

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

IN THIS NUMBER—(172 Pages of Good Things for Wide-Awake Builders)

Helps to Bigger Business

A New Department Showing How Carpenters and Builders Have Pushed Ahead—Money-making Pointers for Every Reader, Big or Little, Who Is Ambitious—Cash Prize Contest for Personal Experience Letters.

“SPLASH-DAMMING” ON THE BIG SANDY
A Lumbering Story, Vivid and Novel

TO MAKE FRAME HOUSES FIRE RESISTING
Simple, Cheap Method Does It

For the ONE-MACHINE WOODWORKING SHOP
Making One Do Work of Six

PAINTING FOR CARPENTERS AND BUILDERS
Some Handy Things to Know

HARDWARE OUTSIDE BLINDS WITH SCREENS
Correct Detailing of All Parts

STEEL SQUARE SOLVES FRAMING PROBLEMS
Principles and Uses Explained

Complete Set of Plans for 5-Room Bungalow

Plans for Self-Supporting Roof Barn—Questions and Answers—Letters from Builders
—How to Make a Writing Desk—Concrete on the Farm—New
Tools and Machinery for Builders.

ATKINS "SPRING BEAUTIES"

Here are just a few of the tools that you will find invaluable in your kit. They represent the most scientific construction and Highest Quality. Your regular dealer will supply you. Just tell him you want "ATKINS SILVER STEEL". He will order from his wholesale house, if he does not have them in stock. Why not "sort up" your outfit—this spring—now—and enjoy the benefits these really fine **mechanics** tools will bring.



Two Man Saws—For Heavy Cutting



Hand, Rip and Panel Saws



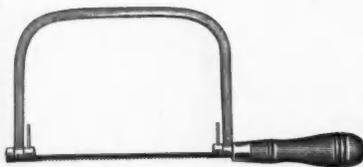
For Heavy Framing



Floor Scrapers. Blades of Saw Steel



Nests of Saws with Metal Cutting Blade



Coping Saw



Back or Mitre Saws



This Mark on all Genuine Atkins Tools



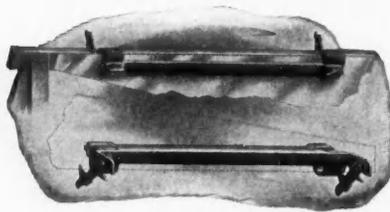
Trowels Made of Saw Steel



Improved Hack Saw Frames



Atkins No. 100 Flooring Saw



Atkins AAA Saw Clamp



Another Popular Floor Scraper

FREE Send your name and address with ten cents for postage, and we will register you on our list of High Class Mechanics and send you **Free** our Carpenters Book, called Saw Sense, a handy monthly Time Book, with wage scale and a fine carpenters nail apron.

E. C. ATKINS & CO., INC.

THE SILVER STEEL SAW PEOPLE

INDIANAPOLIS, INDIANA

When Writing Advertisers Please Mention the American Carpenter and Builder.

No. 3 C. H. & E. PORTABLE SAW RIG

MORE
C.H.&E.
PORTABLE
SAW RIGS
NOW IN USE
THAN ALL of our
IMITATORS
COMBINED

One 12" Rip Saw
One 12" Cross Cut
Saw
One 8" dia. $\frac{1}{2}$ " Dado
Head
4" Jointer Head
Jig Saw (3 Blades)
Boring Table (3 Bits)
Emery Wheel
10" Sander
Adjustable Gauges
Canvas Cover
Trucks
Huther Bros. Adjust-
able Dado Head



WE ARE THE PIONEERS IN THE
MANUFACTURE OF

PORTABLE SAW RIGS

We manufacture them in four sizes, besides a
complete line of contractors' equipment

WRITE for our attractive colored wall hanger, de-
scriptive of this No. 3 Portable Saw Rig

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

322 Mineral Street - - MILWAUKEE, WIS.

The American Floor Surfacing Machine

IS NO EXPERIMENT. Its work since 1903 has established a standard for finely surfaced and polished floors. It is the only machine whose work is specified by leading architects and used in the best government buildings and will surface and polish any kind of a floor from common pine to the finest parquetry.

IT IS THE ORIGINAL and only two-roll, self propelled, dust collecting machine, that surfaces close to the wall and can be used in small rooms. Anyone can operate it.

ITS WORK IS RAPID, regular smooth and even because the power that drives the rolls, also propels the machine at the same ratio of speed. It has surfaced and polished millions of square feet of the finest floors in America and Europe.

GET A MACHINE that does first class work and in paying quantities, that is fully guaranteed and sold on its merits. Don't be fooled with an imitation.

Write for Our Free Book, "Surfacing Floors as a Business."

Manufactured By **The American Floor Surfacing Machine Co., TOLEDO, O.**



We Make Panels of any Thickness and Any Kind of Wood — Curved or Flat.

FOR
Wainscoting
Ceiling
Mantels
Doors
Counter Tops
Partitions
Cabinets
Shelving
Drawer Bottoms

Our products excel in Quality and Durability, because we concentrate our best efforts in their manufacture.

We specialize in Panels and have the facilities for producing best results.

Try us with your next order. Send us your specifications and ask for our prices.

AMERICAN VENEER CO.

Specialists and Manufacturers of Built-up Veneer Panels

We appreciate small orders as well as large ones

12 Market St., KENILWORTH, N. J.

ANTI-STICK PRODUCTS

We Are the People Who Have Done So Much for Concrete Men.

ANTI-STICK for forms of all kinds used with poured concrete. No sticking. No rust. No gumming of forms.

ANTI-STICK ENAMEL. For forms where damp process is used.

ANTI-DAMP. The damp proofing that is good all the time. Hard as flint. Stands the tests.

ELEPHANT TREAD. A concrete floor finish with years back of it. Always successful.

Write us and find out more.

THE ANTI-STICK CO., Westerville, Ohio

"It Works Like a Plane"

The Boss Floor Scraper

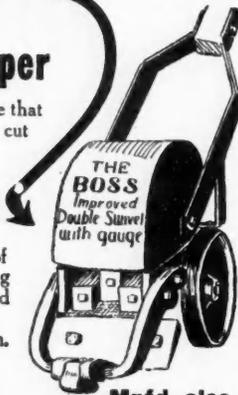
The "Boss" is the only Floor Scraper made that will plane a floor without leaving a square cut where knife first starts cutting. Why? Because the "Boss" is made with a gauge on front, to which is attached a pear-shaped wheel which raises when machine is pulled and lets the knife down gradually.

The "Boss" can be set for any thickness of shaving, it also can be set for any shearing cut right or left up or down to suit the kind of Lumber.

It is guaranteed to give absolute satisfaction.

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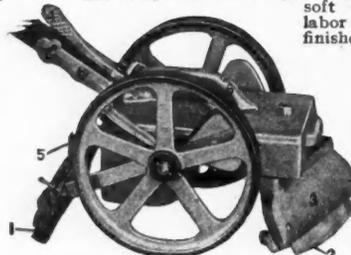


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THE RAPID FLOOR SCRAPER



Large Wheels—easy motion. Automatic brush, sweeps floor ahead of knife. Knives sharpened in machine. No bolts to loosen when knives are sharpened or changed. Scrapes hard or soft wood. Saves labor of 3 men. Does a finished job. With the **RAPID KNIFE SHARPENER (INCLUDED FREE) ANY MAN CAN SHARPEN KNIVES.**



SEND FOR CATALOG — AND — **FREE TRIAL**

MONARCH MFG. CO
266 Shepard Bldg.
GRAND RAPIDS, Mich.

DON'T BUY A FLOOR SCRAPER

of any kind until you have tested the

LITTLE GIANT

at our expense. Sold only on its merits. Shipped to you prepaid for a free trial. If not satisfactory in every particular, return it to us, at our expense.

Easy to operate. Will scrape your floors rapidly, perfectly and economically.

Ask for special price on the **LITTLE GIANT**



The Thor Electric Home Laundry Machine

permanently solves the laundry problem in the home. More than 34,000 now in use. Sizes, designs and prices to meet every requirement. Free trial. Easy payments.

Write for full particulars.

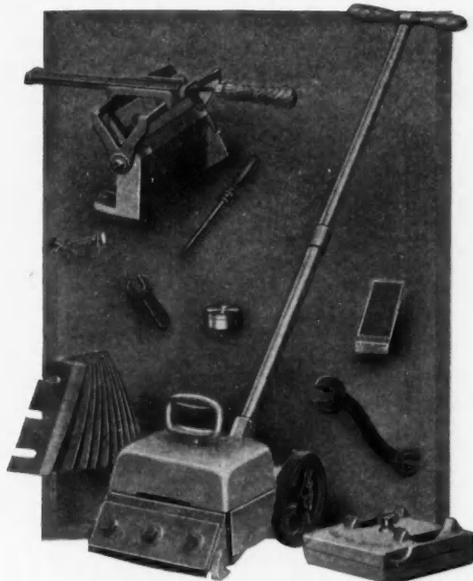
Hurley Machine Company

1008 Flatiron Building
NEW YORK

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EVERY SHAVING MEANS A SAVING OF 75% When the

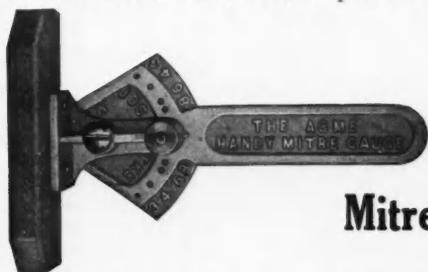


Acme Floor Scraping Outfit

is on the job—because one man with this outfit can do the work of four men using hand scrapers and do it better.

Thousands of contractors have proven this on their own work. Are you willing to be convinced? If you are, let me send the Acme Floor Scraping Outfit to you on one week's free trial and after you have worked with it and then are not entirely satisfied, just send it back to me at my expense.

No strings to this offer whatever. Just a straight business proposition based on the principle of permitting you to try before you buy. Write me for booklet and further particulars today.



Acme Handy Mitre Gauge

is one of those little tools that is a great time saver. It fits in the pocket where it is always ready for immediate use. The dollar that you pay for this mitre gauge is the best investment that you ever made. If your dealer can't supply you, I can. Guaranteed absolutely accurate. I have a circular that gives full particulars. Write for it today.

JOSEPH MIOTKE
247 Lake Street : : Milwaukee, Wis.



Saves 3 Men's Wages

Scrapes twelve "squares" a day where one man will scrape but three. Gives you four times the work at the same wages—or saves just three men's wages on every job.

It does far better work, too, than can ever be done by hand. Scrapes forward or backward any way of grain. Very easy to handle. Has all latest improvements, including an A-1 Sharpening Device.

Try It Free

Send for it now. If its work is not satisfactory after five days trial, return it at our expense.

John F. Weber
Pres.
Weber Mfg. Co.
670 71st Ave.
WEST ALLIS,
WIS.



This Machine Will Increase Your Profits

The Fox Floor Scraper

The Most PRACTICAL Scraper Built

SMOOTHS A FLOOR PERFECTLY

You will **SAVE** enough on 3 days work to pay for the Fox Scraper. **WE CAN BACK THESE STATEMENTS**



It will cost you one penny to try it

We will send you this machine on 5 days Free Trial, freight prepaid. A post-card will bring it to you.

FOX SUPPLY CO. BROOKLYN, WIS.

What Carpenters
Contractors and
Builders think
about it!



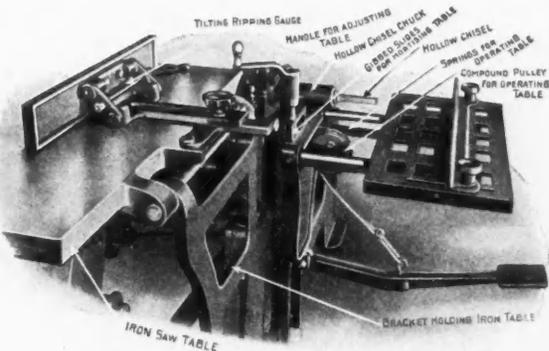
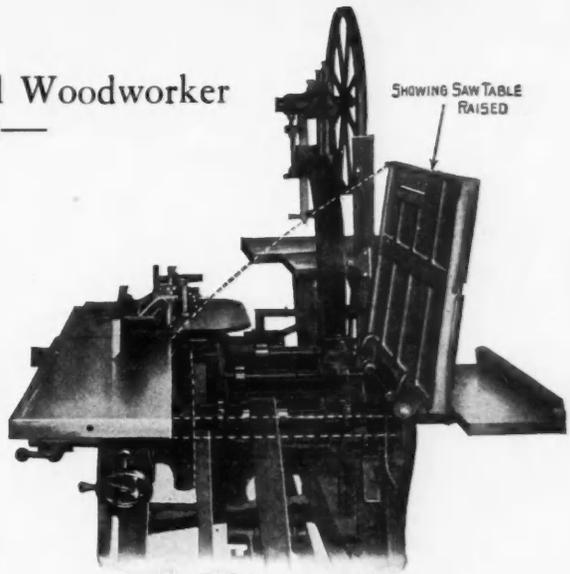
Twelve
Hundred
(1200) In Use

16 Machines in One

When you buy a FAMOUS Universal Woodworker you get sixteen machines in one, as follows:—

- | | |
|---|--|
| 27" Band Saw | Single End Tenoner |
| 12" Jointer | Drum Sander |
| Saw Table (with raising and lowering arbor) | Disc Sander |
| Single Spindle Shaper | Emery Grinder |
| Borer | Knife Grinder |
| Pony Planer | Band Re-Saw |
| Tongue and Pole Rounder | Spoke Tenoner, Rim Borer and Wheel Equalizer |
| Hollow Chisel Mortiser | Adjustable Felloe Rounder |

The Saw Table and Ripping Gauge are made of IRON.



