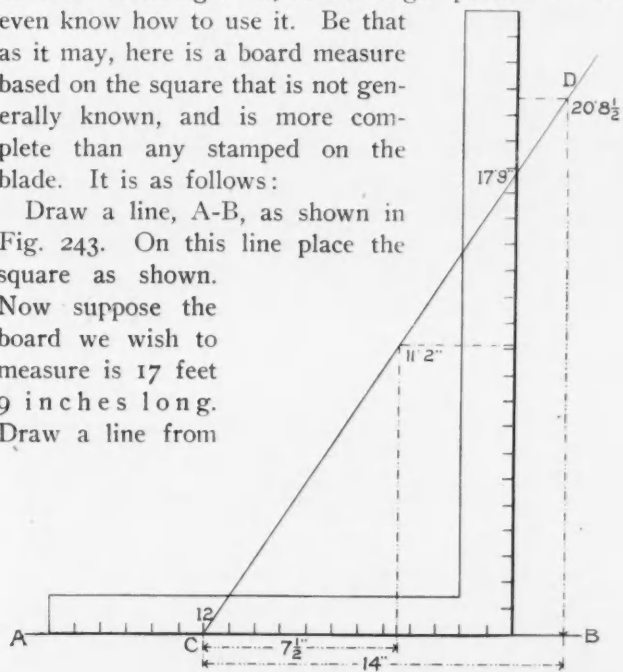


FIG. 243.

12 on the tongue, passing at 17 9/12 inches on the blade, continuing same indefinitely. This line we will call C D, C being at the point of intersection of A B. Now, if the plank be 7 1/2 inches wide, slide the square

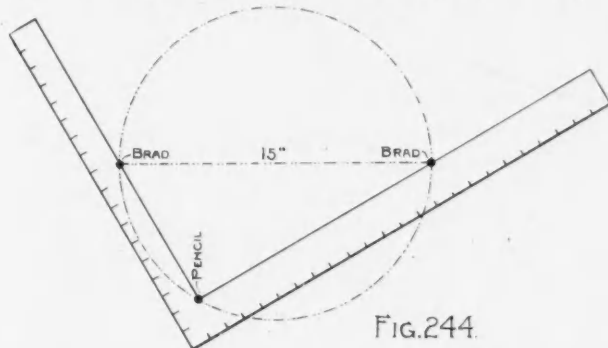


FIG. 244.

along the line A B, letting 7 1/2 on the tongue rest at C, and we find that C D passes at 11 2/12 inches on the blade, representing 11 2/12 feet. If the board be

14 inches wide, let 14 on tongue rest at C, and we find the line passes at 20 and eight and one-half twelfths inches, which represents a little over 20 2/3 feet of lumber in the board, which is reckoned to be 1 inch thick. This method solves fractional lengths and widths as readily as in even inches and feet.

Here is another problem that can be readily solved with the steel square. It often happens that a compass is not at hand when a true circle is required for some special piece of work. Suppose a circle with a 15-inch diameter is wanted—it may be found as follows:

Drive two small brads 15 inches apart, as shown in Fig. 244. Place the inside edges of the square against the brads and with pencil

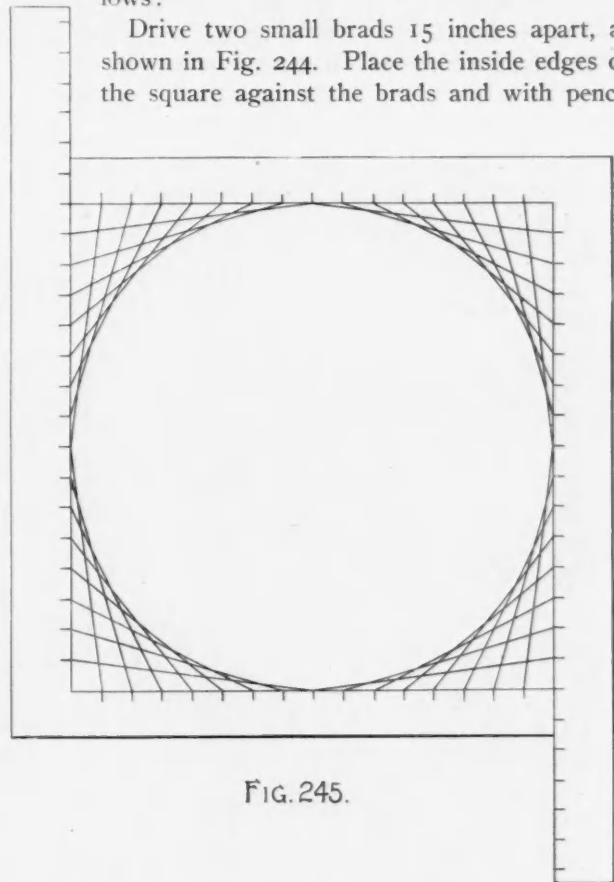


FIG. 245.

point in the angle, slide the square around, always keeping the edges against the brads and the pencil will describe a true half circle. Reverse the square to the other side and repeat the operation and the desired circle will be formed.

A circle may be formed by using all straight lines,

as shown in Fig. 245. The lines are run to the inch divisions on the square, but they could be just as well run to the half or quarter divisions. In fact, the more lines used, the more true the circle will be formed, as will plainly be seen by referring to the illustration.

The oval may also be laid off, as shown in Fig. 246. A B represents one-half of the short diameter, and A C the same for the long diameter. Take a straight-edge and on it lay off these measurements, as a-b and a-c. Drive brads at a and b and make a hole at c large enough to in-

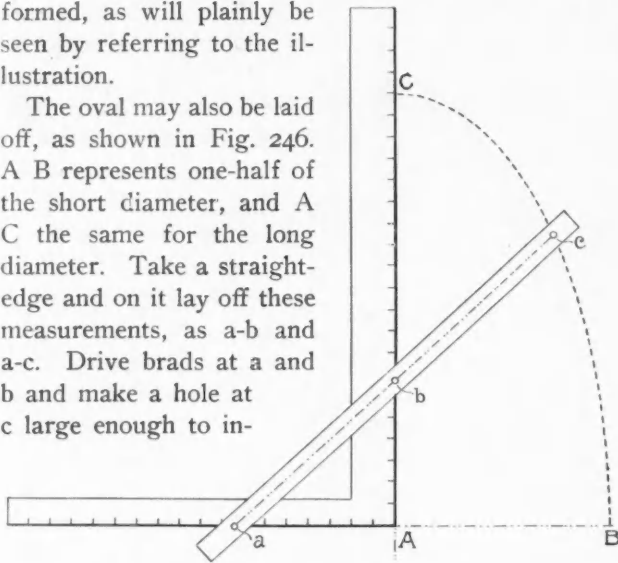


FIG. 246.

sert a pencil point. Now, by moving the straight-edge so that the brads will slide along the outer edges of the square, the point at c will describe one-fourth part of the oval. By turning the square over, letting the blade rest along the line A C as before and repeating the operation, one-half of the oval will be outlined. Proceed in like manner for the other half.

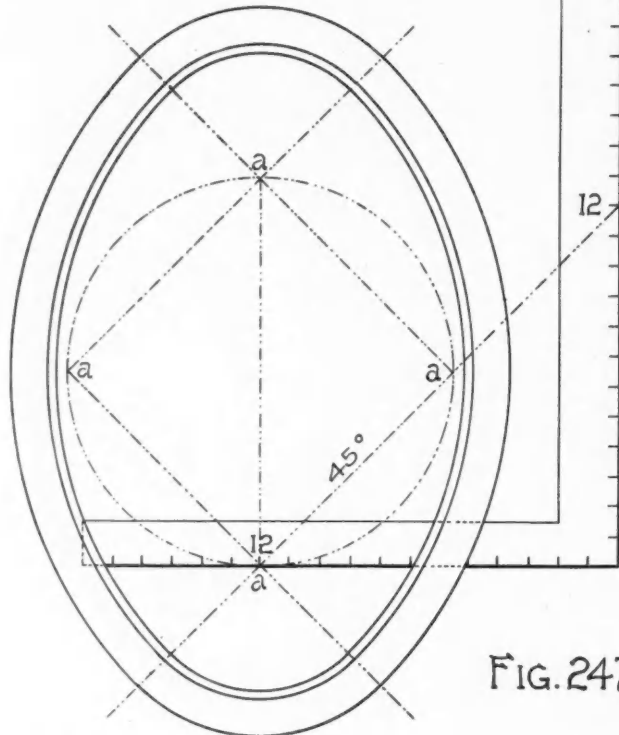


FIG. 247.

Oval-shaped arches are quite commonly used in building construction and interior decoration; but the

workmen often lose in architectural effect by trying to form them with parts of true circles. While such arches may be more easily arrived at, they are a failure from an architectural point of view.

In Fig. 247 and 248 are shown how such arches may be formed. In the former, the oval is formed by four full quarter circles of two sizes. The centers being at a a a a and the intersections at the dotted lines. The parts are quadrants of 90 degrees, and so placed as to make the least perceptible irregularity in the curve. In the latter, the oval is formed by two large quadrants of 60 degrees, and two of 20 degrees; but as we said before, ovals formed in this way are lacking in that graceful ever-changing curve of the true oval. This should not be overlooked, even in

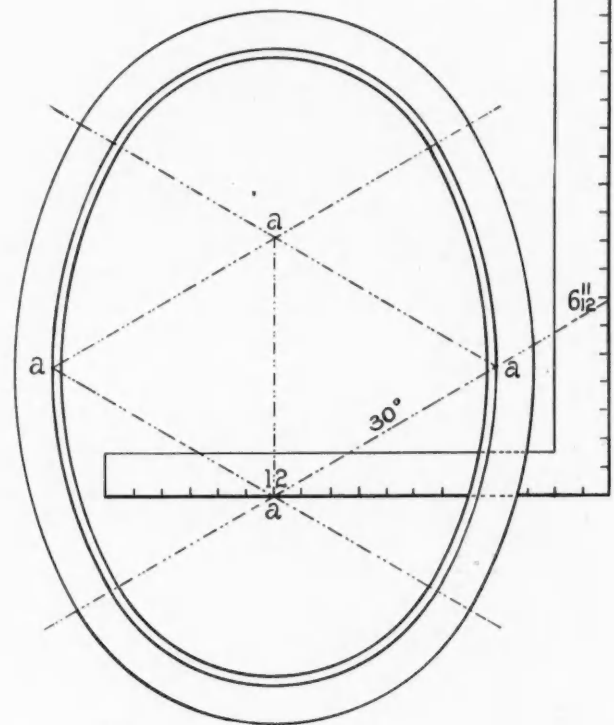


FIG. 248

what may be classed as cheap work, for the sake of a little easier way of arriving at the construction of the work regardless of the after-effect.



**To Remove Rust from Steel**

Cover the rusted part with any non-drying oil or fat. Allow this to remain about three or four hours, then wipe off with a clean dry cloth. Now mix four ounces of opodeldoc and two drams of caustic potash. Apply to the part rusted, and after ten minutes wipe off with a dry cloth. Another method is to rub the rusted part well with sweet oil, and allow to remain until the next day; then sprinkle over it powdered quicklime and polish with this until the rust is gone. Still another way: mix one-half ounce of powdered emery and one ounce of soft soap. Rub this in well.



# PRACTICAL CARPENTRY

## Cold Storage Rooms for Stores

A PRACTICAL AND TIMELY ARTICLE TELLING HOW TO BUILD SMALL REFRIGERATOR AND COOLING ROOMS FOR MARKETS AND STORES

By T. B. Kidner

THE season of the year is rapidly approaching when many of the readers of this magazine will be called upon to construct cold storage rooms for meat, fruit, etc., for use during the warm weather.

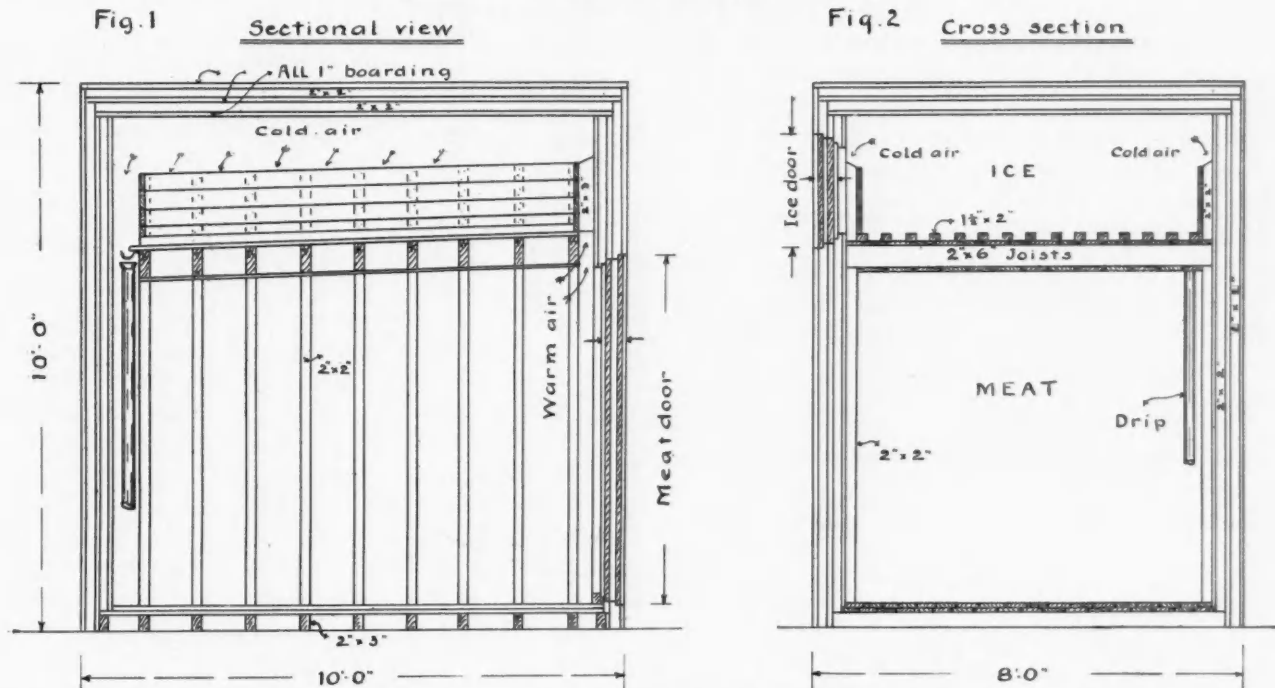
Articles dealing with this matter have appeared from time to time in these columns and, judging from the number of letters received from correspondents, it appears that there is a further demand for information as to the planning and construction of simple ice house for storage purposes. Mr. J. Hatfield, of Arlington Heights, Mass., writes as follows: "Would like to know the best way to build a refrigerator for a meat store; size 8 feet wide, 10 feet deep and 10

feet high. It should be so arranged that when the door is open the warm air will not be direct on the ice; must have proper circulation of air so that the meat will keep dry and also be so made that the ice will be overhead and put in from the side. Can it be built of 2 by 4 sheathed two sides and filled with shavings? Would that be sufficient to make it tight?

Also would like to know the best way to build a corn-beef tank so as to use the drip from refrigerator to circulate around it and keep the beef cool." The several articles on refrigerator construction which have appeared in this magazine all dealt with separate outdoor structures, but there is a considerable demand for refrigerating room which can be placed inside a store or in a room at the rear. This article and its illustrations will therefore deal with the construction of an indoor room of a simple type.

In the first place, the insulation suggested by Mr. Hatfield would not be quite satisfactory; instead of building the sides and top of 2 by 4, sheathed on both

### A SMALL REFRIGERATOR ROOM



feet high. It should be so arranged that when the door is open the warm air will not be direct on the ice; must have proper circulation of air so that the meat will keep dry and also be so made that the ice will be overhead and put in from the side. Can it be built of 2 by 4 sheathed two sides and filled with shavings? Would that be sufficient to make it tight?

sides, it would be very much better to provide two dead-air spaces by having three layers of sheathing, with pieces of 2 by 2 between, as shown in the sectional views. Authorities differ as to the respective merits of packing the spaces between layers of boarding with some insulating material or simply leaving them as dead-air spaces. There is little doubt, how-

ever, that for the small refrigerating room, properly formed and tight, dead-air spaces are quite satisfactory and are not as liable to absorb moisture or harbor insects as if packed with sawdust or shavings.

Fig. 1 is a vertical section taken from front to back of the room, and shows the ice floor well sloped towards the back. The ice floor is carried on joists of 2 by 6, as the blocks of ice are heavy and are, moreover, likely to be dumped in none too gently. On these joists, matched boards are laid and on the top of the boards strips of 1½ by 2 to form drains for the water running from the melted ice. All around the main walls of the ice chamber short pieces of 2 by 2 are nailed vertically about 1 foot apart and on these strips 1-inch boards are nailed to within 10 or 12 inches of the ceiling. These serve to keep the ice from the walls and form flues for the circulation of the air between the ice and meat chambers. A sharp fall is given to the ice floor, not only for drainage purposes, but also to help the circulation. The warm air from the meat will seek an outlet at the highest point near the front of the house and pass upwards through the air spaces to the surface of the ice and thence down again at the sides and rear end to the meat chamber.

Fig. 2 is a cross section showing how the joists are carried on pieces of 2 by 2 nailed to the inside of the side walls; and also shows the side boards and air spaces in the air chamber. Of course, the side boards would have to be loose at the ice door, but that is an easy matter to arrange.

The top of the refrigerator is formed with two dead-air spaces, like the walls, and needs no special remarks. The greatest of care must be taken, however, in fitting the angles of the walls and also the angles between the walls and top, for any slight leaks or open joints may set up a circulation of air and spoil the non-conducting properties of the air spaces between the layers of boarding. As an additional precaution, it is strongly recommended that a layer of good, stout sheathing paper be placed under the outer boarding, and well lapped and tacked around the angles.

The doors should be of several layers of matched boards with paper between the two outer layers. The openings should be rabbeted as shown in the drawings, so as to have several surfaces for the doors to close against, and thus prevent any circulation between the refrigerator and the outer air.

For a room of the size shown, a window in the rear end would be a convenience if light is available in that position. If a window is inserted, it should have triple sashes closely fitted and well fixed with stops nailed around each sash.

The water from the ice floor should be received in a half-round galvanized iron gutter fastened on the side of the last joint, as shown in Fig. 1, and led to a down pipe at one corner of the house. If it is desired to utilize this cold water for cooling a salting

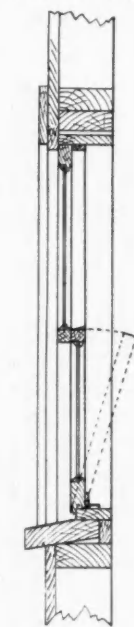
tank, as suggested by Mr. Hatfield, an outer tank or skin should be built to contain the salting tank; a space of 1½ inches being left between the tank and the skin. The water should enter this space from the down pipe at one side of the tank and pass off through an overflow pipe at the other end. The overflow pipe should be provided with a trap to prevent the admission of air to the refrigerator and be led away to some convenient sink or drain. An ordinary S lead trap with a clean-out plug is best, as drip water from ice usually fouls pipes quite rapidly and necessitates frequent cleansing. This also applies to the cooling space, which should be scrubbed out occasionally.

The woodwork in the food chamber should be thoroughly varnished with several coats of good grain shellac, well dried between each coat. The whole of the outside should be painted a dead white and kept clean by frequent washing.

### ✦ Window Ventilation for Hen House or Barn

Last summer I made fifteen window frames, as per cut, enclosed, for a hen house. Frames were made two abreast, for roosting rooms, and three abreast for scratching sheds. Blindstops were about 2¾ inches wide, so as to nail half onto studding, then the siding was run against the blindstop, which makes a better joint when casing is put on. At the top, I use no blindstop, other than letting drop siding project below. This also makes it better, because the water cannot easily run through. The 1½ strip is of same width as the thickness of sash, just to hold it up and act as a back for lower sash to rest against when shut. The "stop" may be a piece of lath or any thin board. The bottom of frame, 2 by 6, is grooved for tongue of drop siding, 5/16 groove. This is where it comes handy to have a gainer run by gasoline engine. I cut the rabbet for lower sash with the same machine, which is adjustable to ¼ inch, or if I must have a groove 7/8 or so, I place thin cardboard washers between each cutter blade. The rabbet can also be cut quite exact by using a fine gauge circular saw and cut one side at a time. This makes two operations, but beats using the plane by hand. If rabbets need smoothing up, then the plane comes handy, that is if you have ripped the rabbet instead of using the gainer. The lower sash is fastened with small butts, and tilts inward to allow for ventilation.

A. O. STIEN.



✦ To prevent the rusting of screws used for joining machinery, whereby they become fixed, it is recommended that the screws be dipped in graphite mixed with a non-drying oil, which will prevent any rusting for years. It also facilitates the tightening up of the screws.

## Ornamental Glass and Its Use

THE DEVELOPMENT OF THE INDUSTRY IN RECENT TIMES AND THE DESIRABILITY OF A GREATER USE OF ART GLASS IN GENERAL BUILDING

By Walter H. Helmerich

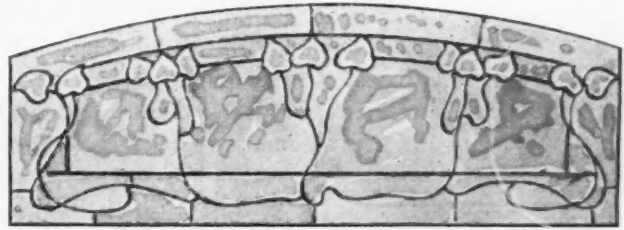
THESE is a certain conservatism among builders generally, especially among those outside the large cities, concerning the selection and the use of building materials. From long course of habit the "old standbys" are specified and used—sometimes to the advantage of the job and the owner, it is true—while other, newer materials, whose uses are not so generally known, might have been employed more economically and to much better effect. Art or ornamental glass is one of these materials. It is safe to say that ornamental glass ought to be used much more freely in ordinary building than is now the case.



One of the largest promoters of building improvements in Chicago, in a recent conversation with the writer of this article, stated that he found greater return for money invested in the art glass on his buildings than on any other line of ornamentation; saying that by spending fifty to seventy-five dollars for art glass on a flat building, cottage or bungalow he not only disposed of them more rapidly, but also frequently received several hundred dollars more for them than for houses built in the same style and manner with plain glass only. As this gentleman has at present about two hundred buildings under way, or in contemplation, in Chicago and vicinity, his opinion is worthy of consideration.

The use of ornamental glass for church windows

and for various public buildings is, of course, familiar. Neither can this be called a new product, since the craftsmen of the middle ages were masters of the art of stained glass, passing on down to us moderns many of their methods. But ornamental glass is now used in more than public buildings. Improved methods of manufacture have now brought it within the reach of builders for ordinary residence work. Special designs have been made, especially suited to houses and the smaller class of work.

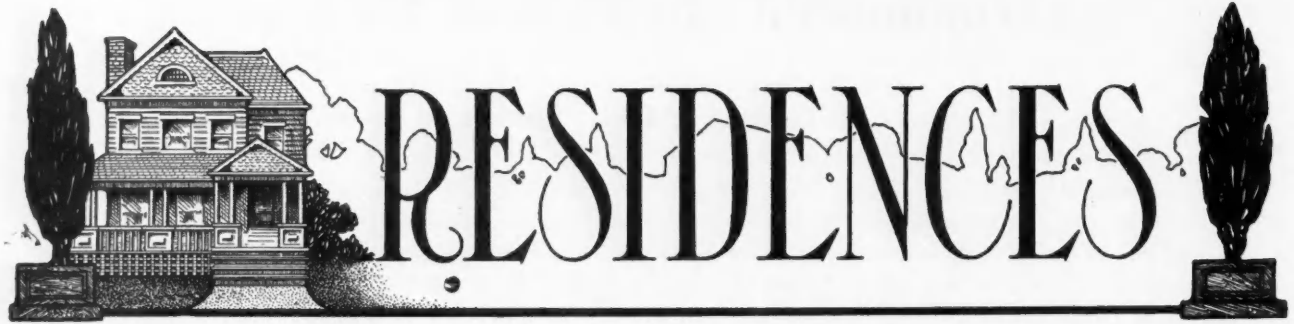


Not long ago a committee of the manufacturers of ornamental glass met in Chicago for the purpose of compiling a catalogue of art glass designs. They represented the largest and best equipped establishments of the east, west and central portions of the United States, and had designs from almost every reliable manufacturer in the art glass industry. These were submitted for selection by this committee. The purpose of publishing this catalogue is to advance the standard of work.

Not only will this be the most complete catalogue of its kind ever published, embracing the best ideas of all sections of this country and the work of the high-



est-grade artists in the profession, but it is not distributed alone to members of the organization, it having been decided to place it at the disposal of any reputable manufacturer or jobber. This is an evidence of the growing spirit of indeed making the art glass industry one that will make this country what it should be, a leader among nations in all lines of manufacture. Heretofore it has been said that we have to go to Europe for the highest grade of work in this line; but the writer, without hesitation, affirms that there is not a piece of work in the line of decorative art glass which cannot be duplicated here in our own country, and in many instances our methods are far in advance of those in use in European factories.



## Modern House and Bungalow Designs

PERSPECTIVES WITH FLOOR PLANS OF THREE MODERN RESIDENCES OF INTERESTING DESIGN—SPECIAL FEATURES NOTED

WITH the opening up again of the spring building season in all its activity and with the recurrence of the annual spring "moving day," house renters in all parts of the country are turning in great numbers to the subject of home-building, and are giving the matter much

pensive bungalow; all want modern conveniences and well-planned designs.

A number of house plans are presented this month, each well-designed and typical of its kind; as a whole they represent a wide range of styles.

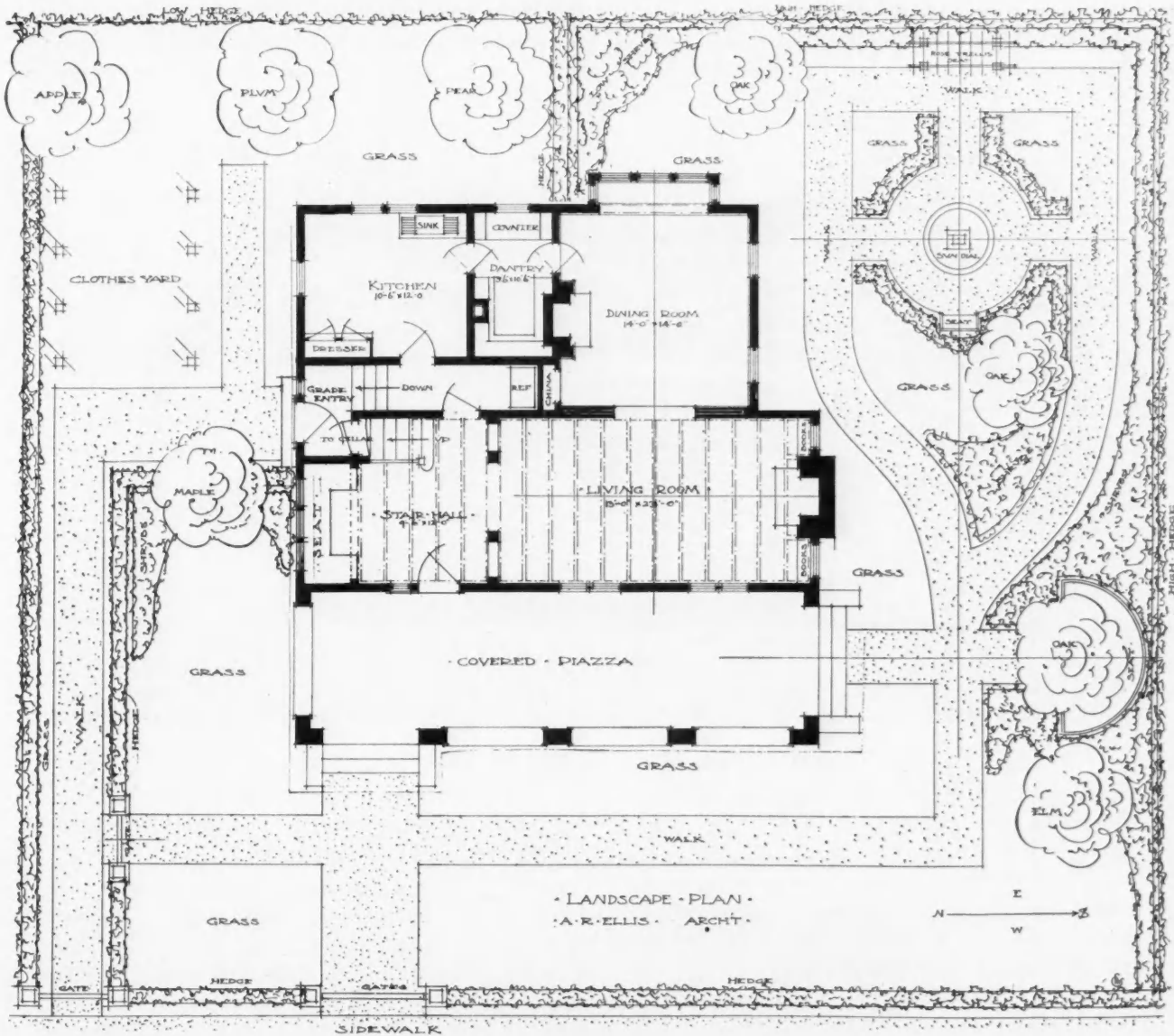
The first is designed in the English period, to be



Attractive, Well Designed House of the English Period. Cost \$8,000

thought. For these people, building plans are of the greatest interest. Minute details of the design and arrangement of houses take on an importance they never before—to them—possessed. Some are ambitious to build a fine suburban place with lawns and shrubbery; others are interested in the compact inex-

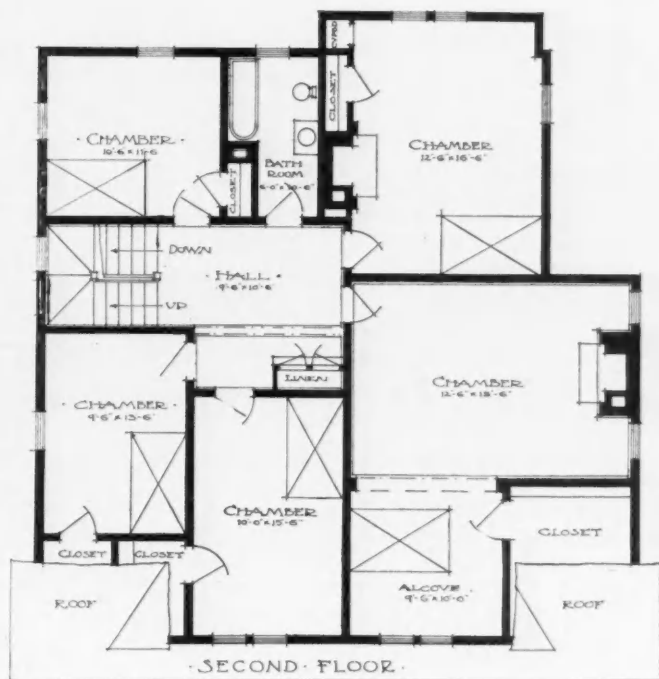
built of frame, plastered on the outside and decorated with half-timber work. The piers forming the front of the piazza and supporting the roof above have been thickened to give an appearance of solidity. The construction might be improved if these were built of brick, offering firmer support for the overhanging



roof and floor above, or solid concrete would be good.

The interior is spacious and well-balanced, on account of the stairs, hall and living-room being divided by columns rather than a solid partition. At the end of the hall the small alcove answers the purpose of a reception-room as well as being a decorative feature. The wide entrance to the dining-room also adds to the effect of spaciousness. Direct access is obtained to every part of the house conveniently. The kitchen has no outside porch but is reached by a side door which leads to a grade entry and thence by four steps to the main floor. From this grade entry, a flight of steps passes to the cellar under the front stairs.

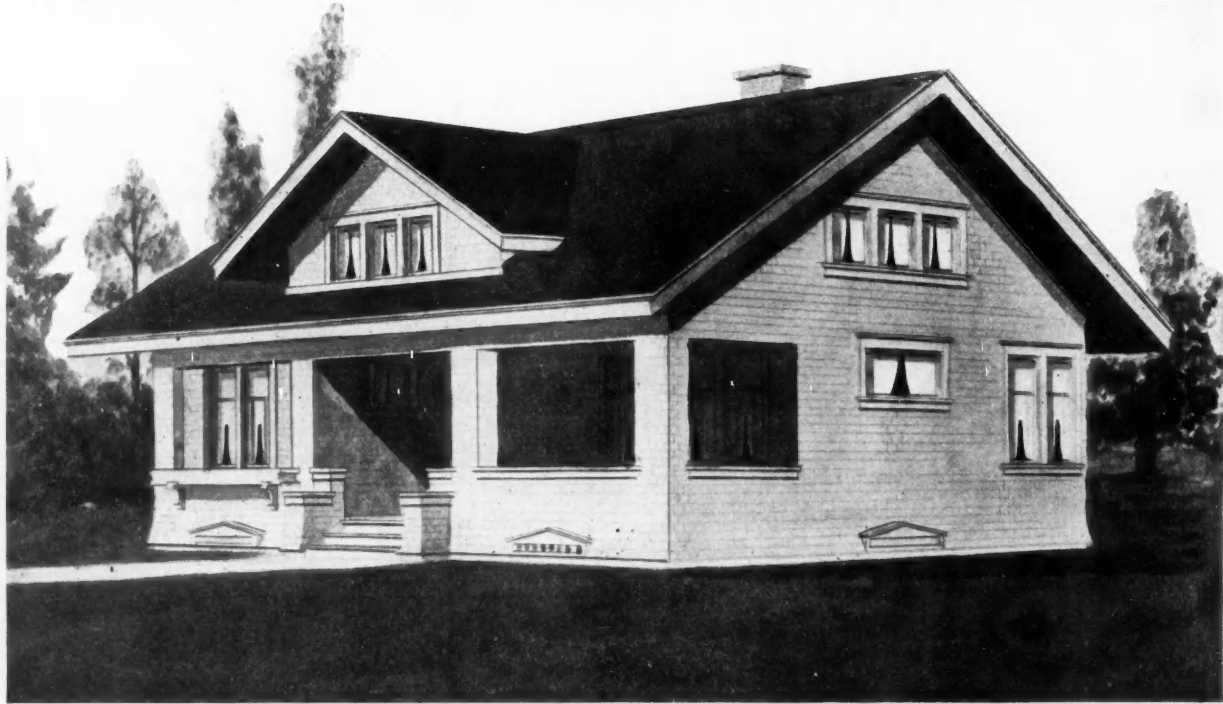
Every inch of space is utilized to the best advantage in this house. The second floor contains five splendid chambers of more than ordinary size, and there is considerable available space in the attic which could be used for storage, a playroom or sleeping-rooms. The owner's chamber is large enough to permit the addition of a private bath. With simple interior trim, hardwood floors and good plumbing and fixtures, this house is estimated by the architect, A. R. Ellis, of Hartford, Conn., to cost about \$8,000.



**A Desirable Bungalow**

No collection or assortment of building plans would be at all complete today without the bungalow being

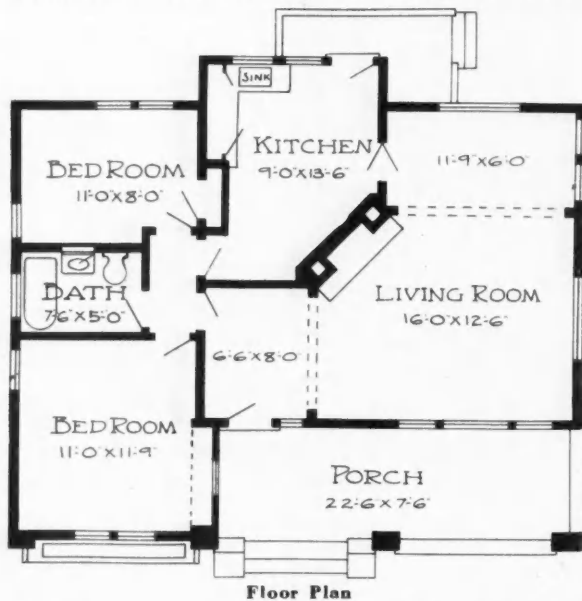
The space under the roof is left unfinished, but windows are provided on three sides to take care of ventilation. This makes the house much cooler during the



**Bungalow with Very Interesting Floor Plan—Estimated Cost, \$1,800**

well represented. The accompanying plans show one that especially recommends itself, and for a number of reasons. The exterior is artistic and attractive, and is at the same time *sensible*. It presents a very substantial appearance and is, in fact, a very well-built little house. Shingles, stained, or narrow weather-boarding is the exterior finish.

The interior of this bungalow shows an interesting



**Floor Plan**

plan. The living-room is large, 16 feet by 12 feet 6 inches, besides two large alcoves off from it, one serving as an entrance-hall and the other as a dining-room. Two nice bedrooms are provided. The bathroom is easily accessible from all parts of the house.

hot weather—removing one of the faults sometimes found with the cottage style. The cost complete with modern plumbing is estimated at \$1,800.

**A Brick Veneer House**

The design shown on the next page is that of a brick-veneer house, recently erected for Mr. J. W. Menlove, at Lincoln, Neb., after plans and specifications prepared by Woods & Corder, architects, of that place. This kind of a building, when properly erected, has all of the appearance of solid brick walls and, when the framework is properly constructed, makes as substantial a structure as when the all-brick construction is used; besides it has some advantage in preventing dampness from penetrating the inner walls.

This is a very convenient and inexpensive house. It has a large central hall with the four principal rooms well arranged with reference to it. The dining-room and living-room have large bay windows, which furnish an abundance of light. Large openings with sliding doors give access between the principal rooms. The large porch, extending across the front and circling the corner, adds much to the appearance of the house and to the comfort of its occupants.

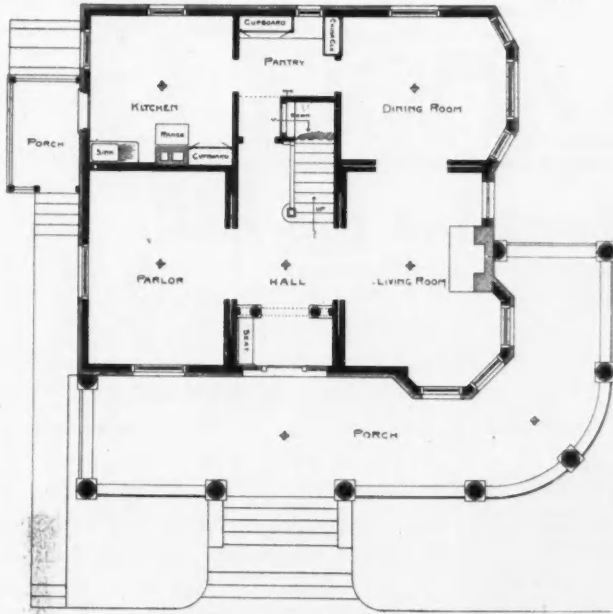
The second floor contains four good-sized bedrooms, all provided with closets. The bathroom is located near the head of the stairs with opening from the hallway. This floor also contains a sewing-room at the opposite end of the hall, where the sewing machine and other appurtenances thereto may be kept in readiness without having to use other rooms.

A box stair leads from the hall to the attic, which is floored but not otherwise finished. A balcony over

the side porch furnishes a splendid place for sunning purposes.

There is a basement under the entire building, di-

vided off into the usual rooms for cellar, laundry, furnace and fuel rooms. The house is heated with hot water and contains modern furnishings throughout.



First Floor Plan—Brick Veneer House



Second Floor Plan—Brick Veneer House

vided off into the usual rooms for cellar, laundry, furnace and fuel rooms. The house is heated with hot water and contains modern furnishings throughout.



It is supposed that the first nails were the thorns of the locust tree, some of which are eight inches long

and as hard as iron. The use of fish bones was common before Noah's time, and in all probability the first of the commodores built his raft scow with them.

They were as long and strong as our metal string bolts. Wooden pins were employed also, being driven through holes burned by hot irons before there were crude augers to bore them. We smart Americans were cutting iron nails by machinery 100 years ago at the rate of 100 a minute to the machine. The great wire nail industry started in 1886 and is now of colossal importance. Before cut nails were introduced all nails were hand forged.



Brick Veneer House, Residence of J. W. Menlove, Lincoln, Nebr., Woods & Cordner, Architects



## Two Desirable Pieces for the Hall.

COMPLETE DETAILED INSTRUCTIONS WITH WORKING DRAWINGS SHOWING HOW TO MAKE A HALL CLOCK AND A HALL TREE OF PLEASING DESIGN

**F**OR the hall clock described herein there will be needed the following pieces. Order them mill-planed and sandpapered as indicated in the stock bill. S-4-S and S-2-S are abbreviations that will be understood at the mill as meaning surfaced or sized or smoothed on four or two sides respectively. Quarter-sawed white oak makes up nicely. It is generally carried in stock by most dealers and takes a beautiful finish. Plain-sawed red oak is very appropriate for Mission design such as these:

4 posts  $1\frac{3}{4}$  by  $1\frac{3}{4}$  by 6 feet 1 inch. S-4-S.

3 rails 1 by 4 by  $15\frac{3}{4}$  inches. S-4-S.

4 rails 1 by 4 by  $10\frac{1}{2}$  inches. S-4-S.

1 rail 1 by 2 by  $15\frac{3}{4}$  inches. S-4-S.

1 rail 1 by  $1\frac{1}{2}$  by  $15\frac{3}{4}$  inches. S-4-S.

2 rails 1 by  $2\frac{1}{2}$  by  $10\frac{1}{2}$  inches. S-4-S.

1 stile  $\frac{7}{8}$  by  $1\frac{1}{2}$  by  $48\frac{3}{4}$  inches. S-4-S.

2 panels  $\frac{1}{4}$  by 7 by  $48\frac{3}{4}$  inches. S-4-S.

2 panels  $\frac{1}{4}$  by  $9\frac{3}{4}$  by  $14\frac{3}{4}$  inches. S-4-S.

1 panel  $\frac{1}{4}$  by  $14\frac{3}{4}$  by  $14\frac{3}{4}$  inches. S-4-S.

1 top  $1\frac{3}{4}$  by 16 by 22 inches. S-2-S.

2 brackets  $1\frac{3}{4}$  by  $2\frac{1}{4}$  by 4 inches. S-2-S.

Stock for the box which is to contain the movement should be made of  $\frac{1}{2}$ -inch yellow poplar. The size and construction of the box will depend somewhat upon the kind of movement that is to be used. Ordinarily there will be needed:

2 pieces  $\frac{1}{2}$  by 6 by  $16\frac{1}{2}$  inches. S-2-S.