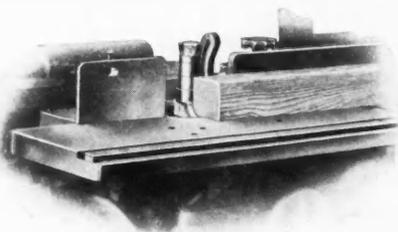
Four men can operate at one time on four different attachments. Not much floor space is required

Ask About the FAMOUS Portable Universal Woodworker

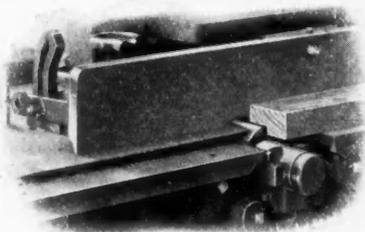
We also build the FAMOUS Portable Universal Woodworker—a machine that is self-contained, with its own power plant and belting, and which can be moved around from place to place.

Send us your name on a postcard and get full particulars—you gain nothing by waiting, and something by writing at once.

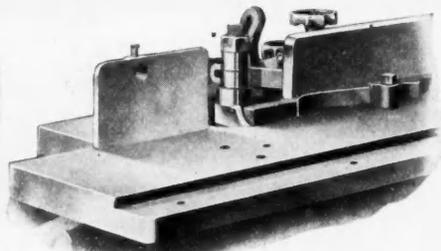
THE SIDNEY TOOL CO.
SIDNEY . . . OHIO



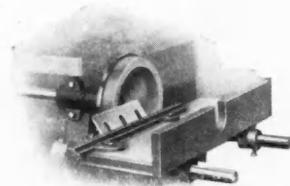
Poles and shafts can easily be rounded on the shaper spindle. This feature will appeal to the wagon and carriage builder. All you need to do this work is the special knives.



This shows how to do rabbeting on the jointer. You can't do it on every jointer but you can on a CRESCENT. The operation is fully explained in the special circular of the No. 51 Universal wood worker.



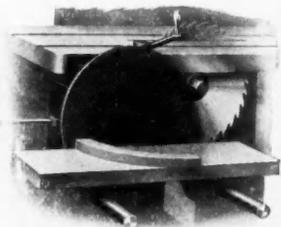
It is a very easy matter to work quarter round or moulding on the shaper spindle. The pressure spring holds the work securely up against the fence.



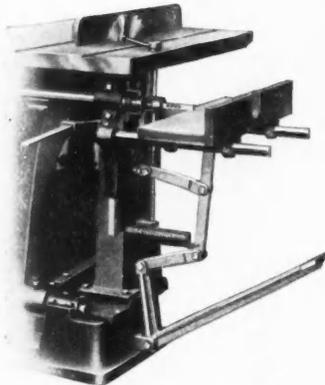
A knife grinder can be furnished as an extra and is very convenient for grinding planer knives.



Four men can work on the No. 51 CRESCENT Universal wood worker without interfering with each other. Each machine may be started and stopped independent of any other and each workman controls his own work.



This is a good view of the disk grinder. The disk is 14 inches in diameter. Table can be raised and lowered to suit the work being done.



This attachment converts the borer into a hollow chisel mortiser, suitable for cutting mortises up to 5/8 inch square.

The No. 51 Crescent Universal Wood Worker

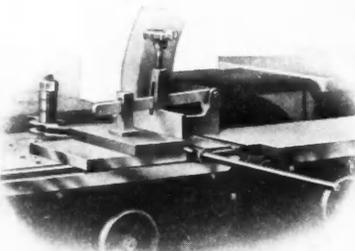
will increase your profits. It will cut down your cost, save delays and enable you to do more work and better work this season than you have ever done before. If you could just see this machine in operation and see how easily it does its work, if we could just get you to understand how convenient the machine is and how well adapted it is for just the kind of work you have to do, we would not have to ask you a second time to place your order. You would buy the machine without urging.

Ask today for our special catalog No. 51. It tells all about this splendid tool. At the same time we will send our 1912 catalog of band saws, saw tables, jointers, shapers, planers, disk grinders, swing saws, planers and matchers, variety wood workers and borers.

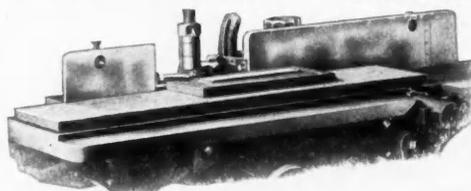


See how the jointer and shaper can be used to straighten one side and one edge of a piece at the same time. Pressure spring holds the work in place. This is a regular feature of the No. 51 CRESCENT Universal Wood Worker.

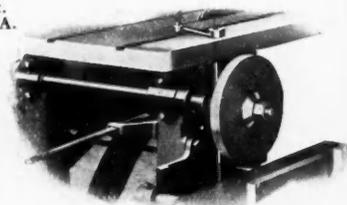
THE CRESCENT MACHINE CO., No. 224 Main St., Leetonia, O., U.S.A.



A tenoner attachment can be furnished at very low price and will soon pay for itself on many kinds of work.

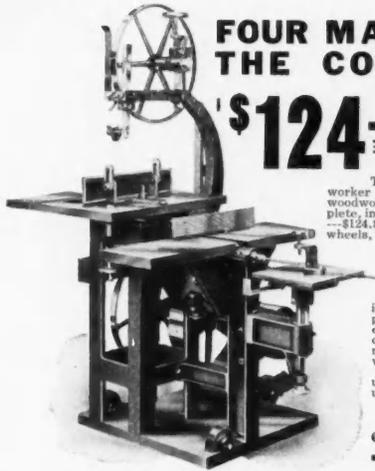


A panel raising attachment can be supplied at a slight additional charge. This is a desirable feature for many classes of work.



An emery wheel may be attached to the borer spindle and is very convenient for grinding tools.

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FOUR MACHINES FOR THE COST OF ONE

\$124.80

A Band Saw—A Saw Bench—An 8 inch Jointer and Planer—A Mortiser and Borer—all in one machine for only \$124.80.

This solid cast iron Universal Woodworker is the best value ever offered in any woodworking machine. It is equipped complete, including tools and belting, at this price—\$124.80. The heavy base is furnished with wheels, one of which swivels. Any man can move this machine easily. This Woodworker includes four of the principal machines used in any shop or mill—all ready for instant use. Here is a guaranteed A No. 1 machine in every respect—selling at from one-third to one-half the price others ask. It is big value in every way. We guarantee this machine absolutely and will refund your money if you are not perfectly satisfied with it.

Don't buy any woodworking machine until you know about this one. Write us for further descriptive matter now.
THE TANNEWITZ WORKS
 315 N. Front Street
 Grand Rapids Mich.



Gasoline Engine Drive

GRIMM MANUFACTURING CO. 46 Erie St., Buffalo, N. Y.

Do you want to save on the work you now have done at the Planing Mill. If so get a

GRIMM Woodworker 9 Machines in 1

It will do ripping, cross cutting, dading, jig sawing jointing, boring, moulding, sanding and emery wheels. Built with belt drive or electric motor also gasoline engine for portable use.

Send for Catalog and Prices
 Buffalo, N. Y.

FOOT, HAND AND LIGHT POWER WOOD-WORKING MACHINES



"Victor" Scroll Saw

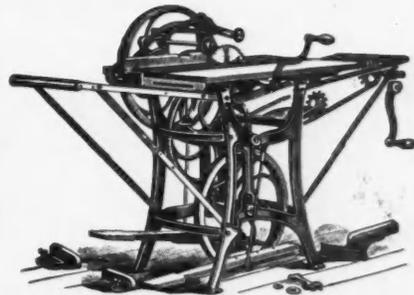


"Diamond" Mortiser

Carpenters, Builders, Cabinet-Makers and other woodworkers can successfully compete with large shops by using our labor saving machinery. Save for yourself some of the profits you have been paying to the mills. With our machines one man will do as much work as four to six men using hand tools; will do it easier; will do it better.

Send for Catalog "A" describing our complete line

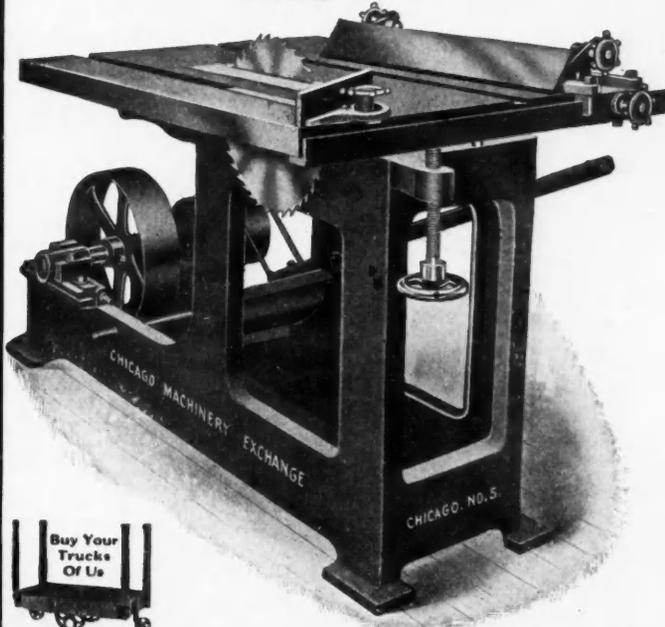
THE SENECA FALLS MFG. CO.
 218 Water Street - SENECA FALLS, N. Y., U. S. A. (249)



No. 5 "Union" Self Feed Rip and Cross-Cut Saw

\$144.00 For Both

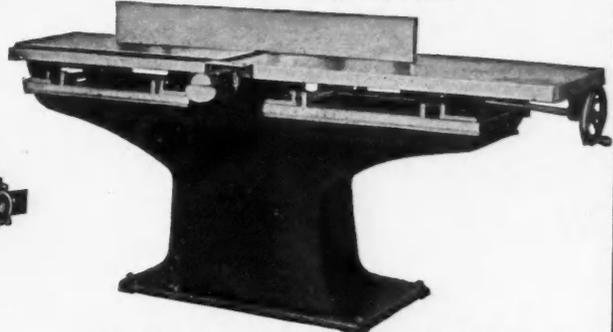
Ask for Price on One if You Can't use Both
 Chicago No. 5 Combination Saw Table
 Used for Cutting Off, Ripping, Mitering, Grooving, Boring, Tenoning, Etc.



CHICAGO MACHINERY EXCHANGE, 1213-1223 W. Washington Blvd., CHICAGO, ILL.

To Contractors and Builders

Chicago 12-Inch Jointer and Planer



Used for Planing, Jointing, Shaping, Matching, Rabbeting, Grooving, Chamfering, Beading and Making Mouldings

The Worlds Largest and Most Complete Stock

of Woodworking Machinery, Tools and Supplies—everything for the Woodworker.

Send for our Free Special Catalogue to-day. We issue a catalogue of machines especially adapted to Contractor's and Builder's use.

When Writing Advertisers Please Mention the American Carpenter and Builder.

IN THE SHOP



The Cut-Off Saw is only one attachment — there are eight others—all of practical use to the practical contractor.

Specifications of Attachments

10" Rip Saw (2" cut and guide).
 10" Cross Cut Saw (2" cut and guide).
 12" Cross Cut Saw (3" cut and guide).
 6" Huther Dado Head ($\frac{1}{8}$ " to $1\frac{1}{2}$ " groove).
 Moulding Knives (3 pairs).
 6" Jointer (adjustable table and guide).
 11" Sanding Disc (for surfacing).
 Jig Saw (6" cut, for circular work).
 Boring Machine ($\frac{1}{2}$ ", $\frac{3}{4}$ " and 1" bits).
 8" x $\frac{1}{2}$ " Emery Wheel.
 All necessary tools and belting.
 Self Oiling Bearings.
 Table 28"x43".

**Completely Equipped—
 All Attachments
 5 H. P. Valveless Gas-
 oline Engine**

**Price, \$250.00,
 f. o. b. Buffalo**

What do you suppose the young man is doing?

Do you see that pile of saw-dust?

Does it look real?