2 pieces  $\frac{1}{2}$  by 6 by 7 inches. S-2-S.

1 piece  $\frac{1}{2}$  by 8 by 8 inches. S-2-S.

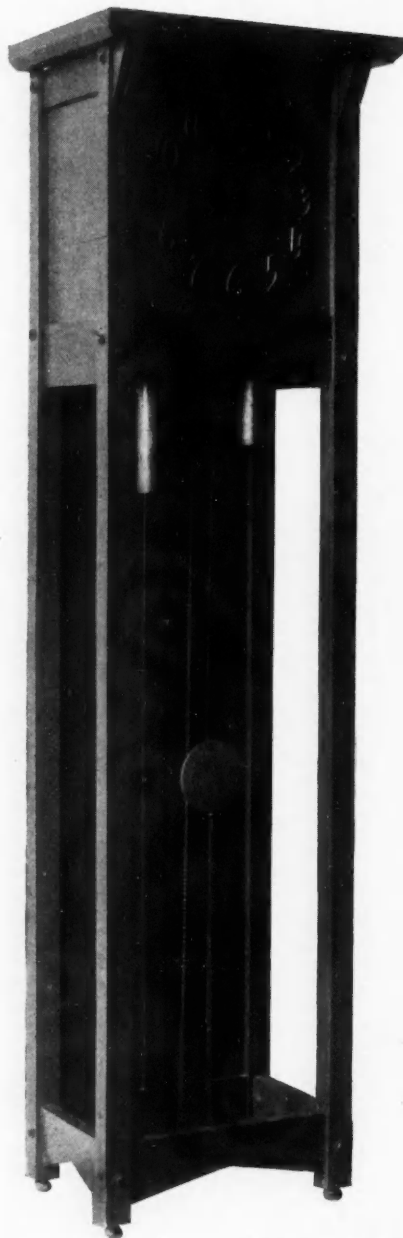
Begin work by squaring the posts to length. Place them side by side and lay off the mortises and the auger holes for the lag screws. Chisel these mortises and bore the holes. The tenons are to be stub tenons—about  $\frac{1}{2}$  inch long—so that the mortises need not be cut much deeper than  $\frac{1}{2}$  inch. These stub tenons hold the rails from turning, the lag screws giving the strength needed. A  $\frac{1}{4}$  by  $2\frac{1}{2}$  inch lag screw is a good size to use. There will need to be a smaller hole in the end of the rail than is bored in the post— $\frac{3}{16}$  inch is about right. It will be well to have a few of the screws  $\frac{1}{2}$  inch longer than the others, to be used in case the shorter screws should strip the wood threads because of over wrenching.

Lay off the tenons of the rails and cut them. These rails are all 1 inch thick and will stand shouldering on the four sides of each end. Three-eighths or  $\frac{1}{2}$  inch is a good thickness. The location of the holes in the ends of the tenons can best be obtained after the tenons are fitted into their mortises.

Plow the rails and posts for the panel grooves. Cut and fit the panels and then assemble the whole, glueing the tenons before inserting the lag screws.

The top may now be squared up. It has a  $\frac{3}{4}$ -inch bevel on the front and ends. Fasten it in place, nailing down into the posts.

The two brackets are easiest got by squaring a piece to 2 by 3 inches and  $\frac{3}{4}$  inch long, then ripping diagonally. Plane these surfaces smooth and put on the





ornamental groove as shown in the photograph. Fasten the braces with light brads, covering the heads with putty colored to match the finish.

The face or dial may be either of wood or of heavy copper. Whichever is used, there will be needed four corner blocks fastened to the rails into which screws through the face can be fastened.

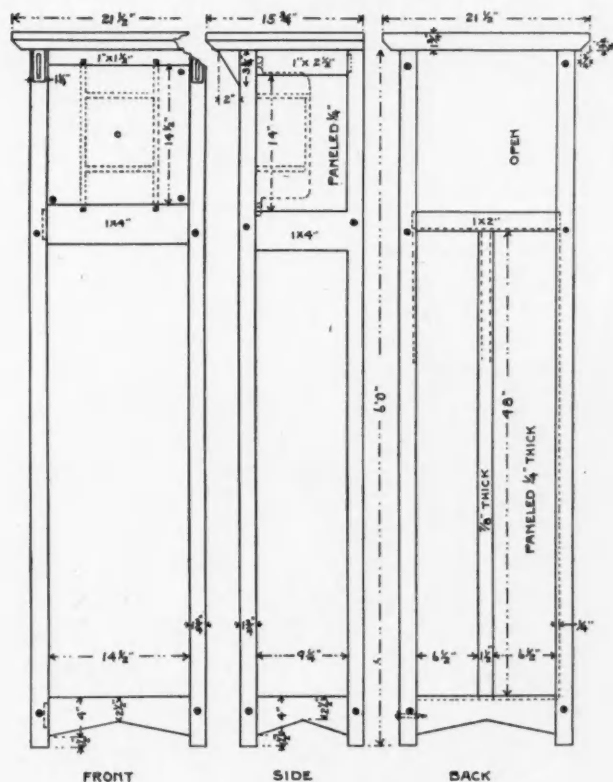


FIG. 1. HALL CLOCK.

Bronze figures for the dial have two prongs each, which are put through face and clinched on the back.

The size and shape of the box for the "works" will have to be determined after they are purchased. In general there will need to be two verticals fastened top and bottom to the front rails of the frame, as indicated in the drawing with two horizontals, the lower so placed as to bring the pinion to the center of the dial, approximately. Hooks with nuts are furnished that permit the fastening of the "movement" to the bottom horizontal. They are long enough to permit of a little "blocking up" if the pinion is too low. A back is needed to keep the dust out. Like the front, it should be fastened with screws so as to allow easy access to the movement.

The adjustment of a clock is rather delicate, and if the clock is out of level the ratchet will not release properly, hence the clock will not "run."

To permit of the adjusting of the clock frame to uneven floors, bore and insert four lag screws—large-headed ones—in the lower ends of the posts. The clock frame will rest on these and may be turned at will so as to "take up" any unevenness in the floor.

As for the finish, a dark effect will be most appropriate for this design. A water stain, sanded lightly when dry, followed by a dark filler, colored to match

the stain, and this when dry by several coats of wax, makes an easy and satisfactory finish.

#### How to Make a Hall Tree

A companion piece for the hall clock is the hall tree, Fig. 2. For this will be needed the following:

- 1 post 2 by 2 by 6 feet 2 inches. S-4-S.
- 4 feet 1 5/8 by 4 1/4 by 11 1/2 inches. S-2-S.
- 1 base 2 by 11 by 11 inches. S-2-S.
- 4 braces 1 1/4 by 1 1/4 by 6 inches. S-4-S.
- 8 pegs 3/4 by 3/4 by 6 1/2 inches. S-4-S.

The post may be made first and the V-shaped grooves cut as indicated on the drawing. Next make the base as detailed. The hole in the center is for the lag screw which holds the post to it, and should be 3/8 inch in diameter. In the end of the post should be bored a 1/4-inch hole, also for the lag screw. A 3/8 by 3 1/2 or 4 inch screw will be needed.

The four feet are to be shaped as indicated in the drawing. Angles of 30 degrees and 60 degrees are easily obtained. Hold the beam of the bevel against

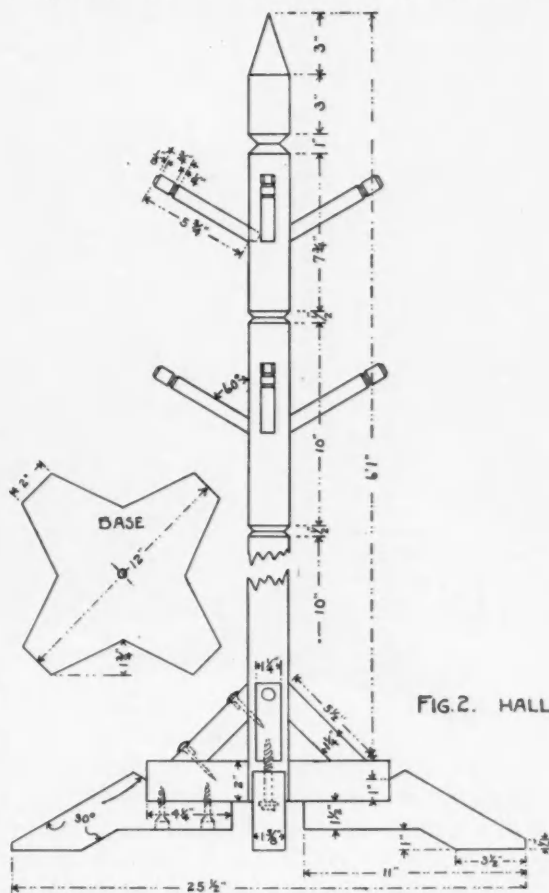


FIG. 2. HALL TREE

either the blade or tongue of the steel square. Adjust the blade of the bevel so that it shall be the hypotenuse of a right-angled triangle in which its length shall be twice that of one or the other of the sides of the triangle made by the edges of the blade and tongue of the square.

The braces are cut at angles of 45 degrees to the length indicated. The pegs have their mitered ends cut at an angle of 60 degrees. They may be fastened to the post by dowels, but a better way is to cut them

long enough to "tenon them in." There will be considerable "prying" on them and they should be "set in" as far as is possible.

Time will be saved and a better finish result if the parts are stained and filled before putting them to-



gether—except those which have to be glued. Glue will not stick to oiled surfaces to advantage.

The feet are to be fastened to the base with strong flat-head screws from underneath. The base is fastened to the upright with the lag screw and the braces are nailed to base and post, the heads of the nails being covered with ornamental heads, representative of the old hand-wrought nails.

The finish for the hall tree should be the same as that for the clock.

**New Type of Saw Handle**

Our readers will be interested in the following description of a comparatively new style handle, designed by E. C. Atkins & Co., for hand, rip and panel

saws. The handle is so constructed that the wrist and saw arm are permitted to operate on a free and easy line and it is plain that through the use of this handle



Fig. 1

each ounce of power is brought into full play, making the operation not only more rapid, but much easier than heretofore.

In order to demonstrate the idea, we give below, illustration (Figs. 1 and 2, respectively) of both the old and new style handle.

The line drawn from the handle to the point of the saw indicates the natural position of the saw arm, when grasping the handle in an easy manner. You will notice that the tooth or cutting edge is on an angle, so that the operator is forced to bend the wrist upward in order to secure the full cutting force.

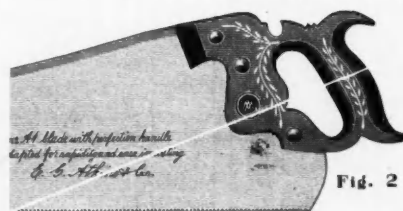


Fig. 2

Fig. 2 shows the new-style handle. You will note how low it sits on the blade. It will also be apparent that the hand may now grasp the handle and secure the full cutting force of the teeth while the wrist and saw arm is an easy, natural position.

In other words, the wrist position is well demon-

strated by referring to the following illustrations. Fig. 3 showing the position of the wrist and saw arm while using the new style handle, and Fig. 4 demonstrating the forced position which the sawyer is obliged to adopt with the old style handle.

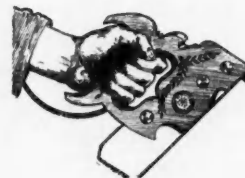


Fig. 3



Fig. 4

strated by referring to the following illustrations. Fig. 3 showing the position of the wrist and saw arm while using the new style handle, and Fig. 4 demonstrating the forced position which the sawyer is obliged to adopt with the old style handle.

**His Statistics**

At the Boston Immigration Station one blank was recently filled out as follows:

- Name—Abraham Cherkowsky.
- Born—Yes.
- Business—Rotten.

**His Title Clear**

A new arrival in Hades was walking around putting on airs. Somewhat annoyed by his self-important manner, the Devil said to him: "Say, look here, you walk around here as though you owned this place." "Well," answered the newcomer, "I do. My wife gave it to me before I died."

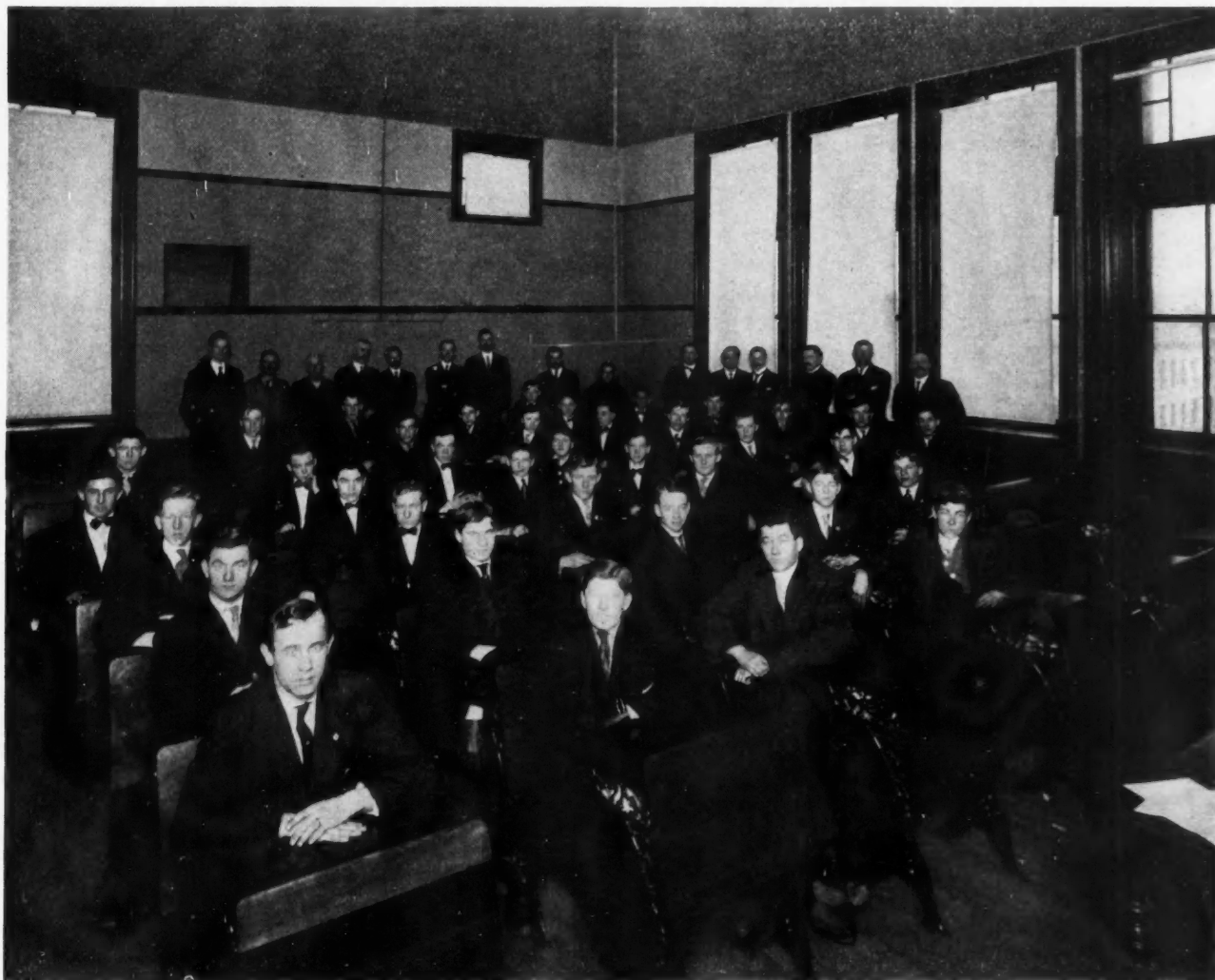
# Chicago Building Trades Apprentice School

INDUSTRIAL EDUCATION APPLIED DIRECT WHERE IT WILL DO THE MOST GOOD—A NOTABLE EXAMPLE OF FORESIGHT AND PROGRESSIVENESS

**I**N THE midst of all the controversy and the discussion pro and con over the question of industrial education in our public schools, a school has been established in Chicago and conducted now for

question by teaching those boys and young men who are actually engaged in the practical work of the world, the building trades apprentices.

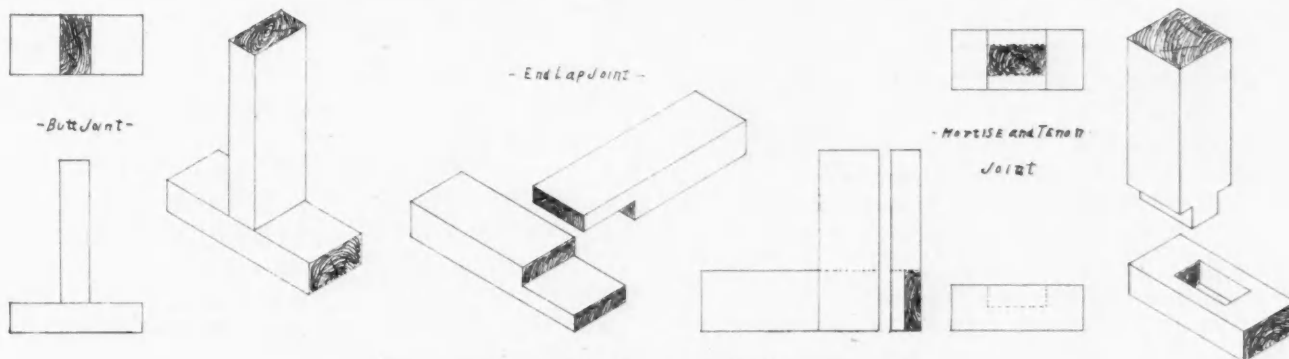
This school was established and is maintained by



Group of Apprentices, Instructors and Speakers, Closing Exercises, March, 1909

five years—so it is no longer in the experimental class—which cannot fail to meet the approval of everyone. This is the Building Trades' Apprentice School. It gets right at the heart of the industrial training

the journeymen carpenters and by the carpenter contractors, working together to give the apprentices a better training and so make them more efficient workmen. The school is in session for three months each

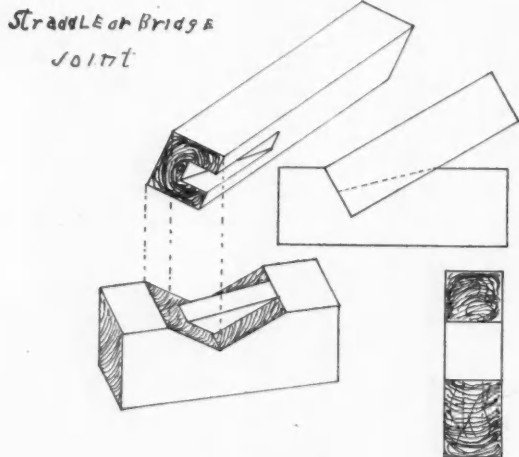
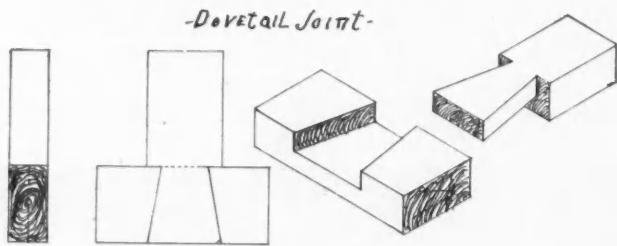


Carpentry Details—The Work of a First-Year Apprentice

winter. During those three months enough of "theory" and book explanation is given to properly balance the other nine months of practical training "on

of them are carpenter apprentices, one-third brick-layer's. All apprentices of these trades in the Chicago district, whether affiliated with any organization or not, are supposed to attend.

The course of study centers around architectural drawing, with mathematics as a close second. Considerable attention is given to spelling and penmanship as these are essential to all lines of education. As a rest from long periods of drawing and mathematics, geography and history are taught in a minor

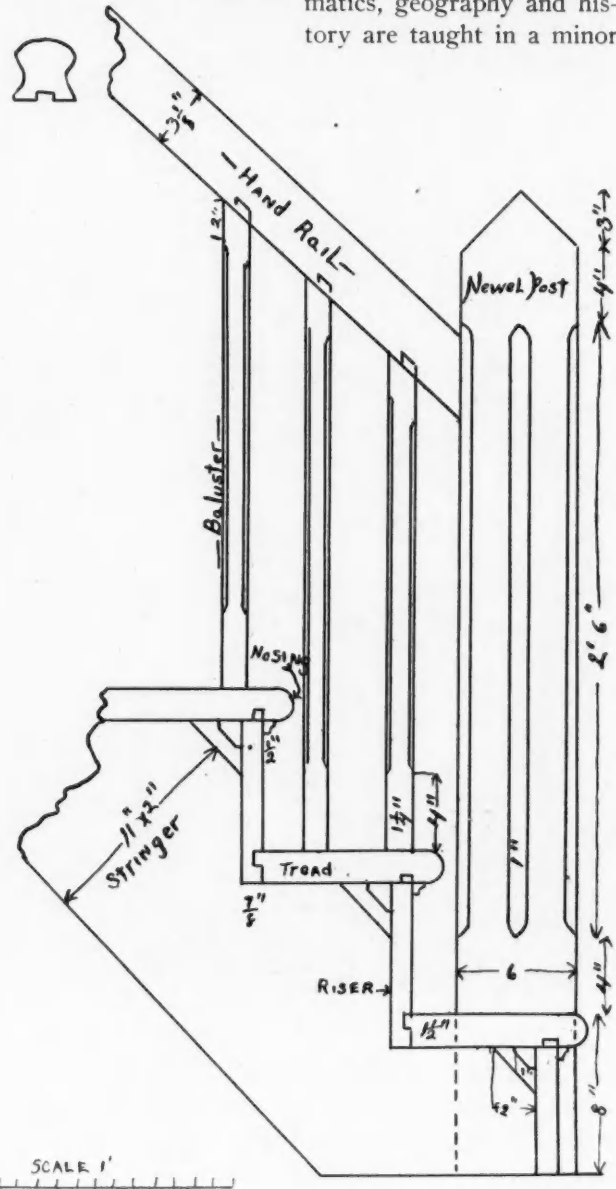


First Year Work

the job." During those three months in school each year the boys receive their regular weekly wages just the same as though they were at work, the contractor



or builder to whom the boy is indentured paying him. In the session of this year, just closed, nearly 300 young men have been in attendance; about two-thirds



degree. The work in mathematics is such as is necessary for a man to know in order that he may specify and estimate as well as handle such accounts and problems as must naturally arise in general as well as in his particular line.

The city school board supplies the building, equipment and teachers for this school.



## Value and Use of the Buzz-planer

HOW THIS IMPORTANT MACHINE SHOULD BE SELECTED AND HANDLED FOR BEST RESULTS IN CARPENTER AND WOODWORKING SHOPS

By W. D. Graves

HAVING in mind an Irish bull, which was thought familiar to all, the writer entitled the preceding article of this series "The Works of a Buzz-saw." While the change of title by the editor was truly a vast improvement, it seems a pity not to dwell for a moment on the world of suggestion in Paddy's expression: "It's wonderful, the works of a wheelbarry, when it's well wrought." In the speed of modern automatic production, and in the wonders of automatic machinery, we are apt to consider too lightly the possibilities which skill may develop in the simpler ones. As, in our awe of big guns, we are prone to forget "the men behind the guns"; so are we apt to think more of the machine than of its manipulation. The writer once stood for hours, agape at the wonders of a brussels carpet loom, before he gave thought to the men who brought about its upbuilding by doing just such work on the crudest of machines. Wonderful indeed are the capabilities of any simple machine "when it is well wrought." Hence, it is well, before investing in elaborate special machines, to give careful thought to what may be done with the simpler ones—more to use and get acquainted with them; for "one never knows till he tries."

After the buzz-saw, perhaps the buzz-planer is the most generally useful and essential machine for the small plant. For some reason it seems to appeal but little to the uninitiated, and one rarely appreciates it till he has used it; but it is capable of wide application in general job work, and one has to use it but a short time till he feels that he cannot get along without it. True, this is somewhat apt to be the case with any machine; but it seems especially so with the buzz-planer.

As the primary use of such a machine is for jointing, rigidity is perhaps an even more essential feature for it than for other machines, so one should beware of too many adjustments. Be it said, however, that there appear to be no buzz-planers on the market with adjustments which are necessarily detrimental; though, as with most other machines, the demand for something cheap tends to incline some makers to too great economy of metal. As a rule, one wants all the adjustments he can get; being ever watchful that they

are not so made as to weaken the machine.

The cylinder should be long enough to plane the widest work likely to be brought to it, and should be slotted on four sides. Even if the bulk of the work is narrow one can use the whole length of the knives by setting the fence at different points for different job. In following this method it is better to use the back end first; thus leaving the front end and corners sharp as long as may be, for the occasional job of rabbeting. By having the four sides slotted, even though one may never want to use anything but the regular straight knives on two of them, he is able, on occasion, to slide one knife end in a trifle; and to so get rid of a part of the ill effect of a bad gap, and to postpone the evil day of grinding. Such postponement is not procrastination, for the removing and resetting of knives is an item of moment; taking as much time in the case of short knives as in that of long ones. Also, with the four sides slotted, and with a small stock of knife blanks, one may "make a stab" at making moldings. Indeed, it is often more economical to work a short piece of an odd style on a buzz-planer than on a molder.

Another feature of considerable importance is to have the cylinder as small, and the throat opening as narrow, as may be. Though the danger of dropping in a finger or hand is quite largely eliminated by the guards so commonly advertised and used nowadays, still a wide throat remains a yawning chasm tending to produce an aching void where one's fingers were. Theoretically, perhaps, it is true that a larger head will do smoother work; but practically the gain in this respect due to a larger cutting circle is more than offset by the impracticability of properly balancing a large head.

The first "Woodworth" planers had cylinders (or knife-carrying frames) 16 inches in diameter; but it was soon found that smaller ones did the work better. If one has been made too small, the writer has not seen it. So far as safety is concerned, the size of the cylinder on a surfacer has little bearing; but in the case of a buzz-planer, it is an important item, which should not be overlooked.

Buzz-planers are usually arranged so that the front

end of the knives may be used for rabbeting; and that end of the knives should be ground to a slight bevel, in order to give good clearance and insure a smooth cut on the back of the rabbet. If the head is slotted on four sides, however, it is often advantageous to use a supplementary pair of knives for this purpose. By placing these sufficiently well back on the head, with projection sufficient for the depth of the rabbet, the stuff may be jointed and rabbeted at one cut. Of course champfering and beveling are within the regular line of work of the machine; and one is also constantly finding it nicely adapted to an endless variety of jobs.

Much has been said of the danger in operating buzz-planers; and there is danger—to the careless operator. As due care in operation tends rather to increase than to diminish the output of any machine, it is well, besides having the best safety appliances available, to know how to take care. As there is only one point in the buzz-planer of serious danger, and as that is the point where the work is done, it would seem that one ought to be able to keep his fingers out of it.

In setting up, always make the throat as narrow as is compatible with the work in hand; for thus better

work is done, and the zone of danger is made narrower. In running small stuff, the habit, easily acquired, of hooking the little finger over the top of the fence, tends to safety. With long and slender sticks, it is well to have a bench or table to support the end after it runs off the machine table proper; for many, the good finger has been lost by such a stick turning from under it. Also, with such stuff, it is well that the right hand should be taken off the extreme end just before it reaches the knives; the cut being finished by pressing the moistened finger on top of the stick, *ahead* of the knives. Thus, if the end happens to be cross grained and to sliver off, a thumb is likely to be saved.

The suggestion that a wide machine is preferable, and that the back end of the knives be used first, plainly implies the desirability of a guard. A guard is desirable; yet one should not become too dependent upon it. There is no occasion to put one's fingers on the cylinder when it is running; and one should learn to keep his fingers above the table under all circumstances. While the writer has only approbation for all practical safety devices, he greatly reprobates the need of them.

## Hoisting Ropes and Pulleys

EASILY REMEMBERED RULES FOR DETERMINING THE STRENGTH OF ROPES AND CABLES OF DIFFERENT SIZES—MECHANICAL ADVANTAGE OF THE PULLEY

By T. B. Kidner

**A**MONG the many valuable suggestions for articles likely to be of interest to our readers which have come to hand lately from our correspondents, is a request for an article dealing with the strength of rope gearing, particularly the guy lines and hoisting gear of derricks and similar appliances. This is an important question, especially in view of the appalling loss of life amongst workers caused by defective ropes, chains and other hoisting gear.

Most of the engineering pocket books give tables of the strength of ropes which have been deduced from experiments made either by government investigators or leading scientific engineers. The following particulars are taken from a published table which provides for a safe load for ropes in tons of 2,000 pounds:

SAFE LOADS IN TONS

For common hemp rope.....	$1/3 D^2$
For iron wire rope.....	$8/3 D^2$
For steel wire rope.....	$14/3 D^2$

$D^2$  means the diameter of the rope squared, that is, multiplied by itself. For example, a hemp rope of 2-inch diameter would give  $2 \times 2 = 4$ , and  $1/3$  of 4 is  $1 \frac{1}{3}$ , that is,  $1 \frac{1}{3}$  tons for the safe working load of a rope of 2-inch diameter.

Or, if an iron wire rope of  $1/2$ -inch diameter be taken, we get  $1/2 \times 1/2 = 1/4$  and  $1/4 \times 8/3 = 2/3$  of a ton for the safe working load. A steel wire rope of the same diameter gives a proportionately greater result,

by the table, as follows:  $1/2 \times 1/2 = 1/4$  and  $1/4 \times 14/3 = 1 \frac{1}{6}$  tons for the safe load.

This little formula is not difficult to apply and keep in mind if it be remembered that it is *the square of the*

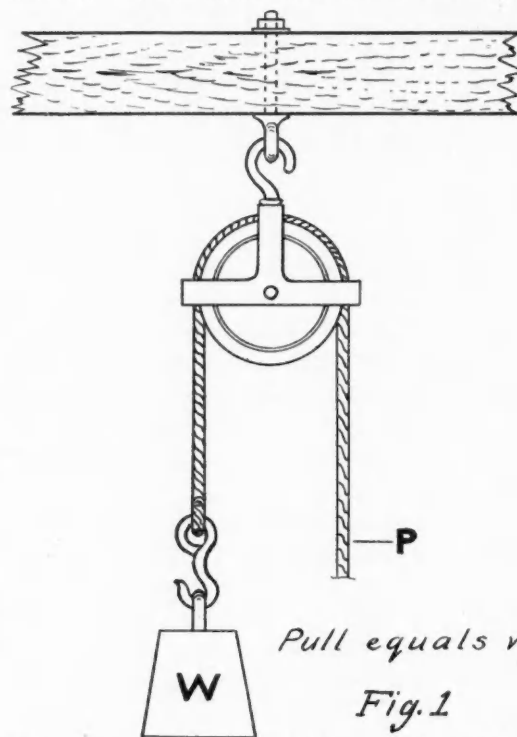
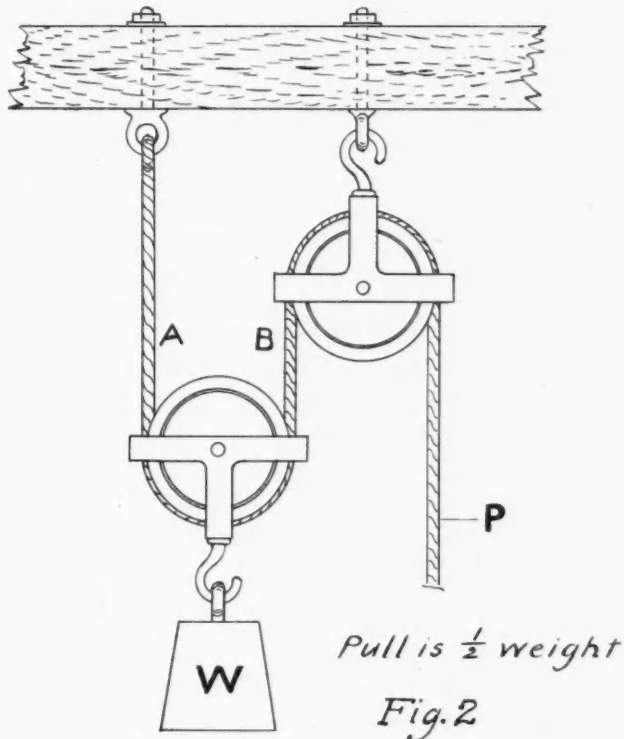


Fig. 1

diameter of the rope which must be taken. This is important, for it will be recalled that in purchasing ropes the nominal size always given is that of the

circumference. Thus, a 3-inch rope means a rope of 3-inch circumference, but only 1 inch (nearly) in diameter, and an 18-inch manila (hemp) hawser is only 6 inches in diameter.

Another important point to consider in connection with hemp ropes is that there is considerable loss of strength in them from wear, tear and exposure to the



weather during a few months' working. In Anderson's standard tests he found great variation between the strength of apparently good rope which had been used for a time and of new rope of the same size and make. A piece of 6-inch Italian hemp rope, after working, gave  $10\frac{3}{4}$  tons only, as against a breaking strength of  $14\frac{1}{4}$  tons for new. An old piece of 6-inch Russian hemp rope broke with  $5\frac{1}{2}$  tons, while a new piece of the same rope required  $11\frac{1}{4}$  tons. This rapid deterioration in the strength of hemp ropes is one of the main causes which have led to the general adoption of wire ropes for hoisting purposes in modern practice, for a good wire rope may be used for a long time with little or no loss of strength.

Hemp ropes are still used almost universally for slings, and as the breaking of these is a frequent cause of serious accidents and deaths, it may be worthy of note that the ordinary form of doubled sling (usually a spliced loop) does not give double the strength of a single rope under a test, as might perhaps be fairly expected. If, however, an iron thimble be used in the end of the sling where the hoisting hook is inserted, a sling will generally stand double the strain of a single rope.

It may be well to mention, however, that although, as stated above, most engineering books give rules for finding the strength of ropes, some authorities do not

place much reliance on them. Trautwine goes even further and says: "The common rules for finding the strength of rope by multiplying the square of the diameter or circumference by a given co-efficient are entirely erroneous." He places great confidence on the tables published by the leading manufacturers of ropes, especially the wire rope makers, and it is probable that, speaking generally, the manufacturers' tables of strength are the most reliable guide.

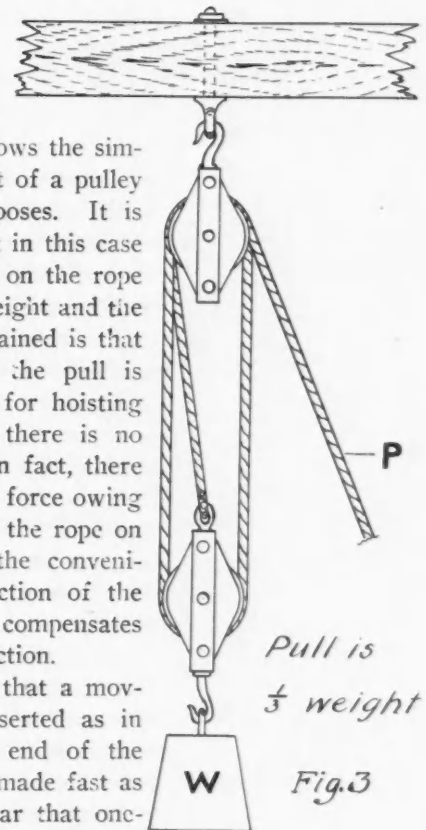
But one cannot get very far in considering the strength of ropes for hoisting purposes without coming to the mechanical advantage gained by the use of movable pulleys or blocks. Every practical man knows the advantage gained by using a tackle composed of a pair of blocks instead of a single pulley for hoisting heavy weights; one man being able to hoist very heavy loads by employing, for instance, a three-sheave and a two-sheave block properly rove or threaded.

The principle by which this mechanical advantage is gained is quite simple and may be demonstrated by means of a few diagrams so as to be readily understood with a very little

study. Fig. 1 shows the simplest arrangement of a pulley for hoisting purposes. It is quite evident that in this case the force or pull on the rope must equal the weight and the only advantage gained is that the direction of the pull is more convenient for hoisting the weight, and there is no gain of force. In fact, there is a slight loss of force owing to the friction of the rope on the pulley, but the convenience of the direction of the pull more than compensates for the loss by friction.

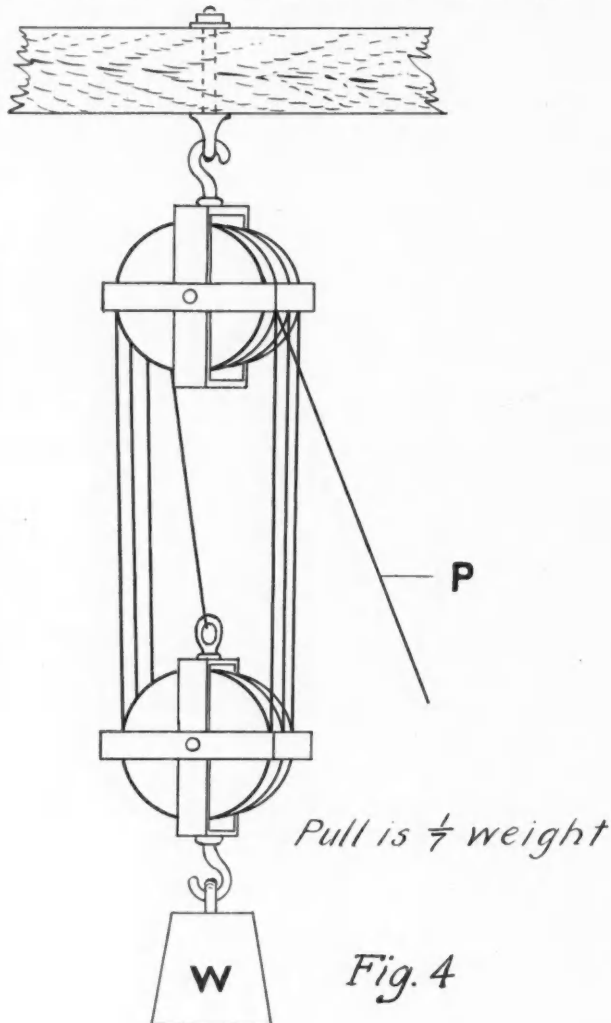
But supposing that a movable pulley is inserted as in Fig. 2 and one end of the "fall" or rope is made fast as shown. It is clear that one-half the weight is borne by the rope at A and one-half by B, and that therefore the pull or force required at P will be just half the weight, or, in other words, the mechanical advantage of such an arrangement is 2. But as it is a universal law of nature that one cannot get something out of nothing (or for nothing), there is a corresponding loss in the rate of hoisting, the weight being lifted only half as fast as the part P moves.

Fig. 3 shows a tackle composed of a pair of blocks, the upper having two sheaves or pulleys, and the



lower block one pulley. In this case the pull or power required at P is only one-third of the weight. In other words, the power required is equal to the weight to be raised, divided by the number of pulleys round which the rope passes. Or to put it yet another way, which is just as easy to remember, divide the weight by the number of parts of the rope, not counting the free or pulling end, and the result will give the pull or force required.

This rule may be applied whatever the number of pulleys may be, a four-block and three-block tackle as in Fig. 4 giving a mechanical advantage or gain in



force of 7; that is, the pull required will be one-seventh of the weight to be hoisted. Of course, the friction increases with the number of pulleys and the actual force required would be one-seventh of the weight, plus power enough to overcome the friction. Otherwise the weight would be just balanced, or, as the scientist would say, in equilibrium, if exactly one-seventh the weight were applied as the pulling force.

The question is sometimes asked as to the proper arrangement of pulley blocks; that is, whether or not it is necessary to have one more pulley or sheave in the upper block than in the lower. While this is by far the most common arrangement, it is by no means universal, and a tackle arranged with an equal num-

ber of pulleys in the upper and lower blocks is quite correct. In this case the mechanical advantage is 8; that is, the weight can be divided by 8 to give the force or pull required on the free end of the rope at P.

The relation of this matter of pulleys to the strength of ropes should be obvious, for it is clear that if the pull or strain on the rope is lessened by the number of pulleys over which it passes, a much lighter rope can be used by increasing the number of pulleys.

At the same time it must not be forgotten that every advantage gained in force by the use of pulleys is at the expense of speed. While the weight in Fig. 4 can be hoisted with a pull equal to one-seventh the weight (plus the overcoming of friction) yet the rate of movement of the weight is only one-seventh the rate of the free or pulling end of the rope.

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### No Race Suicide Here

Fra Torro McRaye relates that while he was clerking in a shoe store in Quebec the following order was received from a worthy habitant:

"Monsieur, please put some shoe on my leetle family, like dis, and send by Sam Jamison, de carrier:

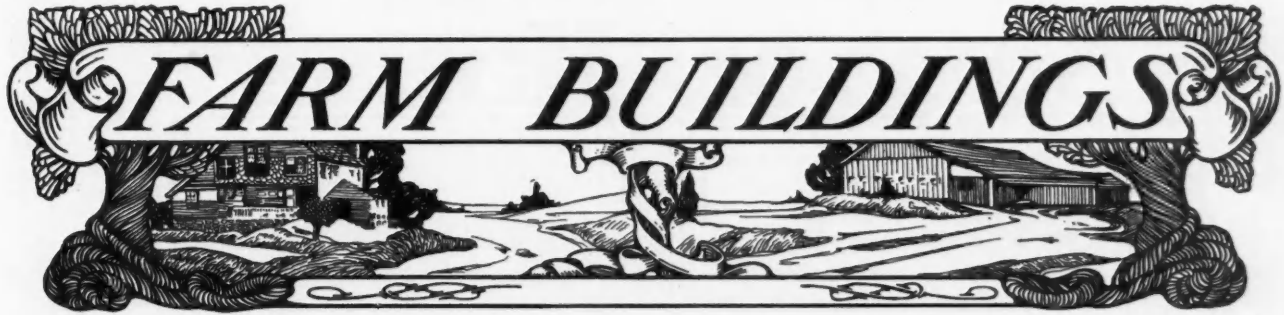
"One man, Jean St. Jean, thirty-nine year, me; one woman, Sophie St. Jean, thirty-eight year, she; Hermedes and Leonore, nineteen year; Honore, eighteen year; Celena, seventeen year; Narcisse, Octavia and Philias, sixteen; Baptiste, fifteen; Celeste, fourteen; Philippa, thirteen; Emile and George, twelve; Babette, eleven; Madore, ten; Pierre, nine; Eugene, we lose him; Paul, seven; Alphonse, six; Gaston, five; Armand, four; Maurice, three; Edouard, two; Muriel, one year; Hilare he go barefoot. How much?"—*The Fra.*

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### Folding Monkey Wrench

Nowadays almost every sort of a tool is made so that it can be folded up into a small compass when not in use. One of the most useful of these is a folding monkey wrench which has been invented by an Indiana man. This implement is especially convenient for plumbers and automobile drivers, but many other people will find it valuable, as it can be dropped into a handy pocket or hung upon a nail or any other projection that is within easy reach. The wrench has a handle which works on a pivot. When not in use the handle folds over one side, like the blade of a jack-knife, and when the tool is in operation it is opened out to its full length. The jaws work by means of a screw, as in an ordinary wrench, but this screw has a nut mounted upon it which fits into slots on either side of the handle. When the handle is open the nut keeps it rigid and when it is closed the nut fits into the slot on the other side and keeps it closed. At the other end of the handle is a ring by which the tool may be hung up.





## Compact Horse and Cow Barn

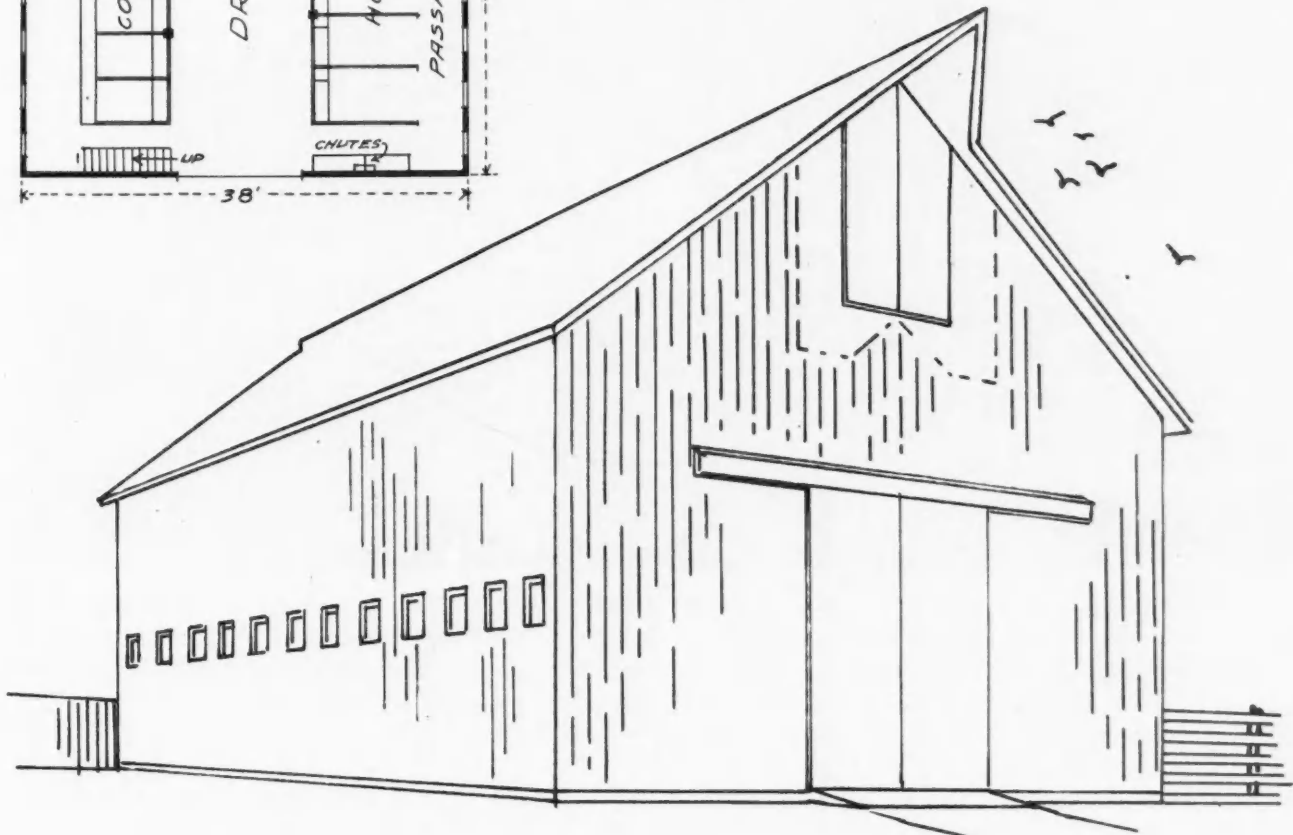
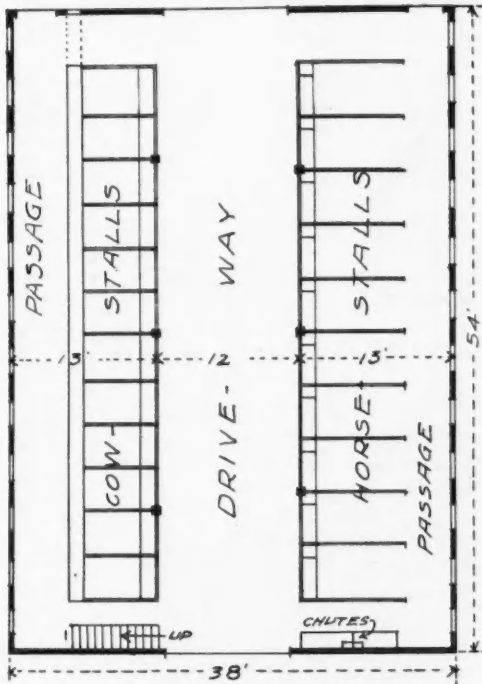
PERSPECTIVE AND PLAN OF A WELL-ARRANGED BARN OF PROPER SIZE TO STABLE TEN HORSES AND TWELVE COWS

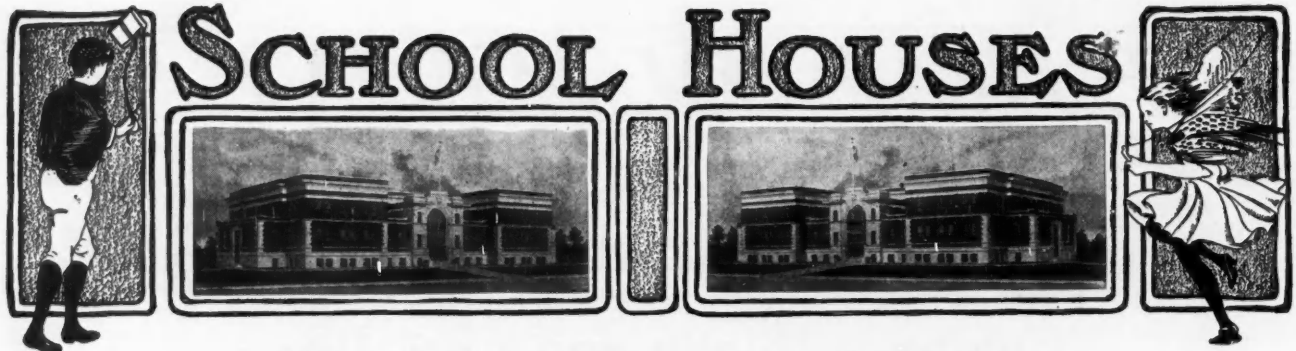
**T**HIS barn has been designed and arranged at the request of one of our subscribers, James E. Weaver, of New London, Ind., to meet certain special needs, as explained in the following letter:

"I would like to know about what size to build a barn so as to give stables for ten head of horses and ten or twelve cattle. It should also have a driveway so that a load or two of hay could be protected from a storm, if such should come up while harvesting. The hay is to be taken up at the end of the barn."

This design seems to fulfill all these conditions in a very satisfactory way. The barn is 38 feet wide by 54 feet long. It is intended for a level site—no basement to be used. A driveway extends straight through the barn and is ceiled over high enough to allow a full load of hay to be handled without difficulty. The ceiling over the horse and the cow stalls is not so high.

To suit many locations this design would doubtless be improved by cutting another doorway in the front, in line with the passage back of the horse stalls. Hinged boxes for grain and feed could be arranged along one side of the driveway.





## Desirable Six-room School

PERSPECTIVE AND FLOOR PLANS OF A MODERN SIX-ROOM SCHOOL DESIGNED IN COMPACT, ECONOMICAL AND CONVENIENT FORM

**T**HE problem of designing a 6-room school building that is conveniently arranged and is at the same time of economical construction and without waste space is one that has given architects a good deal of thought. To obtain the greatest

way. There are two entrance-ways, with broad stairs leading to the central corridor. A small office for the principal occupies the strategic position in the corner between the stairs. The corresponding space on the second floor is put to good use as a library. The



amount of room with the least expense for foundations, outer walls and roofs, a building of square or nearly square plan is desirable. So the problem resolves itself into arranging the three class-rooms on each floor, together with necessary hallways and stairs, into a desirable square plan.

The accompanying design by Geo. W. Ashby, architect, meets all the requirements in a very satisfactory

class-rooms are very well lighted and ventilated.

The exterior appearance of this school is dignified and pleasing. The material to be used is red brick, trimmings of stone, and slate roof.



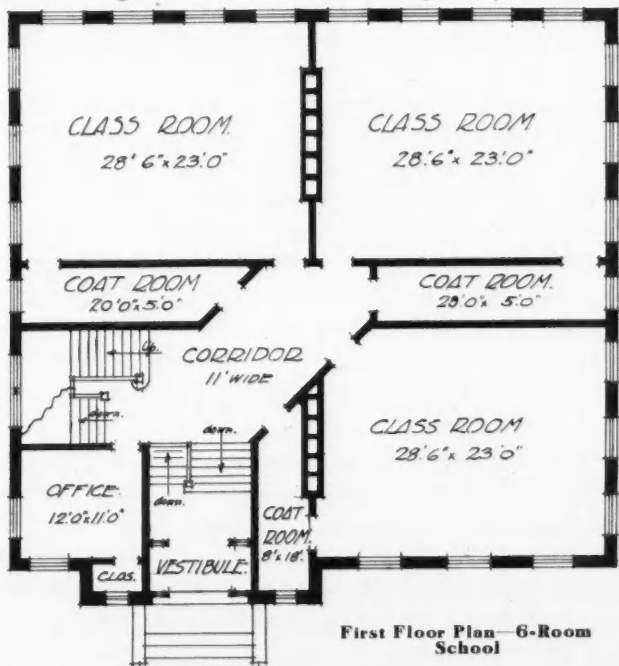
### Decay in Building Stone

The causes of decay in building stones are various

and depend on the physical structure of the stone, its composition and the nature of the surrounding atmosphere. The most destructive agent to which the stone is exposed is rain or a moist atmosphere, and also, in a minor degree, wind, frost and smoke. The air of large towns is usually charged with various deleterious acids; these acids are dissolved by the rain, which penetrates the stone in a greater or less degree, according to its physical structure, and combines with the constituents of the stone, causing it to decay. So that any contrivance that will check the admission of water will be most likely to succeed in arresting decay.

**Why We Move**

Any change in the dollars and cents of life means usually that the modern American family will move. When we get rich, we move. When poverty threatens,

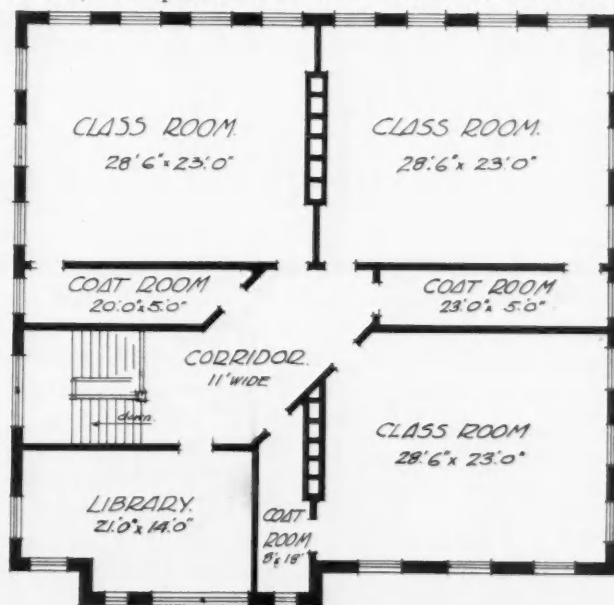


First Floor Plan—6-Room School

American family to move. Some of us own two or three different homes, in city, in country and by the sea; and thereby have an assurance of the delight of moving several times a year. And some of us live in hotels or in boarding houses in order to be "foot-free" to come and go as we will.

**One Way of Breaking an Emery Wheel**

Some time ago the writer, for the first time in his experience, broke an emery wheel when it was running—indeed, it seemed that, to quote the small boy, it broke itself. As no sort of maltreatment was in evidence, as one of the flying pieces brought into the visual field of the operator more stars than a 26-inch telescope could bring, and as the wheel was made by a firm whose wheels the said operator had not used before; such pieces as could be found were carefully



Second Floor Plan—6-Room School

we move. When the land on which our house stands rises considerably in value, we move in order to invest the profits; and when it falls, we move because "the tone of the neighborhood is no longer what it was."

We move for many other reasons. When we marry, of course we move. Sometimes we marry in order to have a plausible reason for moving; and sometimes, when our children marry and go away from home, we move "because the old home seems lonely." Nearly every divorce means that two must move. When the parents die, the children move. As the family grows in number, we move into a larger house in order to have more room; and, when we can, we move into a better neighborhood in order to give the children social advantages. When unwelcome faces appear upon our street, we move; and when our friends move away, we move. When the landlord raises the rent or refuses to make repairs, we move.

Almost any event is a good enough reason for an

boxed and sent to the said firm of makers, with a letter which would not make good Sunday reading.

The sentiments expressed in the letter were rigidly adhered to until, some time later, another wheel broke in practically the same manner. As this one was made by one of the old and tried firms (perhaps the fact that none of the pieces made personal contact tended to a more judicial frame of mind) a more careful investigation was made. It was found that the wheel usually hung, when not in use, back of the machine, where the oil thrown from the bearing made a streak across it, directly through the center. The primary break was directly along the oily streak. As it happened in the latter case—doubtless in the former, too—the wheel had been hanging in one position while the machine, with another wheel on, had been considerably used. While the writer is not prepared to positively assert that the oily streak was the cause of breakage, there was no other cause in evidence; and these were the only breakages in twenty-seven years' experience.



# PAINTING

Edward Hurst Brown

## Practical Questions Answered

VALUABLE ADVICE AND SUGGESTIONS AT THE REQUEST OF SUBSCRIBERS ABOUT PAINTING, DECORATING AND WOOD FINISHING

THE difficulties and perplexities which one man meets in connection with his work are apt to occur to another man, and therefore, the writer may be pardoned in taking as the "text" for this article, some of the problems that have arisen in connection with painting and decorating work that has come under the charge of readers of the AMERICAN CARPENTER AND BUILDER. Here, for example, is a contractor and builder of Rush City, Minn., who has been told by one of his customers that in Chicago calcimining is very successfully done over wall paper and asks how this is done.

### Calcimining Over Wall Paper

In the first place, this is not good practice, as all walls should be washed off to the bare plaster before being re-papered or re-calcimined, as a sanitary precaution. Underneath the paper is a layer of paste and probably of glue size, also; and when these vegetable and animal substances are buried beneath several additional layers of paper or calcimine, they form excellent breeding places for germs and bacilli of all kinds. A layer of dirty wall paper, perhaps laden with the spores of some disease, is none the less dirty and dangerous because covered up with calcimine or a new thickness of paper. Moreover, calcimine is made with glue, which in time decays, as all animal substances will, and sanitary precaution would require that it should be washed off before a new layer of calcimine takes its place. Some of the prepared calcimines or cold water paints are made with vegetable glue and others with casein—the cheese part of milk—as a binder, and no matter how permanent and sanitary the lime base may be, this binder will eventually decay.

Again, it is very difficult in calcimining over wall paper to prevent the pattern of the paper from striking through. This is especially the case in a paper where strong red is used either as a printed background on white paper, or where red flowers or ornaments form a part of the design. Most wall paper manufacturers employ, especially in the cheaper grades

of wall papers, a class of aniline red colors, known as para reds, which are reasonably permanent and of rich and beautiful color tone, but which have an unfortunate tendency to "bleed" through any subsequent coverings of paint, calcimine or wall paper. The best method of preventing this, or at least of partially preventing it, is to give the wall paper a coat of alum size, made by mixing melted alum—a "saturated solution," or as much alum as the water will dissolve—in warm glue size. This gives a crystalline or glossy surface which stops suction to some extent, and permits the calcimine or water paint to flow over the surface more freely. Two coats of this alum size should be given.

The surface of the wall paper should be carefully examined before sizing, in order to see that there are no loose places and that the paper is firmly adhering to the wall. It would be worse than folly to attempt to calcimine over old, loose wall paper, because the moisture in the calcimine would tend to still further loosen it up and you would have your labor in vain. Indeed, in most cases, the saving effected by calcimining over old wall paper is so small as not to make it worth while.

The experienced painter, of the old school, prefers to make his own calcimine from whiting and glue water, tinted with colors ground in water—known as distemper colors. Great care must be taken to get the proper proportion of glue or the calcimine will crack and peel, and in summer ice must be used in order to produce the proper condition in the material. Very few journeymen painters, today, are able to mix a pail of calcimine, and the trade has therefore, very generally adopted the use of ready-prepared calcimines, put up in powdered form, and made ready for use by the addition of cold or boiling water, as the case may be. These materials are, to all intents and purposes, calcimine, being made from Paris white or whiting, with the requisite binding material, having the nature of glue. They are ready tinted, and moreover are much easier applied than ordinary calcimine,

which has a tendency to show laps, unless brushed on with the greatest smoothness, constantly keeping a wet or flowing edge.

#### Natural Finish for Trim and Floors

A house having yellow pine trim and birch doors was to be finished in the natural wood, and the builder, Tom DeKoster, of Hull, Iowa, wished to know how this should be done. The best way would be to give a first coat of shellac and follow this with two coats of a good brand of interior varnish. It is against our policy to recommend special brands, but we might say that there is practically no difference in quality between the interior varnishes or interior wood finishes made by any of the leading varnish manufacturers. These goods sell at an average list price of two dollars and a half a gallon, with the customary discount when purchased in case lots of twelve gallons. As it requires a special knack to apply shellac without showing laps, owing to the rapid drying of the denatured alcohol with which shellac is usually cut, many painters prefer to use three coats of varnish. The result is equally good, but an ordinary oil varnish will darken yellow pine to a certain extent, the color gradually deepening as time passes. This, however, is not objected to by many people.

For a cheaper finish a coat of a good quality of liquid filler may be followed by two coats of varnish. But the cheap liquid fillers that are nothing more than rosin varnish mixed with a little pigment base should be avoided.

As a finish for an oak or maple floor, a good floor varnish, and there are many of them on the market, will be very satisfactory, provided it is properly protected from hard wear by rugs and is taken care of by occasional rubbing with a good quality of polishing oil, or a floor oil, afterward wiping off with a dry woolen cloth. Milk may also be used for keeping a varnished floor in good condition. Of course, very little of either should be used. A maple floor, being close-grained, does not need a filler before varnishing, but an oak floor, having an open grain, needs to be first properly filled with a silex paste filler. This should be thinned to the consistency of stout varnish with pure turpentine, and applied with a suitable brush to a stretch of four or five boards wide by the length of the room. In from ten to twenty minutes, it will be set sufficiently to rub it across the grain of the wood with a bunch of tow, or excelsior, or a piece of burlap to remove the surplus filler from the surface, afterward wiping it with a soft rag. The floor should then be allowed to remain at least twenty-four hours before varnishing.

For a dwelling house, the most satisfactory finish, over the paste filler, for a hardwood floor, is, to give two thin coats of shellac, followed by prepared floor wax, brought to a polish by means of a weighted brush. This can always be kept in good condition by re-polishing, using a little additional wax when necessary.

If the wax surface becomes dirty, it can be removed down to the shellac by means of turpentine, and a new wax surface can then be given. Avoid using too much wax.

#### Something About Stains

A California subscriber, G. S. Smith, of Berkeley, wants to prepare a stain for Oregon pine, which he wishes to make from color ground in japan and linseed oil, saying that the prepared stains he buys set up so quick he cannot wipe off the surplus. He wishes a stain that will enable him to bring out the beauty of the grain by wiping it off from the hard parts. He would find that a stain made as he suggests would have the same property of quick setting. Instead of using color ground in japan, he would get better results by using color in oil, thinned with equal portions boiled linseed oil, best brown japan and turpentine. Apply the stain, then wipe to bring out the grain, and after allowing it to become thoroughly dry, finish with two coats of shellac or of varnish as desired.

Colors ground in japan are used in the preparation of varnish stains, employed by amateurs for staining and varnishing in one operation, but these stains are not ordinarily used to any extent by practical painters.

#### Painting a Bungalow

The owner of a bungalow at Convent, La., wants to paint it brown with white trim, and desires to know how to do this so as to get the best effect. As a rule, the object of present-day color treatments is to give breadth of color, and to avoid accenting minor details by picking them out in contrasting colors. The safe rule to follow in case of a house of this kind, would be to paint everything that might properly be termed the body in brown. For example, if siding is used as a covering, then all the siding should be brown and everything else white. Or, if the sides are shingled, the same rule would apply, the shingles being painted or stained brown, and everything else white, including corner boards, cornices, balconies, porches with their accompanying railings, lattices, etc.; window frames and sash; front and other outside doors, dormers and everything that cannot be considered the structural body of the building. Outside blinds, in such a color treatment might be painted like the body or like the trim, but a preferable treatment would be to use either a bronze green or a bottle green. The same color might be used for the sash, but the writer considers it preferable to follow the trim color. For the roof, the shingles would look very well if stained a moss green.

+

#### A Safe Guess

Ellerton—I would like to know where all the bright girls of the past are.

Bronson—I should say that some of them are administering cautious doses of paregoric to the bright girls of the future.



**Practical Articles Wanted**

To the Editor: Toronto, Ont.  
 Being a reader of your valued paper since its first year, I would like to see some practical articles illustrated on church or theater construction; what I want is the best method of constructing the balconies, how to finish, etc.  
 I would like to see both wood and steel construction, as we are about to attempt something in that line, and I would like to see something in your paper on the subject.  
 I might say that I have learned a great deal out of your paper, and have confidence in it, seeing that I am a paid-up subscriber till September, 1910. J. J. HELLING.

**A Good Drawing Table**

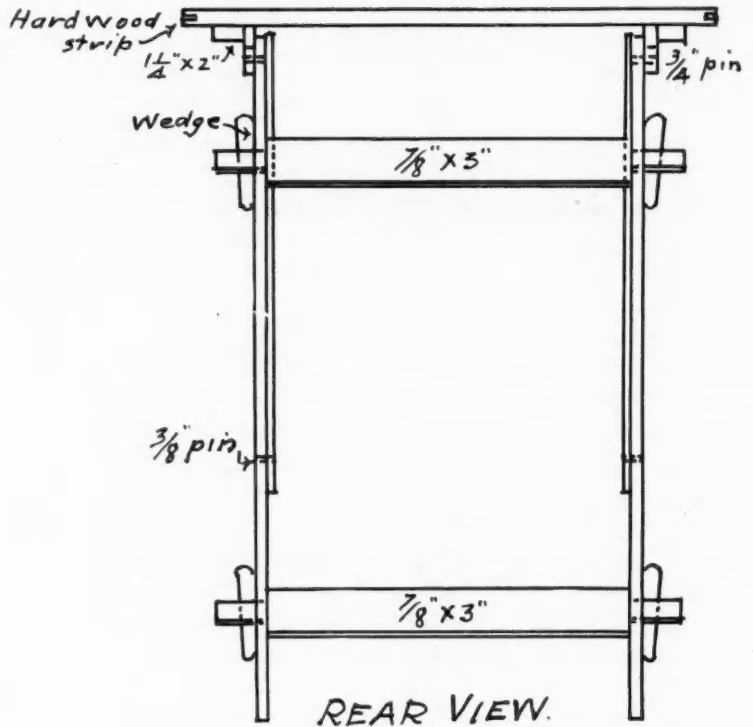
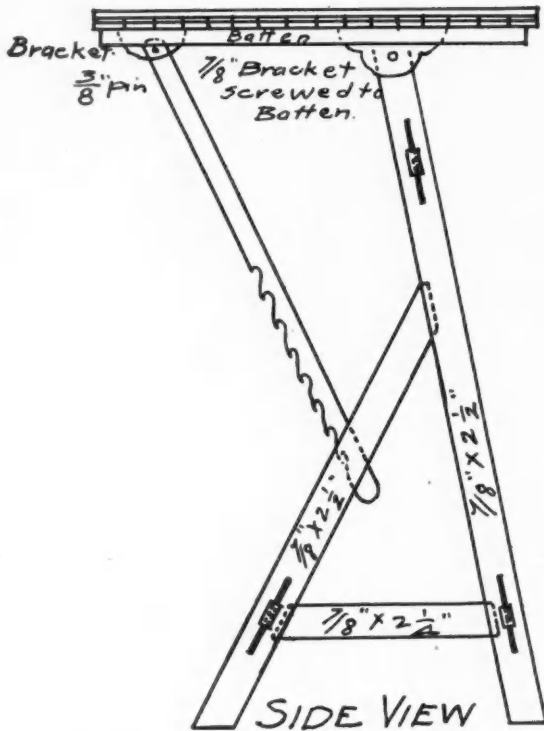
To the Editor: Lisbon, N. D.  
 As an answer to query of Mr. Joseph F. Kucera, of Prague, Neb., in the April, 1909, issue of the AMERICAN CARPENTER AND BUILDER, how to make a drawing table, I inclose herewith a sketch of one that I made for myself some eight or ten years ago. I have used it a good deal and believe it is as good today as it was when new; and I have not seen

vent warping. The hardwood cleats under table are put on with three screws each, for each end of the cleats; round-headed screws and slotted washers are used to prevent splitting when the table shrinks. The hardwood brackets attaching the legs to the table are fastened to the cleats with wood screws. The brackets attaching the adjustable braces to the table are made of 1 3/4-inch material and ploughed out in the center for the brace to fit in and a pin put through for the brace to hinge on. Outside of the top the whole thing is made of hardwood, and is strong. The top can be tilted to any angle desired, or it could be folded together when not in use.

This is free if it is worth picking up, but if it is not worth picking up it wouldn't cost anything anyway. M. H. SEVERSON.

**Length and Cuts of Rafters for Square Roof**

To the Editor: Sharpburg, Iowa.  
 I would like to have some one give a rule for cutting, also for finding the length of a main common rafter on a square roof. Say the rafters are cut on 12 and 10. What would be



any other cheap make that I thought was any better.  
 The two legs are mortised and glued together and they in turn are held together with crosspieces which are mortised through the legs and held in place with wedges. This makes it strong and steady. The table is made of 1 1/8-inch soft pine, glued together of 2-inch strips, the grain being reversed. The two ends are ploughed out and a hardwood piece glued in to make a smooth edge for the T-square. The bottom of table has 1/8-inch creases ploughed in it to pre-

the length of the common and hip rafters? M. E. BROWN.  
 Answer: The seat and plumb cuts would be on 12 and 10, of course. The 12 side giving the seat and 10 the plumb cut. For the seat cut of hip or valley substitute 17 for 12, because that is the length of the diagonal of 12 and 12, and proceed as for the common rafter.  
 As for finding the lengths, place the square at 12 and 10 on the rafter and run it as many times as there are feet in the run, and the length will be obtained for the common

rafter. If there happens to be a fraction in the run the extra length will take care of itself by measuring square out from a plumb line of the last placing of the square. Proceed in like manner for the hip or valley, using 17 and 12 on the square, and run as many times as for the common rafter.

To find the fractional length to correspond with that of the common rafter, measure square out the diagonal amount of the fraction and the corresponding length for the hip or valley will be obtained.

By referring to page 427 of the January issue of this magazine, you will find an illustrated article fully covering this subject, applying to any pitch, as the principle applies to all alike.

The great trouble with would-be learners is that they do not study or master the principle involved, so as to be able to apply it when the occasion demands a change in the size or pitch of the roof.

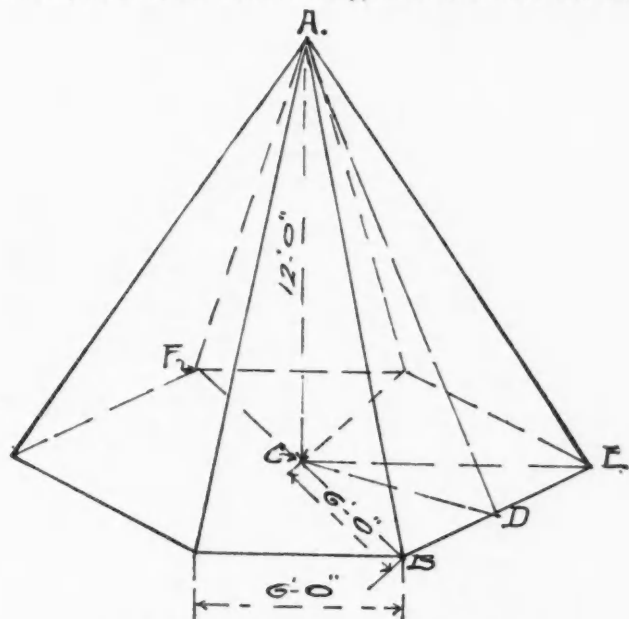
A. W. WOODS.



**The Pyramid Problem**

To the Editor: Edmonds, Wash.

Mr. Editor, what constitutes a "sticker"? Should the hexagonal pyramid class as such? But here is the way we used to do it on the Minnesota prairies. If diameters be drawn, as B F, the base of the pyramid is divided into six



equilateral triangles, 6 feet on a side. Draw D C and D A perpendicular to B E, then:

$$CD^2 = CB^2 - BD^2 = 6^2 - 3^2 = 36 - 9 = 27$$

$$AC^2 + CD^2 = AD^2 = 144 + 27 = 171 \text{ and } AD = \sqrt{171} = 13.07$$

$$\text{Area } ABE = \frac{6 \times 13.07}{2} = 39.21 \text{ square feet}$$

$$\text{Lateral area of pyramid} = 6 \times 39.21 = 235.26 \text{ square feet, answer.}$$

Here is another; pass it along:

How many cylindrical cans 1 foot in diameter and 2 feet in depth can be stored in a room 12 feet square and 8 feet high?

FRANKLIN H. BASSETT.

**Other Solutions**

Peter C. Boddorff, of Miconisco, Pa., by a similar process, finds the required area to be 235.368 square feet.

C. R. Snedeker, of Lodi, Ohio, agrees that it is 235.368 square feet.

Don McPherson, because of a wrong slant height, makes it 222.642 square feet.

Clarence C. Bennett, Santa Paula, Cal., also makes a mistake in regard to the slant height. His answer is 241.49 square feet.

J. R. Montague, Niagara Falls, Ont., writes that he knows no way to get the half-base except by measuring to scale. Using this method he makes the answer 235.36 square feet.

G. Jenkins, Iliion, N. Y., finds the area to be 236.27 square feet.

Harry A. Lovett, Harrington, Me., says 235.44 square feet.

Reed H. Deming, New Milford, Ohio, makes it 235.368 square feet.



**The "Cow" Problem Again**

To the Editor: Springfield, Ill.

Here is a solution to Mr. Liffingwell's real "sticker." The problem is not difficult if you apply higher mathematics, and I am much in favor of their use. I will not agree, however, to solve all the "stickers."

(Editor's Note: A very carefully worked out solution follows, trigonometry being used. The answer is 30,294.2 square feet, which—from the number who have agreed upon it—seems to be correct.)

This problem has very little interest in it for the carpenter unless he is able to own a cow and a small plat of ground and he does not wish his cow to be troublesome to his neighbor. I own neither, but somehow I like to solve some of these stickers.

I would like also to state that too much is expected of school teachers, as by far the majority of them are never required to do anything in the higher mathematics.

I know one who, when required to find the number of yards of plastering in a room, completely filled the room with plaster and then maintained she was correct. But she was an exception to the rule. Let's be patient with them and not require too much.

J. W. TRAFZER.

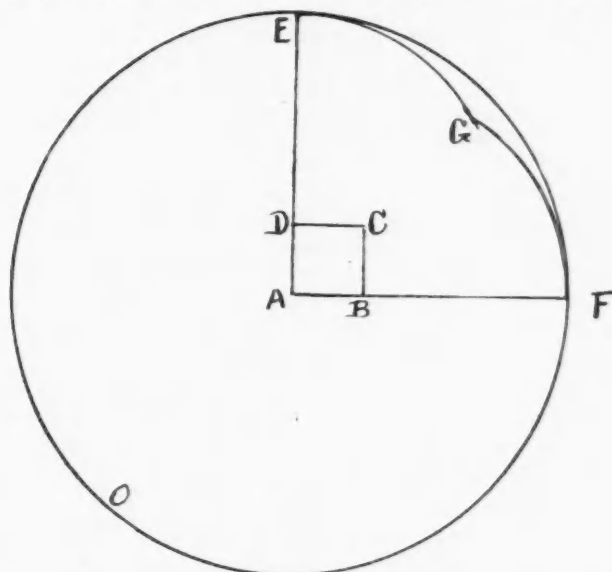
**A "Quantitative" Method**

To the Editor: Zion City, Ill.

It is assumed that the rope is so tied to the cow that she can graze just 100 feet from the corner of the barn; otherwise, the problem cannot be solved without more data.

(Note: A complete solution follows along approved mathematical lines, the amount of grazing ground for the cow being found to be 30,294.275 square feet. Another very unique solution accompanied this first; it is given in full below.)

On a sheet of paper of uniform thickness and weight (ledger bond in this case) I draw the square A B C D with



sides equal 1 inch, and produce A B and A D, making A E and A F each 4 inches. Draw the circle E F O with center A and radius A E, equal 4 inches. Then with centers B and

D and radius B F and D E, equal 3 inches, draw the arcs E G, F G. I then cut out the circle carefully and weigh it upon a balance which will weigh 1/20 milligram. Then cut out the square A B C D and the part enclosed by the quarter circumference E F and the two arcs. The remaining figure represents the ground grazed over by the cow. Of course, in this drawing, 1 inch represented 25 feet.

The respective weights of the circle and figure grazed over were 3.853 and 3.716 grams.

The area of the circle, as in first solution is 31,416 square feet. Then,

Weight of circle : weight of figure grazed over :: area of circle : area of figure; or, 3.853 : 3.716 :: 31,416 : answer.

Solving the proportion we get 30,294.348 square feet, which is remarkably close to the result of the first method.

In this method there must be extreme accuracy in drawing and cutting the pattern, and careful weighing on an accurate balance.

R. H. HARPER.

#### By Simple Mathematics

To the Editor:

Rockville, Conn.

Anent your problem of the cow and the grazing lot, here is a solution based on principles of measurements found in the text-books of the common schools, except two, viz.: that of finding the length of the arc of a sector and that of finding the area of a sector; the rules for these I found in a very old text-book on mensuration, as follows:

First. From 8 times the chord of half the arc subtract the chord of the whole arc; one-third of the remainder will be the length of the arc.

Second. To find the arc of a sector. Multiply one-half the length of the arc by the radius of the circle; the product will be the area.

Working the problem by these rules I find: Three-fourths of the circle equals 23,562; area of two sectors equals 5,758.285; two triangles between the sectors equal 975.95; total area over which the cow can graze equals 30,296.235.

W. J. TEMPLETON.

#### Others

H. W. Stevers, of Roseland, La., finds that the cow can get at 29,625.2 square feet of pasture.

E. B. Gillespie, Birmingham, Mich., says 28,988 square feet.

Harry A. Lovett, Harrington, Me., points out two mistakes in Mr. Collier's solution as published last month. With these corrections made he says the answer will come out 30,294.3 square feet.

Franklin H. Basset, Edmonds, Wash., finds the same errors in Mr. Collier's solution and makes the result 30,293.6.

W. N. Collier, Santa Rosa, Cal., submits another elaborate solution correcting that of last month. He carries decimals to five and six places, and finds 30,461.02 square feet for the answer.

Jac. Gerend, Milwaukee, Wis., says 30,428.5 square feet.

J. R. Montague, of Niagara Falls, Ont., writes that he takes much interest in working the problems. His verdict concerning the cow and her feed is 29,265.7 square feet.



#### Problem for Timbermen

To the Editor:

Harrington, Me.

I'm sending a "sticker," which is this: On the water's edge of a stream 50 feet wide there is a tree 100 feet high. How high up will the tree break and bend over (not falling off stump) so that its top just reaches the opposite bank?

HARRY A. LOVETT.



#### A Warlike "Sticker"

To the Editor:

Fountain, Col.

I am an old subscriber to the AMERICAN CARPENTER AND

BUILDER, and will say it is the most helpful journal there is for the carpenter and mechanic.

The sticker column is all right—keep them coming brothers! We all like to crack nuts. Here is one that is not very hard to crack, but has caused many an undecided argument:

A cannon is able to throw a ball 60 miles a minute; at the same time or second the cannon is discharged it is drawn backwards 60 miles a minute. How far from the cannon will the ball be after 1 hour's time, and how far will each be from where the cannon was discharged?

Let us have your idea on the subject.

L. E. BRUNDAGE.



#### Board Trimming Problem

To the Editor:

Milwaukee, Wis.

Here is another "sticker": A carpenter had a square piece of board from which he cut off 1-inch all around. He measured the board again and found out that he had cut off as many square inches as he had left. How many square inches did he cut off?

JAC. GOREND.



#### How to Join Members of Cornice

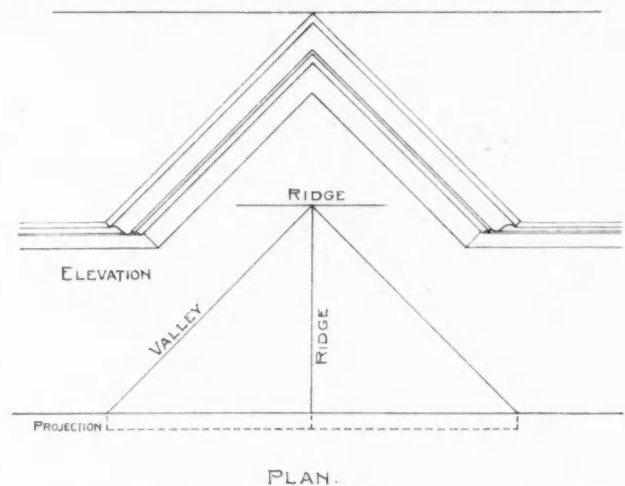
To the Editor:

Smithland, Ky.

Would you kindly tell me with illustrations in your paper the proper method of constructing and connecting cornice on a frame house where the end and side of the house are on a line.

J. A. THOMPSON.

Answer: It is presumed that the question has reference to a house with a side gable where it is desired to have the fascia mold member with a like mold of the raking cornice of the main roof. If so, we will say that it cannot be done, because the mold on the fascia of the gable is resting on a plumb backing while that on the raking cornice is at right angles to the pitch of the roof. Consequently, they cannot



directly member without making a return connecting the two. This can be very small, just enough to fill the inverted V-shape gap, where the top edge of the two are on a line, or it may be gotten over by letting the gable extend a few inches so as to purposely make the return longer and thereby destroy what otherwise may seem to be a blunder on the part of the workmen. The accompanying elevation and plan we trust will illustrate the point in question.

However, there is another point in connection with a roof of this kind that we wish to call attention to, and that is the cut on the plancher of the gable to member with that of the raking cornice. We have seen carpenters who could readily frame a hip and valley roof, but when they came to make the above cuts, were puzzled to know how to apply the square.

The trouble is in this, as in most all other framing prob-



lems, they did not stop to think. We make haste sometimes by going slow, and this is one of the times.

Now, let us stop and think. To begin with, the plancher of the gable lies in exactly the same position as the jack rafter. Consequently, the figures that give the plumb and side cut of the jack will give the cuts for the plancher, but are reversed; that is, the plumb cut becomes the edge cut and the side cut becomes the face cut across the board. As for the cuts of the raking plancher, it lies in exactly the same position as the roof board just above it, consequently the same figures that are used for the roof boards will give the cuts for the plancher.

EDITOR.

### How to Build a Log House

To the Editor:

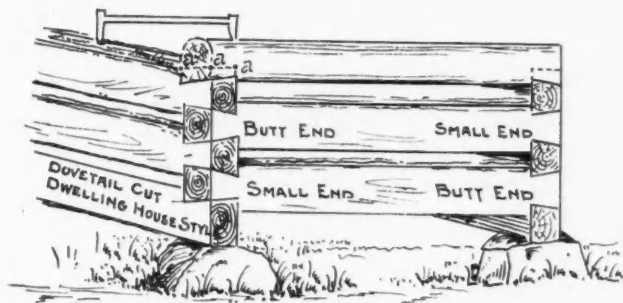
Fossum, Minn.

In certain localities, it is necessary to erect barns and out-houses, and even temporary dwellings of logs, and there are several ways to proceed.

The dovetail cut is mostly used for dwellings, as it has a tendency to hold corners together better than the straight cut, and then the corners may be made straight and even, to allow the nailing on of wide corner boards to cover the end wood of logs, which usually crack, take in water and rot.

It does not pay to put siding on a log house; it protects the logs from the weather but makes the building colder, because the plastering loosens and you cannot get at it to plaster again; and so it is only the siding to keep out the cold, except what is on the inside of the logs; this you can get at until you wainscot or plaster it on lath. The reason plastering loosens is that a log house never gets through settling—never; so it presses the mortar away from the logs. For keeping out the rain, the round log is best. If logs are hewn, or sawed flat, the rain drives through easily.

Cuts "a. a. a." show how to measure bevel of dovetail cut on a round log. Use a divider and measure at "a. a. a." all same height, at both ends of log, so as to get the drop the same at each end. It is well to use butt and small ends of



logs alternately, unless very even of thickness at both ends. When crooked—and they often are—turn crook up when possible, unless log should fit the under one better by turning crook down. If too crooked, it can be straightened somewhat by sawing up into log, which will let it down some. Do not turn bends of logs out and in. It makes a crooked wall and is much more liable to spring out of shape. Some use logs in the gable, whether roof is to be shingled or not; others use boards, nailed up and down on outside of rafters and of logs. In places where shingles are not to be had, a roof of flat pitch is used. Run a log or two parallel with ridge and side wall; counting ridge as one log, and one or two on each side between ridge and wall, we have three to five logs, according to width of building, to carry the roof. This is made of poles laid up and down with a cross piece fastened on top of these at the bottom ends to hold against the sod, which covers the slough grass or birch bark under coat. After sod is put on, it is covered with clay to keep out the water. These roofs will hold out an ordinary shower; but when they do leak, they may keep on a day or two after the rain is over.

"b" shows one way to fasten logs at door and window openings by putting in a short dovetailed block between them, fitted to lower log and hollowed out to receive the next upper one. This way is just as easy as to bore holes, as in "c," for 1½ or 2 inch oak dowels.