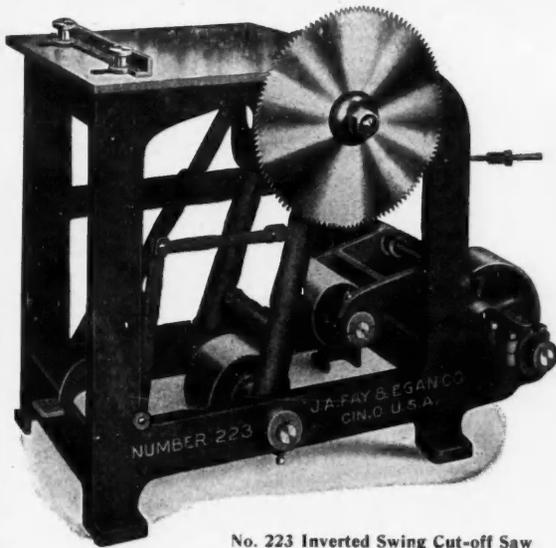
Do you see where it comes from?

How thick do you think that piece of lumber is?

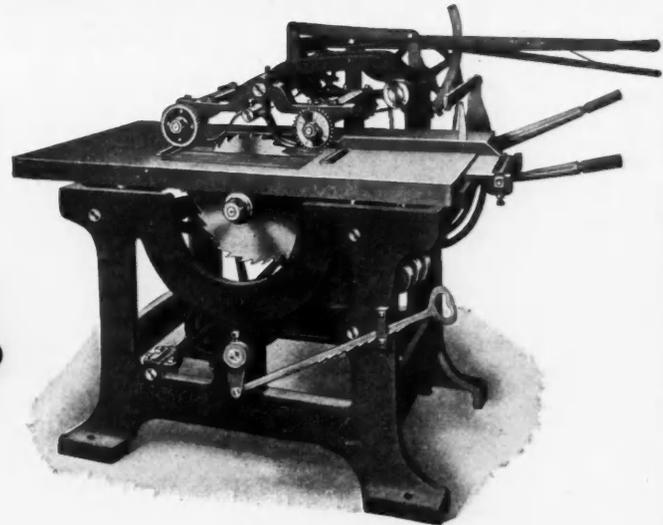
Do you see with your common sense eyes that the machine is
 a real machine, doing real work — saving its owner
REAL MONEY?

LITTLEFIELD-CLARK COMPANY
 20 ILLINOIS STREET :: :: BUFFALO, N. Y.

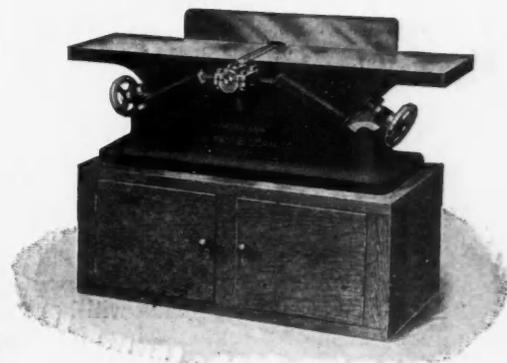
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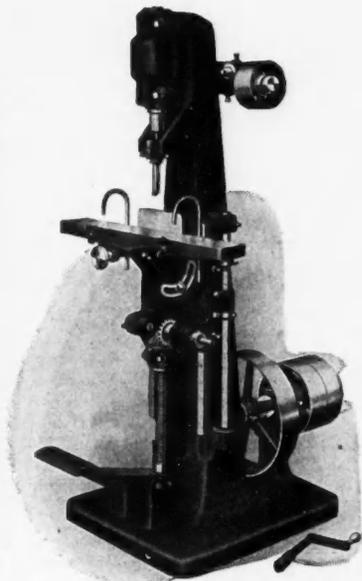
No. 223 Inverted Swing Cut-off Saw



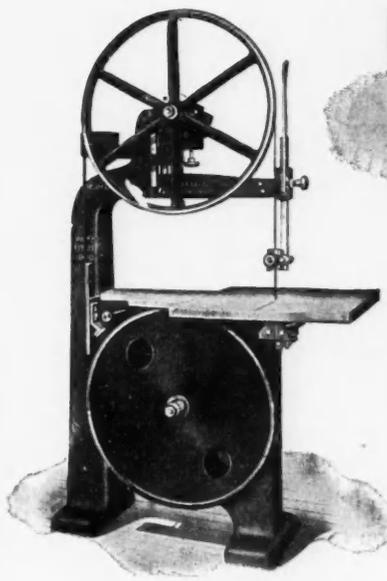
No. 110 S. F. Rip Saw



No. 254 Bench Hand Planer



No. 272 Hollow Chisel Mortiser



No. 192 Band Scroll Saw



No. 2 Centennial Surfer

Carpenters and Contractors everywhere are using ^{FAY-EGAN} "LIGHTNING" small shop tools to a very decided advantage—

Why continue in the old way, depending upon the planing mill to get out your work when you can do it quicker and cheaper, by having a few Fay-Egan tools in your shop? They are substantial, yet simple in construction, easy to operate, require but little power, and by the great saving they effect, pay for themselves in a short time. Catalog upon request.

World's Oldest and Largest Mfrs. of Woodworking Mchys.
The "Lightning" Line.

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

Sales Offices:
New York, Chicago,
New Orleans, St. Louis,
Seattle.

When Writing Advertisers Please Mention the American Carpenter and Builder.

**MAKE IT SAVE YOU TEN DOLLARS
BEFORE YOU EVEN THINK OF BUYING IT**

**Try Out the
Eveready on a Job
One Week Free**

You are wholly welcome to the use of an Eveready "portable private planing mill" for Six Days. We will deliver it, and take it away (if you'll let us—*but you won't!*) and you won't be obligated to one solitary thing. **THAT'S HOW GOOD IT IS!**

**Send for the
Eveready Without
Promising to Buy It**

In your week's Free Trial it will surely save you Ten Dollars if you keep it halfway busy. Others save \$25 a week running an

TRADE MARK
OSHKOSH
Guaranteed
for Life

EVEREADY

Portable Saw Rig

**Easily Outdoes 25 Men
Rip or Cross-Cut Sawing**

No six men on any job of yours could possibly do merely the sawing jobs the Eveready will handle with one man and a gallon of gasoline! Move it from place to place easily, it's so compact, so readily portable, so complete and self-contained—engine and all in one adequate unit. And fast, fine sawing is only part of the profit-service the Eveready can give you! For it

**Outfits You With Your
Own Planing Mill!**

Glance at the summary of Eveready Free Extras (printed at the right). Realize that each of them is an AA1 modern tool for its purpose—not a mere gim-crack, but a sure-enough work-producer. Get the fact that a quarter a day runs this planing mill and saw mill. **Then**—figure how well it will pay you to

**Let the Eveready Cut Your
Costs Ten Per Cent!**

You can bank on every assertion made here for this outfit, because we invite you to test it—on your own work—in your own way—six days free. Feel entirely welcome to make that free test. There is no come-

Tell us on your letterhead that you are in line for an Eveready "Show Me" Demonstration. Your only obligation will be to **keep track of what it does for you**, so you'll know its value. Leave the rest to us. Put it up to

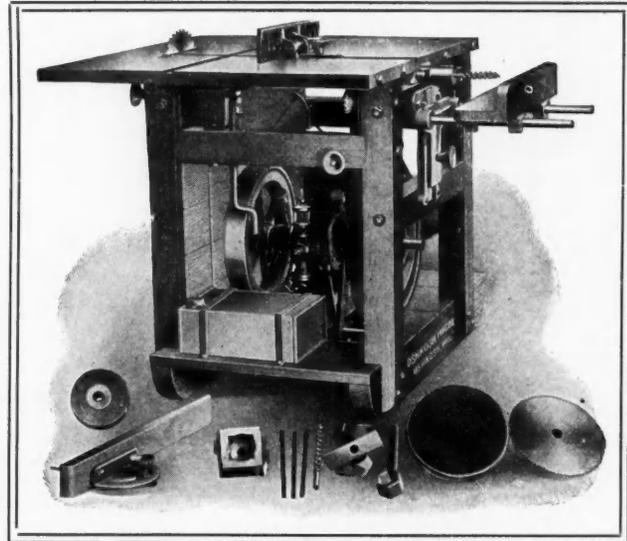
Oshkosh Manufacturing Company

316 South Main Street

OSHKOSH, WISCONSIN

**DOES SIX MEN'S HAND SAW JOBS
COSTS ABOUT A QUARTER A DAY FOR POWER**

When Writing Advertisers Please Mention the American Carpenter and Builder.



**This Is the Machine With
All the Free Attachments**

Jointer Head—This works on exactly the same principle as an up-to-date planer. Produces a smooth, even job, with no deep cut as the material leaves the jointer head. 2½ inches in size.

Boring Attachment—A high-class attachment. Guaranteed absolutely accurate. Extra long boxes insure easy long-running qualities on the guides. Bits, standard size.

Jig Saw—Not a cheap one, but the best 12-inch jig we can make. All joints reinforced with steel, equipped with brass bushings. Once use it and you won't part with it.

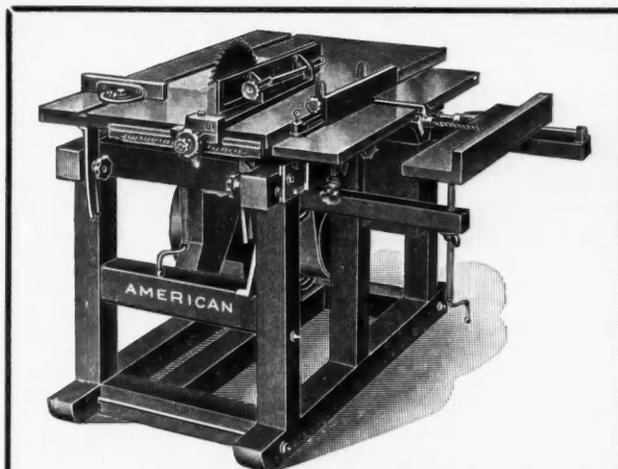
Sander—The best one yet—a great time and money saver over old methods in change and economy of paper. Our methods of holding paper will not blister as do many others. 10 inches in diameter.

Saw Gauge and Mitre Device—Saw gauge of best gray iron, 18 inches long, adjustable to any bevel. Mitre device adjustable to any angle and can be used as a cross-cut gauge.

Dado Head—Our own special design. Does smooth, even work with or across the grain. Makes window frames, dados, etc.

Emery Wheel—A 6-inch wheel made for grinding tools is also furnished with this rig.

back to it, no growling if you send it back, no pestering you for reasons. Take it and try it and see it make a place for itself on your work that nothing else can fill.



"American" Contractors' Portable Variety Wood-Worker

A complete saw bench—a planer and moulder—a boring machine—bought separately would cost more than the average contractor wants to pay.

But in the "American" Wood-Worker you get these three machines in one, so combined that three men can work at them at once without interference—and all at a very moderate price.

There's no lost time if you have an "American"—no men standing around for a chance at the machine.

This three-man feature triples the earning power of your investment in an "American" wood-worker.

Write Us for the Circular.

AMERICAN SAW MILL MACHINERY CO.
 82 Main Street HACKETTSTOWN, N. J. 1655 Hudson Terminal NEW YORK CITY

SMITH OF SMITHVILLE

Woodworking Machinery

Forty different Sizes and Styles of Single-end and Double-end Tenoners.

Send for Loose Leaf Catalog.

H. B. Smith Machine Co.
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New York Chicago Atlanta San Francisco

HOW TO MAKE A GOOD PROFIT ON FANCY SASH

Whittling the joints of fancy sash with a jack knife and chisel is slow and tedious work, and the profits from it are small. The American Sash Trimmer makes the work of fitting curved and straight sash bar equally easy, and with this machine a man can fit up more fancy sash in one hour than he can in from three to five hours by hand, also producing better work.

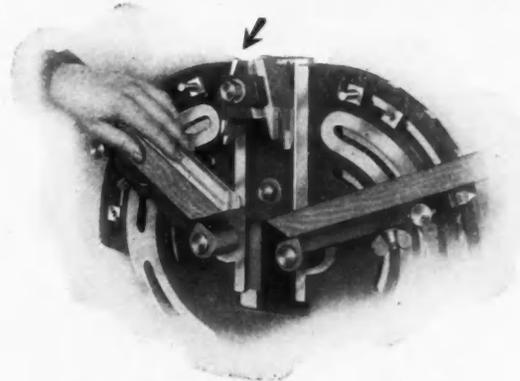
Here is the Proof

The Heald Machine Co., Worcester, Mass.
 Gentlemen:— We have been using one of your "American Sash Trimmers" constantly for the last two and a half years, and are perfectly satisfied with its work.
 It is a great labor saver, doing five times as much work as could be done in the old way, and doing it cheaper and better. Yours very truly
 Mohawk Valley Lbr. Co., Fultonville, N. Y.

Here's How We Do it

Two or three downward strokes of that cutter will cut a piece of bar to the exact length required and shape the end to a perfect fit in a very small part of the time required to do a poor job by hand.