Another way is to make an oak strip like a 2-inch square continuous dowel, fitted at "e," the bottom log; also at "f," the one above door or window. It is quite a little more work, because you have to make sort of an open end mortise through each log and slip them in onto the stick;



but you get a straight wall. In making jambs, do not have them as tall as the door opening, because the log above the door will keep sagging and cause jamb to spring crooked. Use 2 by 6 inch for door jambs. In "chinking" or filling cracks between logs, do not drive "chinks" too tight; better to use an 8-penny nail here and there. The log-hook, or dog, to hold log from turning, is made of 5/8-inch iron about 18 inches long with flattened ends, one in line with bend, the other across. This can be made simpler than the one shown in drawing.

Two men usually are needed, one at each end of log, to do the fitting. Sometimes the logs are let down so as to ride on some knot, or hump. They should not do this; cut off projections.

Barn log style is best for outbuildings; it is easier to fit, and sheds water better than the other kind. Short ends are left outside of cuts, to hold logs together. If made very long, they are very handy to run against.

A. O. STEIN.

### Repainting an Old House

To the Editor:

Cosby, Mo.

I have a house I want to repaint; the paint has about all perished and the house is very dry. I am going to follow your Mr. Edward Hurst Brown's instructions for painting a house in the above named condition; he says, first give it a coat of raw linseed oil, with the proper amount of turpentine and japan driers added. Now what I want to know is, after this is done, how best to apply the following two coats of paint. Should the first coat of paint be well thinned with oil or should it be put on about as furnished? (I intend using a good brand of ready-mixed paint.)

H. M. THOMAS.

Answer: In painting this house, the first thing is to get the old paint off, as much as possible, either by scraping, if it is scaly, or by using wire brushes. Next give a coat of oil over the entire surface. The proper proportions for this oil coat would be 4 gallons pure raw linseed oil, 1 gallon of turpentine, and about a pint of the best liquid drier, or just enough driers to set it nicely, depending on the weather conditions. If any old scaling paint remains on the surface after this oiling, it should be scraped off before the priming is ap-

plied. In any case, the oil coat must be allowed to dry thoroughly before the first coat of paint is put on. Whether the ready-mixed paint should be used just as put up or thinned will depend very much upon the brand chosen, some mixed paints being made so stout that thinning is invariably required, while others are so thin that they will scarcely stand any further thinning. In general, however, over an oil coat, the first coat of the paint should be thinned by the addition of from 1 quart to 3 pints of pure turpentine to the gallon of paint, or enough to make the paint dry nearly flat, or with an egg-shell gloss, the paint being well brushed out. The last coat should be used just as it comes from the cans, or if any thinning be required in order to make the paint spread properly, use only just enough pure raw linseed oil.

EDWARD HURST BROWN.

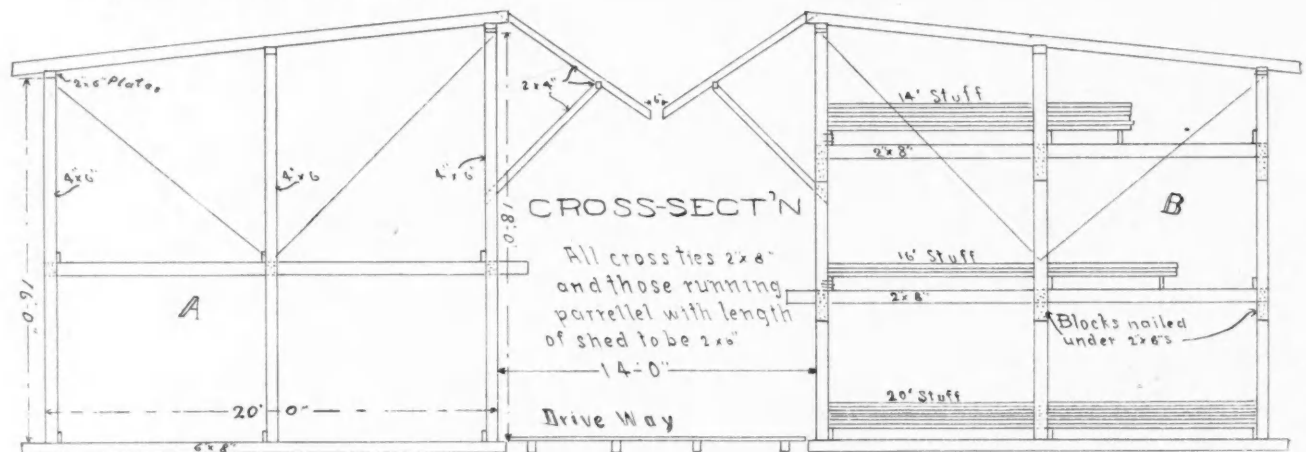
### How to Build a Lumber Shed

To the Editor:

Convent, La.

I send you herewith drawings for lumber shed requested by you for the benefit of Mr. Baysore or others interested. From the cross sections you will see its make-up. I built this style for the J. C. Rives Cypress Lumber Company; its arrangement on the front is similar to the shelving in a store.

Ends & rear boarded  
top Sheathed solid for paper



Trusses should be placed about 6 on centers

and pockets made to suit—Say A-side has 2 pockets

can be used for heavy stuff—B side Base, Mldg etc. 3 pockets

The stalls are partitioned off to suit the stock. This shed can be built 100 to 200 feet long, depending upon the amount of stock you intend to keep on hand. Each pocket should be tagged A 1x12x12, B 1x8x16, C, etc. Also molding department as No. 8066—14 feet lengths, 10, 12, etc.

An important feature of this shed you can see is the driveway giving access to your entire stock. B. P. TUREAUD.

### Stucco Work Over Old Brick

To the Editor:

Upland, Ind.

Being a charter member of your valuable paper, I take the privilege of asking your advice concerning some stucco work I have to do. I have a 2-story brick building to plaster on the outside with cement. Most of the bricks are very soft and badly eaten out, but the mortar joints are in good shape. Can this be done with any certainty of standing? If so, will you please give me the specification for such work and the average cost of same.

H. R. MILES.

Answer: It is entirely feasible to plaster old brick walls, but great care must be used if it is to be a satisfactory, permanent job. The fact that the surface of the brick is badly eaten will do no harm; in fact, it ought to be to your advantage in

doing a good job, for the rougher the surface the tighter the plastering will adhere to it. All the mortar joints should be cut out, using a granite point or a regular hand drill hammer, the cutting to be from  $\frac{1}{4}$  to  $\frac{3}{8}$  inch in depth. After this is done the wall should be thoroughly cleaned, using a coarse fiber brush and water. If the wall has been painted, as much of the paint should be removed as possible. The wall is then ready for the plaster.

First apply a thin "scratch" coat. This is made up just the same as for ordinary interior plastering, except that a little Portland cement should be added and the quantity of hair used should be reduced about one-half. Score or scratch the surface of this coat when it is partly dry.

Next apply the "browning" coat. This contains more of the cement and less of the hair mortar. This coat should be applied carefully, laid on with even thickness, all corners and returns being shaped up square and true. When this coat is set enough so that it cannot be indented with the finger the finishing coat should be applied. This may be sand finish, pebble dash, slap dash, etc., just as desired; and its application is just the same as for any kind of outside plaster work. The total thickness of the three coats should be about 1 inch.

The cost for plastering over old brick walls is usually figured at from \$1.25 to \$1.75 per square yard. This would include the work of erecting scaffolding, cleaning out mortar joints, roughening, the washing of walls, etc. The cost, how-

ever, would of course depend on the experience of the men employed and the local cost of materials. EDITOR.

### How to Frame Hood Rafters

To the Editor:

Barnes, Kan.

As I have had some difficulty in cutting hood arms, I am writing you for information. Take a barn 20 feet wide with 12 and 10 pitch. I wish to build a hood with a 14-foot base and 7-foot projection. Please explain the cuts for these rafters.

C. GULLIAN.

Answer: The hood arms rest in exactly the same position to the common rafter as the hip or valley would in a roof of like pitch. The cuts are the same at both ends. Twelve and 10 will give the plumb cut (cut on the latter) and 12 and 15 $\frac{3}{8}$  will give the cut across the back of the rafter (commonly called side cut—cut on the latter). If it is desired to have the back of the rafter lie in the plane of the roof, it should be backed one way only and the gauge line in this case would be  $\frac{5}{8}$  inch square down from the edge of a 1 $\frac{3}{4}$ -inch rafter. If the packing is done before the cuts are made, then 12 and 15 $\frac{3}{8}$  will give the cuts. Cut on the latter. A. W. WOODS.

### Question for Stair Builders

To the Editor:

New Alexandria, Pa.

I would like to know what distance should be left from end of steps to the joist on second floor, say for an 8-inch newel post at foot of step; 6-inch post on platform and 6-inch post at head of stairs in order that a person's hand may slide up the rail and not come in contact with the string board around the opening. Say for a 3½-inch rail. If the rail is halved to the side of the post, it will take more than if cut against it. In either case, what distance should be left between the step and joist? Also, if a plumb miter be cut on rail to turn to post, can the little piece that turns to the post be cut to fit the plumb miter on the rail of the same width? This seems a simple question, but I would like to hear some of the brothers' opinions on it in the next number. A. C. BROWN.

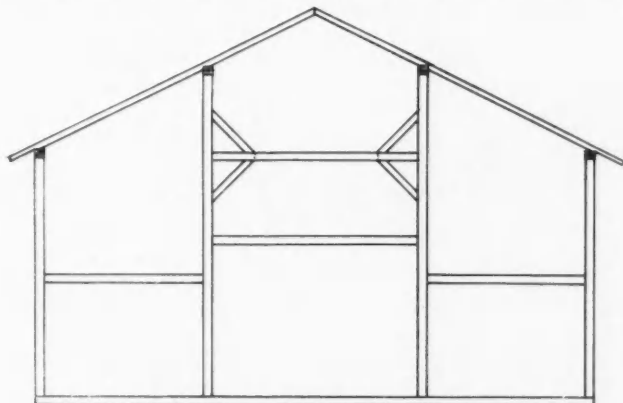


### Barn Framing

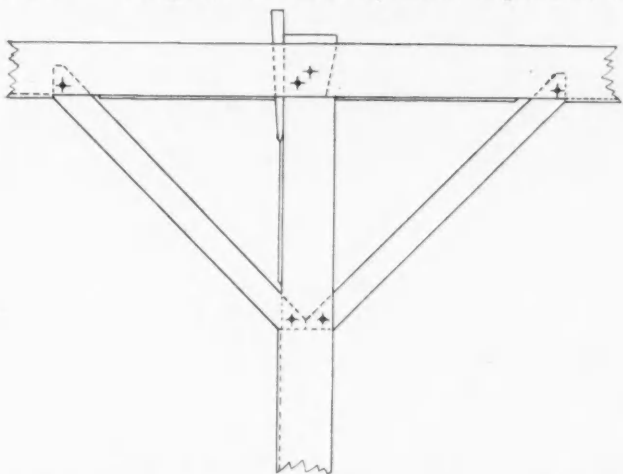
To the Editor:

Pekin, Ind.

I am sending you my method of framing the center bents of a barn. This design is especially adapted to barns having flat roofs and having been equipped with hay carriers, as a



very strong bond is needed in such barns between the purlin posts to prevent the excessive weight placed on the top rafters by the hay carrier from spreading them apart. The girder is also low enough for the loaded hay carrier to pass over it.



You will note that I do not use a girder between the top of the shed post and the purlin; for when the purlins are framed as I have described, there is no need of such a girder as the rafters will hold the shed post to its place, if it has a tie at the bottom and a loft tie up some 8 or 9 feet. Of course, where the barn is extremely high, it is well to put in this girder.

I have drawn a section of the purlin post, center girder and braces to a large scale to illustrate the method of dovetail mortise joint.

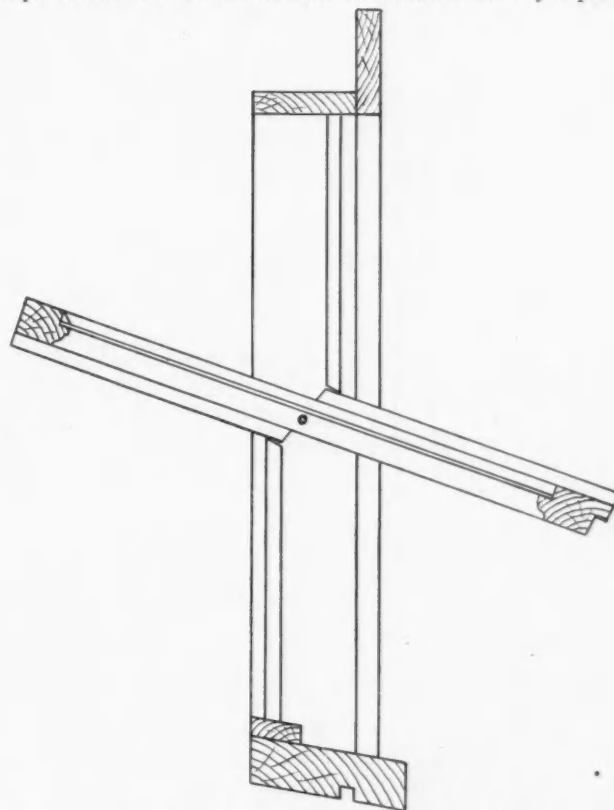
W. H. WATTS.

### How to Construct Pivot Windows

To the Editor:

Trenton, Ohio.

Mr. Albert Gonne, in the March number, had a sketch of a pivot window. I wish to show the readers the way I pivot



the sash, which adds greatly to the appearance. The difference is in the sill, which will keep out the storm, and the head will stay in better shape. Nothing is too good for the subscribers of the AMERICAN CARPENTER AND BUILDER, of which I am one.

GEORGE C. HOUSE.



### Fireplace Construction

To the Editor:

Fitchburg, Mass.

Will some of your readers give information as to the proper construction of a fireplace? What is the proper proportion of the width to the height; the height to the depth, size of throat, flue, etc.?

F. O. LITTLEFIELD.



### To Lay a Tight Barn Floor

To the Editor:

Florence, Mont.

Mr. Hinchin's suggested way to make a tight barn floor is probably as good as could be devised if wood alone is used; but it is open to the objection that it would be constantly saturated, and would soon rot out.

A better way would be to have a concrete floor; and, if it seems preferable to have wood for the animals to stand on, lay a floor of rough planks, somewhat open, over it. An excellent way is to have the concrete floor with an unbroken surface, sloping enough to drain to the desired points, and to floor the stalls only with plank; leaving cracks wide enough so that all liquid would immediately run through to the concrete.

W. D. GRAVES.



### Wanted—A Band Stand

To the Editor:

Reedsburg, Wis.

Will you please insert a cut of a band stand in your valuable paper in the near future, to cost about three hundred dollars.

BYRON RANDALL.

### Which Way Is Right ?

To the Editor:

Stuttgart, Ark.

I would like to ask a question in regard to hanging screen doors. I have had arguments several times over what is the right way to hang them. I claim the wire should be on the inside, so if there are any flies in the room they are more easily chased out, and have no chance to stay in the corners of the stiles, projecting the thickness of the door; and I also think a fancy screen door looks better from the street, hung that way. Let me have the verdict of the readers of the AMERICAN CARPENTER AND BUILDER as to which way is right.

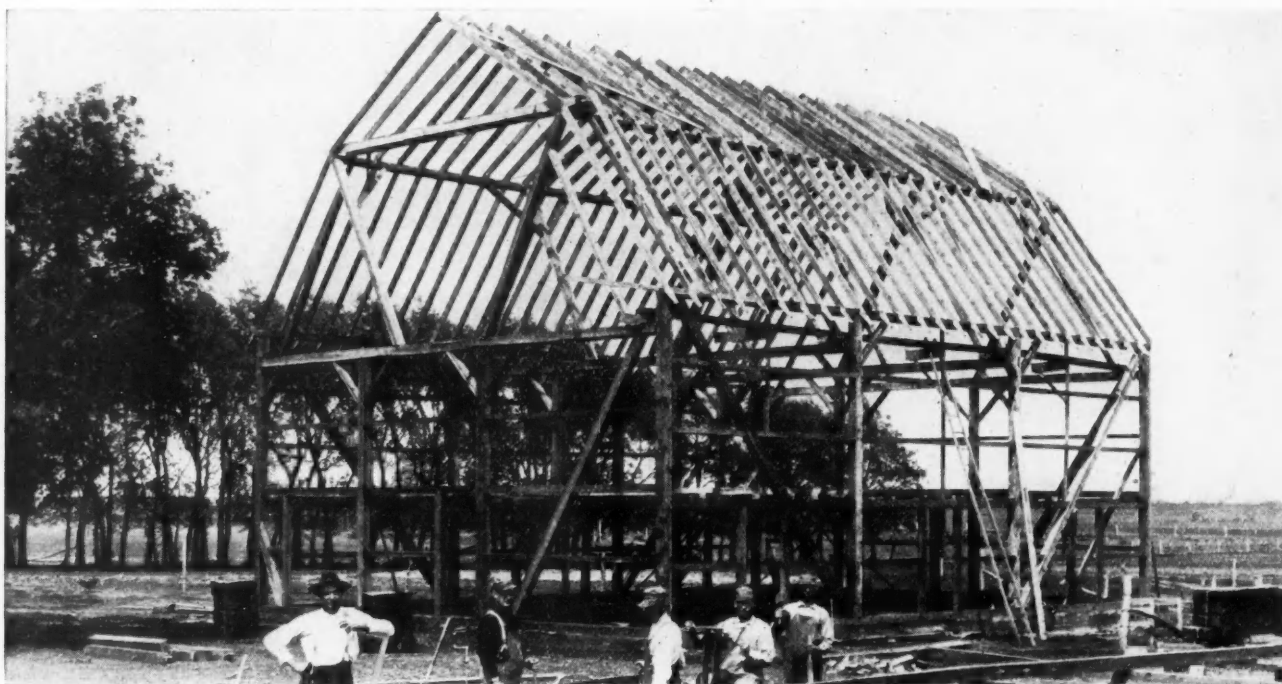
P. J. BUERCKLE.

### A Heavy Timber Barn

To the Editor:

Granville, Iowa.

I herewith send the renewal for my subscription. I regret that I am a few days late and hope that I won't miss the April number. I would not like to miss a single one. It is the best building paper ever published. I herewith send you a photo of a heavy frame barn. The building is 40 by 54 feet with 20-foot posts, all mortised and pinned. The posts are 8 by 8 inches, and there is no stick lighter than 4 by 6.



On each corner is a brace mortised in the sill and plate, 6 by 8, and girders mortised in same. This is the only way to brace buildings for these western high winds. The roof is a gambrel, the lower rafter having two-third pitch and the upper ones one-third pitch.

B. J. DIERS.

### To Put Screen Wire on a Door

To the Editor:

Detroit, Mich.

In making the frame of a screen door it is well to regulate the size of the vertical stiles so that they will call for some one of the standard widths of wire cloth, and thus avoid cutting off a selvage and leaving an inferior edge.

Lay the frame on a pair of trestles with a loose board or two resting on the same short enough to drop inside to relieve the sag in the middle of the cloth. Space the cloth by putting a temporary tack in each corner. In the middle of either end put two adjacent permanent tacks. Go to the opposite end, stretch as tight as possible and put in two more. Repeat the same for the sides. Next take out the four corner

tacks. When the corners are free you can get a good hold to stretch it, both from the last tack and from the opposite side. Put in but a few tacks until you go to the opposite side, and carry it on evenly until you get within about half a yard of the corner. Then alternate between the stile and the head until you finish at the corner. It is a job which keeps getting easier all of the while.

The upholsterers do nearly all their covering on this principle. I got the idea from them, and pass it on, hoping it may be of use to some amateur who sometimes has such jobs at his home.

LESLIE EDMISTON.

### Concrete Walls and Beams

To the Editor:

Smith Center, Kan.

Will you give me information in regard to construction of concrete walls where seven or eight storerooms are to be built side by side; wall to be 14 feet high. Can these walls be constructed in such a way as not to sweat? Is there any way by which I can construct a truss to carry a cement roof over these rooms running from 20 feet to 28 feet wide?

ROBT. H. TRACY.

Answer: Concrete will pass a sweating period, but blocks made and left out in the weather are usually safe to use with

no danger of sweating. However, if coated with a good water-proofing paint before plastering, any kind or age of blocks can be used with safety.

A safe beam to carry roof would be 12 inches wide and 1 inch deep for every foot of span, viz.: for 20-foot span make beam 20 inches deep, and for 28-foot span make it 28 inches deep. These beams should be reinforced with 4 rods  $\frac{3}{4}$ -inch diameter 2 inches from bottom and 2 rods  $\frac{3}{4}$ -inch diameter 2 inches below top, and looped every 4 feet with  $\frac{1}{4}$  by  $1\frac{1}{2}$  inch flat iron bands for the 20-foot beam. Use 6 of the rods in bottom and have loops every 3 feet for the 28-foot span.

This is a rough estimate. If exact load and construction were given there might be a saving of material over these sizes.

FRED W. HAGLOCH.

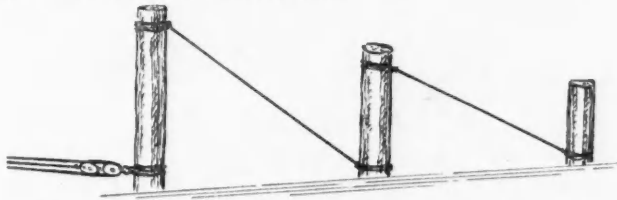
### A Sand Anchor

To the Editor:

Cape May Point, N. J.

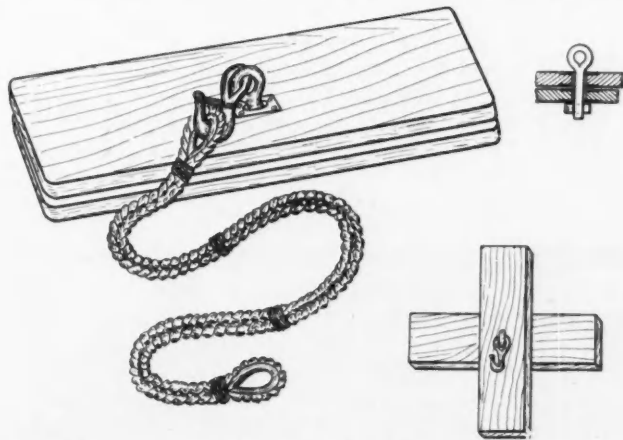
This very useful contrivance first came to my knowledge

when a contractor who had undertaken to move a very heavily timbered building, about 25 by 50 feet, 2 stories high, gave it up. He had the tackle and all necessary appliances, but was handicapped for a suitable place to take hold. He rigged up a series of backing, as shown in outline below, but to no purpose, for the stumps were snatched out, as easily as a man will pull up a cornstalk.



When the sand anchor was suggested, it took but about fifteen minutes to rig it up, whereas the other arrangement had taken at least an hour, showing that in the saving of time the anchor will recommend itself.

Two oak or yellow pine boards, 12 by 1 1/4 inches thick, and 3 feet 6 inches to 4 feet in length, were secured together, loosely, by means of a 1-inch eyebolt and key. On both sides of each board were screwed a 1/4 or 3/16 inch thick plate, about 4 inches square; a hole being bored through them, and the boards, for the eyebolt, which had a loose fit. A pennant, consisting of a doubled 3/4-inch rope, 2 yards in length when



doubled, was furnished with a cringle or eye at each end, and a hook to connect with the eyebolt. The ropes were secured to each other at the cringles, and at two points between, as indicated in sketch. The hook also was kept from slipping out of the eyebolt by wrapping cord around the end after the rope was in place.

A hole, 3 feet deep, was dug in the shape of a cross, and the anchor dropped in. The earth was thrown into the hole loosely, no attempt being made to pack it. This size anchor was used in moving a very heavily constructed building, which was use for a life-saving station at one time. For lighter or heavier work anchors in proportion can be constructed, using wire rope instead of hemp, should the work in hand be extra heavy.

I. G. BAYLEY.

**The Use of the Steel Square**

To the Editor: Hartman, Col.

In the January number, page 427, a question is asked: "How to find the cuts of rafters." There it says, concerning the jacks set 16 inches at centers, "Slide square along from 12 to 16 and the length of rafter covered tells common difference."

Will same rule work on any pitch? Say for 16 inches, 18 inches, or two feet?

To give side cut you take 12 on the tongue and 13 5/8 on the blade for the jack. What are the figures for the side cut of the hip or valley? Would 17 on the tongue and 18 on the

blade give it? Please give a rule for side cut of hip and valley.

J. M. RINEDOLLAR.

Answer: The questions asked have reference to an illustrated article in which the 1/4-pitch was taken as an example, and is as clear as we know how to put it. The rules stated and the principles explained are perfectly general, and can be easily applied, and with good success to any other pitch. And this is the beauty of steel square framing—once you have caught the scheme of it all framing problems can be solved; the rules are perfectly general.

We are glad to answer these simple questions over and over again; but that will do little good unless the readers stop and think and study.

**What Is the Trouble?**

To the Editor: Lanesville, Mass.

I put a bay window on a house, and after a while it commenced to leak. I took off the saddle board and fixed it the best I could, and still it leaked. There was a window over the middle of the piece, singles come up to the sill; I ran the zinc up in the groove on sill and all along under the clapboards.

If some of the readers would be kind enough to give their version of the trouble in the AMERICAN CARPENTER AND BUILDER, as I know others have had the same trouble, it would oblige me and all readers.

ALBION KNOWLTON.

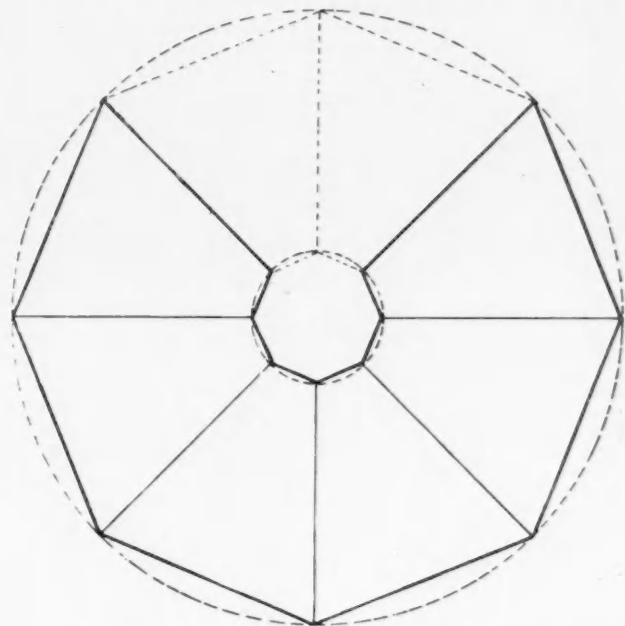
**To Lay Out a Gas Light Dome**

To the Editor: Detroit, Mich.

I would be pleased if you would give me the dimensions of a good-sized hexagon or octagon dome for a dining-room gas light. I am a charter member of the AMERICAN CARPENTER AND BUILDER and consider it the best building paper I ever had.

WALTER H. DENNERT.

Answer: It depends somewhat upon the construction of the dome as to what dimension would be most appropriate.



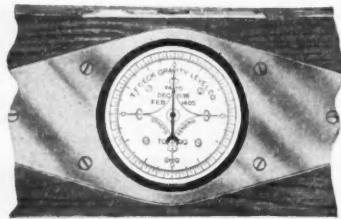
A dome in which the diameter of the opening at the top is 5 inches, with 24 inches at the base, is a good size. We show in the sketch the method of developing the sides of the hexagonal dome. The circles were stepped off into eight parts, two of them being removed. Enlarging or lessening the circles or the number of parts will change the size and slope of the dome. An octagonal dome would be made by stepping the circle off into ten parts and removing two.

IRA S. GRIFFITH.

# PRACTICAL TRADE APPLIANCES

## The T. F. Deck Gravity Level

Here it is! Another candidate for popular favor in the way of a gravity level for the use of building mechanics is



that which has been brought out by The T. F. Deck Gravity Level Company, of Toledo, Ohio. This level has met with such unprecedented favor with the mechanics throughout the United States that it will be necessary for

the Deck Gravity Level Company to multiply its manufacturing capacity many times over that of the preceding year.

This level is the result of many years of patient, persistent effort by the inventor, Mr. Deck, to perfect a gravity level. His level will record upon a surface dial, positively, absolutely and accurately to the most minute fraction of an inch, the amount of which anything is out of plumb or level, and is the only invention of its kind in the world.

The arrangement of parts in this level is such as to make the level automatically indicate horizontal and vertical posi-

tions, and the angle of any deviation correctly, without any adjusting whatsoever.

It is simple in construction, and as the name implies, is operated by the laws of gravitation, as exemplified in a plumb-bob. This plurab-bob, or pendulum, is suspended from a shaft or arbor which rotates in three-disk roller bearings, journaled in a brass barrel. This arrangement of the pendulum, arbor and disk roller bearings produces, it is claimed, 75 per cent more power than is lost by friction. What is understood by this is, if one end of a level stock is raised one-sixteenth of an inch to the foot, the indicator will instantly move one-sixteenth of an inch on the graduated dial, which is graduated the same as a rule or square.

Fastened on the shaft, or arbor, is a multiple gear-wheel of brass in which are cut one hundred and fifty teeth, so accurately spaced as not to vary one-half thousandth of an inch. The teeth of this multiple gear-wheel mesh in a pinion, and to one end of this pinion staff is attached an indicator, which points to the graduations on the dial, showing whether the work is level or plumb. A brake is also provided which operates upon the shaft in such a manner that by pressing on the lock button, which is on top of the level stock, will at once stop the pinion staff to which the indicator is attached;

### A FINE LETTER TO BURT

The Yale & Towne Mfg. Co., Stanford, Conn., one of the largest and best known manufacturers of locks and hardware in the world, write under date of February 18, 1908:

"We have to advise that the Burt Ventilators placed on a recent addition to our buildings, have given excellent satisfaction. Very truly yours,

Yale & Towne Mfg. Co.

(Signed) H. J. Lamborn, Superintendent."

## BURT COMBINATION SKYLIGHT VENTILATORS

may be found on a large majority of the most important constructions in the country. Their design is in accord with the latest ideas of the most progressive ventilating and mechanical engineers. Their construction is as thorough and honest as a modern factory and skilled mechanics can make them.

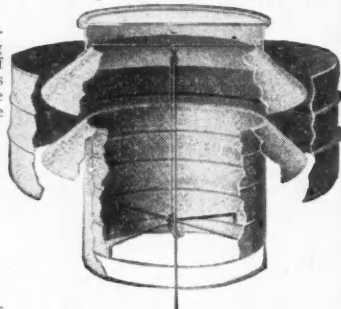
Send for our new 96-page catalogue, giving fine illustrations of Mills, Shops, Factories and Residences where Burt Ventilators are in successful use.

### THE BURT MFG. CO.

500 Main Street  
AKRON, OHIO

The Largest Manufacturers of Oil Filters and Exhaust Heads in the World.

Geo. W. Reed & Co., Montreal, Sole Manufacturers of "Burt" Ventilators for Canada.



Glass Top Burt Ventilators are also made up to and including the 72-inch size. Notice Sliding Sleeve Damper. (Patented.)

## Give Your Shoulders FREE PLAY

Don't make them sore and tired by wearing the old-style rigid-back suspenders, which tug, strain, and chafe with every move you make. Get a pair of



## President Suspenders

and learn what **rea** suspender comfort is. The sliding cord in the back of President Suspenders (which is not found in any other suspender) permits them to "give and take" with every motion of the body. They rest lightly upon your shoulders and allow you perfect freedom of movement. The Extra Heavy Weight, made especially for workers, outlasts several pairs of ordinary suspenders. Light and medium weight for dress wear. Extra lengths for tall men. Every pair sold with the maker's guarantee—satisfaction, new pair or money back. If your store-keeper cannot supply you, we will, postpaid, upon receipt of price, 50c. Get a pair today.

### THE C. A. EDGARTON MFG. CO.

739 Main Street : : : SHIRLEY, MASS.

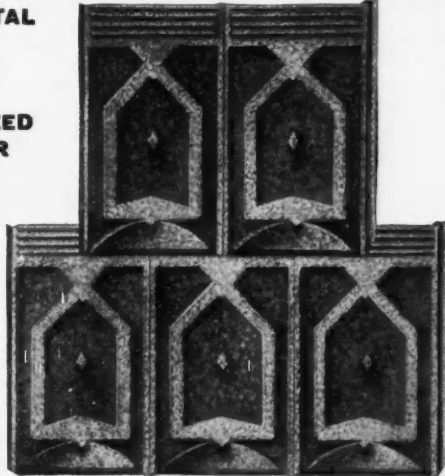
**STANDARD—Lock Joint—METAL SHINGLES**

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EASILY  
APPLIED**

**GUARANTEED  
WEATHER  
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*We can save  
you money on*

**CORNICE  
SKYLIGHTS  
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ABSOLUTELY STORM PROOF

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**Amatite**  
THE GREAT AMERICAN ROOFING

**Mineral Surfaced  
Needs No Painting  
Fire Retardent  
Durable and Lasting  
Anyone Can Lay It  
ALL YOU NEED IS  
A HAMMER**

THE quality, the price, the ease with which it can be laid, the fact that it requires no painting, its adaptability for any climate, have made Amatite "The Great American Ready Roofing."

We have never stood still under any belief that Amatite was as good as it could be made—or "good enough." Our aim has always been *Perfection*, and while working towards that goal we have striven to make Amatite leader over all kinds of ready roofings.

Nothing short of that has ever satisfied us.

The qualities which have brought such phenomenal success to Amatite are the qualities which are peculiar to Amatite alone, and these are no secret.

That which makes Amatite the best wearing and most water-

proof roofing is the liberal use of that time-tested and absolutely supreme waterproofing material—*Coal Tar Pitch*.

Nothing has been discovered or made that equals it for keeping out the water.

With two layers of coal tar pitch as the foundation, interlaid between layers of wool felt, we add a top finish of *real mineral matter*—a combination for a ready roofing that cannot be excelled.

These may seem extravagant statements, but we "stand by the goods" and behind them, and an easy way to settle all doubt in your mind is to write for a sample and test it yourself.

Any one of the offices mentioned below will gladly send a free sample and booklet upon request.

**BARRETT MANUFACTURING CO.**

New York Chicago Philadelphia Boston Cincinnati Minneapolis  
Cleveland St. Louis Pittsburg New Orleans Kansas City

**Corner  
Bar  
No.5**



**The  
SMALLEST AND  
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**ALL  
METAL CORNER BAR**

**AND STORE FRONT CONSTRUCTION**

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To merit the approval of the ARCHITECT it must be artistic, strong, durable. Corner and division Bars must be small and inconspicuous. It must provide for expansion and contraction of glass; supply perfect ventilation and drainage; be thoroughly adaptable and

**EASY TO INSTALL**

To meet the requirements of the progressive MERCHANT it must afford Maximum display space; keep glass clear from frost and sweat during continuous cold weather; give the lowest rate of plate glass insurance; and increase to the greatest degree the earning power of the show window

**Kawneer System**

more than satisfies every demand and its power to stimulate business is only one of its many points of superiority. It has demonstrated its value to the merchandising world as a positive creative force.

To the Architect and to the Merchant it is SUPREME.

*"It stays and pays"*

Let us supply full information concerning our complete "SYSTEM" of Construction.

Ask for Catalog No. 2 and Price List B.



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See Ad. in "Sweets." Index Pages 650 and 651.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

also by pressing the lock button, and giving the button a quarter turn it will lock the movement when not in use.

The point is made so that the movement of this gravity level is fitted into the stock, and securely fastened, so there is no chance of the instrument getting out of adjustment.

By writing the T. F. Deck Gravity Level Company, Toledo, Ohio, and mentioning the AMERICAN CARPENTER AND BUILDER, they will be pleased to send you a circular fully describing this practical instrument.

### Hamilton Universal No. 103

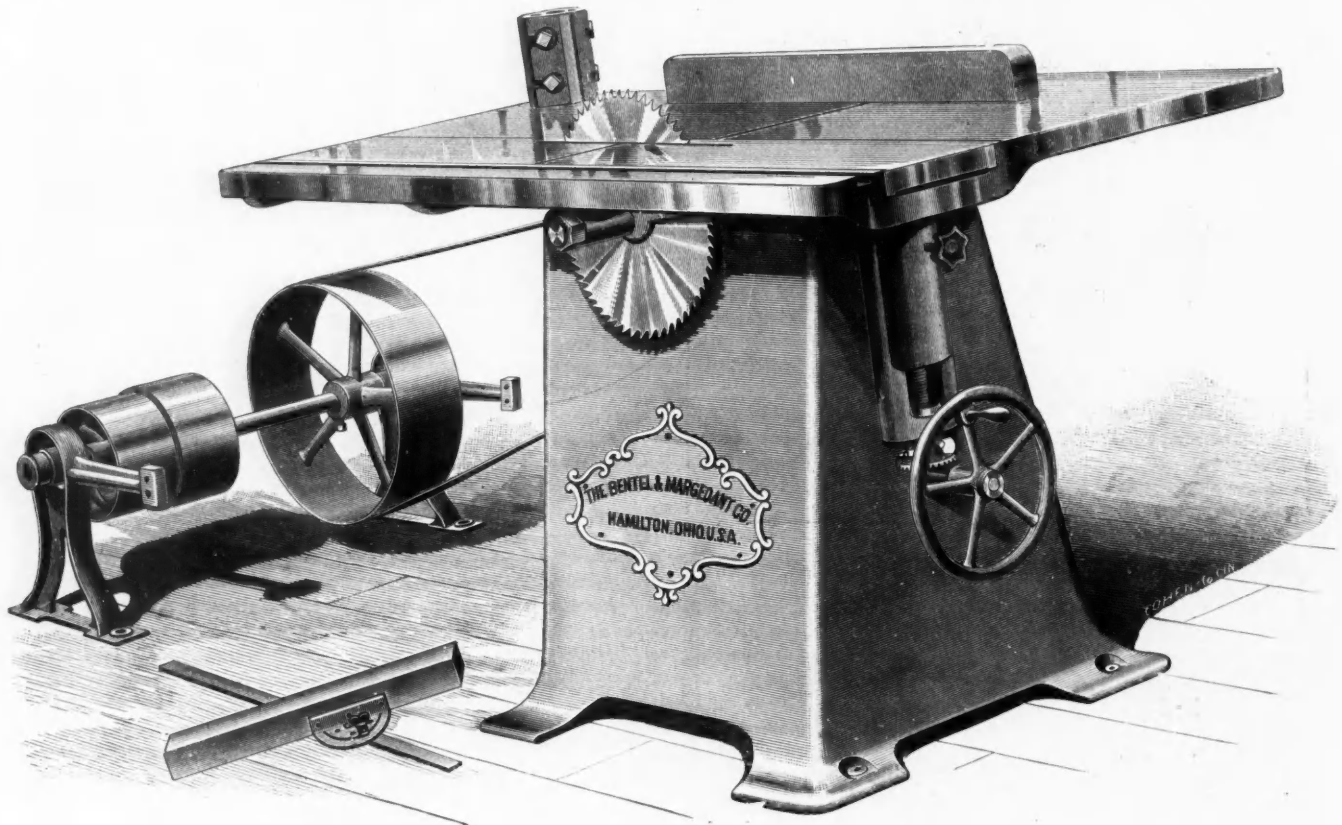
This machine, with or without boring table, is especially designed for a great variety of operations, such as jointing,

the floor. The mandrel rests in long heavy boxes and overhangs the front box far enough to carry a head 5 inches long, and will take boring bits in the opposite end, being arranged for this purpose.

An adjustable boring table, not shown in the illustration, is furnished for the reverse side of machine when so ordered. It is well arranged and convenient in operation.

All cutterheads used on our Universal woodworkers can also be used on this machine. We furnish a 5-inch triangular shear knife or slotted head, as preferred, adjustable cross-cutting, gaining and ripping fences, and one 16-inch saw, either rip or crosscut with this machine.

For further information and prices on this machine address the Bentel & Margedant Company, Hamilton, Ohio, manu-



smoothing, planing out of wind, squaring, beveling, tapering, rabbetting, gaining, plowing, cornering, beading, mitering, tenoning, panel raising, hand matching, molding, rip and crosscut sawing, boring, etc.

Though not classified among the "Universal woodworkers" in the past, it has nevertheless been considered such by many on account of the great variety of work it is capable of doing.

It is a machine especially designed to meet the wants of those who have a variety of work to do, who cannot put in machines for each purpose, and who want a good combined machine at small cost.

It is quickly arranged without material change for rip and crosscut sawing, planing, matching, jointing, panel raising, tenoning and boring, and a variety of other operations conveniently performed.

The table is of iron, 5 feet long by 3 feet wide, and is adjustable for height, being raised and lowered in sleeves by means of the one hand wheel shown, on the cylindrical slides provided, one at each end.

Two separate adjustable tables are placed in this large top which are adjustable to and from the center for either planing or sawing. The full length groove near the edge of the table receives the guide bar of the adjustable cross-cutting and gaining frame furnished with the machine, as shown on

factors of the well-known "Hamilton line" of woodwork- ing machinery.

### Are You Getting What You Pay For?

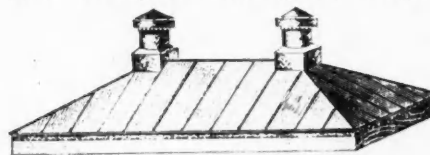
This is the question asked in the little folder of the Badger Steel Roofing and Corrugating Company, 214-216 Second

street, La Crosse, Wis., and asked relative to the purchase of galvanized corrugated, pressed stand-

ing seam, roll cap and other formed roofing materials. That is, when ordering, for instance, No. 29, are you getting No. 29? Some manufacturers admit that they substitute No. 28 for it, and when No. 28 is ordered, No. 27 is given.

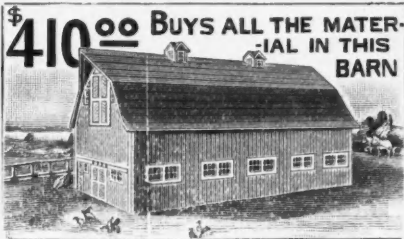
The little folder that asks this question has some information in it that will help every buyer of galvanized metal, as it gives the United States weights, and this will be gladly sent to anyone who wishes it.

This company are now occupying their new quarters, which are admittedly the largest in the northwest. Their substantial growth, from a small concern, organized in 1903, to their present size, is due solely to the fact that they have





# GREATEST BUILDING MATERIAL OFFER EVER PUBLISHED



AN ILLUSTRATION FROM OUR "BOOK OF PLANS"

A modern, up-to-date barn, one of many illustrated and fully described in our free "Book of Plans." It can be readily constructed by an ordinary mechanic with the aid of our simple plans and specifications, furnished free of charge. In referring to this design mention "J F1."