RESULTS— Better Work— Less Cost— More Profit



View Showing Cutter Head and Bed Pieces

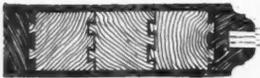
We guarantee the enormous saving of at least 75 per cent in cost over the old way of fitting up this work and the price of the machine being small, it soon pays for itself.

Can you not see how this machine would increase the profits from your sash department?

Machines sent on approval to responsible concerns

THE HEALD MACHINE COMPANY
 2 NEW BOND ST. WORCESTER, MAS.S

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"From the Paine Paine Kore-

"The TRAIL of the **KORELOCK** TREE to FINISHED PRODUCT"

*This Guarantees Selected Material,
Workmanship and the Lowest Prices*

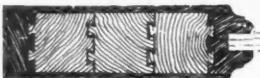
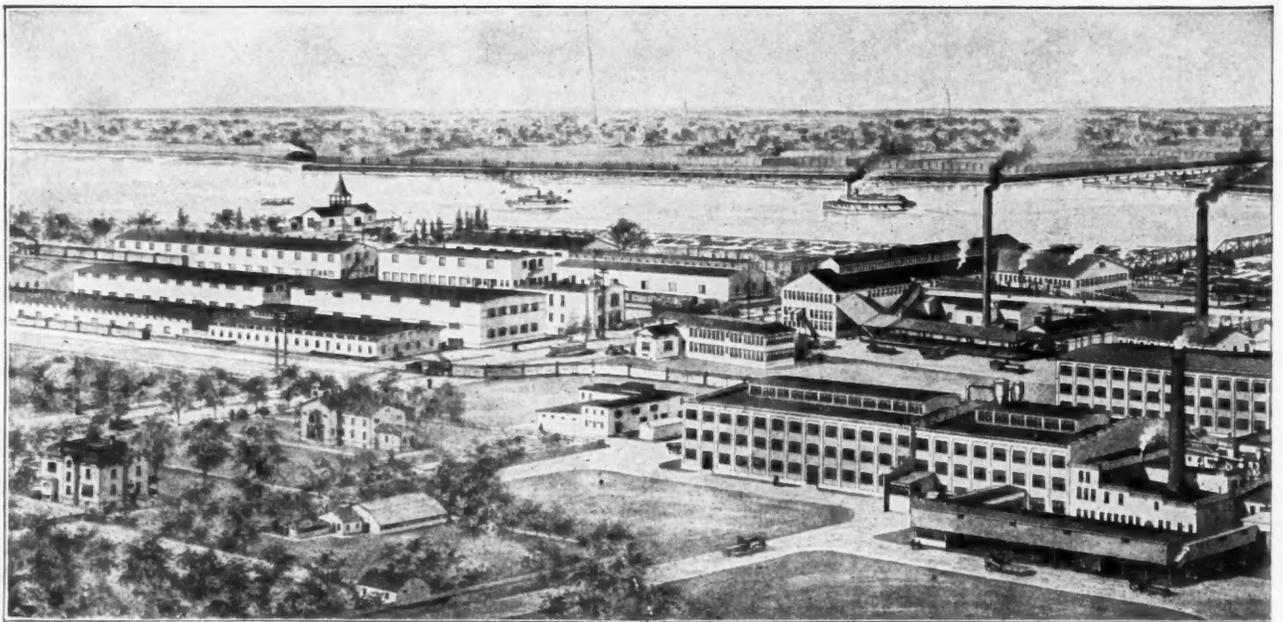
More than two-thirds of the Reach the User through the

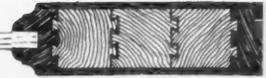
*We invite correspondence from Contractors
We respectfully remind you that the only
promptly is to apply for same **at once.***

We Manufacture Everything Known



"ORIGINATORS OF THE STANDARD
OSHKOSH WIS





Forest to the lock Doors."



DOOR" leads straight "FROM
without leaving PAINE Ownership.

*Detailed Inspection, Scrupulous
Consistent with Quality and our Guarantee.*

World's Standard Veneered Doors PAINE PLANT Shown Below.

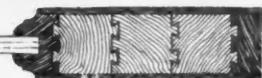
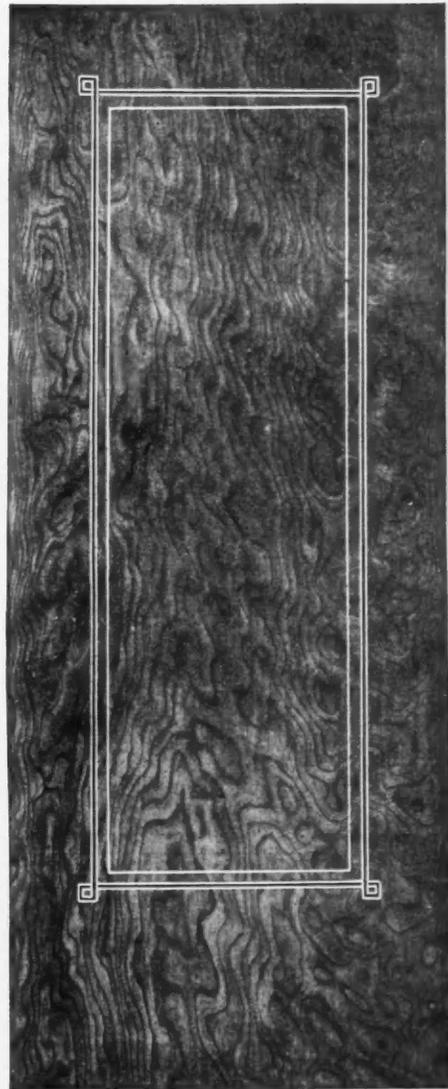
*and Builders anywhere in the world.
way to secure our New CATALOG "A"
(Requests met in order received).*

in Millwork—in Every Kind of Wood

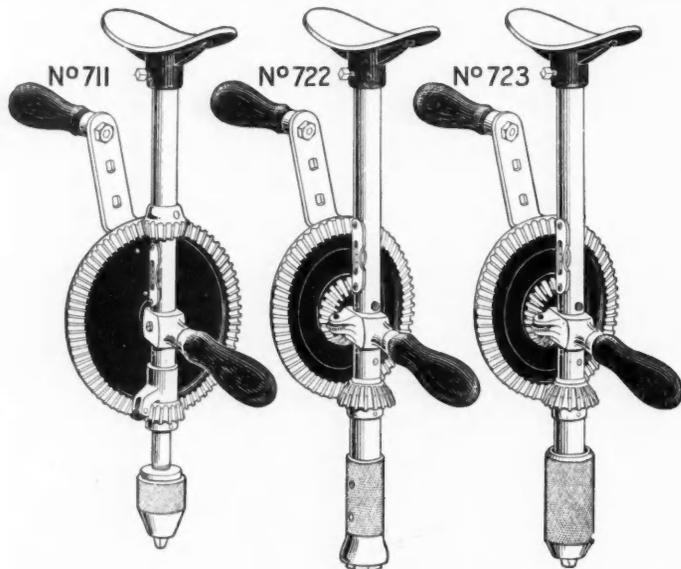


HARDWOOD VENEERED DOOR"

CONSIN U. S. A.



Breast Drills



Stanley Tools

Stanley Breast Drills are of the highest grade of workmanship, material and general finish. Made in a variety of styles in both the Single and Double type speeds. You cannot do better than add one of these to your kit. Let us send you our special Breast Drill circular illustrating twelve different styles and containing complete descriptions, prices, etc.



Stanley Rule & Level Co.
NEW BRITAIN, CONN. U.S.A.



YES, IT'S WORTH TWICE AS MUCH ON THIS ONE CEILING JOB.



No Strain When High Nailing
DOUBLE CLAW HAMMER

"for the mechanic with an ambition to succeed"

16 oz. or 21 oz. Head - WHICH?

\$1.50 at your dealer's

or from us, delivery prepaid.

Worth ten times more than the common

hammer - costs three times more to make.

DOUBLE CLAW HAMMER CO.

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START **OUT**



Pulls The Nail Out Straight Without A Block

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

JOSEPH DIXON CRUCIBLE CO.
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The Universal Sash Bar

Holds with a Grip of Iron, yet with a Touch of Velvet

Makes any angle. Allows for expansion and contraction of glass and for settling of building.

The only Flexible setting for Plate Glass



Glass set from the outside

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NINE Woodworking Machines in ONE



That is Just What Our Standard Portable Combination Woodworker Is

You most certainly want to know this Standard Portable Combination Woodworker. It is nine distinct woodworking machines in one—Cut-off Saw, Rip Saw, Dado Head, Moulder, Jig Saw, Jointer, Sander, Boring Machine, Emery Wheels—all operating on one shaft, except Jig Saw which is driven by eccentric belted from mandril. There are no gears, springs, cogs or such devices anywhere about the machine. Nothing which can get out of order. Machine is very simple in operation. Changes from one attachment to another can be made in one minute or less.

This is a machine that will more than pay for itself in a few months. It will prove a constant money maker as it will do more and better general woodworking work in less time. With this machine in action you can turn out more jobs than ever before and every bit of the work will be entirely O. K.

Our Standard Portable Combination Woodworker is a machine intended for Carpenters, Builders, Woodworkers in every line of work, Cabinet Makers, etc., etc. It is made for either portable or stationary use. It is built of the finest materials throughout and every detail is mechanically perfect.

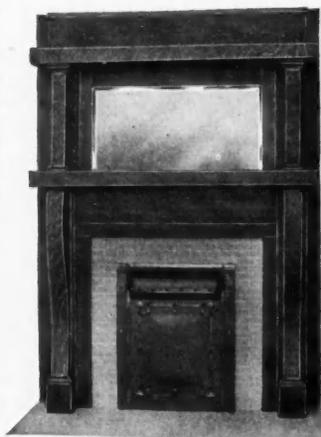
The power equipment of this woodworker can be either a 6 H. P. air or water cooled engine or an electric motor. This 6 H. P. engine can be driven by either gasoline, artificial gas or natural gas. This engine is simple in construction and perfect and reliable in its operation.

You can undoubtedly make considerably more money through having a woodworking machine. But don't buy any woodworking machine until you have sent to us for our catalogue and detailed particulars and know our Standard Portable Combination Woodworker and just what it can do. Drop us a line that you want complete information NOW Just say you want Catalogue G.



Atlantic Engine Co.

MEADVILLE :: :: PENNSYLVANIA



\$28.60

For this elegant massive, selected oak or birch, mahogany finished mantel. Beveled Mirror 18x36.

"From Factory to You"

Price includes our "Queen" Coal Grate with best quality enameled tile for facing and hearth. Gas Grate \$2.50 extra. Mantel is 82 inches high, 5 feet wide. Furnished with round or square columns, as shown in cut. Dealer's price not less than \$40.00.

No. 875½.

"Reputation and Quality Count"

Central Mantels

are distinctive in workmanship, finish and style. Twenty-five years' experience enable us to know and satisfy the needs of those who want mantels of quality, different from the rest. We build all styles—Colonial to Mission.

CATALOGUE FREE—Will send our 100 page catalogue, the finest ever issued, free, to carpenters, builders and those building a home.

CENTRAL MANTEL COMPANY

1247 Olive Street

St. Louis, Mo.

Miller's Two Minute Lever Lock Mortiser

Chisels the opening for Locks

Actual Use of Tool ¼ Minute
Over 6000 Mortisers Sold



One Builder wrote us:

"I was surprised, I did not think it would do the work so quick. This is the best I ever saw."

MR. CONTRACTOR AND BUILDER

Our patent double edge, side-cutting chisel can cut more wood, four times more rapidly and 100% less exertion than any boring bit.

GUARANTEED

to be as we represent, and will send on trial to any reliable contractor and builder. We will return all money paid if it does not cut an opening in a door for a mortise lock in two minutes.

We also make a Butt Mortiser and Rule Gauge which cuts out the seats for butt hinges in soft or hard doors, jambs, and similar work which we will send you postpaid for 75 cents.

A. W. Miller Mfg. Co. Main Office and Factory
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20,000 Copies of This Book Sold

Absolutely New Only Book of Details

We are mailing out thousands of copies of book of "Details of Building Construction". It is a book that will prove of untold value to builders and contractors, being a collection of exterior and interior details of every part of every kind of a building, interior fittings and cabinet work.

Radford's "Details of Building Construction" will prove to be in every way a

Contractor's Bible For Study and Reference

Every page gives working drawings of details that can be relied upon to be absolutely correct, accompanied by descriptions that will simplify and make clear each illustration. The contractor and builder who is called upon to plan or carry out work that is new or unusual will find "Details of Building Construction" a treasury of ideas for his benefit. The many illustrations and suggestions for "Built-in" work makes it especially valuable.

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practical and reliable information for Carpenters and Builders—especially those working in the country—Working drawing and details which solve complete every building problem.

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HOW TO MAKE A THOUSAND AND ONE USEFUL THINGS

61 Pages, packed full of practical helps for doing all the various pieces of work that the Carpenter and the "handyman-about-the-house" is called upon to do. Details and working drawings with brief explanatory text.

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A.B.C. 6-12

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We have made some wonderful subscription offers and have always given a great deal more to our subscribers than they could obtain elsewhere for the same money, but never before have we been able to come anywhere near what we offer you in this proposition. We are sure you will realize what an immense opportunity this is for you, but advise you to act quickly, as we may have to withdraw this tempting offer at any time and don't want to disappoint you.

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The American Carpenter and Builder for one year (twelve numbers), the largest, best edited, most handsomely illustrated monthly magazine for the contractor, builder and carpenter or any one in the building trades.

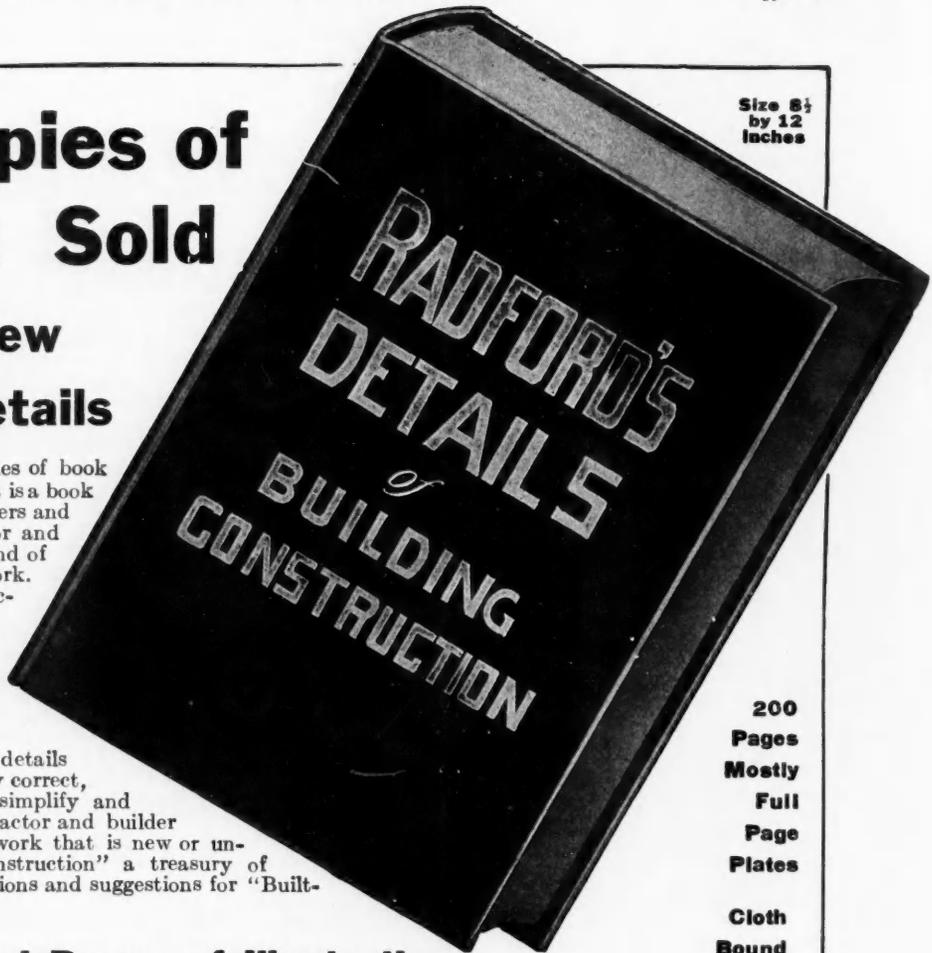
Radford's Details of Building Construction, 200 pages, cloth bound.

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That's the whole secret of heating—plenty of warmth at low cost. And this is the problem solved by Campbell's Winter-Chaser.

This furnace is built like a steam boiler, tight, can't leak smoke and gas; gives abundance of moist, clean heat with wonderful economy in coal, practical method of installation; size of pipes right, registers properly located, scientific, simple and satisfactory.

Campbell's Winter-Chaser Furnace

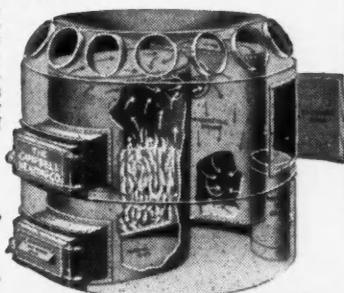
saves money because it is **built right**. Slow, steady combustion is assured. You can recommend Campbell's for your clients or install one in your own home with the certainty of satisfaction for years to come. Campbell's Furnace is of the thickest steel used in any furnace in the country; lasts a lifetime.

It warms 20 barrels of air at one time; this is the best fire insurance.

The Air is Warm, Moist and Soft

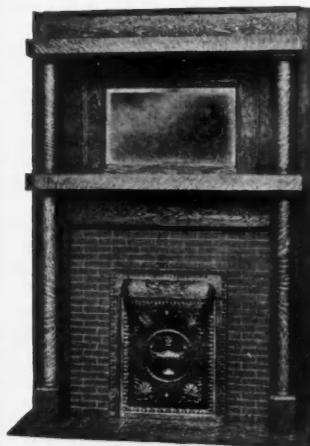
Pure, too—the air chamber can be easily cleaned; the Campbell is the only jacket furnace made with a large air-chamber and an entrance door.

Before you finish your plans write for our booklet "Twice-A-Day." It will explain why Campbell's Winter-Chaser Furnace ranks highest in service after a quarter century of test.



CAMPBELL HEATING CO.
1101 Walnut St.
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JUST FOR A SPRING 1912 STARTER Special Bargain



~~Old Price~~ **\$24.75**

No. 239

At the above prices we include **Solid Oak Mantel, with Tiling and Grate, also Plated Frame and Front and Ash Screen.**

Mantel catalogs, sent free on application.

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MOORMANN & OTTEN
611-623 Main St. CINCINNATI, OHIO

GET THE ROOF THAT LASTS

—the kind that never fades, never wears out, never needs any painting, re-coating or repairing every few years and never absorbs any water.

GENUINE FRANKLIN TUNNEL SLATE

—the strongest, the most uniform in color the best hand-selected, made from the best slate deposits makes the "Roof that Lasts a Lifetime" and Guarantees Freedom from all Roofing Troubles.

Plan **Now** to roof **Right**. Begin by sending to-day for our new Catalogue. Just out. It points the way to immense roof saving. Write for your copy to-day. It is sent Free.

SLATINGTON SLATE CO. Sole Manufacturers **SLATINGTON, PA.**
G. F. T. Slate puts "The Finishing Touch" on any Building.



A HOT AIR FURNACE

For Less than
\$50 Complete

For 5 and 8 Room Dwellings

An unheard of Price and
a most Remarkable and
Indestructible Furnace

No Pipes No Lost Heat

**AMERICAN BELL AND
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PHOENIX INSIDE SLIDING BLINDS

WIKES BARRE, PA.

The Phoenix Sliding Blind Co.

Enclosed find my check for blinds. I am pleased with them and sorry I did not have them put throughout the whole house.
C. W. BURT.

**Comfort!
Economy!**

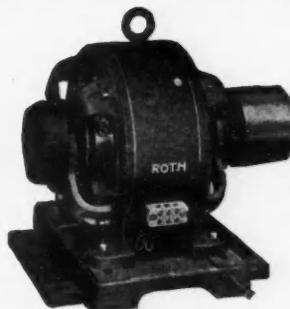
Convenience! PHOENIX SLIDING BLIND CO.

BRIDGE & CANAL STS.

PHOENIX, N. Y.

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.

Reason It Out! Individual Motor Drive with ROTHMOTORS will Save Money.



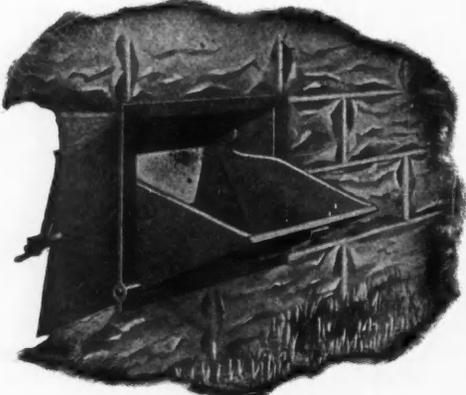
Only the machines that are in actual operation consume power. Over 25 other advantages.

Let us act as your engineers. We will save you money.

Roth Bros. & Co.

1422 W. Adams St., Chicago
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Roenius Wood and Coal Chutes

**A NECESSITY TO EVERY MODERN HOME
NO MORE DAMAGED CASINGS OR SASH**

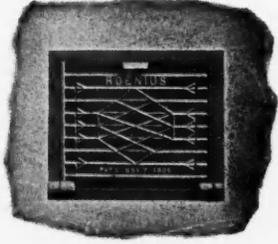
Roenius Chutes are equally desirable for houses of low or high cost.

Nearly 20,000 In Use

Safe from outside tampering or entrance and weather-proof. Are easily opened and locked.

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Grand Rapids Foundry Co.
High Street - Grand Rapids, Wis.





PERFECTION ELEVATORS

The Best Value for the Money in the World
Mechanically Correct

Dumb Waiters, Carriage and Store Elevators, Sidewalk Hoists, Etc., Etc.

Our Elevators are noted for their EASY RUNNING and SERVICE-ABLE QUALITIES. They are practically self-contained, and can be erected by any carpenter in a few hours. We furnish plans for erecting.

The Low Cost Will Surprise You

State your requirements, giving capacity, size of platform and number of feet to travel and we will name our lowest money saving estimate.

SIDNEY ELEVATOR MFG. COMPANY, SIDNEY, OHIO

BUY FROM THE MAKER



We have made and sold thousands of steel furnaces in Chicago, and we have sold them everywhere, by mail, direct to contractors, builders and house owners, all over the country, from Maine to China. We don't offer them through dealers, for the DIRECT DEAL with the consumer is the most satisfactory to all concerned. It means BETTER SERVICE—because of the direct interest of the maker in each contract—and it means BETTER PRICES, for the middlemen's profits are cut out.

In buying the Hess Furnace, you needn't have faith. You can buy it now, on trial, and test it before January 1st, 1913. We will deliver it at your station, with all pipes and registers—freight prepaid.

Set it up and use it. If you're not pleased; not sure you have big value for the price—send it back to us—we paying return charges—and we won't claim one cent from you.

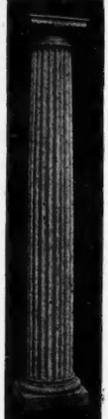
We don't offer you credit, however, for we require the price to be deposited with your local banker when you receive the goods. He holds it till the test is made, subject to the conditions outlined above, and gives it to you or to us, according to the result of the test. You take no risk, and you will save money.

Our furnace is made of steel, EVERY SEAM WELDED, and therefore permanently gas, dust, and smoke-tight. Made in six sizes, and burns any fuel. There is no furnace, better, at any price.

Our 48-page booklet on furnace heating is free. Ask for one. It will give you a lot of useful information on heating.

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We make those beautiful white steel medicine cabinets, cheaper than wood.



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Our trade bulletin No. U-1 Containing valuable information for the Architect, Woodworker and Builder. All the information you need regarding wood columns. Free for the asking.



HARTMANN - SANDERS COMPANY
Sole Manufacturers of
KOLL'S PATENT LOCK JOINT COLUMNS
2155-2187 Elston Avenue, CHICAGO
Eastern Office: 1123 Broadway, New York City
The best columns for porches, pergolas or interior use.

SALT GLAZED BRICK

THE BEST IN AMERICA

ARE MADE BY

The Hocking Valley Fire Clay Co.

NELSONVILLE, OHIO

**Light, Medium, Dark Shades
With Heavy, Smooth Glaze**

Some Good Territory Unassigned. - - Write Us.
Annual Capacity, 12,000,000

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The Open Doors to Carpenters

In all the fields of industrial activities there seems to be none that offers such assured opportunities as architecture and its several branches. With a country growing as rapidly as America one of the chief demands is for builders.

Each year over 2,000,000 men and women in America reach the age of 21. In the same period 1,000,000 foreign laborers come to the United States. For them homes must be built; work shops and places of business must be erected; and manufacturing and industrial establishments constructed to supply the needs of the millions.

No profession is more alluring to a man who has self-confidence. It offers a field in which wealth, independence, and honor can be won.

There are laborers a plenty. What this country wants is men that can guide, direct, plan, and pass judgment upon the work of other men.

The successful man cannot be a guesser—he must **know**. For more than 20 years the I. C. S. have been particularly successful in training men to **know**.

What the I. C. S. have done for thousands of others they can do for you. By means of an I. C. S. Course you can become Architectural Draftsman, Building Foreman or Superintendent, Building Contractor, or Architect.

Mark and mail the attached coupon and you will receive, without cost or obligation, full information about the position you wish to secure. You will also receive a booklet telling how thousands of other men have advanced to higher and better-paying positions through I. C. S. training.