## FREE BUILDING HOUSE AND BARN PLANS

The Chicago House Wrecking Co. is the most wonderful institution in the world. We offer you an opportunity to make an enormous saving in the purchase of building material and supplies of every kind. Read our new 1909 offer carefully. It is something that every man with an immediate or prospective building idea must carefully consider. We say that, *quality considered*, we can undersell any concern in existence on any lumber or building material needed for construction of any house or building. Write for free plan book.

**\$650** Buys all the Material to Build This House!



This is an EXACT PHOTOGRAPH of our wonderful \$650 home. That means we will furnish you all the Lumber and Building Material needed to construct it and it'll all be new, first-class, up-to-date material. Write for our "Book of Plans," which gives details showing exactly which material is furnished. Mention design "J F6." This is only one of many other designs shown in our grand "Book of Plans." If you have any future idea of building, you must write for a copy at once. It gives valuable suggestions.

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We purchased direct from the Mills, at various Forced Sales, thousands of carloads of high-grade, first-class, brand new lumber. We bought it at sacrifice prices and we are offering it for sale at a reasonable margin of profit. This is an opportunity of a lifetime to buy the very best Lumber manufactured at prices less than the dealer or jobber can ordinarily buy it for. Don't delay a single moment. Even if you have no immediate need for lumber, the time to buy is to-day when our low prices are calling on you for action. You will never again be able to buy lumber at such low prices as we offer.

As to quality, rest assured nothing better is manufactured. Don't listen to what unscrupulous dealers may tell you. Our material is guaranteed to be clean, new, fresh lumber—not wrecked material in any sense of the word—just as good as you can buy anywhere and it is sold under a positive, binding guarantee that protects you, absolutely.

We don't ask for money in advance. You can buy without sending one cent of money with your order. All we require is a guarantee as to your responsibility. Money refunded if material is contrary to our representation. We have a capital stock and surplus of over \$1,000,000.00. We refer you to any bank or banker anywhere. Or you can write direct to the Great Stock Yards Bank, The Drovers Deposit National Bank of Chicago.

We can furnish you with every single thing required for the construction of a building of any kind. That means the Lumber, the Sash, Doors, and Millwork, and Nails, the Roofing Material, the Plumbing and the Heating Apparatus, Structural Iron, your Paint, and even your Furniture and Household Goods with which to furnish the building. Just think what that means to you—an opportunity to buy every single thing and at a saving of anywhere from 30 to 60 per cent. Satisfaction guaranteed or money refunded. Fill out coupon in lower left-hand corner and mail it to us to-day—now.

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Studding—2x4-14 Sized	17.00
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Rafters—2x4-22 and 24 ft., Sized	20.00
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Prices are per thousand, in carload shipments only. F. O. B. Chicago, for 30 days only.  
All material guaranteed new.

### SEND US YOUR LUMBER BILL FOR OUR ESTIMATE!

We urge you to send us your carpenter's bill for our estimate. Have him make up a list of every single item you will need and send it on to us for our prices. We guarantee to go over it carefully and itemize it fully, and to send you a clear, concise statement of just what we will furnish and the prices will be so low as to secure your order. You can include in your list of material everything needed; that means even plumbing and heating material.

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We make our quotations Freight Prepaid. That means delivered free of all charges to your railroad shipping point. No trouble with the Railroad Companies for you. We assume every possible risk. We guarantee safe, sound and prompt delivery and if any material reaches destination damaged, we make good at once and assume all your claims against the Railroad Co.

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We have in our possession thousands of letters received, unsolicited, from customers who have bought carloads of material from us by mail. We will be glad to send you copies of them to convince you that we are all we represent ourselves to be. Satisfied customers are really our best advertisements. Our wonderful success is a proof that our dealings are correct and honorable; it is a convincing argument that our prices are right. We'll be glad to demonstrate this to you.

### Note the Prices!

Barn Sash	\$0.36
Storm Sash	.70
Stall Sash	.21
Hot Bed Sash	1.55
Windows	.50
Panel Doors	.80
Glass Doors	1.75
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Door Frames	.50
Corner Blocks	.02
Base Blocks	.03 1/2
Inside Trim	.60
Plate Rails	.06
Stair Rails	.07
Porch Balusters	.05
Colonial Columns	1.70
Cottage Windows	3.52
Porch Columns	.65
Blinds	.66
Cellar Sash	.35
Hardwood Mantels	5.00

Prices are subject to quick acceptance, and all material guaranteed brand new, standard grade and quality. Our Catalog tells more about it.

### Send for our Free Mammoth Illustrated Catalog No. 742

We publish a book of some 500 pages, containing a general record of our goods and showing millions of dollars' worth of merchandise secured by us at Sheriffs' Sales, Receivers' Sales and Manufacturers' Sales. It is a friend to every economical person. You cannot afford to be without it. It lists Building Material and Supplies, Machinery, Roofing and Wire, Structural Material, Hardware of all kinds, Furniture and Office Fixtures, Belting and Rubber Hose, Plumbing and Heating Apparatus, Pipe, Valves and Fittings, Wire and Manila Rope, Electrical Apparatus, Saws and Vault Doors, Tanks, etc., etc.

In addition to this General Catalog we publish a "BOOK OF PLANS." It shows illustrations of modern houses and barns; give illustrations from life as well as floor plans; it explains our unique offer to furnish all material needed to construct any buildings shown in our book. You can get a complete set of plans, specifications, and bill of material for \$2.00. Or, furnished free with your order. We also publish a Furniture Catalog showing handsome designs in Household Goods, Furniture and Office Supplies. Write us your wants. We can save you big money. Our special furniture catalog will save you money on furniture, carpets and rugs.

**Chicago House Wrecking Co., 35th & Iron Sts., CHICAGO.**

### Chicago House Wrecking Co. 742 CHICAGO

Cut this out and mail to us at once.

I saw your advertisement in Amer. Carp. & Builder.

Name .....

Town .....

County ..... State .....

R. F. D. No. ....

Send me free of all cost your Wonderful Catalog and Building offer, as advertised.

# All Free to

## American Carpenter and Builder Readers

### *Let Us Send You These Samples*

**D**ON'T put it off 'til later — send us the coupon right now. It will only cost you a minute's time and a two-cent stamp. We have got to do a whole lot more than that. It costs us a lot of money to send out these samples. We couldn't afford to be so liberal if it were not for the fact that a man cannot test Johnson's Wood Finishing specialties without being convinced of their superiority.

We want to send you at once this package of samples, including a bottle of Johnson's Wood Dye (any one of the 14 shades you want), a sample of Johnson's Prepared Wax Black and a sample of our Under-Lac (better than shellac or varnish) for a high-glossed finish.



We want to send you a sample of our Black Wax, for it is the only wax on the market suitable for use over dark finishes. All other brands will show light in the grain or corners where it is sometimes carelessly left. You will be very much surprised at the results obtained with our Wood Dye and Prepared Wax Black. With Johnson's Wood Dye inexpensive woods may be made as beautiful as hardwood.

We recommend the use of a coat of Johnson's Under-Lac over our Wood Dye upon pine, cypress and everywhere else that a higher gloss than a waxed finish is desired. A single coat of this Under-Lac is better than the best shellac or varnish.

Johnson's Prepared Wax can be successfully used upon furniture and woodwork as well as floors. It produces a lasting artistic finish to which dust and dirt will not adhere.

**S. C. Johnson & Son, Racine, Wisconsin**



## We'll Send You This Book, Too

“WE will also send you our illustrated guide book for home-beautifying. Contains complete color card and complete directions for finishing and refinishing wood.

It is full of practical information and helpful suggestions that are of great value to painters and wood-finishers.

Johnson's Wood Dye is made in fourteen beautiful colors. From these any desired shade can be made. To lighten use alcohol—to darken use Flemish Oak No. 172. Pick out any color you want from the list below, and write the number on the coupon. If you would like a set of wood panels, showing various shades of Johnson's Wood Dye, kindly note this on the coupon, and we shall be glad to include them with the working samples. These panels will be mighty handy for you to show your customers. Help them to pick out just the colors they want. And you can depend on it, Johnson's Wood Dye will always match up exactly with the samples.

- |                        |                             |
|------------------------|-----------------------------|
| No. 126 Light Oak      | No. 130 Weathered Oak       |
| No. 123 Dark Oak       | No. 131 Brown Weathered Oak |
| No. 125 Mission Oak    | No. 132 Green Weathered Oak |
| No. 140 Manilla Oak    | No. 121 Moss Green          |
| No. 110 Bog Oak        | No. 122 Forest Green        |
| No. 128 Light Mahogany | No. 172 Flemish Oak         |
| No. 129 Dark Mahogany  | No. 178 Brown Flemish Oak   |

Fill out the coupon and let us send you sample bottle of Johnson's Wood Dye, one bottle of Johnson's Under-lac and a sample of Johnson's Prepared Wax Black.

**S. C. Johnson & Son, Racine, Wis.**

**Please Use this FREE COUPON**

**S. C. Johnson & Son, Racine, Wis.**

I accept your offer of Free Booklet, Edition A.C. B. 5 sample of Johnson's Wood Dye, shade No. .... and samples of Johnson's Under-lac and Prepared Wax Black.

Name.....  
Address.....

I usually buy my paint at store of  
Name.....  
Address.....

gotten their business and held it, by giving the best obtainable at a reasonable profit. They have tried—and succeeded—to do everything thoroughly, and with this end in view have



sought only the best sources of supply, and have, consequently, been in a position to secure the best results.

Owing to their ideal shipping facilities, orders can be filled quickly and with less expense, and you, Mr. Builder, reap the benefit.

The Badger Steel Roofing & Corrugating Company would be pleased to furnish estimates. If they can save you money it's to your interest to investigate. Their's is the complete line: Cornices, skylights, finials, ventilators, metal ceilings, slate, tile and tin roofing, architectural sheet metal work, eaves trough, conductor pipe, wire and steel hangers, sheet metal roofing and siding, steel and wood tanks. Drop them a card for their folder.

### New Simplex Mixer

The Miles Manufacturing Company, of Jackson, Mich., whose concrete block and brick machines have been so well and favorably known to all concrete workers, are exhibiting and demonstrating this year at the cement shows their newly acquired machine, the New Simplex concrete mixer.

Experimenters have been trying for many years to get a thoroughly reliable continuous mixer. The reason for this is that the contractor who operates with a regular force of men can work to much better advantage with a continuous mixer, thereby reducing labor costs. This is evident from the fact that batch mixers are now being made as nearly continuous as it is possible to get them. The greatest objection registered so far regarding continuous mixers is their unreliability both as to feed and the mix.

The aim in designing the "Simplex" was to get an absolutely positive and reliable continuous mixer. Pocket feeds, etc., have been eliminated, and the feed has been made continuous. This is accomplished absolutely, as the same amount of material is running into the conveying drum at all times except as the proportions may be varied. Owing to the large drum revolving, the material is carried around in it and mixed the same as with the batch process.

### Star Expansion Bolt Company Moves

The Star Expansion Bolt Company, of Bayonne, N. J., whose standard line of expansion bolts, toggle bolts, cable hangers, drills and drill holders are so well and favorably known to the trade, have removed their general offices from Bayonne to 147 Cedar street, New York City, where a very complete stock will be maintained at all times, and where the company hopes to have the pleasure of receiving their friends who may be either located permanently in the city or just there to see the sights.

# SEA GREEN & PURPLE SLATE

MAKES

## Roofs That Never Wear Out

Sea Green and Purple Roofing Slate is the *only* roofing material that *never wears out*. That affords spark and fire protection, pure cistern water, reduces insurance rates and *never* requires a dollar for paint or repairs—the kind of roofing your customers are demanding and are going to buy—either through you or the *first man* in their neighborhood who can supply their wants.

### CARPENTERS AND BUILDERS

Don't you see the demand that is developing in your locality for a strong, durable roofing material? Something that will give faithful service without yearly paint and repairs expense? Don't you *realize* that with very little effort you can establish a very profitable growing Slate Roofing Business? One that can be conducted in connection with your present line without added trouble or expense. We want you to take up Slate Roofing this spring and handle our **Sea Green and Purple Roofing Slate**. Write to us at once for delivered prices and *free* book of instructions. Don't delay. Write today.

This proposition does not apply in any locality now covered by an established Slate Roofer or Roofers.

**AMERICAN SEA GREEN SLATE CO., Box 36, Granville, N. Y.**

# CONGO



## NEVER LEAK ROOFING

### BACKED BY A 10-YEAR SURETY BOND

We have just arranged with The National Surety Co., a \$1,000,000 corporation, to furnish a Surety Bond with every roll of Congo. This bond says that Congo 3-ply Roofing, if directions are followed, will last ten years.

If it should fail during that period you get a new roof absolutely free.

Of course Congo will last the full time and more.

Otherwise the Surety Co. couldn't afford to stand behind it.

The real insurance lies in its durable, lasting qualities. Nevertheless, to give the purchaser confidence, we furnish him absolute protection against loss by including the numbered and recorded Surety Bond with every roll.

No other ready roofing manufacturer dares give such a guarantee.

A Surety Bond like this is as good as gold, and Congo to be sold profitably this way must be "as good as its bond"—and you can be sure that it is.

Send for sample of Congo today. You can then see why we are so willing to guarantee it.

## UNITED ROOFING & MANUFACTURING CO.

Successor to [BUCHANAN-FOSTER CO.]

555 West End Trust Building, PHILADELPHIA, PA.

CHICAGO and SAN FRANCISCO

## Expensive Experiences

### A Plain Talk to All Interested in Concrete Building Blocks

The enormous future for concrete building blocks has naturally induced many ambitious and progressive men to open plants for the manufacture of this great building material.

Many, not being thoroughly familiar with the different types of machines built, have been induced, through misrepresentation or otherwise, to install machines whose very construction alone would prevent the manufacturer's claims ever being fulfilled. The result has been that many have become discouraged. Others have either been compelled to purchase machines built along correct lines, or be driven out of the business by competition. This is a sad and expensive experience.

Many have made the mistake of buying a machine simply because it was cheap, not realizing that such machines were the most expensive in the end, the blocks produced—being of an inferior grade, always out of square, lacking in design, with no variety—would not sell. Therefore, in order to stay in the business, an entirely new machine, built along correct lines, became necessary.

Many have bought machines, being led to believe that they could produce any size of building block, finding when the machine arrived that only one length could be made, and in order to make another length it was necessary to buy a second machine, and even then, they could not supply the demand for regular standard sizes. They realized, too late, the impossibility of making a 20-inch or a 24-inch stone on a 16-inch machine, a 32-inch stone on a 24-inch machine, or a standard-size window sill on a 32-inch or smaller machine. This expensive experience of buying several machines to do

the work that one machine built along correct lines should do, could easily have been saved.

To produce concrete blocks, a coarse aggregate must be used, mixed wet. This is an impossibility with machines whose cores are removed from the side, as blocks will collapse after removing core. Such machines are not built along correct lines. They produce blocks made of dampened sand and cement, which break and crumble. Such blocks are a detriment to the industry and naturally injure the reputation of anyone producing them.

Another handicap has been the lack of variety in designs. On account of the enormous expense connected with producing a great variety of designs with each size, many of the smaller manufacturers are prevented from furnishing more than one design with each size, resulting in that awful "sameness of appearance," so objectionable to all builders.

When buying a machine, the future should be considered, as well as the present. As your business succeeds and grows, you will find it necessary to add to your equipment new sizes, designs, etc. You cannot do this unless the manufacturer of your machine is still in business.

Therefore, when you buy, profit by the experiences of others, and get a machine built along correct lines; a machine that will make a concrete block; a machine that will make all heights, widths, lengths and designs; a machine that expands as your business grows; a face-down machine with cores that remove from the top; a machine built by an old reliable firm.

(See next page.)



## 99 TIMES OUT OF 100 SUCCESS IN THE BLOCK BUSINESS IS ASSURED

If you use **HERCULES MACHINES**, making real **CONCRETE BLOCKS**.

This fact is proven conclusively by the steady growth of **Hercules** plants everywhere; by the duplicate orders received; by letters from enthusiastic users of **Hercules** machines, who have practically eliminated competition. **What's the reason?**

### HERCULES BLOCK MACHINES

enable operators to produce a grade of stone that overcomes competition—strong, durable, everlasting stone of the best quality—the kind that withstands fire.

### Look at this Test! — Study it for Yourself!

These walls required no repairing. Were pronounced perfect when everything else was gone. Read what the owners said right after the fire:

"Walls were in fine condition, requiring no repairs for rebuilding." These walls were examined by thousands, many being prospective builders. **If you had made these blocks, YOUR sales would have doubled instantly!**



*After Fire, Nothing Left but Walls of **HERCULES** Stone.*

## Cut This Advertisement Out—Show It to Builders!

IT WILL HELP YOU AND THE INDUSTRY IN GENERAL.

**BUT REMEMBER: This was Hercules Stone; or, in other words, Real Concrete** in the form of building blocks. This kind of stone cannot be made of sand and cement mixed **damp**. It **must** be a **coarse aggregate**, mixed **wet**. **Hercules** block machines are the only machines that allow for the use of a **really coarse wet mixture**. You can't use a **wet mixture** in a machine that inserts and removes cores from the **side**; **BECAUSE** blocks would collapse and fall out of shape the minute cores were removed. You can't use a **wet mixture** in a machine with impression plate on the side—in other words, "side-face" machines—**because** the material will stick to the moulds.

No matter what other manufacturers may claim, **these are facts beyond dispute**. **Hercules** machines are **built along correct lines**. They are "Face Down" machines, with cores removing from the top. They are unlimited, making all Heights, Widths, Lengths and Designs—impossible with other machines. That's why **Hercules** operators succeed.

**You can make no mistake** in buying a tried, proved, known machine, backed by reputation, popularity and a reliable Company.

*Send for our Catalogue. It will pay you.*

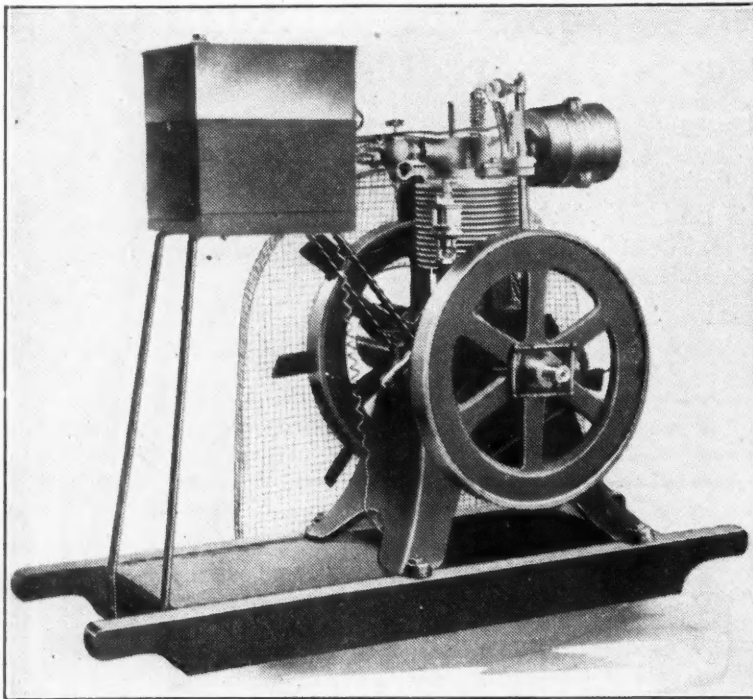
## CENTURY CEMENT MACHINE CO.

268-278 St. Paul Street

Rochester, N. Y.

### A Gasoline Engine Opportunity

Almost every owner of a small shop can use power economically in his work. Many labor-saving machines which cannot be operated by hand can be introduced and thus both



the capacity of the shop can be increased and the cost of turning out work largely lessened.

With the development of the gasoline engine practically

all the objections to the use of power in shops which would not use machines continuously have been overcome. Naturally, a steam engine, to be used economically, must be run all day, for it takes some time and fuel to start it, and if it was only to be used a few minutes at a time it would be very expensive. Moreover, a steam engine requires a boiler and other apparatus which increase the cost and take considerable space.

The electric motor, of course, is a highly convenient machine, but in many localities there is no current in the daytime, and in most the cost for current is so large that the motor has not come into the general use which its convenience and adaptability would otherwise deserve.

The gasoline engine has none of these objections. It is comparatively small and is entirely complete in itself. It is always ready to start and can be instantly stopped. The cost is less than that of the electrical or steam power plant, and the expense of operating is very slight.

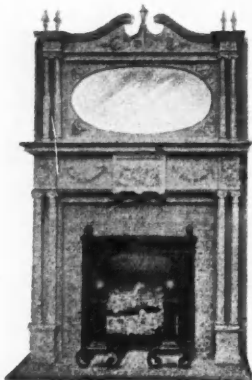
A small shop can be equipped with a gasoline engine for slightly over a hundred dollars. It will run all of the light machinery, such as saws, planers, etc., and will produce a maximum power with a minimum of expense and trouble.

No power house is required, as the engine can be installed in any convenient corner, and the gasoline can be bought as needed, or can be deposited in a storage tank outside.

The White Lily engine, advertised in this issue, is particularly adapted to shop work, as it is very compact and small. It is air-cooled, so that there is no danger of its

Great Variety  
of Designs

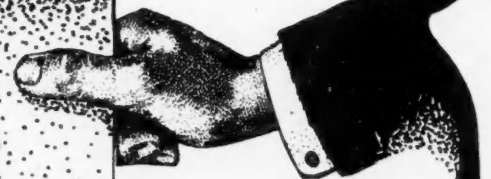
Colonial  
Corinthian  
Craftsman  
Mission  
Renaissance  
Ionic, etc.



## KING MANTELS

\$5000.00

Worth of Proof



In our magnificent catalog—including the art supplement "Colonial Beauties"—is shown the greatest variety of beautiful and serviceable mantels ever catalogued.

Illustrates the graceful outlines—the artistic conceptions that were designed to match every style of furniture made.

Gives reasons why King Mantels have no equal on earth. Explains the points that you have read about. Backs up every claim we make with solid proof.

Although this catalog actually costs us 50 cents to deliver, we will send it absolutely free to any builder who names the probable number of mantels that will be required.

### Artistic and Durable

Although King Mantels are superior to anything made for durability and unique appearance, the price is just as low as the other kind.

Of course our large output makes this possible.

Get the catalog before the first edition is exhausted.

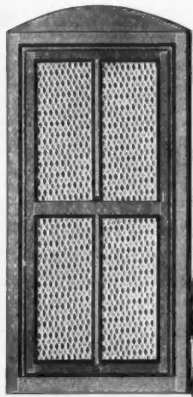
**King Mantel Company,**

551-553 West Jackson Avenue,  
KNOXVILLE, TENN.



# Sheet Metal Building Material

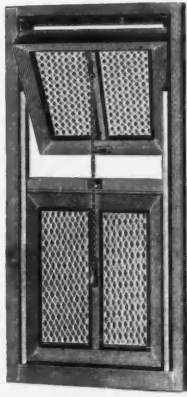
THAT HAS ALWAYS GIVEN PERFECT SATISFACTION



Pivoted Style

**Fire-Proof Metal Windows, Fire Doors and Shutters, made of Galvanized Steel and Copper.**

Write for our special catalogue "A" which fully describes their construction.



Double Hung Style

What a prominent Iowa architect said: "All persons who have had occasion to work about them are loud in their praises for your windows.

"They ought to be in a position to judge, as within the past year have set several different kinds of metal frames and all concede the ones you make are the best of them all."

**E**VERY Contractor, Builder and Architect who wants information about all classes of Architectural Sheet Metal work should write for a copy of our 110-page illustrated catalogue.

We are doing business in every State in the Union, also Canada and Mexico, and we can do business with **You**. There is nothing in our line which is too large or too small for us to successfully execute for you.

Prompt shipments are our hobby. Our facilities for handling your orders promptly are the best and we keep a complete stock.



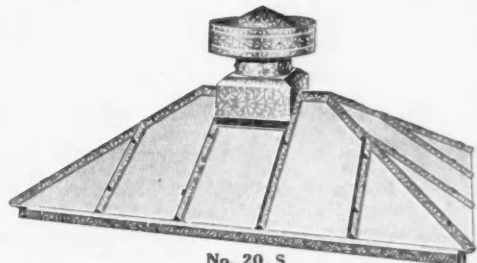
We are looking for an opportunity to serve **YOU**.

Send for our general catalogue No. 5, illustrating our complete line of Sheet Metal Building Materials also Steel Ceilings, Steel Roofings and Sidings, Spanish and Cluster Tile.

## Willis Ventilators and Skylights

can be set up by any person of ordinary ability without the use of tools or solder to make a watertight light.

They are made knock-down which reduces freight expense also chance of damage while in transit. They can be filled with any style of glass which we cut to size and pack in a separate crate. We make all styles and will quote delivered prices on receipt of your specifications.



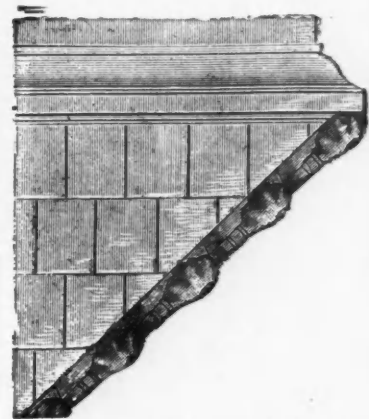
No. 20.5

### WE ALSO MAKE

**Willis Special Double Gutter, Mould Face and Standard Roof Gutters, Cornices, Metal Store Fronts, Bay Windows, Ridge Roll and Valleys, Wall Ties and Veneer Ties, Metal Shingles, and all kinds of Architectural Sheet Metal Work.**

You will be interested in our prices and workmanship as we guarantee satisfaction.

Plans sent us for estimates returned promptly with postage or express prepaid.



Originals of the famous Willis Hip Shingles and Cresting Tile No. 59.

# Willis Manufacturing Co.

Galesburg, Ill.

FLIES ALWAYS MIGHT  
ON THE SCREEN



WATROUS NO. 17  
ONLY SIDE HANGER MADE

## BIGGER PROFITS

FOR THE  
CONTRACTOR  
Who Uses The  
**WATROUS  
NO. 17  
SCREEN  
HANGER**

These same pieces, arranged to suit, will hang either a full or a half screen from either the top or side. Storm sash should be hung from the top, but this is the only way to hang a screen.

Only four screws to set instead of twelve, a saving in labor of two-thirds. A gauge mark locates the piece instantly, and makes mistakes impossible. A carpenter who has bought other hangers, could afford to throw them away, buy the Watrous No. 17, and make more money on the job. Mounted working model sent free postpaid to dealers or carpenters. Write to-day.

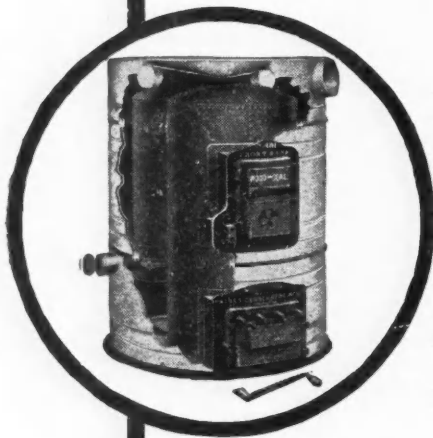


**E. L. WATROUS  
MFG. CO.**  
DES MOINES : : IOWA

### The Front Rank Steel Furnace

**Reduces Your Fuel Bill—  
Because it does not Waste  
—Burns any Kind of Fuel**

Distributes heat evenly and plentifully  
in the coldest weather.



Let us help you  
arrange your heating  
plans— We  
make no charge  
for furnishing  
estimates.

Our latest Catalogue gives complete details and other heating information. It will pay you to send for it — It's free.

Write us today and tell us, please, the  
name of your local Furnace dealer.

**Haynes - Langenberg Mfg. Co.**

4045-4057 Forest Park Boulevard : ST. LOUIS, MO.

freezing up in winter, and is in every way a highly convenient machine. The manufacturers of this engine have found by actual experience of its users that 3-horsepower is sufficient to run almost any machine in a small shop. Indeed, it is possible to run a number of light machines at the same time with 3-horsepower without in any way overloading the White Lily engine.

When operating on a full load, from one and a half to two gallons of gasoline per day is used, but under ordinary circumstances the consumption is less than a gallon, and costs probably 15c, including the cost of lubricating oil.

When it is realized that the White Lily engine will more than double the capacity of any shop now operated by hand-power the tremendous advantage of installing such a machine is evident. Besides being exceedingly convenient, the White Lily engine is thoroughly reliable. It is manufactured by the White Lily Manufacturing Company, of 1597 Rockingham road, Davenport, Iowa, who have always made it a point to sell only such goods as they could absolutely stand behind. Every engine is sold under their guarantee (not only covering the construction but the operation and horsepower as well), which is rigidly maintained.

No question is ever raised in the few cases where some accident happens to the engine, and a purchaser of the White Lily engine may feel that he is absolutely protected in his purchase.

Every engine that goes out of the White Lily factory has been subjected to a series of tests covering four days, in actual operation of the machine, which make it practically impossible for an imperfect engine to be shipped. This policy of care and accuracy in construction has enabled the White Lily Company to establish a reputation which is unquestioned by anyone who has become familiar with them.

Believing, however, that every prospective purchaser of an engine has a right, not only to know these technical points of manufacture, but also whether or not the engine which he proposes to buy is adapted for his particular needs, a free trial policy has been adopted which is extremely liberal and which eliminates any risk whatever on the part of the purchaser. The manufacturers will pay the freight on a White Lily engine to anyone, and allow them 30 days' after its receipt in which to try it for their own work.

If for any reason it does not prove satisfactory, it may, at the expiration of this time, be returned to the factory at the expense of the manufacturers and the purchase price will be promptly refunded. A person using a 3-horsepower engine in this way is under no obligation whatever to keep it if it does not entirely suit his needs.

This policy was adopted in 1908, and since that time but one engine has been returned. In this case the user shipped it back without explanation, and when it arrived at the factory it was found that it had not been handled in accordance to instructions at all, and that with the treatment which it had received no engine could possibly run.

Readers of the AMERICAN CARPENTER AND BUILDER who are operating shops without power should be much interested in this motor, and those who are using some other kind of power, or who have trouble with inconvenient or imperfectly constructed engines should be interested in corresponding with the White Lily Company, who will be very glad to answer any questions whatever, and to give them information as to any trouble which they have.

The White Lily Company maintains a bureau of information which will place at the disposal of anyone who is interested, any information which may be desired relative to their own particular work. This service will be given without any obligation whatever, as it is the desire of the White Lily Company to answer any questions which may arise in this way, depending upon the manifest superiority of its engine



**I**N CONFERENCE—Owners of buildings, factory superintendents, architects, heads of industrial concerns, invariably decide upon The Carey Roof Standard, whenever a careful and thorough study of all known roofing materials is made—for service, durability, safety, economy of upkeep and absolute insurance of uniform standard construction. The same for a quarter of a century.

## Here's the Answer

**T**HE perfection in roof construction today is Carey's Flexible Cement Roofing—the ideal roof covering. It is the one positively *Standard Roof*.

*Standard in Manufacture, in Quality, in Thickness and in Weight, year in and year out, the world over.*

Always *uniform*. Built true to a fixed standard at our factory. Its construction is not dependent upon the workmen who lay it. No roof can be a perfect roof that is manufactured by workmen on top of the building.

Carey's has been recognized for over twenty years as the highest type of roof construction. It has reached a state of perfection that no other roofing material has ever attained.

Carey's Flexible Cement Roofing is a combination of high-grade materials formed into a compact, flexible, indivisible sheet. The plastic cement composition, which is the body of our roof, is tempered in the process of manufacture, which insures its flexibility and renders it immune from exposure to extremes of heat or cold.

The outer layers composed of weather and fire resisting materials offer additional protection to the cement composition, sealing and preserving it from destructive influences.

Carey's Roofing improves with age, and gives the highest degree of efficiency and service, and is so constructed that it can be perpetuated to last the life of the building. The materials are the most durable that could be put into a roof.

Not an ounce of tar is used.

Carey's Roofing is the result of careful and thorough investigation and years of experience in the manufacture of roofing. The principle of its construction is scientifically correct—a fact proved by over twenty years' actual time-tests.

The Carey Roof is finished complete in our own factory by expert and competent workmen, who have grown up in this business.

The Carey Roof is in a class by itself.

# The Carey Roof Standard

The ideal roof for *all* buildings and *all* purposes. The roof that is *different*. The roof equally adapted to *flat or steep surfaces*.

**Carey's Roofing Requires No Skilled Labor to Apply**

Any ordinary workman can apply it. No specifications to follow—no material to mix. The workman is not the manufacturer.

He easily follows the plain, simple directions, clearly printed on the wrapper of each roll.

Our patented wide lap insures a perfect union of the sheets. The result is a completed roof of practically one solid sheet over the entire surface. Carey's Roofing, because of its fire-retardant qualities,

**Is Suitable for the Very Highest Class of Construction**

For all buildings—city or country—from sky-scrapers to farm buildings, warehouses to poultry sheds.

Put up in rolls twenty-nine inches wide by forty-five feet in length, sufficient to cover 100 square feet, surface measure. Nails and cement for laps furnished.

Send for Free Samples and Carey's Roofing Book

**The Philip Carey Mfg. Co., 30 Wayne Ave., Cincinnati, O.**

**Forty-five Branch Offices and Distributing Points**

The Philip Carey Co., Atlanta, Ga.	The Philip Carey Co., Havana, Cuba	The Philip Carey Co., Pittsburg, Pa.
" " " " Baltimore, Md.	" " " " Jacksonville, Fla.	" " " " Norfolk, Va.
" " " " Birmingham, Ala.	" " " " Kansas City, Mo.	" " " " Rochester, N. Y.
" " " " Boston, Mass.	" " " " Knoxville, Tenn.	" " " " Scranton, Pa.
" " " " Buffalo, N. Y.	" " " " Little Rock, Ark.	" " " " St. Louis, Mo.
" " " " Charlotte, N. C.	" " " " Memphis, Tenn.	" " " " Seattle, Wash.
" " " " Chattanooga, Tenn.	Warren & Bailey Mfg. Co., Los Angeles, Cal.	" " " " Syracuse, N. Y.
Western Rfg. & Supp. Co., Chicago, Ill.	W. S. Nott Company, Minneapolis, Minn.	" " " " Toledo, Ohio.
The Breeze Bros. Co., Cincinnati, Ohio	The Philip Carey Co., Montreal, Que.	" " " " Toronto, Ont.
The Col. Rfg. & Supp. Co., Columbus, Ohio	" " " " Nashville, Tenn.	" " " " Washington, D. C.
The Philip Carey Co., Cleveland, Ohio	" " " " New Orleans, La.	" " " " Wheeling, W. Va.
" " " " Dallas, Tex.	" " " " New York, N. Y.	" " " " Winnipeg, Man.
" " " " Denver, Colo.	" " " " Newark, N. J.	" " " " Youngstown, Ohio.
" " " " Detroit, Mich.	Sunderland Rfg. & Supp. Co., Omaha, Neb.	Western Asbestos-Magnesia Co., San Francisco, Cal.
" " " " Harrisburg, Pa.	The Philip Carey Co., Philadelphia, Pa.	Nott-Atwater Company, Spokane, Wash.

to secure for it favorable attention. It has been the custom of some concerns to provide information of this kind and to constantly pursue their correspondents with solicitations for the purchase of their goods. No such inconvenience need be anticipated by anyone who takes the trouble to ask information of the White Lily Company.

This question of modern power is a very important one, for the days of hand labor are gone by and the man who attempts to depend upon such methods in competition with others who use mechanical power is at a great disadvantage. A thorough investigation of the subject will be advantageous to anyone, and probably no more convenient way can be suggested than corresponding with the White Lily Manufacturing Company, whether or not one of their engines or indeed any engine is purchased.

The White Lily Engine is illustrated on this page and a full description of it is given in the very excellent catalogue of the White Lily Manufacturing Company, which will be sent free of charge.

### Gal-va-nite Extension

Owing to the enormous demand for Gal-va-nite—the "triple-asphalt-coated, mica-plated" roofing—the manufacturers, the Union Roofing & Manufacturing Company, of St. Paul, Minn., have of necessity greatly enlarged their plant at that point. Three large fireproof buildings of brick and concrete were recently finished, and last week a contract was let to Wm. Baumeister, Jr., of St. Paul, at \$22,000 for the erection of a 2-story reinforced concrete and brick structure. With the capacity of their roofing machine-rooms trebled and with warehouses in thirty-two of the largest jobbing centers in the United States, the owners of the "mills that quality built" claim they were never quite so rushed with orders, and never were so fortunate to find themselves so well equipped to handle the demand for Gal-va-nite as at this time.

The large roofing machines of new type now being installed are of special design—made especially for the making of the "triple-asphalt-coated, mica-plated" roofing—Gal-va-nite.

### Plumbers' Nest of Saws

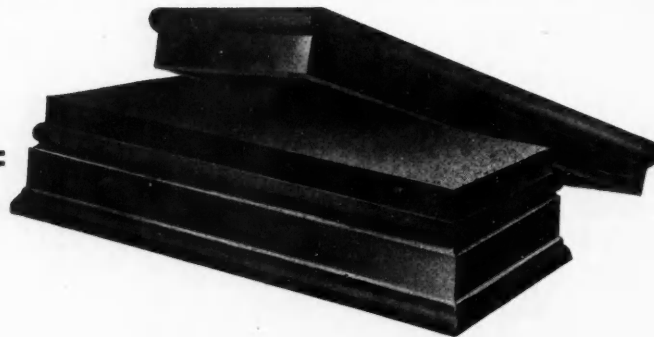
A new nest of saws, being put out as No. 83 by the Simonds Manufacturing Company, of Fitchburg, Mass., and Chicago, Ill., is made up especially for the use of electricians and plumbers. The feature about this nest is that with a keyhole and a compass blade there is included a nail or metal cutting blade. The Simonds handle offers a simple but effective patented adjustment. Either one of the three blades can be readily adjusted to any working position that may be desired.

### A Quick-acting Wrench

The Smith & Hemenway Company, of New York City, the well-known manufacturers of tools and hardware specialties, are now offering a very ingenious quick-acting wrench, the "Yemco." It is new and novel, strong and simple, unique and attractive. Very quick in action and just the wrench everybody wants. The only quick-acting wrench in which the jaw will slide to any hundredth part of an inch and hold at that point without any other movement. Pressing the button



allows the jaw to open, the screw revolving without manipulation. Convenient to adjust with one hand—simply push the jaw up with the thumb and the adjustment is made. To use



## CARBORUNDUM SHARPENING STONES

Put a keen, even, lasting edge on a tool and do it in half the time required by other sharpening stones.

Carborundum is very hard and very sharp. It doesn't *rub* the edge back and forth until it breaks, as ordinary stones do—Carborundum *cuts* the steel and there is no unevenness or wiriness to the edge it makes.

Every Carpenter or Mechanic who loves sharp tools ought to have a Carborundum Sharpening Stone.  
For Sale by Hardware Dealers everywhere.

**THE CARBORUNDUM COMPANY**

Niagara Falls, N. Y.

# *Drawing Trade to Builders*

**More Roofing Business follows the use of "satisfaction-giving" roofing. That's why contractors should continue the use of Ford's Roofing.**



## Look for the Record Behind the Roofing

The contractor is responsible for the roofing he uses. *Good* roofing makes pleased clients and more business. Our forty-year-old reputation is an iron-clad guarantee of quality. Ford's Galvanized Rubber Roofing is just as much ahead today as it has been since 1865.

### Warning

This roofing cannot be bought of "mail-order" or "catalogue houses" and the public are warned against cheap imitations sold under names closely resembling our brand.



## FORD'S Galvanized Rubber Roofing

Is made by a special manufacturing process and from special materials. The manufacturing process involves extreme heat and enormous pressure. It is the only process that insures a perfect prepared roofing.

The materials used, under this process, *must* be of extremely high quality. So every ounce of materials that enter into the manufacture are examined before being used. Thus we know the quality is there. Thus we are certain that every square foot of Ford's Roofing is *good*. That is why we take no risk in making broad guarantees.

### Roofs Covered with Ford's Roofing Are Safe

Where a good roof is needed, use Ford's Galvanized Rubber Roofing. It's the cheapest roofing, wearing and service-giving qualities considered, at present on the American market. It is "different" to other "cut-price" prepared roofings. Not much different in price but in the quality. The Ford quality is the standard quality.

Send for samples, particulars, dealers' names and important literature.



**FORD MANUFACTURING CO.,**  
2333 La Salle Street, CHICAGO

You know what is in the food you buy. The law gives you that protection.

Why shouldn't you know what is in your roofing so that you may be sure of your building's protection?

# Genasco Ready Roofing

is made of Trinidad Lake Asphalt—Nature's absolute waterproofer that doesn't crack, rot, break, or leak.

Ask your dealer for Genasco, and thus make sure of economical and lasting protection for every building you erect. Mineral and smooth surface. Guaranteed in writing and backed by our thirty-two-million-dollar organization. Look for the trade mark; take no substitute. Write for samples and the Good Roof Guide Book.

THE BARBER ASPHALT PAVING COMPANY

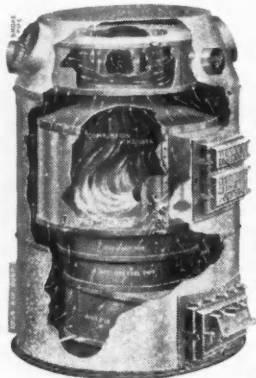


Largest producers of asphalt and largest manufacturers of ready roofing in the world.

PHILADELPHIA

New York San Francisco Chicago

## BUY A BOVEE FURNACE



Direct from the Factory  
AND SAVE \$50.00 TO \$100.00  
ON YOUR HEATING PLANT  
They Actually Save from One-third to One-half of the Fuel

We have one of the best equipped furnace factories in the west and make more than 30 different furnaces of seven leading styles and can furnish our customers with practically any size or style of furnace they may desire, either Upright or Horizontal, sufficient to heat a large church or school house, down to a cottage heating plant complete with all pipe, registers and fittings for \$55.00.

Our furnaces are the only furnaces having a perfect ventilating system for every part of the house.

We ship our furnaces cut to fit. Any handy man can install them without the aid of a tinner.

Catalogue and full specifications free.

Bovee Grinder & Furnace Works  
50, 8th Street Waterloo, Ia.