Mark and Mail this Coupon TODAY

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Architect	Estimating Clerk	Automobile Running
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Contract'g & Build.	Surveying	Sh.-Met. Pat. Drafts.
Building Inspector	Mining Engineering	Textile Manufact'g
Structural Engineer	Mechanical Engineer	Bookkeeper
Structural Draftsman	Mechanical Drafts.	Stenographer
Plum. & Heat. Con.	Stationary Engineer	Advertising Man
Supt. of Plumbing	Electrical Engineer	Window Trimming
Foreman Steam Fit.	Electric Lighting	Commerci'l Illustrat'g
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City _____ State _____

Present Occupation _____

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\$13.95per doz. 4 footers
—if you send cash
with order.

Absolutely Safe; two of them will carry a ton without even springing, and they last a lifetime. Then think of the time you save! One man alone can put them up and take them down easily and quickly.

Write for Catalog of Builders' Specialties!



About clamps—the sliding jaw on each of ours can be moved in an instant **DIRECTLY AGAINST** the work operated on, so that half a turn of the fine specially threaded screw will apply the power.

Think of the time this saves!

The grip is positive, and special grade of steel in the bar more than doubles the strength of the clamp.

Our No. 10 catalogue shows some very interesting price reductions on four of the most wanted styles. It will pay you to write for it at once.

James L. Taylor Mfg. Co.
Poughkeepsie, N. Y., U. S. A.

INTRODUCTORY TRIAL OFFER

If the **SELF-SETTING PLANES** are not sold in your town and you write us saying, "I saw your trial offer in A. C. & B.," we will send you particulars, a carpenter's pencil and our \$1.00 Certificate, which we will receive as \$1.00 in payment for a **SELF-SETTING PLANE** as stated in our \$1.00 Certificate, and if this **S. S. Plane** is unsatisfactory and returned to us at our expense, we will send you \$1.00 more than you sent us, as the \$1.00 Certificate says.



As this paper guarantees we will do as our advertisement says, you know the plane must be O. K.

ALL WE ASK is to have you **TRY** the **SELF-SETTING PLANE** on your own bench, in your own way, with or against the grain, on the **WORST** cross-grained, saty, knurley, knotty, hard or soft wood you can find. **THAT IS FREE FROM SAND OR DIRT.**

If it is not worth to **YOU, OR YOUR MEN, TWICE ITS COST**, return it at our expense as above stated.

If you send us the addresses of ten carpenters, no matter where they live, we will send you another hard, tough carpenter's pencil.

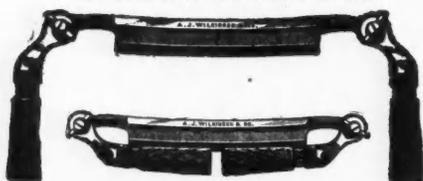
Give the **SELF-SETTING PLANE** a chance to **PROVE ITS WORTH**, if it **FAILS**, return it and we will return your money.

Carpenters' Hard, Tough Pencils, 30c per dozen, postage prepaid.

GAGE TOOL CO., Vineland, N. J.

THE FOLDING DRAW KNIFE

It's the Draw Knife that's the seller
Right up to the Draw Knife law;
It's the workman's prize and treasure,
And the Draw Knife that will draw.



If your hardware dealer does not keep it, we will send it to your address postage paid. : :

A. J. WILKINSON & CO., 180 to 188 Washington St., BOSTON, MASS.

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Is an absolutely brand new book, illustrating the newest and most up-to-date designs in modern homes. This is the largest single book of house designs ever published, consisting of 280 pages and showing 250 designs of houses, together with complete plans, and giving the arrangement and dimensions of all rooms.

Homes to Suit Every Taste

There is a wide diversity of design shown in the houses. This is done because the taste in home architecture is as wide as that in any other field. There are houses for people of moderate means and there are others for the more wealthy, but in every case the design is made with reference to comfort and economy.

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Every design shown has been made by the best architects in the world, who have made a study of home architecture and that alone. This volume has received the benefit of the most careful attention. In a word, the designs are the best that could be secured.

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One will wonder, in glancing over the beautiful structures shown in this book, at the marvelous advance in home architecture in recent years. Yet it has been a development slow and sure, keeping pace with the advancement of the race along all lines.

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Every design shown has been made with reference to comfort convenience and economy in materials. Every house is planned from the inside and not from the outside; that is to say, the convenience of arrangement has been the first consideration.

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Every design in this book is drawn with a faithful regard for mathematical accuracy, and there is no error to bother the builder. There are designs here that will be found adapted to any community, for the rural hamlets, small towns or in cities. In house building, as well as in all other things in which men engage, the purpose should be improvement and betterment.

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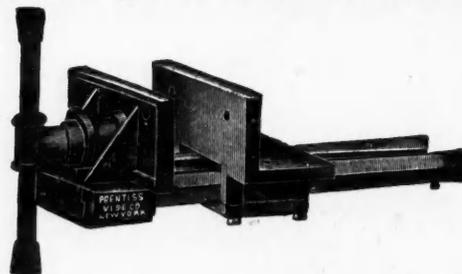
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Dumb Waiters and Hand Power Elevators are seldom used in some communities, and when it is considered what some Dumb Waiters are you do not wonder.

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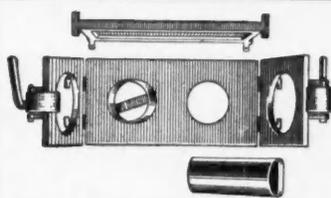
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It has a high and a low stop, saw can be raised 1 1/2 inches above bed by release lever, **YOU CAN OPERATE THE RELEASE LEVER** while holding the handle of the swinging bar. This enables the operator to use one hand to hold stock and at the same time swing saw to any desired angle. The high stop holds saw 5 1/2 inches above bed while placing stock for cutting.

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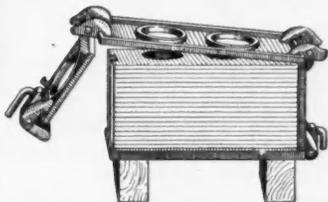
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Tile your farm. It pays. Construct your buildings, water tanks and silos of cement blocks. This work can all be done accurately, economically, and quickly with our wonderful low priced

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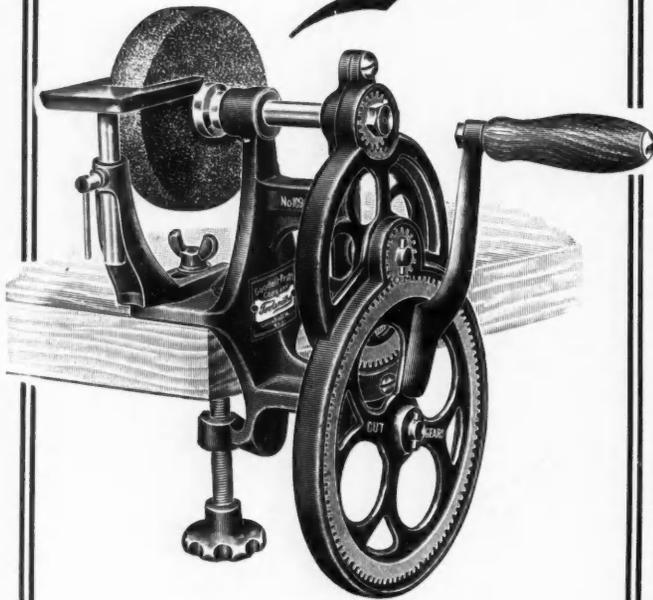
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Red Devil Chain Drills are made in 9 different styles and once used will always be wanted.

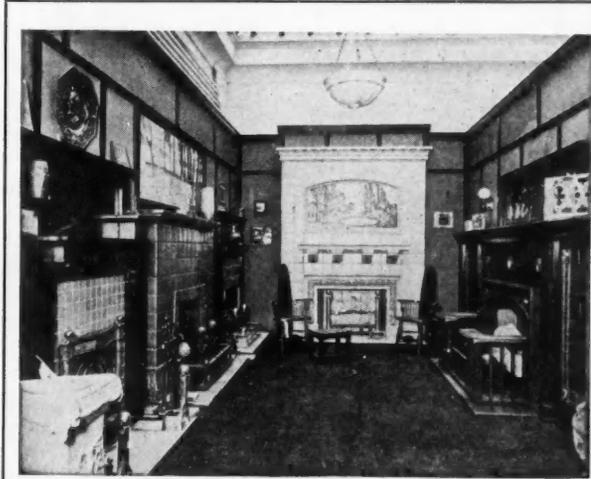


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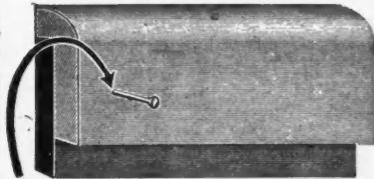
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Free Sample to any address for your Hardware dealers' name.

Time Saved is Money Earned



Use
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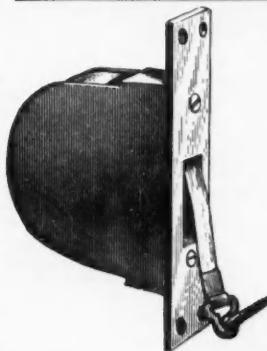
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Makers of

Fine Hand Made Hand Saws

The Purest of Quality Our "GREYHOUND" Hand Saw



IN 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.

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The Recommended Steel Medicine Cabinet

The Only Modern, Sanitary STEEL Medicine Cabinet

or locker, finished in snow-white, baked everlasting enamel, inside and out. Beautiful beveled mirror door. Nickel plate brass trimmings. Steel or glass shelves.

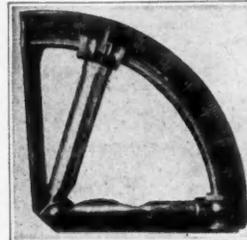
Costs Less Than Wood

Never warps, shrinks nor swells. Dust and vermin proof, easily cleaned.

Should be in Every Bath Room Four styles—four sizes. To recess in wall or to hang outside. Send for illustrated circular.



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Guaranteed to Pay for Itself on First Job

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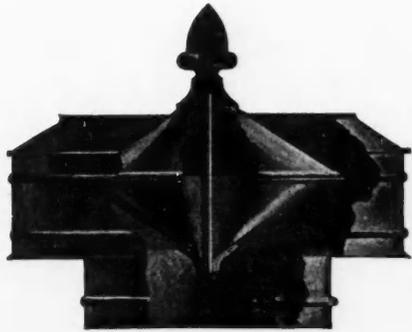
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Quarry Operators
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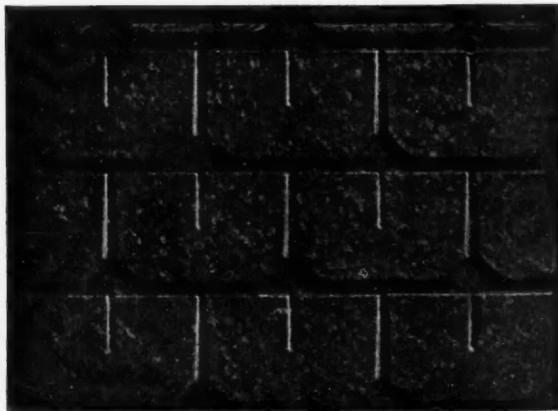
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MADE in about 40 beautiful shades. Costs no more than good wall paper. Lasts for years. Protects walls. Softens sounds. Gives artistic effect not obtainable by wall paper.

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The Cott-a-lap Co.
Chicago, Ill. :: Somerville, N. J.

True Your Saw Teeth

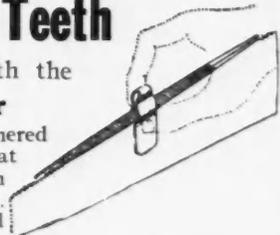
True your saw teeth with the
Campagna Jointer

—it holds and guides any 3 cornered 6" x 1 1/2" file so thoroughly that even an inexperienced person can accurately true up his saw.

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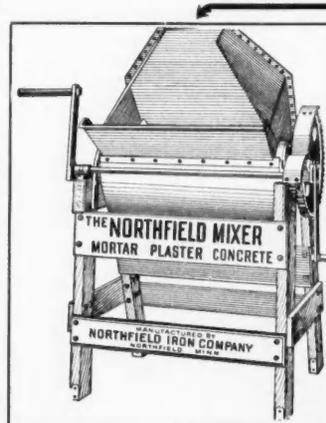
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 Ninety Cubic Yards
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Saves you 60 to 90 cents on every yard. Pays for itself several times each season. Gives you the edge on your competitor. New principle. Most thorough mixer ever produced. Is not a man-killer. Two men operate it easily and do not work as hard as the shovelers. Pump engine will run it. Simple, Light, Handy, Substantial.
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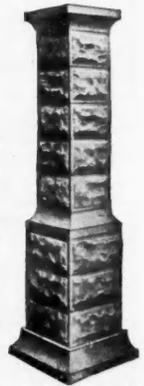
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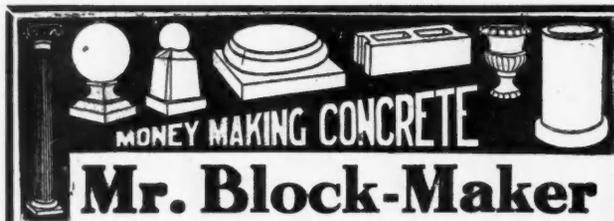
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It isn't exactly a catalogue because it gives you the cost of making concrete Blocks, Bricks, Porches, and Chimneys. It tells all about the profits in making Drain Tile for farmers. The advantage of drainage, etc.

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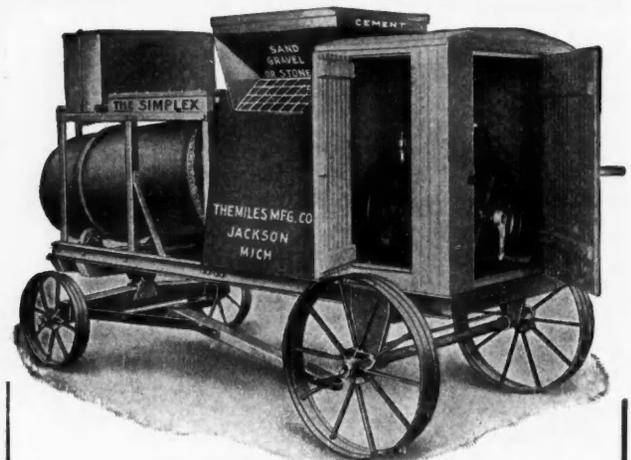
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 COMBINES ALL THESE
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It is 46 inches long and will make three 16" or two 24" blocks at one operation. It makes sills, caps, copings, rails and steps, faster and better than a special sill machine. It has every adjustment that any other machine has and many that no other machine has.

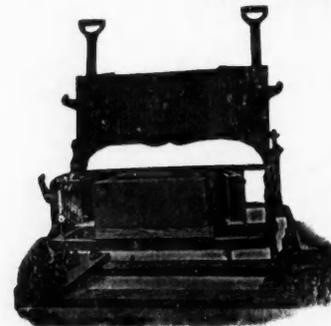
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 1912 MODEL**



3-Hoppers, Continuous feed Rolling Mix, Low down Steel frame, Simple Strong and Accurate.

"The Miles" No. 5, Down Face, Wet Concrete Block Machine

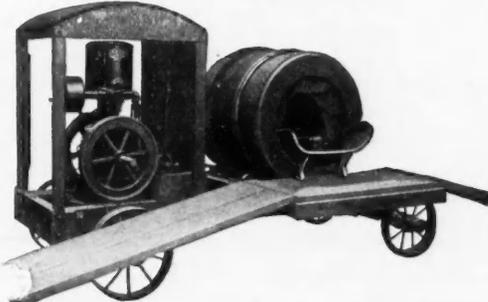
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"The Standard" is low charging. The materials are charged into the mixer from platform about two feet from the ground, avoiding building high platforms with long runways or purchasing complicated charging hoists and hopper arrangements.

"The Standard" simple construction is always ready for use, and avoids frequent break downs, so common with all complicated machinery, especially when subject to rough usage around building operations.

"The Standard" discharging arrangement simply operated from either end of the drum, saves extra man required with other machines.

"The Standard" easy running avoiding unnecessary friction, requires less power, less fuel and less attendance.

"The Standard" moderate weight machine can be easily moved from job to job, avoiding excessive freight charges or heavy hauling expense. The moderate weight machine can also be located any place on the job, often avoiding much manual labor.

Write for information on "The Standard Cart Charging Mixer" for rapid work with few men. Advertisements will appear in early issues. Our new catalog No. 144 tells all about "The Standard."

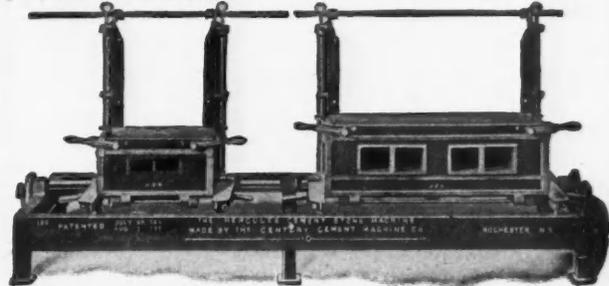
The Standard Scale & Supply Company

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PHILADELPHIA, 35 South Fourth St. NEW YORK, 133 West Broadway

WHY THE Hercules Concrete Block Machine

is the **BEST** for **YOU** to buy

The man who is about to take up the manufacture of concrete blocks, should exercise the greatest care in selecting a block machine. The biggest mistake to make is to buy a small machine that will always remain a small machine. Why not buy a machine large enough for your immediate needs and capable of being expanded to make more and larger blocks as your business expands.



You can buy a HERCULES equipped to make whatever size of block you need when you start. Parts for other sizes are added as you require them. Your machine is a plant in itself. When you expand you don't have to throw away old equipment—you merely add at small cost to what you have.

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We have just issued a little book full of information. Send for it today.

CENTURY CEMENT MACHINE CO.
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Excelsior Dumb Waiters

The only Knock-Down Dumb-Waiter ever offered, shipped complete to a nail, with explicit directions for erecting, for **\$18.50**

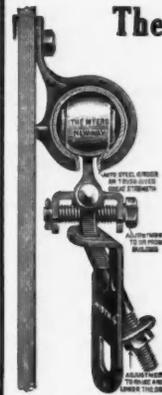
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The Myers New-Way Adjustable Tandem Door Hanger

Is adjustable to and from buildings and permits the door to be raised or lowered as desired. This is a very important feature in cold weather when the ground is frozen and heaved up. It is absolutely dust proof and can be adjusted to keep out all snow and rain. Owing to its construction it will carry a heavier load than any other style tubular track. Another very important feature is its flexibility which permits the door to pass over uneven surfaces.

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ASHLAND, - - - OHIO



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Avoid cutting away and weakening of timbers and walls—save labor, time and money.

Trus-Con Joist Hangers are made from open hearth steel plates, and are proven by actual test to be the strongest on the market. Note the bulb-shaped reinforcement at upper angle.

We also furnish Post Caps Post Bases, Wall Plates and Base Plates made in rolled steel, malleable iron, or cast iron.

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Trus-Con Pressed Steel Inserts are embedded in the concrete during construction, saving expensive drilling after completion of the work. The long slots allow a wide variation in position. Special washers prevent bolts from turning in the slots. Write for details and prices.

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METAL CEILINGS and SIDE-WALLS

WE CAN SAVE YOU MONEY.

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CANTON, OHIO

PEARSON'S AUTOMATIC SHINGLE NAILER



Works well on any pitch roof. Gloves or mittens can be worn and nails driven faster than by the old way. Throw nails in by the handful—holds about 600 nails—start nailing. Nails can be driven through tin or quite heavy sheet iron.

PAYS ITS COST ON ONE JOB

Made in two sizes:
The **BLUE** Nailer for 3d common No. 14 gauge wire nails.
The **RED** Nailer for 3d galvanized No. 13 gauge 1 1/4 inch wire nails.

Order through your dealer or sent prepaid for \$5.00.

Money refunded if not as represented
PEARSON MFG. CO.
Robbinsdale, Minn.

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DECORATE

Your Home and Church

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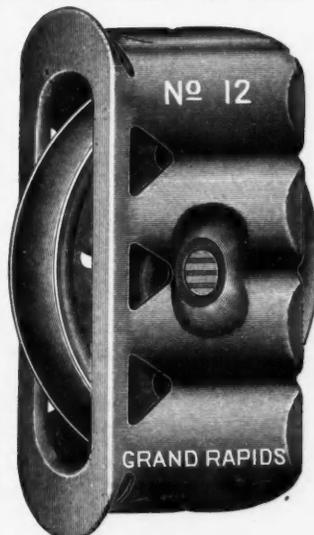
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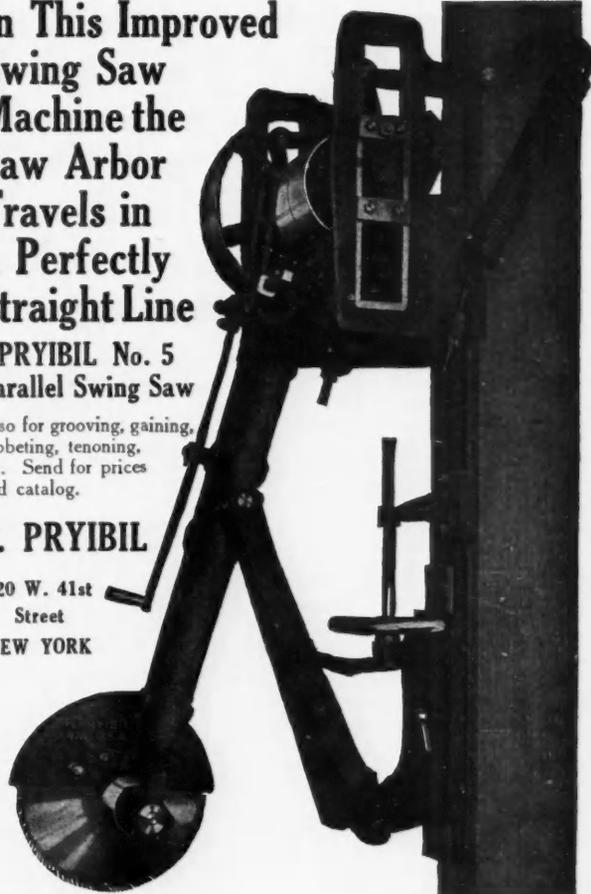
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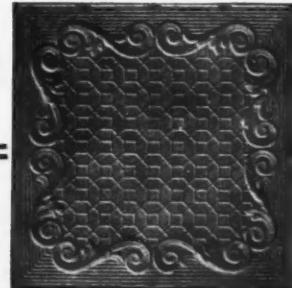
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INDIANAPOLIS CORRUGATING CO.

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1853



1912

Fine Beveled Edge Shank and Socket

Chisels



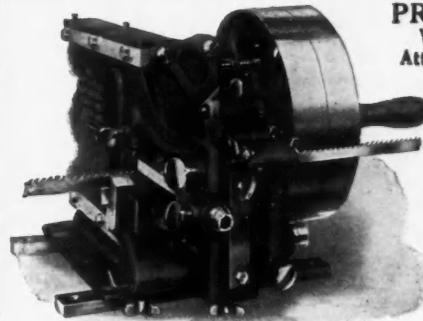
Butt Chisels

Plain and Beveled Edges

Send for illustrated Catalog

Buck Brothers, Millbury, Mass.

PRICE \$50.00
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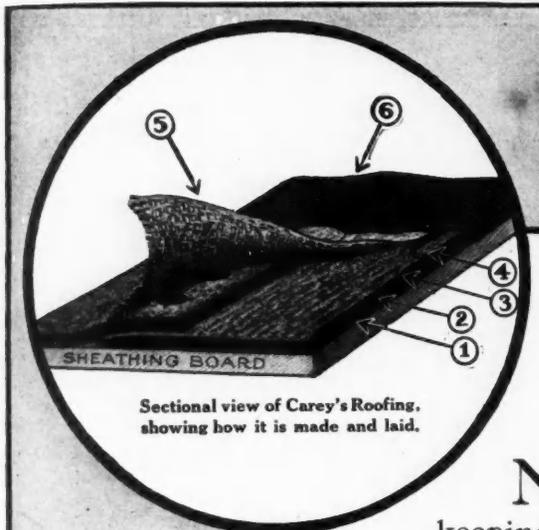
The cut herewith represents the only Automatic Band Saw Filer, Setter and Jointer on the market that will accurately Set, File and Joint a Band Saw during one and the same operation. No personal attention required after the Saw is placed in the machine. Six Minutes does the Complete Job.

Guaranteed satisfactory in every respect. Sent on 30 days' free trial. If not satisfactory, return at our expense. Manufactured by the

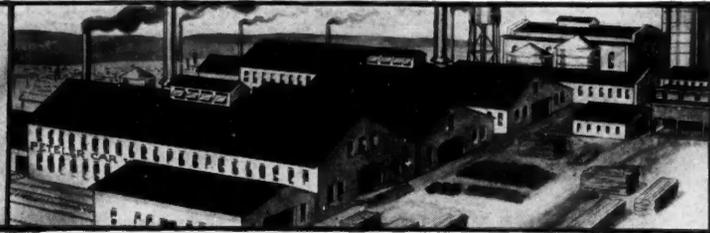
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Manufacturers of all kinds of Saw and Machine Knife Fitting Tools.

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Sectional view of Carey's Roofing, showing how it is made and laid.



18-year old Carey Roof on Peteler Car Works Plant, St. Paul, Minn.

What Proof Behind the Guarantee?