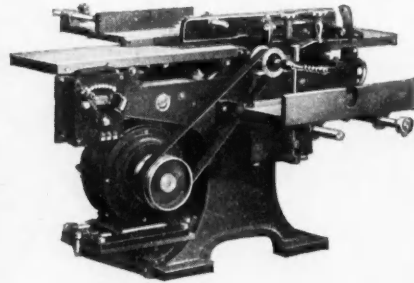


—slip open the jaws, hook outer jaw over nut, push up the other jaw, and there you have it—a correct adjustment in a twinkling. It stands without a rival, none so quick, none so handy, none so novel and attractive.

How often have you wished for a wrench that could be successfully operated with one hand? Yemco wrenches do the trick. The jaw can be pushed to the nut you wish to grip and it locks, its release being effected only when you "press the button." And it's all done with one hand.

## Modern Equipment for Carpenter Shops

But a few years ago, the equipment of the average carpenter shop consisted of a bench, a chest of hand tools and a few foot-power machines. But in recent years there has



been a vast improvement in the equipment of these small shops. The perfection of the gasoline engine and the increasing number of electric power plants, now make it possible for even the smallest shop to have power. Car-

penters and contractors are beginning to realize that their shops are very profitable establishments if equipped with power-driven woodworking machines. A few of them may feel that their business is not large enough to justify the purchase of power-driven machinery, but others who, with no better prospects, have put in machines, find that it pays.

The most important feature for the intending purchaser of woodworking machinery to keep in mind is the fact that the

cheapest woodwork-

ing machine, and the one that should

always be purchased, is the one

that gives the longest term of satis-

factory service. In every case where

the small shop owner installs wood-

working machinery, the efficiency of the

shop is increased. He finds that he can do at a good profit

many of the jobs that formerly were taken elsewhere. When

in a hurry for a bit of molding or a few window frames, he can often get the entire job finished with his own equipment

before a planing mill would get started on the order regular.

Many of the large planing mills now work as much as possible on specialties, so that it is quite expensive for the contractor to get odd jobs of planing mill work done. It is quite true that many carpenters and contractors have such a

limited amount of work for power-

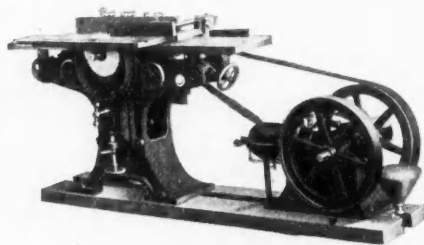
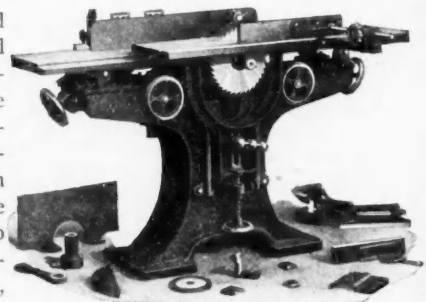
driven tools that they would not be

justified in buying several machines,

but the requirements of just this class of users has been provided for

in the Crescent variety wood worker. The machine consists of an 8-inch

jointer, saw table, horizontal borer, pole rounder and shaper, and an emery wheel for grinding small hand tools and mold-



limited amount of work for power-driven tools that they would not be justified in buying several machines, but the requirements of just this class of users has been provided for in the Crescent variety wood worker. The machine consists of an 8-inch jointer, saw table, horizontal borer, pole rounder and shaper, and an emery wheel for grinding small hand tools and mold-



# The TRAINED Man Gets The Position

You wish to apply for a position—what qualifications have you to offer?

You desire to secure promotion to a better place—are you competent to hold that place?

That which decides your obtainance of a new position or promotion is your fitness for that position. You must certainly realize this. **Incompetency means failure.**

To be fitted for a good position in the occupation of your choice you must have a training that enables you to hold that position better than the average man. **This requires technical training**, as the old methods of practical experience are no longer sufficient. Almost without exception when the places higher up are to be filled it is the trained man who gets the position.

For 17 years the I. C. S. has been training men for advancement to better positions and earnings. This institution has an equipment consisting of five buildings and 3,000 employes and is backed by an invested capital of six million dollars. It has brought advancement to hundreds of thousands of men who never would have achieved the success they have obtained without I. C. S. Training. These men were in all circumstances and conditions of life when they started.

This equipment and these results all prove beyond question that **I. C. S. Training is the most powerful force for promotion in the world.** This force can be brought to bear upon **your** advancement in your own home, in your spare time, and without obliging you to buy books. Mark and mail the coupon below. This will bring you free full explanation of the plan telling how it can be adapted to your individual needs and pocketbook. You will never get a better position unless you make a definite attempt to fit yourself for it. **Start now by using the coupon.**

### International Correspondence Schools

Box 910, Scranton, Pa.

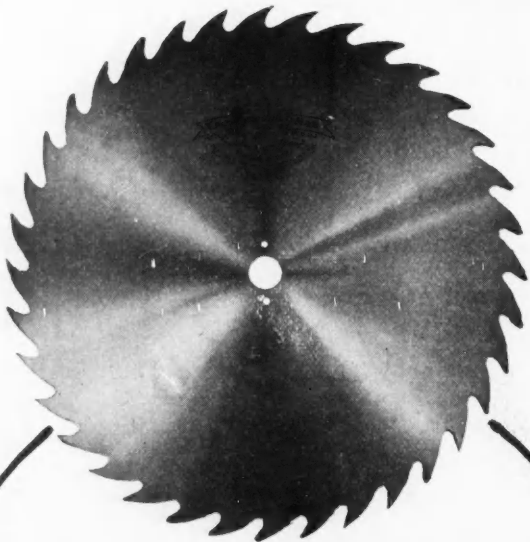
Please explain, without further obligation on my part, how I can qualify for a larger salary and advancement to the position before which I have marked X.

Architect	Stationary Engineer
Architectural Draftsman	Electrical Engineer
Contractor and Builder	Electrician
Building Inspector	Electric-Light Supt.
Structural Engineer	Electric Railway Supt.
Structural Draftsman	Foreman Machinist
Plum. and Heat. Contractor	Sheet-Metal Pattern Drafts.
Supt. of Plumbing	Mining Engineer
Foreman Steam Fitter	Textile Expert
Plumbing Inspector	Bookkeeper
Heat and Vent. Engineer	Stenographer
Estimating Clerk	Ad Writer
Bridge Engineer	Window Trimmer
Civil Engineer	Illustrator
Surveyor	Civil Service Examinations
Mechanical Engineer	Chemist
Mechanical Draftsman	

Name \_\_\_\_\_

Street and No. \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



## SIMONDS SAWS

### Why you should buy them

There is only one reason why you should buy one thing rather than another when there is a choice of several kinds.

That reason is the best value for your money.

Simonds Saws will give you full value for every cent you pay for them. That's the way they are made. That's the way they are warranted.

We are not talking about cheap goods—you pay a fair price, but you get what you pay for. They are **Made of Simonds Steel**, the best saw steel in the country. Teeth that hold their cutting edge longer and require less filing than other saws. A blade that saws true. Evenly tempered. Nicely finished. Well fitted, carved and polished apple handles. These are some of the evidences of quality in our saws.

Tell us what saw you want and we will send address of Hardware Dealers near you handling Simonds Saws, and we will also send you a free copy of an interesting booklet, "Simonds Carpenters Guide"

### SIMONDS MFG. CO.

Fitchburg, Mass.

Chicago San Francisco  
New Orleans Seattle  
Portland New York  
London, Eng.  
Montreal



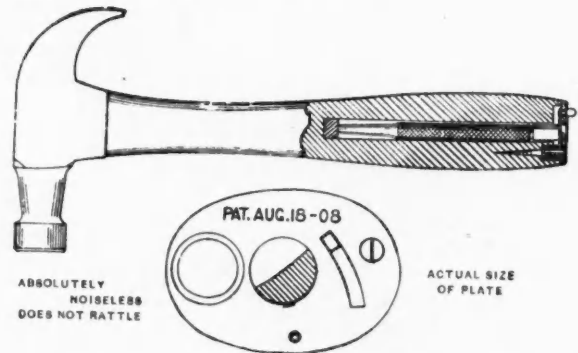
Look for this trade mark etched on every saw.

ing knives. Is a splendid tool, well built, and is meeting with general favor where there is need of several machines and where the work for each is limited. The machine will do any work that can be done on a jointer, and the change from one operation to another can be made very quickly. Without changing a single adjustment on the machine it is possible to do sawing, jointing and boring. In many cases a contractor finds it an advantage to have a machine of this kind on a job when he is erecting a large building. To meet this condition, the machine is so designed that an electric motor can be mounted under one of the jointer tables. The motor is placed on a bracket that is attached to the frame of the machine, making the entire outfit self-contained and easily moved from one place to another. With this construction it is only necessary to make a few wiring connections and the machine is ready for business wherever set. It can also be mounted on skids with a gasoline engine, and is about as easily moved as the motor-driven machine.

The machine is manufactured by the Crescent Machine Company, of 24 Main street, Leetonia, Ohio, and they will be glad to send you a circular giving complete description. At the same time ask for their complete catalogue of wood-working machinery. It contains a lot of valuable information for those who are interested in woodworking machinery.

### A Handy Device

Every carpenter has often felt the need of just such a device as is now being put out by the Peerless Specialty Company, of Rochester, N. Y.—namely, the Peerless nail set holder. It is one of those simple, much-needed devices which immediately calls out the remark—"Well! Why wasn't that thought of before!"



Every carpenter knows that his nail set is continually and everlastingly getting away from him. Like the Irishman's flea (of pious memory), when you want him he isn't there. And just so with the nail set; when you want it in a hurry it is mixed up with the nails in your apron, or it is lost in the shavings, or it has dropped down into the lower regions of the chest, or it has worn a hole through your pocket and is gone for good!

But fit out your hammer with the Peerless nail set holder and your nail set is always in your hand ready for instant use. Any hammer can be equipped with this device at so small an expense as not to be worth mentioning.

The operation of this holder is simplicity itself: Hold hammer in right hand, press spring with thumb of left hand. Nail set will drop into your palm ready for use. To replace, simply place nail set in hole and give a quick shove. The attachment cannot be injured by falling or striking on end of hammer handle.

### What Every Builder Needs

Below is shown a cut of a level especially designed for builders, contractors, etc. This instrument is something that every builder should own, as it will save its cost many times



# MASTIC ROOFING

## MEANS

# A Perfect Roof



We offer Special Inducements to all Contractors and Builders putting on the first Mastic Roof in every locality where it has not been introduced.

## We Will Appoint Live Selling Agents

**Mastic Roofing** is a guaranteed product and represents the highest type of perfected ready roofing that it is possible to produce from the best materials and with the best manufacturing equipment.

The life of any prepared roofing is determined by the quality and quantity of its coating. **Mastic Roofing** has a base of specially woven jute, for first strength, with a heavy ply of pure all-wool felt on the back as a cushion, the whole being bound together and heavily coated with 55 pounds of Asphalt Mastic to the square and having a mixed mica and sand finish on the weather side.

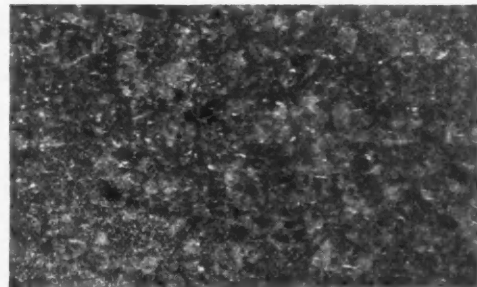
**Mastic Roofing** never requires painting because in our special process of manufacture it is coated with Asphalt Mastic equal in thickness to seven or eight coats of good paint.

**Mastic Roofing** is not the lowest-price roofing per square at first cost, but it is the cheapest and most economical in the end. It is laid the easiest and will out-last any other ready roofing made.

Contractors, Builders and Owners will find it greatly to their own advantage to investigate Mastic Roofing. It will cost you nothing to let us show you the "Hows and Whys" of its superiority.

Just write us now—today—and let us submit the best roofing proposition you ever received.

Booklets and Samples Free

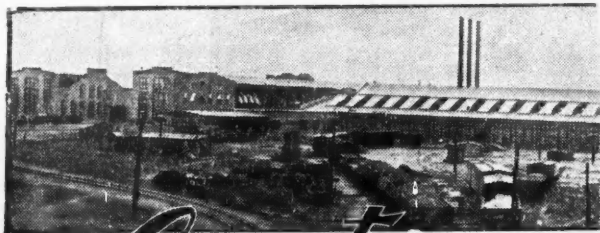


THE ABOVE CUT IS AN EXACT REPRODUCTION OF A PIECE OF MASTIC ROOFING 2½ X 1½ INCHES AND SHOWS THE SLIGHTLY SURFACE FINISH.

# National Roofing Materials Co.

EDWARDSVILLE, ILL.





**Granite** No Other  
TRADE MARK **ROOFING** Roofing  
 Has Such a Record

The ordinary ready roofing roll of 110 square feet is about half the diameter of a roll of **Granite Roofing**.

This is because Granite Roofing is so much thicker and stronger and contains so much more material. **Granite Roofing** is not a light-weight, flimsy paper, but a high-grade permanent roofing, adapted for structures of all kinds.

It is used by railroads, manufactories and on all kinds of brick and stone buildings, where it gives good service for ten to twenty years, **without requiring repairs of any kind**. Yet, although its price is low, no other ready roofing can compare with it for service.

Drop us a postal, and we will send you a free sample and booklet.

**Eastern Granite Roofing Co.,**  
 19 Battery Place, New York. Chicago. St. Louis.

**ZIMMERMAN'S**  
**ANTI-SAG STRAP HINGE**

SEE THIS FLANGE CANNOT SAG OR TWIST

TWO BOLTS WHERE THE WEIGHT IS CARRIED

Attached by STANDARD BOLT OR LAG SCREW

Ask your jobber or write us.

Highest Award Jamestown Exposition.

Easily attached for Heavy Barn and Fire Doors, Gates, Fire Shutters. 22 sizes. 6 inches to 6 feet. The strongest hinge ever offered; superior to blacksmith hinge.

**HARRY ZIMMERMAN & CO., Patentees,**  
 25 Wood Street, FREMONT, O.  
 Eastern Selling Agents, G. F. S. ZIMMERMAN, 4 Arch St., Frederick, Md.

Chicago's Oldest, Largest and Most Reliable  
 Hardware House

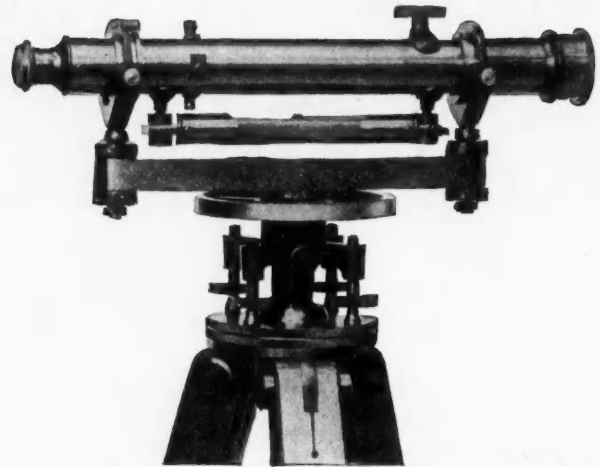
**STEBBINS  
 HARDWARE CO.**

74 Van Buren Street  
 CHICAGO

Dependable Merchandise at Lowest Prices

over in the course of a year, as it is particularly adapted to the leveling of walls, for laying out angles, grading streets, lots, drains, etc. It is not possible in this limited space to describe all the manifold uses of this level, but we can describe it.

This instrument has a telescope 12 inches in length, and is equipped with lenses of the very best optical quality, and magnifying power of 25 diameters. The object glass is 1 1/4 inches. The horizontal circle has a 4 1/2-inch diameter, which



is graduated from 0-90 each way. This instrument is complete in every detail and comes packed in a polished hardwood box, with strap, plumb-bob, sun-shade, adjusting pins and trivet.

Until June first, the David White Company, No. 419 East Water street, Milwaukee, Wis., are making a special offer on this instrument which will interest every builder.

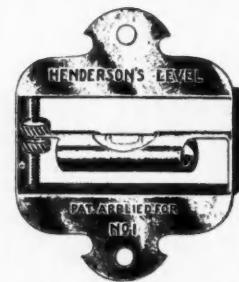
They also manufacture an American Dumpy level, which has the same telescope, the same powerful lenses, but which is constructed slightly different from the before-mentioned level. They are also making a special offer on this American Dumpy. Both of these instruments are guaranteed to be absolutely perfect and are guaranteed to satisfy anyone who buys them.

Write the David White Company today. They have a very attractive proposition, and it will interest you.

Mention this paper when writing.

**Straight-edge Level**

The straight-edge level for setting frames and running levels is the invention of a mechanic who could find nothing on the market good enough for the purpose, so made one embodying his own ideas of how such a level should be made.



The result was that he made so good a level that Henderson & Co., Memphis, Tenn., are making them and offering them to the trade that the public might get the benefit of such a useful tool. It is all brass, nickel-plated, weighs 1 1/2 ounces, is

2 3/4 inches long, 2 1/2 inches wide and 1/2 inch deep, and is fitted with proved glasses.

The level is used for setting frames, setting partitions, leveling joists, and for all purposes where a straight-edge is used.

The object is, by screwing the level to any straight-edge you convert it into a perfect level and eliminate the trouble of having to use a stock level or a plumb-bob; it is not affected by the wind, and you have only one tool to use in place of two.

The level is first screwed to the straight-edge as near true

# VULCANITE

## The Roofing Star



Shines  
in the  
Interest of  
Contractors

### Sixty Years Successful

**S**IXTY years of experience, reputation and constant improvement is behind every roll of Vulcanite Roofing. The high standard of quality has won for it **highest honors** at many expositions; the same high standard makes it the **most extensively used roofing in the world.**

"The roofing of ultimate saving" was what somebody called Vulcanite. We thought it appropriate—discriminative contractors have thought so since. The way we insure this "long-life" quality is like this: The base of Vulcanite is a mineral rubber

compound and is positively the highest priced material used in the manufacture of ready roofing. We pay the price because the quality is there. All the felt we use is pure wool felt. We know it's **good** wool felt because we make it in our own mills. No paper or other cheap filler is used.

Vulcanite is very dense and firm—it's tough, yet as pliable as rubber. The sixty-years' test has proved it will not freeze or crack in winter, will not crumble in dry weather—will absolutely refuse to leak in wet weather.

### To Contractors who use Good Roofing

Contractors are particularly requested to look for our name and trade-mark. Many manufacturers, who cannot imitate the roofing, imitate the name. The word "Vulcanite" and our Vulcan trade-mark is positive protection for contractors.

To dealers who sell it—to contractors who lay it—to consumers who use it—Vulcanite is a safe proposition. It's backed with positive guarantees. Everybody is protected and satisfied.

*Fill out the coupon for literature and samples.*

#### Vulcanite Samples

Sign and Mail this Coupon for Important Literature and Liberal Samples of Vulcanite Roofing.

Patent Vulcanite Roofing Co., Chicago

NAME \_\_\_\_\_

STREET \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

**Patent Vulcanite Roofing Co.,**  
**CHICAGO**

FRANKLIN, Warren County, OHIO

as possible, and then trued up with the adjustment, by either raising or lowering the free end of the bulb. It can be removed and replaced without throwing it out of true, and does not need a recess to apply it, as the tool can be applied flat on the smooth surface, and either way does not interfere with the adjustment.

### New Factory for American Luxfer Prism Company

A unique system of concrete construction is being employed in the erection of the new \$75,000 factory for the American Luxfer Prism Company, at Thirty-seventh and Morgan streets, Chicago. This is to be made a model "day-lighted" plant through the installation of an extensive application of the Luxfer system. The building is to be 170 feet by 200

The Mahler system of pre-constructed reinforced concrete T-beams has been developed as a result of the experience of Messrs. Postle & Mahler, the well-known architects of Chicago, in the construction of several buildings of the beam and tile construction. In short, the system is one in which the members are previously cast and cured, and are handled on the work in a manner similar to the handling of steel members. In the Luxfer prism factory only one form of beam is involved, this being laid on a steel cage frame as a floor beam.

In the building of the Luxfer Prism Company the Mahler beams are placed side by side on a fireproof steel frame, so as to form a solid floor and roof. For the surfacing of the floor, maple flooring is laid on 2 by 4 inch sleepers laid on the concrete. The roof is to have a cinder covering. The floors are designed for a live load of 125 pounds per square foot, and the beams have a 16-foot span. There will be about 2,000 of these beams, which are being cast in about 200 molds in the beam shops on the south side of Chicago.

The engineering experts of this company have applied to its factory building every necessary application of the Luxfer system to make the structure perfectly "daylight" throughout, creating a plant where the workmen may do their work under the most favorable conditions of natural illumination.

The facilities for doing business will be greatly increased, and the railroad track which runs into the factory is capable of handling five cars at a time. No mechanism for the saving of time and the increase of

factory productivity has been omitted in the equipment of this thoroughly modern plant, which also includes a physical



feet, two stories in height, and of fireproof construction, embodying the Mahler concrete T-beam floor and roof system.

# Mantels for Every Purpose

Original Ideas in Mantels suitable for Bungalows, Cottages, Concrete or Cement Houses.

Investigate our new Combination Mantel Fireplaces—ideal for Flats and Apartments.

LORENZEN  
PAYS THE  
FREIGHT

## Lorenzen Mantels are Ahead

The styles are modern—the designs are distinctive—the workmanship is better than other makes sold at higher prices.

Every mantel is made by experienced workmen from highest quality air seasoned lumber in various woods and finishes. The prices are as varied as the style—all the way from \$3.00 to \$250.00.

Our enormous stock is mirrored, and priced, in our catalog—the most magnificent ever issued. Send your name **now** and receive a copy as soon as it comes from the press.

### Dollars for Contractors and Owners in Our Proposition

Our latest innovation, the combination **Mantel-Fireplace**, will coin extra dollars for mantel dealers. Something new! Handsomer, richer, and vastly superior to any brick fireplace. We explain this to anybody writing. **Write today**

# LORENZEN "The Mantel Man"

315 N. Ashland Avenue. Chicago

# Everything for Furnace Work

**On Free Trial** *Until Jan. 1st 1910*  
**At Our Expense**

OUR story is quickly told. We will send you a **Hess Steel Furnace** and complete heating outfit, including pipes, registers, fittings and everything needed, for from \$25 to \$100 less than you can buy from dealers. You may place the purchase price in the hands of your local banker who will hold the money until January 1st, 1910, while you test the heater.

If the test is not satisfactory to you in every way, you may return the goods at our expense and have your money back, we to pay the cost of removal and freight charges both ways. Ask us more about it. There's money in it for you. Our great co-operative plan makes you a partner in our success. We explain this with every estimate. This offer also applies to heating equipments for all buildings. We **manufacture and sell from our factory direct to you and loan you the tools free with which to install the outfit.**



Our No. 45  
"Leader" Steel Furnace  
Heats 7 or 8  
Rooms

**Price \$49.00**

Delivered to any Station East of  
Omaha & North of the Ohio River  
Pipes and Registers Extra

## Special Heating Plans Free

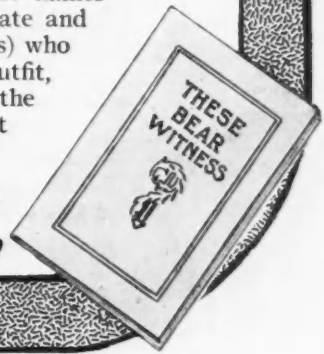
Send us a rough sketch of any building you wish to heat and, without any charge or obligation on your part, we will have our experts prepare a simple, clear plan which you can easily understand, showing every detail of the furnace, pipes, registers, etc., in their proper places, with the exact cost to you of the complete equipment.

## Write For These Booklets

Our booklet "**Modern Furnace Heating**" clearly explains principles that cannot be ignored if the heating of any building is to be accomplished perfectly and, at the same time economically. This booklet is written so anyone can easily understand the diagram illustrations and principles involved. It covers the entire heating proposition thoroughly and contains heating information of much value.

The booklet "**These Bear Witness**" gives the names and addresses of hundreds of people in every state and territory (many of them, perhaps, your neighbors) who have, and are using, the Hess Steel Furnace and outfit, and to whom we refer as having found our furnace the best in heating capacity and most inexpensive in first cost and fuel consumption.

THESE BOOKLETS ARE FREE.  
WRITE FOR THEM TODAY.



**Hess Warming & Ventilating Co.**  
920 Tacoma Bldg. Chicago

laboratory where the experimental work demanded by the ever-growing line of Luxfer products may be developed.

The factory of the American Luxfer Prism Company is almost a pioneer example of the German method of reinforced concrete construction, and marks an epoch of this type of construction.

This country is ten years behind Germany in the use of concrete in its various adaptations, and we understand that in 50 per cent of the work in that country members or parts are cast in forms, or "pre-made," and assembled in the course of construction.

### Roof Workers Take Notice

Due to the increasing volume of business the company has been called upon to handle, the office of the Coldwater Specialty Company has been removed from Coldwater, Mich., to 56 Fifth avenue, Chicago. This change will make the high-class roof worker's equipment manufactured by this company more easily procured, and will be a convenience to its many customers.

### Profits in Sheet Metal

Every carpenter and builder should study the metal ceiling situation. Few of them pay the necessary attention thereto, thinking that as a side line there is not sufficient money in the selling and erection. They have grasped the situation at the wrong end; there is a profit, and a most substantial one, too.

In order that a carpenter or builder be properly informed, he should secure the catalogue of some well-known manufacturer. The designs and the construction of the ceilings should be carefully studied, so that he may understand to what buildings certain designs are best adapted.

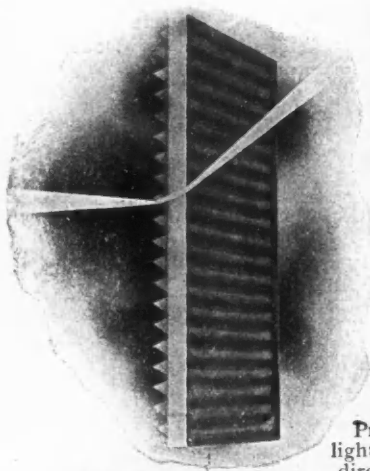
He should learn the difference in quality or production of that ceiling from others on the market; what they are made from, the quality and gauge of iron; how put together "on the job," and form his own reasons why the ceiling he is to handle is the best on the market.

There is a growing demand for metal ceiling or sheet-metal decorative material. Year after year the manufacturers are pouring hundreds of thousands of squares into the buildings of this country. There are many sound reasons. While metal ceiling and sidewalls are not fireproof, they are fire preventive, rather retardive. Then again, an old storeroom, office-room or any other place can be highly decorated with a carefully studied-out metal-ceiling arrangement. Harmony of design is necessary in the selection of sidewall and ceiling material.

Very often an inexperienced person will select one ceiling design and another sidewall design, because they seem to appeal to them. The manufacturer, probably more than anyone else, will be able to make a proper selection, that is, if it cannot readily be made by the buyer.

The numerous stories that float about the country in which people are killed by falling plastered ceilings and all that, seemed to have reached their deserved end. The fact is that a first-class plaster ceiling will hold up under extraordinary use. But then a plastered ceiling in a nice storeroom, or a church or public auditorium seems such a plain, tiresome effect when more desirable effects are within reach. The modern metal ceiling is rich in relief work, and many of them carry plastic effects which seem almost impossible in "cold metal."

The school house which is to be healthful and sanitary, and fire preventive, must have metal ceiling or sidewall. Some boards are specifying such material in every new build-



# Luxfer Prisms

## Turn Darkness *Into* Light

**Luxfer Prisms take the light of the sky and focus it to any part of the building.**

Luxfer Prisms flood the dark places with daylight and render artificial light unnecessary.

The secret of the successful results that always follow Luxfer Prisms is in the sharp, accurately cut angles. Sheet prisms cannot give such results; they merely throw the light on one spot—Luxfer Prisms distribute it into every nook and corner. The light rays are not merely reflected; they are scientifically directed—bent—focused. They are drawn from the sky to places they would otherwise never reach.

### Contractors Can Install Luxfer Prisms

Ninety per cent of the total installations are on our principle. This is appreciable evidence of superiority of the Luxfer system. It is testimony of the fact that architects and contractors are not risking their reputation by installing imitations.

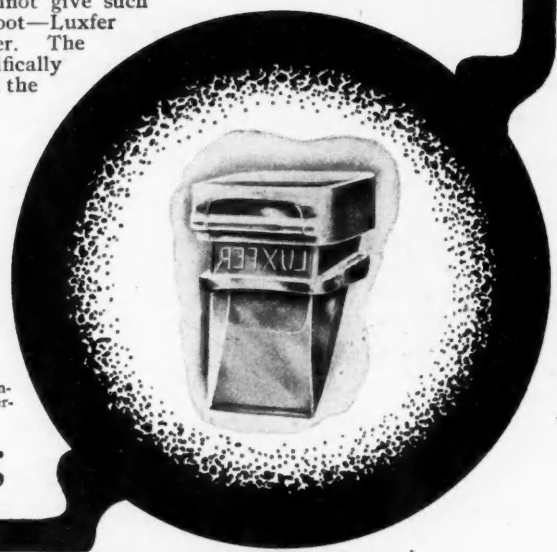
Wherever a dark room or basement exists there is a need for Luxfer Prisms. The rental value of each room is increased, while the utility of a daylight basement is unquestionable.

Contractors contemplating Luxfer Prisms can obtain ready-to-lay slabs made up to any specifications, at our shops.

### Send for "Daylighting"

Drop a postal for our booklet—"Daylighting." Gives you an insight into the most advanced method of daylighting and makes interesting reading for contractors.

**American Luxfer Prism Co.**  
1600 Heyworth Building Chicago



# THE PROBLEM SOLVED

You can have Modern Sanitary Plumbing installed in your home at a very low cost, for our "All Iron Pipe" system enables any handy mechanic, without previous experience, to do the work.

**DON'T BE HELD UP** for an exorbitant sum in order to possess these conveniences, for we will sell you the material at lowest wholesale prices.

**THERE IS NO MYSTERY** about the pipe work for plumbing. Look at the picture. The large vertical pipe is the stack. The smaller vertical pipe is the vent. All fixtures are trapped to prevent odor or sewer gas escaping into the rooms, and are so connected as to be properly vented. This is a fair type of Sanitary Installation. We will arrange any variations for you to supply you the most perfect arrangement for your home.

Whether in the city, where you have running water and sewerage, or in the country, where you have to provide your own water system and dispose of your own sewerage, you can have these improvements. We will sell you all the material of all kinds needed, make you working drawings, and tell you how to do the work.

**JUST SEND US A PLAN** of your house for our free estimate of all the material required to put in these modern conveniences.

## A Hot Water or Steam Heating Plant

**SOLD DIRECT TO YOU AT MANUFACTURER'S PRICE**  
Don't say you can't afford a new heating plant for your home until you get our prices. They will surprise you—and we furnish plants in such convenient form that you can install them yourself if you want to—or have a handy man to do it at day laborer's wages. Get ready for next winter now. It costs you nothing to have us make an estimate for you—and we not only save you about 50% in the cost, but

### We Guarantee Satisfaction

You take no chances. We write it in the contract that our plant will supply the temperature required in each and every room, and hold ourselves in readiness to supply, free of all cost, all material, should any be needed to bring the plant up to our guarantee. Should the plant at any time within one year prove a failure, or unsatisfactory to you, we will refund the entire purchase price upon the return of the plant to us. We will make you complete working drawings, showing how to do the work, so that you can't go wrong. We will lend you an entire outfit of tools to do the work. Get started now and utilize your spare time this summer in installing a high-grade plant at low cost.

Remember we guarantee our plant in every way. You can't get a better, even if you pay twice as much. Write for information blank.

### READY ROOFING

We are offering the entire factory output of mill ends of Extra High Grade Vulcan Roofing. This is the regular \$3.00 grade of Ready Roofing, but there are two or three pieces in each roll of 108 square feet, or enough to lay 100 square feet. Fire Proof! Not affected by Heat or Cold! Permanently Weather Proof. Stock limited. While it lasts at 95c per roll.

### STEEL ROOFING

50,000 squares of Heavy Steel Roofing. This is made from metal used in the manufacture of soap. Never exposed to the weather and never nailed. 10 times better than the lightest weights of new. Coated both sides with weather proof "Gelatine" coating. Guaranteed perfect and free from nail holes. Flat, per 100 square feet, \$1.50. Corrugated, per 100 square feet, \$1.75.

Write for Free Samples. Order at Once.

Central M. & S. Co., Chicago.  
I am much pleased with the hot water heating plant, the pneumatic water supply system, the bath room outfit and kitchen sink that I purchased from you for my home. Every part of this plant is thoroughly satisfactory. We have extremely cold winters here but the heating plant heats the house perfectly. In purchasing this from you I have saved about \$400.00.  
Very truly yours,  
John Gasman,  
Bark River, Mich.

C. M. & S. Co., Chicago.  
The hot water heating plant which you sold me for my house is perfect.  
G. R. Daniels,  
Olean, N. Y.

We will sell you a Complete Plant or a Single Fitting. No order too large, none too small.

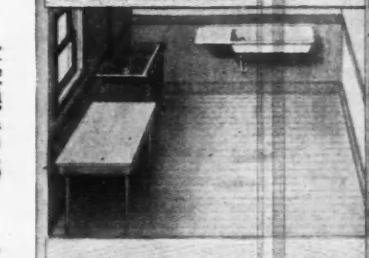
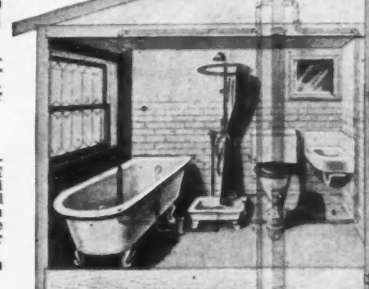
**Our Free Catalogue No. 103** shows plain net prices for each and every article. Write for it today. We also handle light and heavy machinery, gasoline engines, windmills, etc.

**Central Machinery & Supply Co.** 2557 Archer Avenue, Chicago, Ill.



**\$39.00** FOR THIS COMPLETE SET OF HIGH GRADE BATH ROOM FIXTURES

We Sell Direct to the Consumer  
Our regular price \$45.00. Special price to readers of Am. Carpenter & Bld'r. **\$39.00.**  
The Bath Tub is 5 ft. long, 30 in. wide, porcelain enameled inside and over the rim, and is trimmed complete with full nickel trimmings.  
The Lavatory is iron, white porcelain enameled and complete with nickel trimmings.  
The Closet is high grade sanitary bowl, with polished oak, copper-lined tank and seat, and cover to match.  
This offer is for a limited time only—  
Other Bath Room Outfits from \$24.50 to \$125



We will sell you material for a complete installation like shown in this picture, together with all pipe for **\$135.**

Our Pneumatic Water Supply system will furnish running water. By a simple natural law, the water is forced up to the faucets. Our free catalog describes the operation fully. Price from \$40 up.

Pneumatic Water Supply Systems from \$40 up.



**\$300** for hot water heating plant for this 12-room house including all material needed.

**\$247** for all the material for a hot water heating plant for this 11-room house.

**\$180.** A first class hot water heating plant for this 8-room house for \$180.

**\$135** is all it cost for a hot water heating plant for this 5-room cottage.

# "BRADFORD REDS"

## SUPERIOR FRONT BRICK

Brick Fireplaces

Standards—Romans—Ornamentals



Trade Mark Reg., U. S. Pat. Office.

MANUFACTURED BY

**Bradford Pressed Brick Company**

BRADFORD

PENN.

ing to be erected. What about the difference in cost from a plastered ceiling. Many persons contemplate so long over this very slight difference that they forget the four-fold advantages of metal. It is a matter of difference which should not be considered in dollars or cents, if better decorative and substantial effects are sought.

For many years the sheet-metal worker alone worked in the metal ceiling field. Contractors were of the opinion that none but experienced sheet-metal workers could "trim up" the bad plates and fit them together. There was a time when irregular stamping or trimming prevailed, and even now some such material is thrown upon the market regardless of the attainment of harmonious effects.

Manufacturers realize the inharmony of bad plates, poor stamping and plates out of square, and some make special efforts towards securing perfect plates in every respect, so that when erected the ceiling will present an unbroken sheet of metal, strong in relief and pleasing in effect.

The Kanneberg Roofing & Ceiling Company, of Canton, Ohio, have undertaken to instruct the contractor and builder in the rudiments of metal ceiling selling and erection through a new edition of their large catalogue of designs. They realized long ago that a good mechanic should be able to sell and erect ceilings, if the plates are squarely stamped and they fit together with regard to a perfect design. Hundreds of carpenters and builders have availed themselves of these instructions and already are handling them as a "side line."

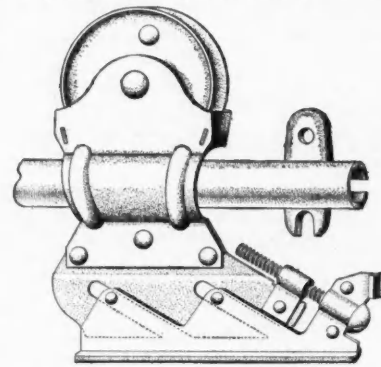
This firm believes that with proper illustrations and rightly built material, any mechanic will be able to handle their product and make a workmanlike job in its erection.

The catalogue gives instruction in detail, with an endless number of illustrations of applied design, and they have reduced to a minimum the matter of selection and ordering, so that no mistake can be made. This catalogue will be sent

any contractor, carpenter or builder who is in a position to undertake a profitable side line business requiring little additional work and which always is a source of pleasure and growth.

### Door Hanger Perfection

The Allith Manufacturing Company beg to announce that they have greatly increased their output this year over any



previous year—and hope the trade will accept this statement as evidence of unusual merit. The improvements that have taken place in their line assure the users of their product the highest standard attainable.

This company now invites your careful attention to their

parlor door hangers, universally recommended and used by the leading architects and builders. In these parlor door hangers they use the same principle of construction that has made their Reliable round-track hanger so universally successful.

"Always on the track" is the verdict concerning the Allith Reliable parlor door hangers. They are simple, efficient, durable, noiseless, frictionless; the most popular outfit with leading architects and builders of fine homes.

This hanger is an improvement in parlor door hangers. The hanger proper and the plate for attaching to the door are made of high-carbon wrought steel. The adjusting screw



Regular \$45.00  
Level for the  
Month of May  
Only  
\$40.00

### This Improved Level

especially designed for Builders, Contractors, etc.  
Has a telescope 12" in length. Lenses of the best optical quality. Magnifying power 25 diameters. Object glass 1 1/4". Horizontal circle 4 1/2" in diameter, graduated from 0-90 each way.

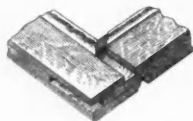
Instrument complete in a polished hard-wood box with strap, plumb-bob, sun-shade, adjusting pins and trivet.

This Regular \$45.00 Instrument with tripod, is offered from now until June 1, for \$40.00. Every Instrument guaranteed to be accurate in every respect.

### DAVID WHITE COMPANY

419 East Water St., Milwaukee, Wis.

### FLY SCREENS and SCREEN DOORS



"See that Corner"

Notice that rails lap over stiles, which prevents the splitting of plowed edges, so common with most screens, but not with ours. They cost no more than the inferior.

Made to order neatly and promptly.

From a single screen or door to a thousand.

Wire fastened by the most improved **Standard Shoulder Strip Method**.

Mr. Carpenter, Builder or Contractor, write for free copy of our 1909 illustrated catalog.

**STANDARD SCREEN CO.,**  
803-05 W. 14th St., Chicago, Ill.

### Practical Art Metal Ceilings



Quickly and easily applied. We are the only manufacturers who cut the beads in the dies after casting. Result—Square and accurate plates—which will save you time and labor in cost of erection.

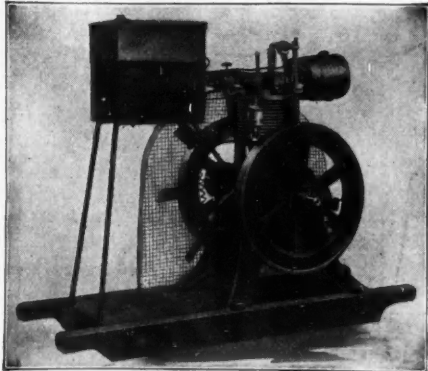
Send for Catalogue No. 2 which shows 200 new and original designs.

Manufactured by  
**Wm. Foster & Sons Co., Inc.**  
Springfield, Illinois

Also manufacturers of Radiator Shields, Fire Proof Window Frames and Sash, Gal. Iron Fronts, Hip Shingles, Cornice, Skylights



## Mr. Carpenter, Builder or Contractor Do You Know?



**The Air Cooled White Lily**

### Gasoline ENGINE

It will pay you to get acquainted with it, and to find out just how much it will save you in the cost of running your shop, and how it will increase your capacity.

#### The White Lily Engine

is small, light, convenient, but Full 3 H. P.

It costs little to run and is always ready. ☞ IT IS FULLY GUARANTEED. ☞ A little White Lily in your shop means a big balance in your bank. ☞ Every engine is sold on full thirty days' trial, all freight charges paid by us. ☞ You can tell by trying—Why don't you try? ☞ Write for full particulars and free illustrated catalog, today.

### WHITE LILY MFG. CO.

1597 Rockingham Road

DAVENPORT, IOWA.

## THE BEST PROOF

that a good tin roof lasts is—that it has lasted.



### 32 POUNDS COATING ROOFING TIN

"The Terne which turns the elements"

is not an experiment but the result of long years of testing and service right on the roof. For ductility, durability and heavy uniform coating, MF has always maintained the highest standard of excellence.

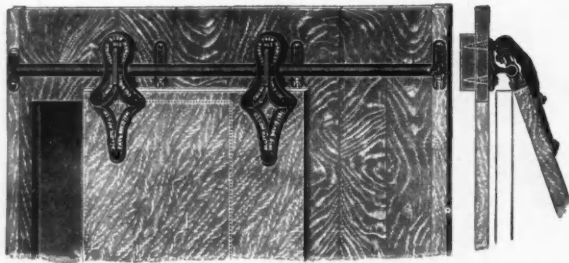
One roofer says: "After an experience of over forty years as workman and proprietor in the tinning business, I have never found a roofing plate so satisfactory as MF."

### American Sheet and Tin Plate Company

FRICK BUILDING

PITTSBURGH, PA.

has an extra long bearing in the frame of hanger, making a very strong and positive adjustment, easily regulated without removing door casing. The wheel is brass bushed,  $\frac{3}{4}$  inches



in diameter, steel cased with hard fibre tread, making it absolutely noiseless. The track is a round steel track with malleable iron supports, fitting tightly inside of the track.

An improved design is now offered in the well-known Reliable door hanger. There has been no change in the principle of construction, as actual tests have proved it to be the only correct one for door hangers. The size of frame and wheels has been increased, making a more symmetrical and easier-running hanger.

The track is made in lengths of 4, 6, 8 and 10 feet. It is a heavy round steel tube, with a  $\frac{3}{8}$ -inch slot in the back, allowing the insertion of the track supports. This shape makes it much stronger and more rigid than a flat track. It cannot get out of line or sag. The supports are malleable iron, fitting inside of the track tightly, and may be spaced to fit any requirements.

#### Disston's New Book of Saws

In the matter of merit, the 1909 catalogue of Henry Disston & Sons, Inc., of Philadelphia, resembles the product of

its world-famous factories, in which sixty-nine years of successful saw-making constitutes a guarantee of quality, workmanship and efficiency.

This new catalogue, just received, tells its own story, and in doing so, describes the superior characteristics of Disston saws and tools. It is a book worthy of special attention from the Pacific northwest trade, dealing as it does with every possible feature and appliance of circular, band and hand saws, backsaws, nest saws, hack saws, wood saws, saw sets, tools and files, as well as advantageous methods of use and repair. From the preface of the book we take the liberty of quoting as follows:

"As long as fifty-four years ago we recognized the importance of making our own steel in order to obtain satisfactory quality, and at that time established the first plant in America for making crucible saw steel. Since then the plant has been enlarged and improved until now it is undoubtedly the largest and best of its kind, making high-grade crucible steel peculiarly adapted and unequalled for saw and tool purposes. It is upon this well-laid foundation the Disston quality is built and uniformly assured."

#### Somers Brothers Blocks

In purchasing a block machine the vital question arises, will it make good blocks? To be successful a machine must not only make good blocks but it must make them rapidly. The question then arises, which is the better method, the pressure method or the tamp method? And both methods are admittedly good if the pressure or the tamp is uniform. All block men agree that to have a successful block made, one that will withstand the elements, a slushy mixture must be used.

Somers Brothers, of Urbana, Ill., have been for the past few years placing on the market a block machine that so far

## THERE IS MONEY in the METAL CEILING BUSINESS, FOR YOU

### Contractors and Builders Should Read This

Why don't you sell METAL CEILINGS? It's a profitable business the year round for every contractor and builder, no matter in how large or small a town you live. We have simplified the work, from the taking of the measurements to the writing of the order and erecting the ceiling. We want a man in every town in the country to whom we can make a special proposition on our line. We have the RIGHT designs for every building and our prices are low.

We also make expanded METAL LATH, METAL ROOFING, and all kinds of SHEET METAL BUILDING MATERIAL. Tell us what you want and ask for catalogue.

**The Kanneberg Roofing and Ceiling Co., Canton, Ohio**

New York    Detroit    Chicago    Kansas City    Dallas    Baltimore



**DOW**  
Wire & Iron Works  
(Incorporated)  
LOUISVILLE, KY.

**IRON LINTELS**

Beams, Angles, Anchors, Hangers,  
Ornamental Cast Iron Fronts and Stairways.



A Roll  
Ready for Use

Union Fibre Co., 72 Fibre Ave., Winona, Minn.  
Dear Sirs: Send Samples and Specifications  
(for sheathing and sound-deadener) of the new  
linen building felt—LINO FELT—“38 times  
as effective as BUILDING Paper.”

(Sign your name and let us prove it to you.)

LINO FELT is Made by the Makers of "LITH"—the Cold Storage and Refrigerator Insulation

#### Not Expensive

500 Million Yards in Use  
Adds less than 1 per cent  
to cost of building.

The Philip Carey Company  
Distributors,  
Cincinnati

Branches & Warehouses  
in all large cities in the  
U. S., Canada and Mexico



Asbestos "Century" Shingle Roof—Dayton Gun Club, Dayton, Ky.; William Lampe, Newport, Ky., Architect; R. L. Brown, Covington, Contractor

## Asbestos "Century" Shingles

"The Roof that Outlives the Building"

What roofing *could* the architect or builder recommend if not Asbestos "Century" Shingles.

Weather-proof—moisture hastens the crystallization of the cement particles about the inter-lacing asbestos fibres. Elasticity defies even continuous freezing and thawing.

Fire-proof—asbestos and cement are indestructible by fire.

Accident-proof—asbestos fibres reinforce the cement in every direction.

Uniform in size and shape, easily and quickly laid, need no painting and no repairs.

Three attractive colors—Newport Gray (silver gray), Slate (blue black), and Indian Red. Numerous shapes and several sizes. Ask your Roofer for new quotations. Write for Booklet "Roofing 1908."

**The Keasbey & Mattison Company, Factors**  
Ambler, Pennsylvania



"Triple Asphalt Coated Mica-Plated."

## Galva-nite Roofing

"First Cost is Last Cost"

When you put GAL-VA-NITE on a building you can leave the job with the satisfaction of knowing that the building is well roofed. "Well roofed" means no more trouble from leaks and the expense of coating or painting every year. GAL-VA-NITE is waterproofed with mineral asphalt and is weatherproofed with a heavy "armor plating" of flaked mica. GAL-VA-NITE will not "run" in the hottest sun on the steepest roof, neither will it fail to give entire satisfaction on a flat roof.

GAL-VA-NITE is put up in rolls containing one hundred and eight square feet complete with nails, lap cement and directions. This pliable mineral-faced ready roofing is such a great improvement over all similar products and it is so much easier and cheaper to lay than shingles or tin that it is no wonder that it is being called for all over the continent.

We have warehouses all over the country and can make prompt shipment at the very lowest freight rates. Let us send you our FREE samples and convince you that "the first cost is the last cost" of a roof of GAL-VA-NITE. Our FREE roofing booklet "The Inside of an Outside Proposition" sent on request.

"For Roofing Right—Know GAL-VA-NITE."

Address the Manufacturers

**UNION ROOFING & MFG. CO.**

ST. PAUL, MINNESOTA.



## THE MANUFACTURE OF CONCRETE HENS' NESTS

Pays enormous dividends on a very small investment

They are Sanitary—Will Last Forever. They offer a profitable field with No Competition

**ONE SALE MEANS A DOZEN**

Every man who owns chickens is a SURE CUSTOMER

OUR FOLDER TELLS ALL ABOUT THEM. WRITE TODAY

**B. M. BANGS & CO.,** BOX 464C LAKE MILLS, IOWA



The Nest

has been uniformly successful, and has caused quite a stir among cement block manufacturers. First and foremost, their method is the pressure method, and by the construction of their machine a pressure of over 80,000 pounds is exerted directly upon the block. One does not have to be well versed in mathematics to know that with such an enormous pressure a very dense block can be made with the wettest of mixtures.

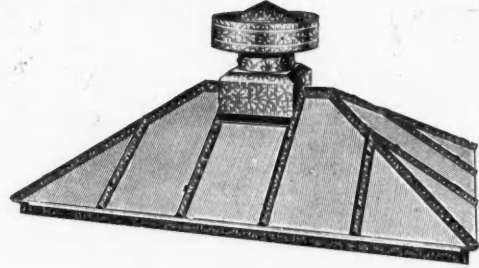
Laboratory tests in the University of Illinois show that one of these blocks made in the ordinary manner carried a maximum load of 338,000 pounds. This test will convince even the most skeptical that a block capable of sustaining such enormous weight must be good. With the Somers machine blocks can be made very rapidly, and with a minimum amount of labor, the machine doing all the work itself and not relying upon the non-uniform work of man. A man becomes tired, and his feeling is reflected upon the efforts he puts into his tamping. With the pressure machine this is done away with, giving an absolute uniformity of pressure and consequently an absolute uniformity of block which is the absolute essential of concrete block manufacture.

Somers Brothers, of Urbana, Ill., will be glad to send you their catalogue and descriptive literature. Drop them a card.

**Willis Skylights and Wall Ties**

Every carpenter and builder will be interested in the newly improved Willis ventilators and skylights now being placed upon the market by the Willis Manufacturing Company, Galesburg, Ill. The high-class sheet-metal goods of all kinds manufactured by this company; their fireproof metal window frames, sashes, stamped architectural zinc and copper work, cornices, skylights, metal ceilings and hip shingles have been known very favorably to the building trade, and their excellencies are well attested. This company is now making a

specialty of a line of ventilators and skylights, which are designed to be sent in the knock-down, and can be easily set



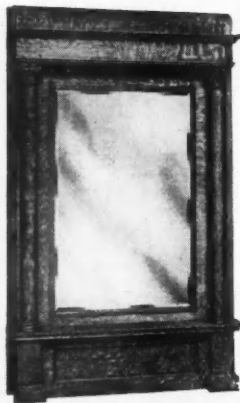
up by any person of ordinary ability without the use of special tools. This is very easily accomplished, there being no solder required to make a water-tight joint. That they can be sent in the knock-down reduces freight expenses considerably, and also lessens the chances of damage while in transit. These skylights can be fitted with any style of glass, which these people also furnish; the glass being packed in a separate crate.

We are informed that carpenters and building contractors in



large numbers in all parts of the country are using these Willis ventilators and skylights, and that architects are specifying them for all kinds of buildings. Their use has been everywhere successful, the owners of the buildings being well pleased with the architectural appearance and substantial construction, and the builders being well pleased at the ease

The Willis Manufacturing Company are also distributing



Console No. 465 1/2

**OUR CATALOG SAVES MONEY**

**To Contractors, Builders and Owners**

There are economic reasons why we can save money to contractors, builders and owners on millwork specialties. We have a combination of years of experience and a plant equipped to save money in manufacturing. You get the benefit in better goods for less money.

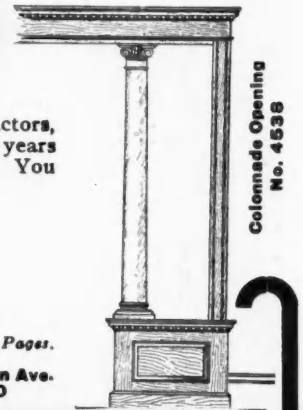
We are Specialists in the manufacture of  
**Embossed Mouldings, Plate and Chair Rails, Grille Work, China Cases, Side Boards, all Interior Mill Work and Anything in the Cabinet Line.**

We Offer Special Inducements

Write to day for our New Catalog No. 17—112 Pages.

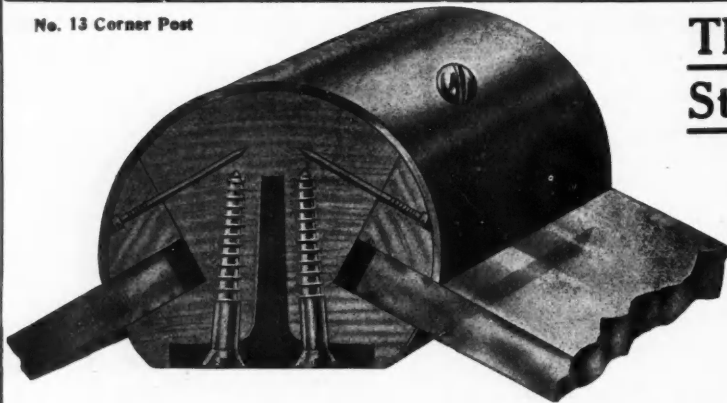
**CHICAGO EMBOSSED MOULDING CO.**

583-87 Austin Ave.  
 CHICAGO



Colonnade Opening  
 No. 463B

No. 13 Corner Post



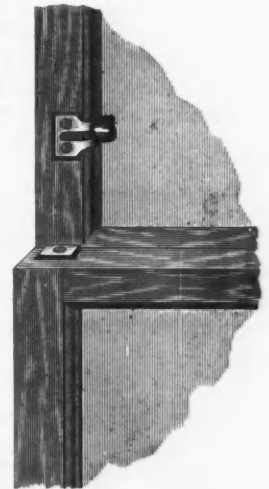
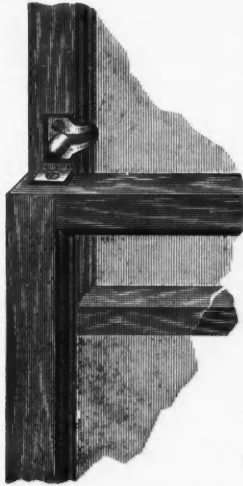
**The COULSON PATENT Store Front Construction**

is the best. You will be convinced of this after the first trial.

Don't experiment, but specify Coulson Store Front Construction to be used, and you will have the most practical and neatest appearing store fronts obtainable.

Write for catalogue D-800.

**J. W. COULSON & CO.,** Sole Owners and Manufacturers  
 Main Office, 234 N. Third St. COLUMBUS, O.



## Ventilation Without Risk

### IVES PATENT VENTILATING LOCK

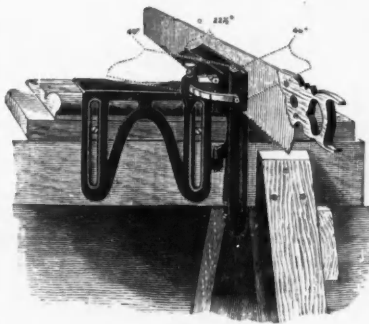
A safeguard for ventilating rooms, allowing windows to be left open at the top, the bottom, or both top and bottom with entire security against intrusion, a permanent fixture easily applied and quickly operated, affording three times more protection to the window than the ordinary sash fastener.

### THE H. B. IVES COMPANY

NEW HAVEN, CONN., U. S. A.

88-page Catalogue Hardware Specialties mailed free

## "SEAVEY" MITRE BOX meets every requirement



Cuts any angle—special or regular.

Needs no special saw.

Lightest box made

Can be instantly applied.

The *only* Mitre Box.

Made so that it is attachable to inside or outside work without a special attachment.

Prices to-day from your jobber or write for the "Green Book"

### SMITH & HEMENWAY CO.

108-110 Duane Street,

NEW YORK ∴ U. S. A.

## The Roof that Proves—Sun-proof and Rain-proof: Needs no Paint or Repairs



If you are interested in Roofs—the best and most economical Roofing to use, for all kinds of buildings—let us send you samples of "Rubber Sanded," and our 32-page booklet. Write today—before you forget it.

### ASPHALT AND ASPHALT PAINT

The Pioneer Roll Paper Company are refiners of Asphalt and manufacturers of Asphalt Paint—which they supply direct from their factories in Los Angeles.

California Agents for Northwestern Compo-Board Company.

### PIONEER ROLL PAPER COMPANY

Address Dept. 21, Los Angeles, California.



## 10 DAYS FREE TRIAL

We will ship you a "RANGER" BICYCLE on approval, freight prepaid to any place in the United States without a cent deposit in advance, and allow ten days free trial from the day you receive it. If it does not suit you in every way and is not all or more than we claim for it and a better bicycle than you can get anywhere else regardless of price, or if for any reason whatever you do not wish to keep it, ship it back to us at our expense for freight and you will not be out one cent.

**LOW FACTORY PRICES** We sell the highest grade bicycles direct from factory to rider at lower prices than any other house. We save you \$10 to \$25 middlemen's profit on every bicycle—highest grade models with Puncture-Proof tires, Imported Roller chains, pedals, etc., at prices no higher than cheap mail order bicycles; also reliable medium grade models at unheard of low prices.

**RIDER AGENTS WANTED** in each town and district to ride and exhibit a sample 1909 Ranger Bicycle furnished by us. You will be astonished at the wonderfully low prices and the liberal propositions and special offers we will give on the first 1909 sample going to your town. Write at once for our special offer.

**DO NOT BUY** a bicycle or a pair of tires from anyone at any price until you receive our catalogue and learn our low prices and liberal terms. **BICYCLE DEALERS:** you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

**SECOND HAND BICYCLES**—a limited number taken in trade by our Chicago retail stores will be closed out at once, at \$3 to \$8 each. Descriptive bargain list mailed free.

**TIRES, COASTER BRAKES,** single wheels, inner tubes, lamps, cyclometers, parts, repairs and everything in the bicycle line at half the usual prices. **DO NOT WAIT** but write today for our Large Catalog beautifully illustrated and containing a great fund of interesting matter and useful information. It only costs a postal to get everything. Write it now.

**MEAD CYCLE COMPANY, Dept. T122 CHICAGO, ILL.**

the well-known Willis wall tie. The illustration shown herewith will call to mind to thousands of builders a very well-known article. This wall tie is made with all the care and thoroughness which characterizes the other products of this company. It is a standard article and is distributed at rock bottom prices.

Every reader of the AMERICAN CARPENTER AND BUILDER who desires exact information concerning all classes of architectural sheet-metal work should write for a copy of the Willis 110-page, illustrated catalogue. It will be found very valuable, the information being up-to-date and reliable. It will be sent without charge to readers of this journal.

### "A Talk with Dad"

On another page in this issue will be seen the advertisement of the Dutro Manufacturing Company, of Mason City, Iowa. This firm is putting on the market a tool that will meet with the unqualified approval of every man who has had his trouble with sash and door fitting. A post card addressed to this company will bring to you, their little booklet, entitled "A Talk with Dad," and this will interest you. Write for it today.

### The Asbestos Market

The Keasbey & Mattison Company, of Ambler, Pa., hold the usual annual convention of the managers of their various branches throughout the United States during the last week in March to plan the future development of the rapidly growing asbestos "Century" shingle, and the general asbestos business of that concern.

The Keasbey & Mattison Company is one of the "Big Four" companies controlled by Dr. R. V. Mattison, who, in addition to being president of the Bell Asbestos Mines, Thetford Mines, province of Quebec, Canada, popularly known as "the

largest and most productive asbestos mine in the world," which is owned by the Keasbey & Mattison Company, is also president of the Asbestos Shingle, Slate & Sheathing Company, and the Asbestos Manufacturing Company, Limited, of Lachine, near Montreal, a recent acquisition, which is the first factory in Canada to be equipped for the manufacture of asbestos products upon a large scale.

Dr. R. V. Mattison is also a director in the Amalgamated Asbestos Corporation, Limited, of Canada, which will control 70 per cent of the world's present supply of asbestos, which is 80 per cent of the supply from the districts of Thetford and Black Lake, Province of Quebec; 90 per cent of the world's present supply coming from that province.

### Protection Against Fire

The manufacturers of Amatite, the best known of the mineral-surfaced roofings, received the following letter from Hot Sprinks, Ark.:

"Dear Sirs: I want twenty more squares of Amatite and I will tell you why.

"I had a house gutted by fire three weeks ago, and it was covered with Arkansas shingles, thin shingles and a rubber roofing. One kitchen was covered with Amatite, and it seemed to be the only fire-resisting roofing on the house. All of the other roofing was entirely destroyed. After the fire was put out, the Amatite roofing was standing with the exception of some places where the sheathing had torn out and broken holes through it. In fact, the major portion of the Amatite would have turned water after the fire.

"As I am going to rebuild, I want enough Amatite to cover the entire house.

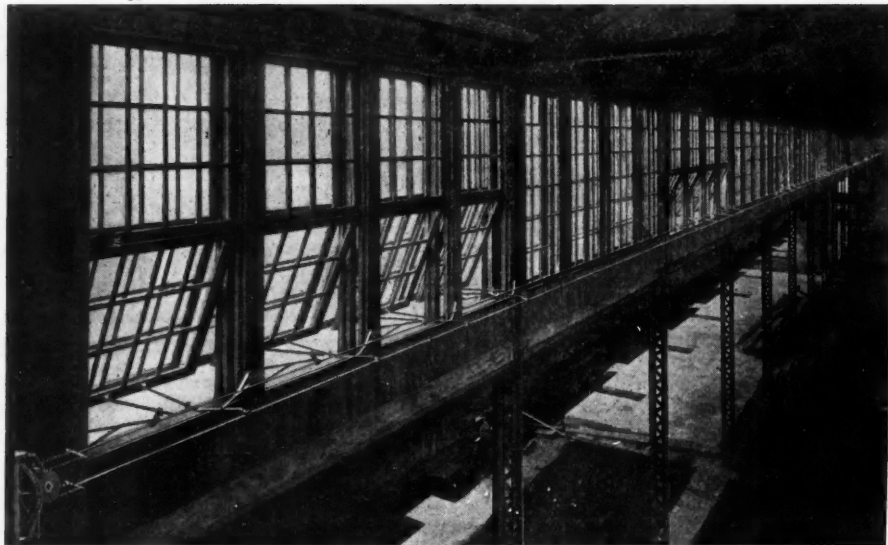
"Yours respectfully,

"G. F. MALDING."

If any of our readers are not familiar with Amatite they should send and get a sample at once. This roofing needs no painting and is fire-retardant as well. Address the near-

## POND OPERATING DEVICE

(PATENTED)



FREIHOFFER BAKERY, PHILADELPHIA.

The device that meets any condition. **One** gear operates a double line of sash 300 feet long, as shown. Power is TRANSMITTED BY TENSION to levers hinged at side of windows. All bearings are Phosphor-Bronze; gears immersed in oil. This insures permanent working conditions. Erected anywhere. Positively guaranteed. No charge for special details.

**You will be interested in LUPTON ROLLED STEEL SKYLIGHT—LUPTON FIREPROOF WINDOWS.**

Our complete organization is described, and unequalled facilities are illustrated in catalogue. Read it and you will understand how the Lupton Standard of Workmanship is maintained. *Write to-day for catalogue.*

**DAVID LUPTON'S SONS COMPANY,** Weikel and Willard Sts., PHILADELPHIA, PA.



**A Test of Toughness**

Not that you are expected to use your pencil as a chisel or an awl, but just to prove its toughness, this pencil was *actually driven* through a half inch plank. The illustration was drawn from a photograph.

**E. C. S. Carpenter Pencils**

are made of straight-grained, seasoned cedar and first quality graphite, toughened to stand rough usage. It is soft, smooth and uniform in use—no hard spots or grit. Beautifully finished in lustrous paint and silver leaf.

If not at your dealer's, write to us for free sample and we will tell you where they may be had.

**SIMMONS HARDWARE COMPANY (Incorporated),**  
ST. LOUIS and NEW YORK, U. S. A.

Sample free upon request



**Slate Roofing**

Use Slate Blackboards, Steps, Risers, Wainscoting, Hearths, Fireboards, Urinals, Grave Vaults, Platforms, Catacombs, Sinks, Etc.

**USE SLATE ROOFING**

It is Fire Proof. Lasts a Lifetime.  
Makes Clean Water for Cisterns.

BUY DIRECT FROM THE MANUFACTURERS  
Write Us for Prices for Anything in the Slate Line, Before Buying Elsewhere. We Furnish Best Goods at Lowest Prices.

**BANGOR STRUCTURAL SLATE COMPANY, Bangor, Penna.**



**Architectural Sheet Metal Work**

Large stock of our catalog designs on hand for prompt shipment of orders.

We have a large assortment of garlands, modillions, enriched mouldings, capitals, finials, tympanum panels, rosettes, faces, etc., which can be readily applied to wood or metal work.

Catalogue No. 12 K, just issued, shows full line of above lines, also cornices, building fronts, skylights, fire-proof windows, metal tile roofing and steel ceilings.

If you have not received a copy of this catalog write us today and we will mail you one.

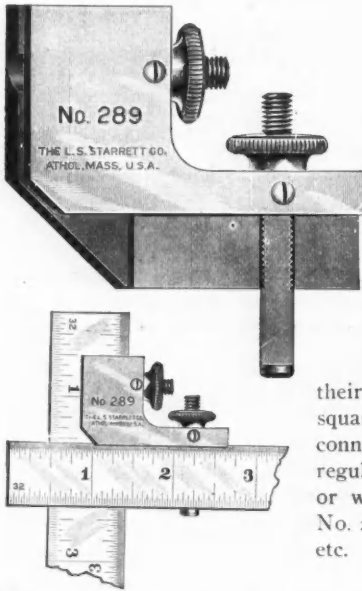
Our prices are low. Our work is strictly first-class.

Send us architect's drawings for estimate. We will return promptly with our proposition. Discounts to the trade on application.

**THE W. H. MULLINS COMPANY**  
Manufacturers of Architectural Sheet Metal Work, Statuary, Fireproof Windows and Skylights  
214 Franklin Street, Salem, Ohio.

est office of the Barrett Manufacturing Company, New York, Chicago, Philadelphia, Boston, St. Louis, Cleveland, Pittsburg, Cincinnati, Kansas City, Minneapolis or New Orleans.

**Improved Tools**



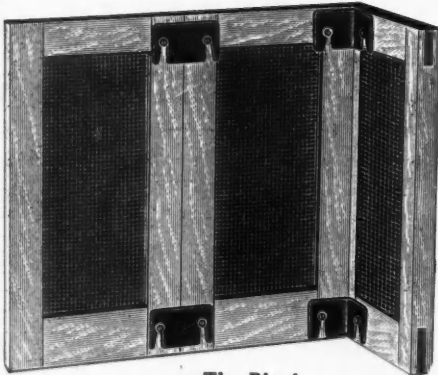
Among the new products of the L. S. Starrrett Company, Athol, Mass., makers of fine practical tools for mechanics, is an attachment for combination squares.

The use of this attachment is so well shown by the illustrations that a further description is hardly necessary. The attachment is made to fit the 12, 18 and 24 inch blades of their Nos. 11, 23 and 33 squares, and can be used in connection with any of their regular rules as wide as 1 inch, or with their flat steel square No. 21 for laying out key seats, etc.

**Automatic Sash Holder**

The Automatic Sash Holder Company, 277 Broadway, New York, has just placed on the market a successful automatic sash holder. It is designed to automatically hold in any posi-

tion required both upper and lower window sash, without using sash cord, weights or pulleys. The idea grew out of the necessities of portable house construction, where large window frames with weight pockets were impossible and superfluous material was discarded, the same conditions being adaptable to houses of cement and concrete block construction. The principle of this holder has been thoroughly tried out for several years in portable house construction, and now, greatly improved in every detail to satisfy more exacting conditions, is offered for permanent structures. The body of the holder requires only an easily made mortise in the stile of sash, about 3/4 by 7/8 by 1 5/16 inches, all of which can be done with a 7/8-inch auger bit and chisel, mortises for new work being machine mortised at the mill. When in position the wheel runs up and down on the jamb of window frame and the holder is absolutely out of sight. The two portions of the frame are formed by special machinery from 5/64-inch sheet steel. A binding or holding friction pressure is obtained by means of two electro-galvanized piano wire steel springs, which are 9/16-inch diameter and held securely in place by large bosses stamped top and bottom in both plates. The wheel pinions revolve in two elongated or oval holes with a play of about 3/32 inch, so that as the sash is raised the wheel revolves, but when lifting ceases the wheel axles move upward in the slot, and the ratchets engage with each side of the upper plate sufficiently to hold the sash at any desired point. The company emphasizes some of the following advantages, viz.: that hardwaremen and others can buy them in sets of four, so as to retail profitably for less than the cost of weights, cords and pulleys; that while equally suitable for old or new construction, in the latter case there can be a great saving, both in material and freight, as well as bulk, by having window frames made without weight pockets; that owing to constant side pressure, windows, regardless of



The Big 4

**Diehl's Screen Door Hinge No. 17**  
STRICTLY MALLEABLE IRON

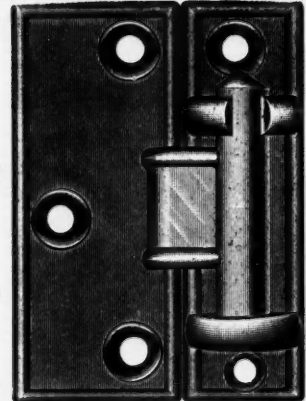
Door can be taken off without removing the hinge. No other hinges made like Diehl's. Ask your dealer for them.

**The Big 4 Corner Brace and Coupling**

for putting up Storm Houses, Porch Screens, Portable Screen Cottages, and fastening Box Corners used by all Practical Builders. Ask for the Big 4.

Samples sent upon receipt of 10 cents in stamps to pay for packing and postage of same

Manufactured by  
**DIEHL NOVELTY CO.**  
SHEBOYGAN WISCONSIN



**This Looks Good to Others, How Does It Look to You?**  
**\$110 to Be Given Away in Prizes.**

We want you to know us, and to know our goods, and their superior qualities and conveniences over all others. We take the lead in a practical line of builders' hardware. To satisfy yourself of this fact send 10 cents in stamps for sample of any article that we manufacture. Seeing is believing. Send for catalogue and satisfy yourself.

In order to introduce our goods to the contractors, we are offering the following prizes to contractors that use the largest amount of our goods between April 1st, 1909, and December 1st, 1909.

- 1st Prize.—Gentleman's Gold Watch, 16 size, 17 jewel, hunting case, Howard movement, value \$35.00.
- 2nd Prize.—Gentleman's Gold Watch, 16 size, 17 jewel, hunting case, Hamilton movement, value \$25.00.
- 3rd Prize.—Gentleman's Gold Watch, 16 size, 15 jewel, open face, Elgin movement, value \$15.00.
- 4th Prize.—Gentleman's Solid Gold Watch Chain, value \$12.00.
- 5th Prize.—Gentleman's Solid Gold Fob, value \$10.00.
- 6th Prize.—Gentleman's Solid Gold Locket, diamond set, value \$8.00.
- 7th Prize.—Gentleman's Solid Gold Locket, value \$5.00.

**DIEHL NOVELTY CO.**

Diehl Novelty Co., Sheboygan, Wis.

Name of Contractor ..... Address .....  
Name of Dealer from whom goods were purchased ..... Address .....

Fill in with amount of goods used:

.... Doz. No. 1 Hangers and Fasteners.	.... Doz. No. 2 Screen Hooks.	.... Doz. No. 19 Basement Window Catch.
.... " " 1 Hangers only.	.... " " 17 Screen Door Hinge.	.... " " 45 Inside Turn Button.
.... " " 1 Fasteners only.	.... " " 18 Screen Door Hinge, extra part.	.... " " 55 Corner Brace
.... " " 1 Screen Hooks.	.... " " 21 Basement Window Hinge.	.... " " 60 Coupling.
.... " " 2 Hangers and Fasteners.	.... " " 22 Basement Window Hinge.	.... " " 23 Base Knob.
.... " " 2 Hangers only.	.... " " 9 1/2 Basement Window Hinge.	.... " " 50 Screen_Door_Catch.

You can show any of these prizes to your local jeweler and if he does not verify our statement of value you may leave them with your local express company or banker and we will forward for the amount.

All carpenters and contractors wishing to enter the contest please fill out this coupon and mail it to us at the end of each month so that we may be able to award prizes to the right parties at the end of the contest.





## FOX MACHINE COMPANY

756-776 North Front St., GRAND RAPIDS, MICH.



### No. 3 Mitering Machine

Cuts a double miter on small mouldings **In One Stroke** and in two or more strokes on larger mouldings.

**FULL PARTICULARS ON REQUEST**

### Adjustable Saw Dado

- 1—Smoothest Grooves
- 2—Fastest Cut
- 3—Greatest Range
- 4—Quickest Adjustment
- 5—Longest Life
- 6—Least Trouble
- 7—Perfect Safety

**No. 1 Adjustable Dado**



## Here's the Roofing You Ought to Use

Just as ready roofing has demonstrated its superiority over shingle, slate and tin roofs, so has **MONARCH Asphalt Roofing** conclusively proven its superiority over the usual ready roofing.

Genuine asphalt is acknowledged to be the most satisfactory roofing saturation and coating so far known. We use genuine Pitch Lake Trinidad Asphalt and all wool felt in the manufacture of **MONARCH**, and our method of applying the asphalt saturation, coating and mineral surfacing makes **MONARCH** a solid and perfectly combined whole—impervious to water and proof against flying fire-brands.

Know what you are buying—there is no substitute for genuine asphalt roofing. Send for Sample Set M-2.

Carpenters and Builders.—We know Monarch will justify our claims. You cannot find a better Roofing at any price. We earnestly desire you to give it a trial. If your dealer does not carry Monarch we will see that you are supplied direct.

**Stowell Mfg. Co., Jersey City, N. J.**

Philadelphia      Chicago      Kansas City



## The Successful Room

Must have character and character depends largely on the finish—it must be appropriate—"in keeping." Thus high class interiors demand high class finishes.

## Lowe Brothers Interior Finishes

are of the highest quality, as every scientific test proves, and continued use by most discriminating architects, builders and owners for two generations, still further demonstrates.

You will get most satisfactory results for all concerned by using Lowe Brothers finishes because you *know* they are dependable and produce beautiful results. Besides, they save the owner money—last long—wear gradually and give a room "that prosperous look" even when old.

You can tell Lowe Brothers Varnishes and Interior Finishes—Linduro, Vernicol and the others, also High Standard Paints—equally dependable—by the Little Blue Flag on the can. It insures the owner satisfaction and hence, protects you.

Write for our practical booklets, "Hints to Architects," and "High Standard Specifications." They will help you solve your paint problems.

Consult Sweet's Index (1909) pages 1282-1283.

**THE LOWE BROTHERS COMPANY**

PAINT MAKERS      VARNISH MAKERS

450-452 E. Third St., Dayton, Ohio.

Boston    New York    Chicago    Kansas City





# More Light



in the window is the demand of the modern merchant. You can get the maximum light by using the Petz System, and at the same time get strength, rigidity, and the most artistic construction.

The Petz corner posts and transom bars are light, strong, and handsome in appearance. They give the greatest possible display room, and are quick and easy to install. They allow glass to be set from the outside.

Our booklet, "Modern Store Front Construction," explains and illustrates the different forms of bar in detail. You should have a copy. Write today to

**DETROIT SHOW CASE CO.,**

491 West Fort St., (Sole Makers) DETROIT, MICH.

For Sale by Pittsburg Plate Glass Co., at all Branches.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



## AN EDWARDS METAL SPANISH TILE ROOF

**COSTS NO MORE THAN A GOOD TIN ROOF**

Artistic and Ornamental in appearance and is positively guaranteed to be Fire, Lightning, Rain, Storm and Wind proof.

Its extreme lightness (about one-eighth that of slate), durability and moderate cost commend it to those wishing something out of the ordinary in roofing.

Manufactured from best quality Worcester Grade Terne Plate, furnished painted or galvanized (galvanized after being formed) size 10 x 14 inches.

Descriptive Booklet sent free on request.

## The Edwards Manufacturing Co.

"THE SHEET METAL FOLKS"

401-417 Eggleston Ave., CINCINNATI, OHIO

swellings or shrinkings, will always fit snugly and thus not rattle. For the average window a holder on each side of each sash up to 20 pounds will answer every purpose, they being especially suitable for residences in town or country, apartment houses, factories, cottages or any of the innumerable structures requiring windows. The holders, it may be said, have been successfully used on sash as heavy as 35 pounds each, the only objection to using them on very heavy sash being the greater strength needed to raise and lower the sash. For sash weighing 8 pounds each or less one holder on a sash is sufficient, thereby reducing the cost one-half, and for sash heavier than the average four holders could be used on each sash instead of two, if necessary.

### Who Makes What

A book of great interest and value to all buyers, makers and sellers of hardware products or machinery has been issued by the *Hardware Dealers' Magazine*, of New York. It is called "Who Makes What."

It is really five valuable directories in one book—as will be seen by the following synopsis:

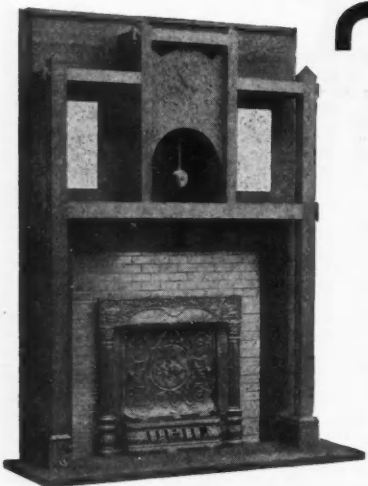
Part I.—Directory of wholesale hardware houses and jobbers, United States and Canada, with the history of each establishment.

Part II.—Directory of more than 10,000 manufacturers, arranged alphabetically and geographically.

Part III.—Directory of products, arranged alphabetically, of more than 10,000 manufacturers—shows "Who Makes What."

Part IV.—Directory of important foreign merchants in all parts of the world furnished by, with a letter from, each American consul, direct to the publisher.

Part V.—Directory of export commission houses and buyers in New York City.



## Central Mantels

are distinctive in character, workmanship and finish. Twenty years' experience catering to the wants of the home builders enables us to know and meet their wants.

Our factory being equipped with all of the most modern labor-saving devices and keeping on hand constantly an enormous

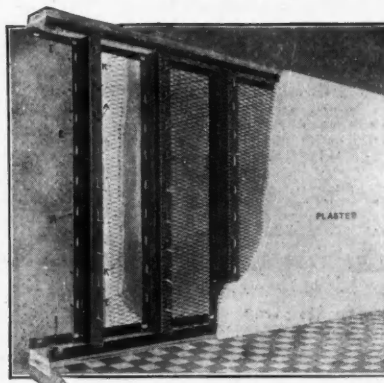
stock of raw materials, places us in a position to sell **better mantels cheaper** than it is possible for you to buy elsewhere.

We can furnish any style from Colonial to Mission, and in any wood or finish, at prices ranging from \$10.00 up.

The above is one of the many designs shown in our 112 page catalog, which is the finest and most complete mantel catalog ever issued. Catalog sent free on request to Carpenters, Builders or anyone building a home.

**CENTRAL MANTEL COMPANY**  
No. 1247 Olive Street - - St. Louis, Mo.

## You Are Missing Something Worth While, Mr. Contractor and Builder, If You Do Not Know About



**BERGER PRONG LOCK STUDS and FURRING**  
for use with expanded metal lath.

It is a system you ought to be posted about. It is both simple and effective. One man can hang the lath on the prongs and clinch them securely with the tap of a hammer. Berger Prong Locks save time and money. There's no wiring and the lath can't get away.

Write TODAY for catalog F-55-S, which shows how this system is applied to various classes of construction.

**THE BERGER MFG. CO.**

CANTON, OHIO

New York, Philadelphia, Boston, Chicago, St. Louis, Minneapolis, San Francisco, Atlanta

# CLASSIFIED DEPARTMENT

Do You Want Help?  
Do You Want a Situation?  
Have You Anything for Sale?  
Do You Want Machinery or Supplies?

An advertisement in the "Classified Department" of the American Carpenter and Builder will be the least expensive and the most thorough way of letting your desires be known. Rates: 5 cents a word each insertion.

**CASH MUST ALWAYS ACCOMPANY ORDER**

**For Sale.**

**CARPENTERS**—I have just the book you want. Written on roof framing; gives full length of common, hip, valley and jack rafters, from 4 to 12 inches rise to the foot and from 4 to 15 feet run. Sent postpaid on receipt of 50 cents. Descriptive circulars sent free. Address F. N. Mapes, 1918 W. 3rd St., Sioux City, Iowa.

**Help Wanted.**

**WANTED**—Mechanics familiar with floor scrapers to represent us in every city. Fox Manufacturing Co., Milwaukee, Wis.

**CARPENTERS WANTED**—Good intelligent carpenters to represent a large manufacturing concern, soliciting orders spare time or evenings. Every building owner buys. Profits large. Yankee Mfg. Co., Box 2108, Bridgeport, Conn.

**Patents.**

**O. L. PARKER**, Solicitor of Patents, McGill Bldg., Washington, D. C. Handbook for inventors sent free upon request.

## SLATE WE HAVE WHAT YOU WANT

*In Roofing Slate, Slate Blackboards  
Structural and Plumbers' Slate*

**SATISFACTION GUARANTEED IN QUALITY AND PRICE  
ASK FOR DELIVERED PRICES**

**J. K. HOWER, Station C., Slatington, Pa.  
H. J. KICHLINE, Sales Agent**



### Carpenter Agents WANTED

Our agents earn \$10.00 a day in-  
stalled the  
**CLIMAX**  
**Automatic Ventilating Sash Lock**  
ABSOLUTELY BURGLAR-PROOF  
Applied in 3 minutes without mortising.  
Locks the window automatically when  
open or shut.  
It is jimmy-proof and withstands 1000  
pounds pressure.  
Cannot be picked by insertion of blades.  
**PREVENTS RATTLING**  
as it draws sashes tightly together regard-  
less how far separated.

The lock cannot be opened by reach-  
ing over or under open sashes.  
Send 25c for two 50c locks  
**Climax Lock & Ventilator Co.  
DEPT. CB.  
Ellicott Square, BUFFALO, N. Y.**

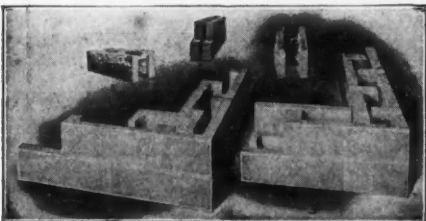
### DO YOU WANT SLATE?

**R**oofing Slate for Houses, Barns, Sheds and Railroad Stations. Clean  
and ornamental, rain, wind and fireproof.  
**B**lackboards for Schools, Colleges, etc., are being used all over the  
World, need no better commendation, "It is just the thing."  
**S**tructural and Electrical Stock, Steps, Sink Tops, Wash Tubs,  
**S** Window Sills, etc., superior to all other stone for such purposes.  
**S**laters' Supplies, Hand-made Slaters' Tools, Snow Guards, Slaters'  
Cement, Nails, Felt, Slate Punching and Cutting Machines, etc.  
Write for prices and I will tell you all about Slate. D. McKenna, Slatington, Pa., U. S. A.  
**JAMES CRAIG, Manager**

"Creole"  
"Etowah"  
"Cherokee"  
"Kennesaw" } **Georgia Marble**  
**THE GEORGIA MARBLE CO., - - TATE, GA.**



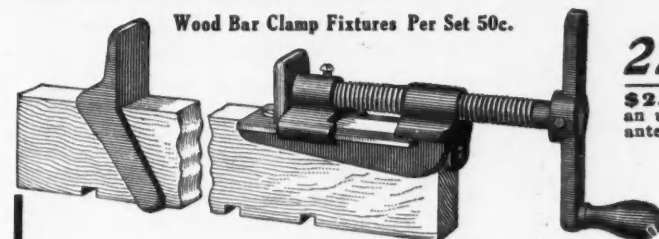
**SCALE FREE** Send us two or more names of persons who...  
we will send you our Architect's Scale. Back inches are divided into 6, 10, 12,  
16 20 and 40 parts. Also free catalog on request. See our two-page advertise-  
ment in the February, 1909, issue of the American Carpenter and Builder.  
**Andrews Heating Co.** 949 Heating Bldg., Minneapolis.  
978 La Salle Bldg., Chicago, Ill.



### THE FRANCISCO BLOCK MACHINE

builds all of the walls shown in cut, down face, wet process, coarse material, with no  
extra expense, with the exception of cores for wall No. 3 and No. 4, using the same  
pallettes for all 5 walls. You also make on our No. 4 machine the 32 inch block, 24,  
20, 16 and fractional block, using the same pallettes; also all of your long stone to  
5 ft., the 8, 10, 12 inch block for width of wall, with no extra expense for parts or  
face plates. The machine is adjustable in width to 20 inches, in length to 5 ft., in  
height to 16 inches. Send for new catalog "G." **AGENTS WANTED.**

**FRANCISCO BLOCK MACHINE CO., 338 North High Street, Columbus, Ohio.**



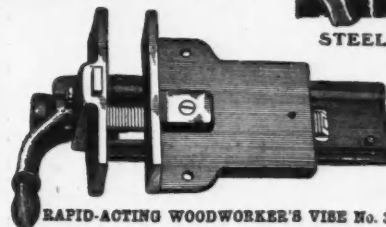
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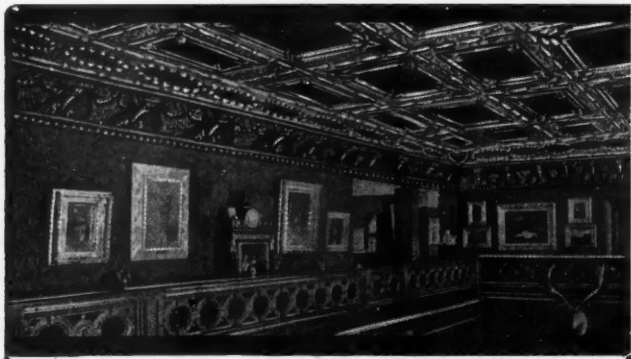
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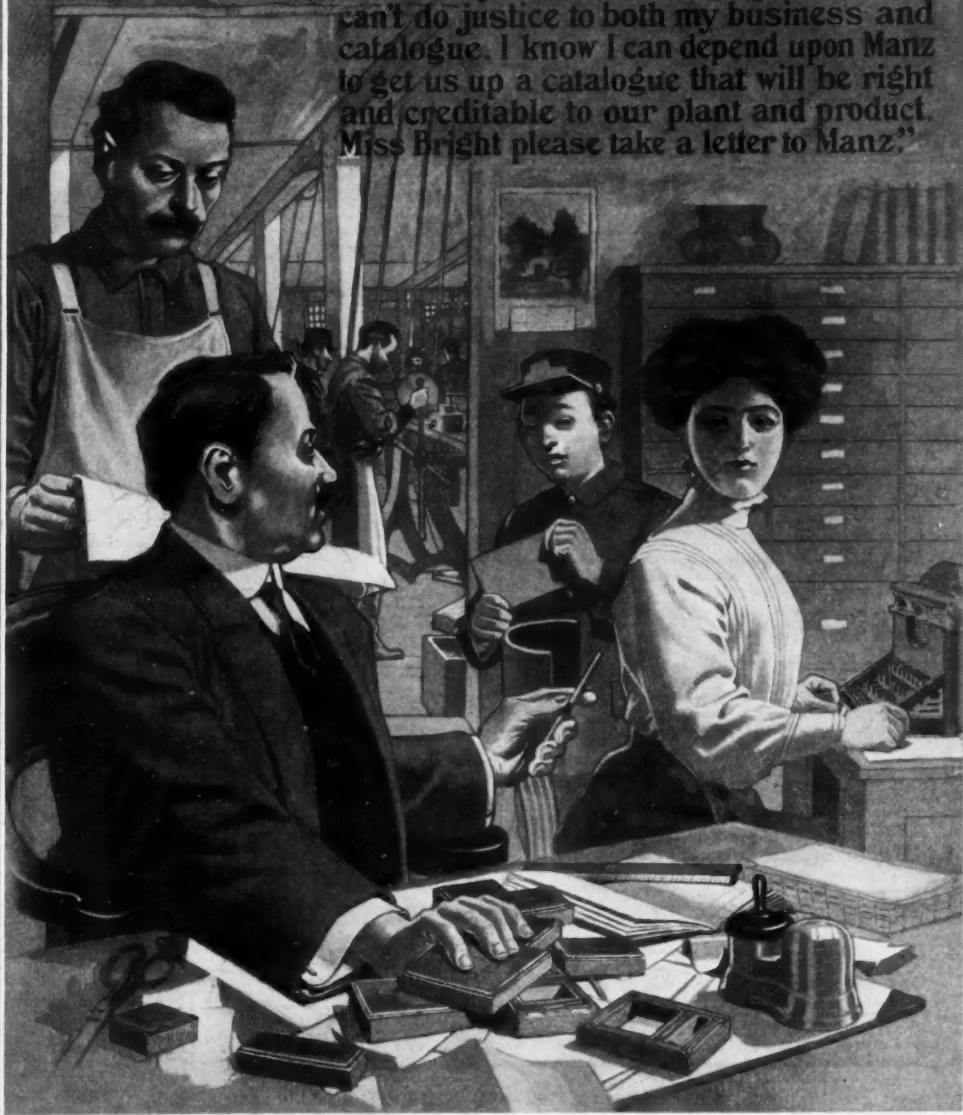
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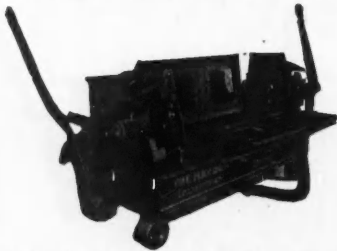


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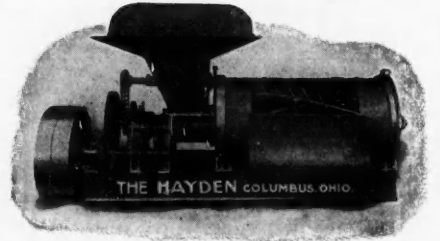
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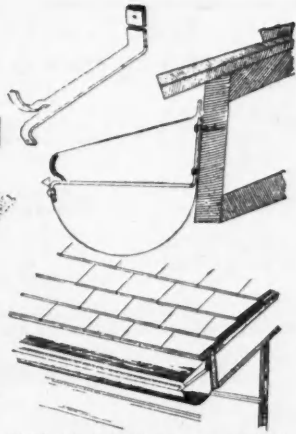
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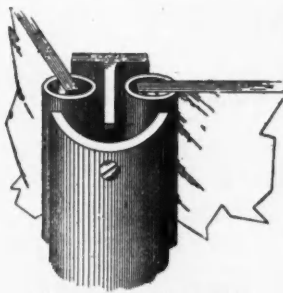
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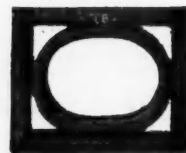
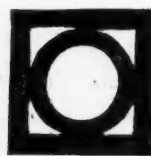
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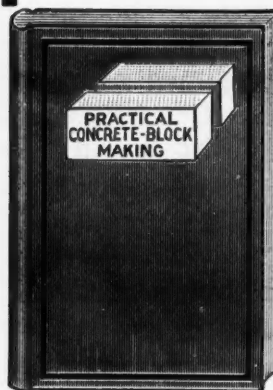
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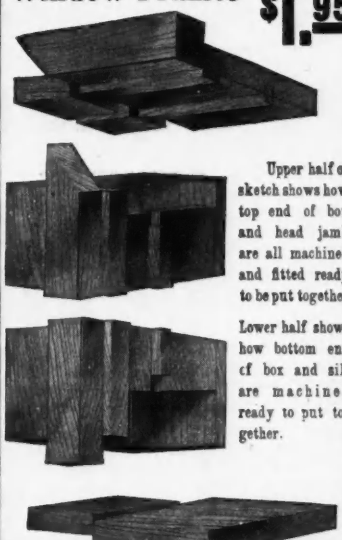
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## Box Window and Door Frames for Brick, Cement, Concrete Block or Stone Buildings

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Each  
\$1.95



Upper half of sketch shows how top end of box and head jamb are all machined and fitted ready to be put together.

Lower half shows how bottom end of box and sill are machined ready to put together.


Window frames are carried in stock in "exact sizes." Brick mould is 1 1/2 x 2 inches, with beaded edge. Blind stop 1 1/2 x 4 inches. Pulley stile 1 1/2 x 4 inches, fitted with pulleys and pocket. Parting stop 1 x 1 1/2 inch. Inside box lining 1 1/2 x 4 inches, rabbeted for extension jamb. Back box lining 1 1/2 x 4 inches. Head jamb is 1 1/2 x 4 inches with 1 1/2 x 1 1/2 inches blind stop. Sill is 1 1/2 x 6 inches.

The boxes on all frames are nailed together, properly fitted at top and bottom (as indicated by cut to left) to receive sill and head jamb. The brick molding is joint mitered at the head as a better job can be made after the frame is fully nailed up. No arch boards or spring pieces are included in the frame, but can be furnished for 11c apiece extra per frame. The arch boards can very readily be nailed right on top of the head brick molding.

Size of Glass	Size of Opening		Price per Frame K. D.
	Ft.	In.	
<b>TWO LIGHTS</b>			
20x24	2	0 1/2 x 4 6	\$1.95
20x26	2	0 1/2 x 4 10	1.96
20x28	2	0 1/2 x 5 2	2.14
20x30	2	0 1/2 x 5 6	2.15
20x32	2	0 1/2 x 5 10	2.23
20x34	2	0 1/2 x 6 2	2.37
22x24	2	2 1/2 x 4 6	1.95
22x26	2	2 1/2 x 4 10	1.96
22x28	2	2 1/2 x 5 2	2.14
22x30	2	2 1/2 x 5 6	2.20
22x32	2	2 1/2 x 5 10	2.29
24x24	2	4 1/2 x 4 6	2.14
24x26	2	4 1/2 x 4 10	2.14
24x28	2	4 1/2 x 5 2	2.14
24x30	2	4 1/2 x 5 6	2.15
24x32	2	4 1/2 x 5 10	2.30
24x34	2	4 1/2 x 6 2	2.38
26x24	2	6 1/2 x 4 6	2.14
26x26	2	6 1/2 x 4 10	2.14
26x28	2	6 1/2 x 5 2	\$2.15
26x30	2	6 1/2 x 5 6	2.28
26x32	2	6 1/2 x 5 10	2.38
28x24	2	8 1/2 x 4 6	2.25
28x26	2	8 1/2 x 4 10	2.25
28x28	2	8 1/2 x 5 2	2.25
28x30	2	8 1/2 x 5 6	2.28
28x32	2	8 1/2 x 5 10	2.29
28x34	2	8 1/2 x 6 2	2.38
30x24	2	10 1/2 x 4 6	2.25
30x26	2	10 1/2 x 4 10	2.25
30x28	2	10 1/2 x 5 2	2.25
30x30	2	10 1/2 x 5 6	2.27
30x32	2	10 1/2 x 5 10	2.28
30x34	2	10 1/2 x 6 2	2.29
32x24	3	0 1/2 x 4 6	2.38
32x28	3	0 1/2 x 5 2	2.25
32x30	3	0 1/2 x 5 6	2.34
32x32	3	0 1/2 x 5 10	2.60
32x34	3	0 1/2 x 6 2	2.64
36x28	3	4 1/2 x 5 2	2.32
36x30	3	4 1/2 x 5 6	2.60
36x32	3	4 1/2 x 5 10	2.65
40x28	3	8 1/2 x 5 2	2.43
40x30	3	8 1/2 x 5 6	2.60
40x32	3	8 1/2 x 5 10	2.65
40x34	3	8 1/2 x 6 2	2.66

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\$1.79  
each



Door frames are carried in stock in sizes listed below. All frames are shipped knocked down, one complete frame to a bundle, consisting of head and side jambs with brick molding. Jambs are 1 1/2 inches thick, width to suits walls as described below. Brick molding is 1 1/2 x 2 inches with beaded edge. Frames are carried in two widths of jambs, 7 1/2 inches over all for 9-inch wall, and 11 1/2 inches over all for 13-inch wall, rabbeted 1/2 x 1 3/4 inches. No sills are included. No arch boards or spring pieces are included, but can be furnished for 11 cents apiece extra per frame. The arch pieces can very readily be nailed right on top of the head brick molding.

<b>No. B-928</b>	
2-8x6-8	.....\$1.79
3-0x6-0	..... 2.15
<b>No. B-929</b>	
2-8x6-8	.....\$2.49
3-0x6-0	..... 2.72

All exposed portions of the frames are made from practically clear lumber. The frame as shipped is a regular standard for 9-inch brick wall with furring and lath, but can be used in a 13-inch wall, as the inside lining is plowed to receive a 13-16-inch extension jamb.

Size of Glass	Size of Opening		Price per Frame K. D.
	Ft.	In.	
<b>FOUR LIGHTS</b>			
12x24	2	5 x 4 6	\$2.14
12x26	2	5 x 4 10	2.14
12x28	2	5 x 5 2	2.14
12x30	2	5 x 5 6	2.15
12x32	2	5 x 5 10	2.30
12x34	2	5 x 6 2	2.38

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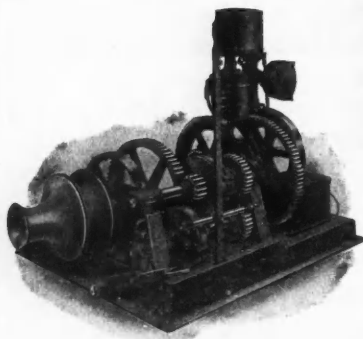


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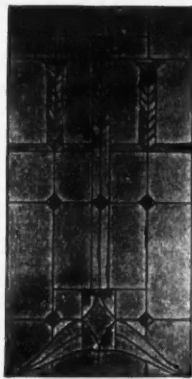
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**HOLLISTER-WHITNEY CO., QUINCY, ILLINOIS**



"I've Noticed An Improvement."

# Promoted!

Don't you worry about the boss not having his eye on you and noticing the improvement in your work. Remember that he is human—he is on the look-out for good men—his own success and the firm's depends on his ability to select the right man.

If you are a little better than the other man—if you know more about your work than he does—do you suppose the boss would pass you by and boost the other fellow?

You wish you had a better job. You wish you knew more, then you could do more and earn more. Fill in the blank form below and let us tell you how your wishes can be realized. Our advice, based upon experiences of our successful students and graduates, will cost you nothing. It may start you right and change your whole future.

The American School is an educational institution. We employ no agents or collectors. Our reputation and the merit of our work make it unnecessary. Advice regarding the work you want to take up and our complete bulletin will be sent for the coupon—be sure and mail it to-day.

**WE HELP MEN HELP THEMSELVES**

## FREE INFORMATION COUPON

American School of Correspondence, Chicago, U. S. A.:

Please send me your FREE Bulletin of Engineering Information and advise me how I can qualify for position marked "X"

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|--------------------------|---------------------------------|
| — Contractor and Builder | — Municipal Engineer            |
| — Building Inspector     | — Railroad Engineer             |
| — Architect              | — Structural Draftsman          |
| — Draftsman              | — Heating and Ven. Engr.        |
| — Electrical Engineer    | — Plumber                       |
| — Civil Engineer         | — Sheet Metal Pattern-Draftsman |
| — Mechanical Engineer    | — College Preparatory Course    |
| — Stationary Engineer    |                                 |
| — Structural Engineer    |                                 |

Name.....

Address.....

Occupation.....

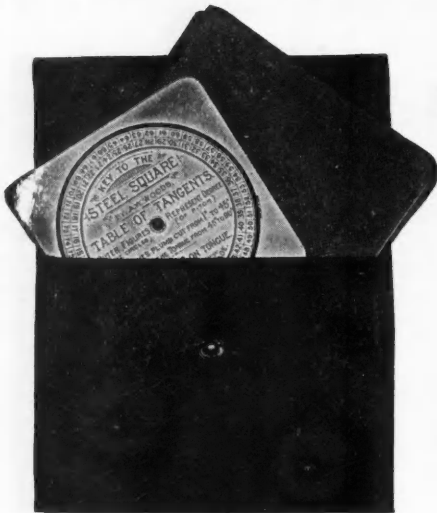
Amer. Carp & Bldr. 5-09.

# SKY-LIGHTS

for any purpose. Our complete illustrated catalogue is ready  
for distribution :: :: :: :: :: :: :: :: ::

**THE CANTON ART METAL COMPANY**  
CANTON, OHIO

## ALFRED W. WOODS' KEY TO THE STEEL SQUARE.



**This is it.**

The Key,  
Book of  
Instruction  
and  
Morocco  
Case.

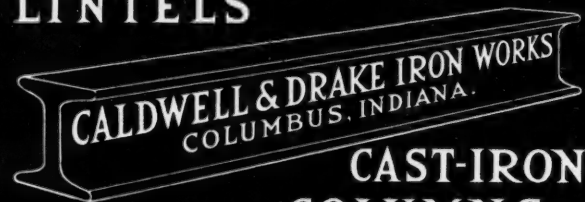
Full Size  
4x5 inches.

It tells the whole story of how to use the common steel square for all kinds of framing.

Price \$1.50, Postpaid

**American Carpenter and Builder**  
185 Jackson Boulevard, CHICAGO

## STEEL BEAMS & LINTELS



**CAST-IRON  
COLUMNS ·  
SIDEWALK LIGHTS**

Sixteen years in our present location

Our designs are strictly up-to-date

We show a large line of column-openings

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PRICE  
LIST**

CHICAGO GRILLE WORKS, 243-251 Wells St., Chicago

Mention this paper

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**The E. J. Johnson Co.**  
38 Park Row, New York  
**QUARRY OPERATORS**  
BLACK, GREEN, PURPLE, RED

Booklet, Samples and Prices on Application

**EUGENE DIETZGEN CO.**

NEW YORK      181 Monroe Street, CHICAGO      NEW ORLEANS  
SAN FRANCISCO      TORONTO

**DRAWING MATERIAL**

Drawing Instruments, Drawing Paper, Blue Print Paper, Tracing Cloth, Builders' Levels  
Everything for Drafting and Surveying. Send for catalogue A

# SEND US YOUR PLANS FOR ESTIMATE

**We  
Furnish  
STOCK  
Millwork**



LET US make you an estimate on your next job. You'll be surprised at the big saving we can show you over local prices — on both stock and special work.

Send us your plans and specifications. We will make up a list of the Millwork and submit you an estimate showing the cost of each item and the freight to your station. And we guarantee the freight.

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133 Douglas Station  
Chicago Illinois

**We  
Furnish  
SPECIAL  
Millwork**

If you haven't a copy of our 1908-9 Catalog, cut off and send us this coupon, and we will mail one to you



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133 Douglas Station  
CHICAGO, ILL.

Send, without cost, your new 1908-09 Catalog, showing your complete line of Guaranteed Millwork and Building Material and explaining your Credit Plan.

Name.....  
Street.....  
City.....



## The Very Latest in Concrete

This Beautiful House was Built by  
**The Jackson System of Economic Building**

It is concrete; strong and warm. It is fire-proof. It is absolutely damp-proof. It costs less than a frame house of the same size and design.

The Jackson System is not a "stucco" method. It uses a solid, durable, poured concrete wall. A dead-air space makes it damp-proof. With it no lumber is wasted for forms.

These are astonishing statements; but they are true. Let us prove them. Write to-day for particulars and for money-making proposition.

**F. M. JACKSON CO.**      **Akron, N. Y.**

**"The Miles" Improved Block Machines**

Make the Best Block Face down, Adjustable, Rigid, no Springs or Cogs to bother. Wet mix used. Prices right. Ask about our Metal Lined Universal Adjustable Sill, Cap and Step Mold.

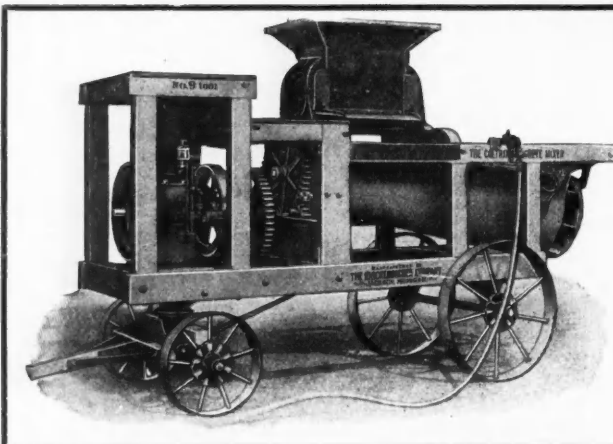
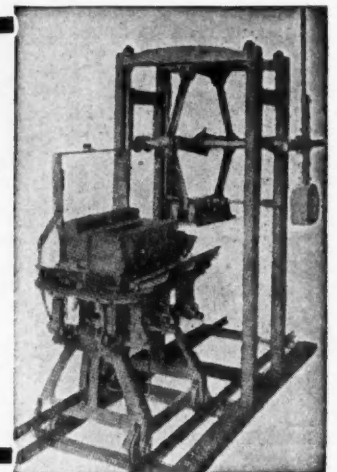
**The Miles Mfg. Co. (Inc.)**  
 109 Cortland Street,  
 Jackson, Mich.

**EUREKA MIXER FOR 1909**

WRITE FOR CATALOGUE

**Eureka Machine Co.**  
 835 May Street, Lansing, Mich., U. S. A.

<p><b>30 Tons' Pressure</b>                  GUARANTEES  <b>UNIFORMITY OF PRODUCT</b></p> <p><b>THE SOMERS</b>                  uses the "wettest" mix of any block machine on the market.</p> <p><b>The Somers Makes Money</b></p> <p><b>We can prove it</b></p> <p><b>OUR CATALOG IS FREE</b></p>	<p><b>2 Blocks Per Minute</b>                  FASTEST MACHINE MANUFACTURED</p> <p><b>The machine does the work, not the man</b></p> <p><b>It makes an absolutely damp-proof wall</b></p> <p><b>You can guarantee it</b></p> <p><b>SOMERS BROS., Urbana, Ill.</b></p>
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## "The Best in Colorado"

Denver, Colorado, Feb. 12th, '09.  
**THE KNICKERBOCKER CO.,**  
 Jackson, Mich.

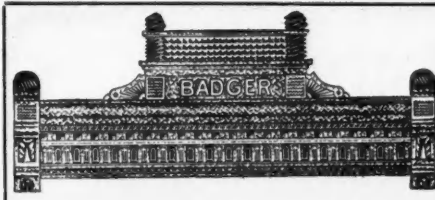
Gentlemen:—We have been using one of your Mixers for three years. Have never failed to speak of it in the highest terms, and do say this—it is the best Mixer ever offered to the public here in Colorado.

Yours truly,  
**BOYD SKELTON.**

## The Coltrin Concrete Mixers

SHIPPED ANYWHERE IN UNITED STATES ON TRIAL  
 Manufactured by

**The Knickerbocker Co.      Jackson, Michigan**



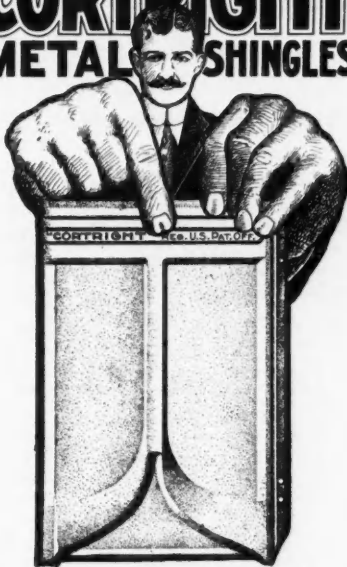
## Badger Quality Always Leads

We manufacture a complete line of Cornices, Skylights, Ventilators, Metal Ceilings, Roofings, Sidings, Eaves Trough, Conductor Pipe, Tanks, etc.

ESTIMATES FURNISHED

**Badger Steel Roofing & Corrugating Co.** 214-16 S. SECOND ST. LA CROSSE, WIS.

## CORTRIGHT METAL SHINGLES



**Labor Cost** comes high and poor material always means added labor cost, so be wise in time and avoid imitations of the

### Genuine Cortright Metal Shingles

The Cortright Kind lay well and easily; they stay where they are put and give satisfaction to your clients, which is most important of all.

Our reputation of 22 years for good workmanship of the best materials has materially aided many contractors and builders in their reputation, because a pleased customer means more business and better advertising for **you**, which in turn means "Dollars in Your Pocket."

You should read the new edition of our catalog, "Concerning that Roof," because there are many helpful suggestions in it.

Yours for a postal.

### Cortright Metal Roofing Co.

Chicago and Philadelphia



Have given entire satisfaction for the past twenty years. No experiment. You are sure of large profits and pleased customers when you lay MONTROSE METAL SHINGLES. Easily and quickly laid with hammer and nails; no soldering. Fire, Storm and Lightning proof. Light. Durable. Artistic. Inexpensive. Write for catalogue and prices. Address 102 Erie Street.

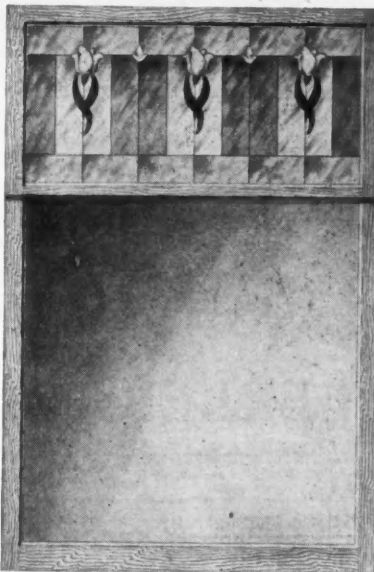
MONTROSS METAL SHINGLE CO. CAMDEN, NEW JERSEY

## \$250 TO \$500 PER MONTH IN THE Real Estate Business



I will teach you the Real Estate Business by mail and appoint you my special representative. I handle Real Estate on the co-operative plan, the only profitable way, and need you, no matter where you are located or what business you are in. Ten dollars (\$10) will start you. I will help you make money. You should make \$200 to \$500 per month. Write for my free book, "The Real Estate Business and Its Present Day Opportunities. It is a guide to the Real Estate Business and it is free. Address

**C. H. GRAY, Pres. Gray School Real Estate, 287 Reliance Bldg., Kansas City, Mo.**  
Mention the American Carpenter and Builder.



## ART NOUVEAU

The Latest in Leaded Glass

We Will Mail FREE

a copy of our new door book No. 107F, if you haven't one. This book shows new patterns of Leaded Art

Nouveau Transom Lights. Special Lace patterns and 68 patterns of our new innovation

### WIDE STILE FRONT DOORS

These are full 5-inch face and permit the use of any size lock.

Veneered Doors, Painted Doors, Store Doors and Store Fronts, stair work all shown in this book.

We sell to dealers only

**The Foster-Munger Co. Chicago, USA**



**By NATURE "PEERLESS"  
By NAME**

**THE WONDER OF THE PRESENT DAY :**

By use of the "Peerless" with material mixed,  
one man can turn out over

**12,000 Brick Per Day**

**The Sensation of ALL the Shows**

**T**HIS machine is a marvel of simplicity and durability. It has been brought to the highest standard of labor-saving and profit-sharing efficiency, and stands alone and in a class by itself.

No other machine of like character has ever been invented, so far as we know, that can produce one-quarter the number of brick in the same time as the Peerless.

The Peerless is in general use throughout the United States, and its friends are numbered by the thousand.

**WHY?** BECAUSE Brick are made face down and delivered face up. Brick are of uniform size with sharp edges and true to the square. Brick are more firm and durable than pressed brick. Brick are tamped, not pressed. The Peerless makes ten bricks at one operation.

Our catalogue tells you all about it. Write for one to-day.

**Peerless Brick Machine Co.** 19 North Sixth St. Minneapolis, Minn.

**Anchor Machines Make  
Continuous Air  
Space Blocks**

The wall that's  
guaranteed  
frost and mois-  
ture proof.



A perfect dead air space from cellar to garret.  
Standard Machine makes blocks 8x24 in.—any width from 8 to 12 in.

Junior Machine makes blocks 8x16 in.—any width from 6 to 12 in.  
All blocks tied together in construction by four quarter-inch galvanized iron rods 8 in. long and turned 1 in. at each end, guaranteed rust proof and everlasting.

Write for Catalogue and Special Prices.  
All Machines sold direct to the trade.

**Anchor Concrete Stone Co., Rock Rapids, Ia.**

**"TRUS-CON"**

**JOIST HANGERS**

**Strongest**

as shown by  
University Tests.

Made from OPEN  
HEARTH STEEL.

**SAVES** cutting and weaken-  
ing of timber. . . . .

**SAVES** labor in installation.

**LOWEST FIRST COST.**

All styles and sizes for brick  
and Concrete Walls, Steel and  
Wooden Beams. . . . .



**WRITE TODAY FOR PRICES  
TO SPECIALTY DEPT.**

**TRUSSED CONCRETE STEEL CO.**  
624 Trussed Concrete Bldg., DETROIT, MICH.



**OLDEST**

**Concrete Roofing Tile Machinery**

Manufacturers in United States

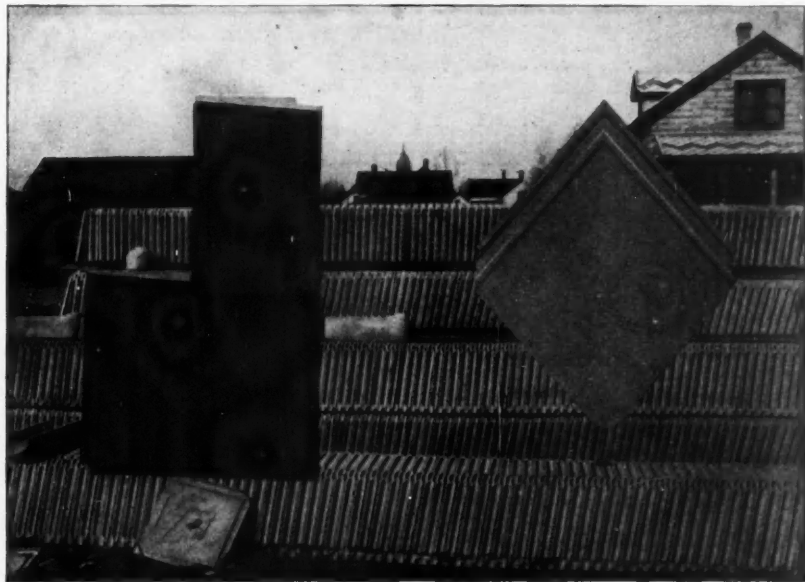
**Europa and New Era Concrete Roofing Tile**

**Handsome, Sanitary, Enduring, Economical**

The crowning triumph of mechanical skill and genius

Costs less than any other Roofing Material, presents a much handsomer appearance; outwears all other Roofing.

"THE ROOFING TILE WITH ARCHITECTURAL STYLE"



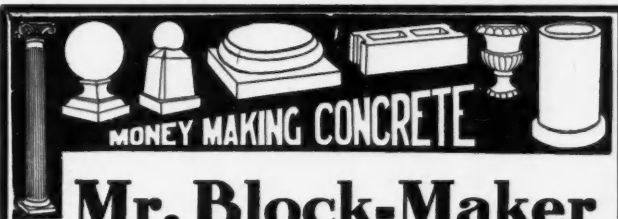
Europa and New Era Concrete Roofing Tile, Showing Different Size and Form of Tile

Made in practical sizes; all colors; not affected by heat or cold; does not absorb the carbonic acid of the atmosphere; will not radiate heat. Lowers Insurance Rates. *The Manufacturing of Concrete Roofing Tile* is one of the most profitable industries in the country. We Build Roofing Tile Machinery. Information cheerfully furnished. Write for catalogues.

**THE AMERICAN CEMENT ROOFING CO.**

623 Columbus Savings & Trust Building

COLUMBUS, OHIO



**Mr. Block-Maker**

Wet Process is Right.  
Face down is Right.  
Three blocks at a time is Right.  
Triple Tiering is Right.  
Damp Curing is Right.

**The Mogul Invincible Block Machine**  
COMBINES ALL THESE

**IT IS RIGHT**

It is 48 inches long and will make three 16" or two 24" blocks at one operation. It makes sills, caps, copings, rails and steps, faster and better than a special sill machine. It has every adjustment that any other machine has and many that no other machine has.

PRICE—Machine and Outfit, \$75.00

WRITE FOR CATALOG

**THE PETTYJOHN COMPANY**  
634 No. 6th St., TERRE HAUTE, IND.

**The Best Cement Building Block Machine Still Further Improved.**

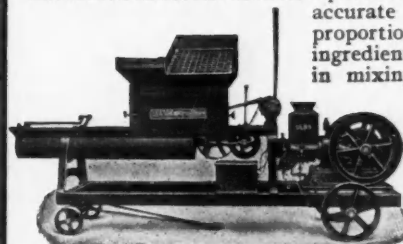
**THE U. S. STANDARD**

waits not until crowded by competition, but rather leads all competitors, by anticipating in advance the demands of the rapidly developing cement building block industry. The New U. S. Standard with its new equipment is a marvel. Write for our literature.



**The U.S. Standard Concrete Mixer**

automatic in all its essential operations, is pre-eminently accurate in measuring and proportioning the different ingredients, very thorough in mixing, simple in construction, handy for the medium size operator, medium in price, etc. Now we have them all on the run. Write for our literature.



**THE ASHLAND STEEL RANGE & MANUFACTURING CO.**  
ASHLAND, OHIO

CONTENTS FOR MAY, 1909

Table with 2 columns: Article Title and Page. Includes items like 'Artistic Bungalow for \$2,900, An...', 'Barn Framing', 'Board Trimming Problem', etc.

INDEX TO ADVERTISEMENTS, MAY, 1909

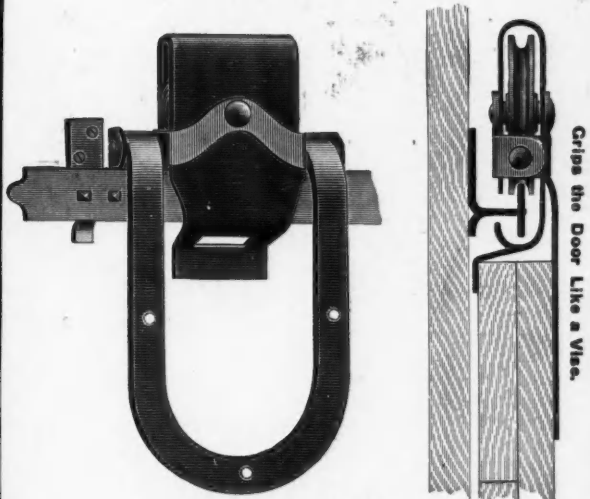
Large index table with 3 columns: Company Name, Page, and Company Name, Page. Lists numerous manufacturers and their page numbers, such as Ackermann & Co., Badger Steel Rfg. & Corr. Co., etc.

NOTICE TO ADVERTISERS

New copy, changes and corrections for advertisements must reach office of American Carpenter and Builder, 185 Jackson Boulevard, Chicago, not later than May 20 in order to insure insertion in June number.

**THE SHARON FLEXIBLE No. 1  
BARN and WAREHOUSE DOOR HANGER**

The Strongest and Best Hanger Made.  
The Reinforced Frame Gives Double Support to the  
Drop Straps and Axle



Cribs the Door Like a Vice.

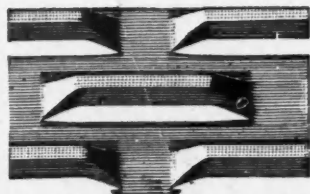
**PATENT PENDING**

Write for our Illustrated Hanger Booklet. A post card  
will bring it.

**SHARON HARDWARE MFG. CO.,**

Builders' Hardware - - - Sharon, Pa.

**SYKES METAL LATH**



The lath that is positively different to anything else made; different because it combines more good features.

Cup lath is the only Expanded Metal Lath that can be plastered on either side — cannot be applied wrong because both sides are alike.

We make two kinds—Sykes Expanded Cup Lath, and Sykes Trough Lath. Both are supreme for their own purpose.

The top illustration shows Trough Lath, bottom cut depicts Cup Lath.

**NO PICKLED LATH**

Sykes Lath is absolutely guaranteed not to have been pickled in an acid bath. This means that the weight and thickness is not reduced and is less susceptible to rust. Requires no furring out from studs because it is self furring.

It has been approved by U. S. Government and by leading architects, carpenters and builders throughout the country. In fact, when we say it is the best ever made we are simply stating a proven fact.

Samples and prices mailed upon request.

**Sykes Metal Lath & Roofing Co.**  
NILES, OHIO



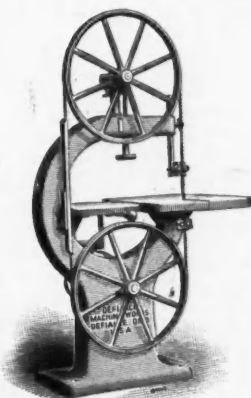
**“DEFIANCE” HIGH GRADE  
Wood-Working Machinery**

Invented and Built By

**The Defiance Machine Works  
Defiance, Ohio**

**For Manufacturing General Wood-Work**

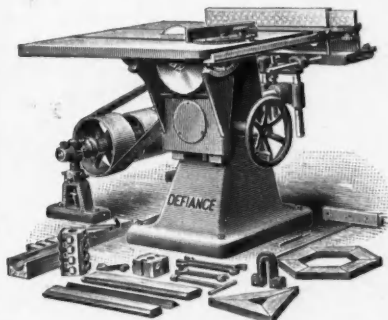
Also Special Machines for making Hubs, Spokes, Wheels, Wagons, Carriages, Automobiles, Rims, Shafts, Poles, Neck-Yokes, Singletrees, Hoops, Handles, Spools, Bobbins, Insulator Pins, Balusters, Table Legs and Wood Dishes.



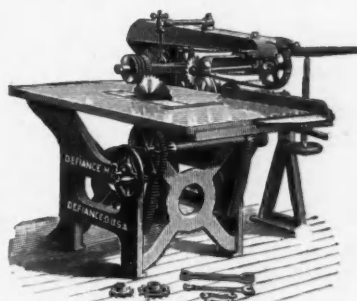
28" Band Saw



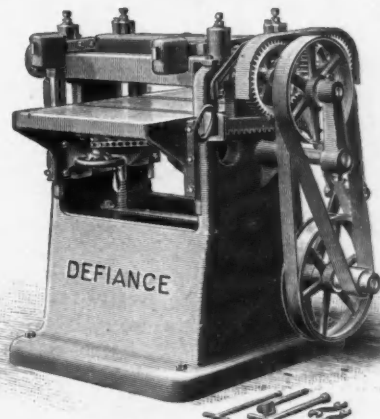
12" Hand Feed Planer  
with or without Boring Attachment



No. 8 Variety Saw



No. 3 Power Feed Rip Saw



24" Single Surface Planer

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

# \$619<sup>00</sup>

**PAYS FOR ALL THE LUMBER and MILLWORK FOR THIS FINE HOUSE**



**Including Architect's Plans, Blue Prints and Complete Specifications FREE**

The above offer is an example of the tremendous saving on material for any size and style of house, if you buy direct from us. Any Carpenter or Contractor can take our Free Book of 44 Complete Plans and figure from our Catalog the exact cost of material for any house there shown.

We will furnish all the material needed to build this handsome home complete with porches and art windows, as shown above, for only \$619. This includes all the Millwork and Lumber to build this house, together with correct and easily understood Plans, Blue Prints and Specifications. See Floor Plans in space at the right. Undoubtedly the greatest house bargain ever offered. Our prices save you at least half. A house like this is easily worth \$3,000 when finished. We carry a tremendous stock and can ship promptly at lowest prices in America.

**Direct to Carpenters, Contractors and Builders from World's Largest Building Material Plant**

**Quality, Safe Delivery and Satisfaction Guaranteed**

We sell over a million dollars' worth of building material a year. We have no traveling men—sell only for cash. We are the only large sash, door and lumber concern selling direct to the consumer. Our low prices will save you big money. We have customers in every locality. Ask any of them about our goods, our methods, our prices, our guarantee, our prompt shipment. Your local banker or any bank in Davenport, Iowa, will tell you we are responsible. See our rating in Dun and Bradstreet. If goods are not satisfactory we guarantee to refund money and pay freight both ways. You take no risk. Why pay double?

**We Undersell Everybody on Guaranteed Building Material. We Ship Everywhere**

No other concern can duplicate our prices. We control our sources of timber supply and operate the largest building material plant in the world. We ship direct from our own warehouses and lumber yards. All our material is guaranteed up to the official grades of the Sash & Door Manufacturers' Associations. Our lumber is first air-dried, then put through a scientific drying process. There is no "come apart" to our work.

**Write for Grand FREE CATALOG of 5000 Bargains in Materials for New Buildings or Remodeling Old Houses**

Write for this great Free Millwork and Building Material Catalog, which pictures, describes and puts a bargain price on over 5,000 different building material items. Saves you the huge profits of the retail dealer. Offers everything needed to build, remodel or repair, at an actual saving of 50 to 75 per cent. May save you hundreds of dollars. An endless variety of styles. Latest architectural ideas. Many illustrations in colors. Gives freight rate to your nearest shipping point. A postal brings you this valuable catalog by return mail—FREE. Write now.

**Gordon-Van Tine's Famous Book of Plans FREE! 44 Complete Houses, Bungalows, Cottages, Barns**

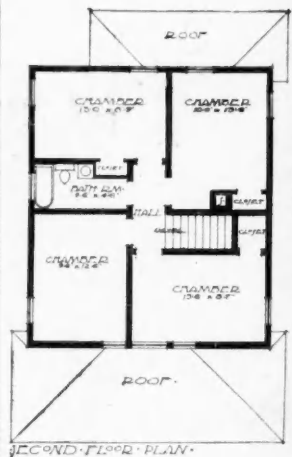
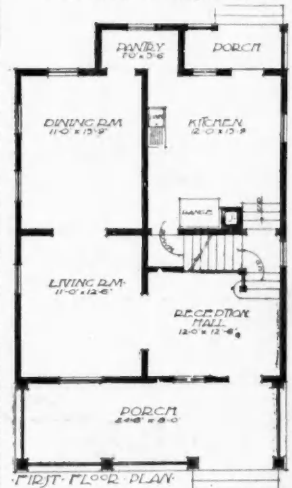
The most popular collection of plans for beautiful, practical homes. Up-to-the-minute in style. Correct in every detail. Designed by licensed architects. See these handsome homes before you build the next house. The complete Book of Plans mailed free on receipt of 10 cents to cover cost of packing and postage. Send for it.

**GORDON-VAN TINE CO.**

**463 Federal Building**

**Davenport, Iowa**

**FLOOR PLANS OF HOUSE**  
See Fine Arrangement



**\$1667.00**

builds this 9-room house complete, as per itemized prices below.

Excavating	\$ 25.00
Foundation	225.00
Lumber	415.00
Carpenter Work	366.00
Plastering	225.00
Millwork	204.00
Painting	125.00
Hardware	5.00
Tin Work	20.00
Chimney	23.00
<b>Total</b>	<b>\$1667.00</b>