NOT long ago a well-known manufacturer of paper was asked to submit, for the keeping of certain records, samples of stock that he would be willing to guarantee to last *at least 100 years!*

His reply was that while his knowledge of paper stock materials would enable him to produce the strongest and finest paper that could be made, there would be no possible way whereby such a guarantee *could be enforced!*

This perfectly obvious conclusion suggests the first and most vital point to be considered in the selection of a *roofing material*—namely: *How long have its weather-proof and wearing qualities been actually tested?*

In other words, a roofing material may reasonably be expected to last as long *in future* as identically similar roofing *can be proved to have lasted in the past.*

Carey's Flexible Cement Roofing

1. Woolen Felt Foundation

Saturated with oily cement to make waterproof and preserve flexibility.

2. Heavy Flexible Cement Body

Laid upon wool felt. This is the "heart" of the Carey Roof.

3. Strong Burlap Imbedded over Cement Body

Protects and preserves cement body and gives great tensile strength to the roof.

4. Asphalt Compound Over Burlap

This compound is imbedded in the meshes of the Burlap and permanently preserves it.

5. Carey Patent Lap Over Joins

An extension of the Burlap that covers over the nails along the joins, keeping them from rusting or working loose.

6. Asphalt Compound (Outer Surface of Roof)

Covers over and cements down Carey Patent Lap, making joints water-tight and permanent, and making Carey Roof one solid sheet.



Here is the one ready roofing that can give you the actual evidence of past performance. There is no guess work—no speculation—as to whether it will be water-tight and weather-proof if placed on *your* building, because we can refer you to thousands of Carey roofs that have, *for nearly 30 years, actually performed* this service, roofs that are in splendid condition today for years of *further* service.

And it's *the service* that you want in roofing material—not the

replacing of a roof after loss and damage have resulted. Not the payment of a damage claim, but a roof *that will never permit damage to occur.*

Carey's Roofing costs only what *that kind* of a roof *must* cost. Its equal simply cannot be bought for less money.

This roofing, too, is *made complete at the factory* and delivered ready to lay. It can be laid *quickly and easily* and once laid, *permanent satisfaction* is insured.

This subject is vital to every carpenter, builder and architect. You cannot investigate the whole roofing situation too fully. We invite and urge a thorough comparison of Carey's with all other roofing materials. Let us send you a generous sample of Carey's Flexible Cement Roofing and full descriptive matter.

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SHORT TALKS WITH OUR SUBSCRIBERS



Busy Season is Here

SPRING was a long time coming, but it opened up with a rush when it finally came. Builders are busy—the sounds of their hammers are heard afar in the land.

To do the best work and the most of it you have to have plenty of tools, and good ones, too. Our American tool manufacturers are the most ingenious in the world. They have invented a special tool for every different kind of work. Such tools are labor savers—busy builders cannot afford to be without them.

If you will look through the advertising pages of the *AMERICAN CARPENTER AND BUILDER*, you will find announcements, of interest to you, about all the *worthwhile tools for carpenters and builders*. Watch these announcements, and write for the catalogs and hand books which these friends of yours the tool manufacturers, have ready to send you, if you will only write for them.

They say a good mechanic never complains of his tools—Then buy the best. Everything that is good in tools, machinery and equipment for carpenters and builders, you will find in our advertising pages. These announcements are there for your convenience and assistance—Use them.

Are You Busy Enough?

THE busy season is on with a rush and a good many builders have just a little more than they can tend to. Are you one of them? Or could you use a little more business if it should come your way?

In either case, get wise to our new department, "Helps to Bigger Business." This begins in this number. With your help it is going to be a winner. We want a lot of practical letters from practical builders (our readers) telling their personal experiences or adventures along the *ROAD TO SUCCESS* in the building business.

The first of these letters, the prize winners, are going to be published in the July *AMERICAN CARPENTER AND BUILDER*. Don't for the world miss them.

Wise builders are going to get many dollars' worth of good ideas out of this department.

Have You Power in Your Shop?

IF not, you ought to. There are very few builders to-day who cannot figure a good profit on installing a one-machine wood-working shop, possibly having the machine of the portable type, so that it can be taken out onto the job in the building season and then kept busy in the shop during the winter months.

For every owner of a wood-working machine, it matters not what kind, the article on machine wood working in this number will be worth a lot of money. Charles Cloukey, a practical wood working man and shop foreman of long experience,

gives some valuable pointers "For the Shop With Only One Machine."

If you haven't got a power wood-worker now, study this out a little and see if you can't get one.

The time is coming when you are going to let a gas engine do the heavy work for you while you do the skillful planning. "Eventually—why not now?"

But in any case you can't afford to miss the ideas in this machine wood-working department this month.

Try Out the New Things

THE *AMERICAN CARPENTER AND BUILDER* readers have the reputation of being "up and coming," all the time. If you hadn't been the kind of a man to size up a good thing—and then act—you never would have become a subscriber,—now, would you? There was no agent to overpersuade you. You saw at once from a printed circular that the *AMERICAN CARPENTER AND BUILDER* was something that would help you to be a more successful builder, and you ordered it, sending us the full subscription price—in advance, too. We are glad that your confidence has been justified, and you have not been disappointed.

And so the *AMERICAN CARPENTER AND BUILDER* is recognized as standing for progress. That is because its readers are wide awake and progressive. There are many new things coming out all the time in the building world these days. If these new things are good you will, before very long, find out all about them in the pages of the *AMERICAN CARPENTER AND BUILDER*. Investigate the new things—perhaps you can use them to advantage.

Good Things Coming in July

OUR July number is going to be one of the best we have ever presented to our readers. Look for those Prize Winning Letters—Do you know "How to Build a House for Three Dollars?"—"The Carpenter and Builder and the Motorcycle,"—"Successful Homes Planned and Built by Our Readers,"—These are just a few of the features coming in July—Don't miss them.

Fraternally yours,

EDITOR *AMERICAN CARPENTER AND BUILDER*.

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REPUTATION

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

Chicago "Relax" Spring Hinges



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

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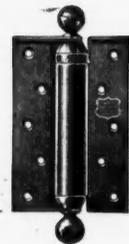
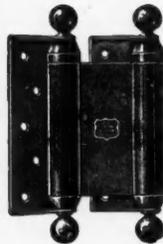
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FREE TO Carpenters and Builders

Hundreds of carpenters and others have written us for our booklet "Saw Points." We are glad to send it to anyone interested in the proper way to **Set** and Sharpen Saws. For 30 years we have been making the Morrill Saw Set—nobody has ever made a **Saw Set** that equals the Morrill.

Fully described in our booklet which will be free to you.



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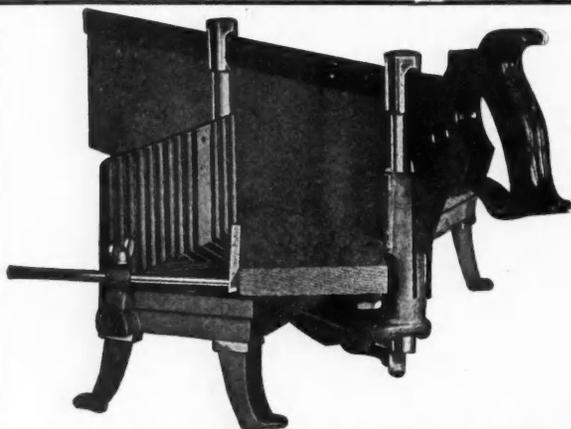


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Lined with Cabot's Sheathing "Quilt" Shepley, Ratan & Coolidge, Arch'ts Chicago.

"Quilt" is not like common building papers. It is a matted lining full of dead air spaces and keeps out the cold in the same way that a bird's feathers do. It is forty times warmer (or cooler in summer) than the common cheap papers. It costs about 1 cent a foot and will pay for itself over and over again in saving fuel, and in protecting stock, poultry or stored fruit, and you and your family from discomfort and doctor's bills. Send for free samples and name of nearest agent.

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Also Cabot's Creosote Shingle Stains, Waterproof Cement and Brick Stains. Conservo Wood Preservative.



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Marsh Ayer Miter Box

Because:

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- It is so convenient to use.
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- It has an unusually large capacity.
- The price is right.

Let us send you our illustrated circular.

H. C. Marsh Company

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<p><i>The</i> World's Greatest Building Paper</p>	<p>Important Notice When your subscription expires, renew at once, using the blank enclosed in your final copy. If it expires with this issue your renewal must reach us before June 25 to avoid missing the July number. Use P. O. or Express Money Order if possible, but bills or 2-cent stamps may be sent at our risk.</p>	<p><i>The</i> World's Greatest Building Paper</p>
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Entered as second-class matter July 1, 1905, at the postoffice at Chicago, Ill. under the act of Congress of March 3, 1879.
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ADVERTISING RATES
Furnished on application. Advertisements, to insure insertion should reach our Chicago office not later than the 20th of the month preceding date of publication.

THE reward of doing business right is more business.



Close up When You Finish

THE time to close up with the owner of a house is right when you finish the job and prepare to move your equipment away. It matters not who the man is, nor how well you know him, good business judgment should tell you to close your deal when the job is finished. Otherwise he may hold off and come back for this and that and worry you so that if there is only a small balance due you would rather lose it than bother further with him. It may be a door to ease up here, a crack in the plaster after a week or two, or any one of a dozen things that come with

the final drying out and settling of a house. If these are things you should attend to, you can go attend to them afterward just as well, and you will be bothered less about them after you have had your final settlement. So settle when you leave a job, and if there are to be deferred payments, get them put into the form of notes. Do not leave an open account to be held up and haggled about every time the owner finds a scratch some where, unless you want to earn that balance twice.



Surface Butts and Hardwood Doors

IS it a case of one thing calling for another, or did it just happen that the hardwood door and the surface butt have both become popular about the same time? Any way the surface butt is popular with many carpenters today, both for hard and for soft wood doors, and the hardwood door has been gaining in popularity for some time.

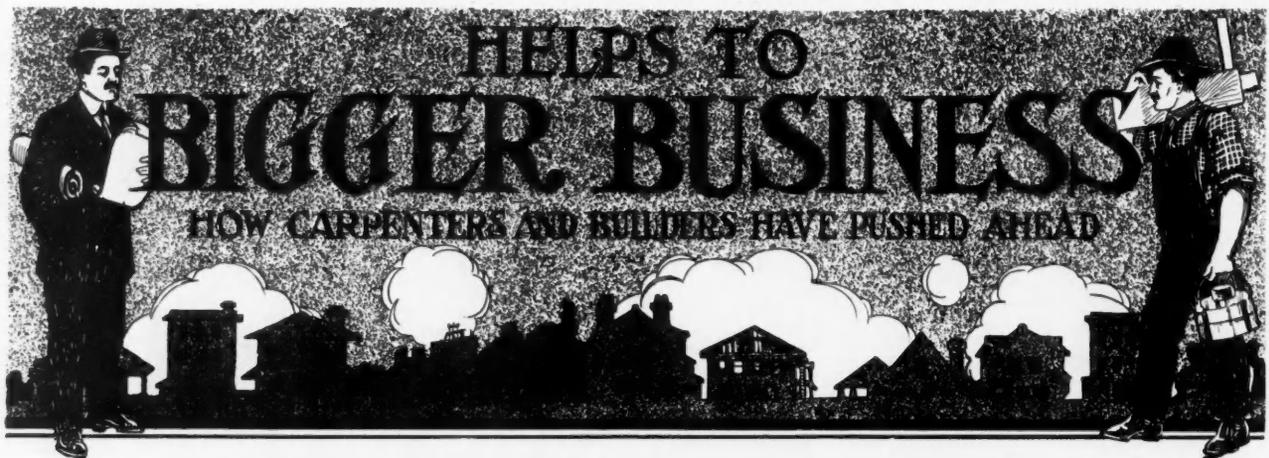
When the hardwood doors were first extensively introduced it was claimed that many carpenters failed to enthuse over them because it took more time and work to hang one. Part of this, of course, was because it took a little more work to mortise for the locks, but a lot of the hold-back sentiment seems to have centered around the hanging, the fitting and putting on of the butts.

Now there has come into popularity the face butt, in different patterns, that is set into the jamb in the same way, but instead of being set into the edge of the door is planted right on the face. This saves cutting into the door for the butts, and makes it much more convenient and easy to hang a door and get it just right. The butts are fitted to the jamb, then the door put in place and held there while the butts are attached to it—and the job is done.



Especially the Older Men

DON'T overlook the Cash Prize offer on page 39. This is a rare chance to help your brother builders and "turn a penny" at the same time. We want all wide awake builders to get together and talk things over in our new department, "HELPS TO BIGGER BUSINESS." See page 39.



A Word to Our Best Builders

WHO KNOWS THE SECRET OF SUCCESS?—A ROUND TABLE DISCUSSION YOU ALL WILL LIKE—
POINTERS FOR CONTRACTORS

THE readers of the AMERICAN CARPENTER AND BUILDER have the reputation for being wide-awake and progressive (no political meaning intended). They are "on the job" all the time.

Those who are journeymen carpenters are *good* carpenters, and what is more they are getting better all the time. They are not contented to stand still, but study and read and think. Those who are foremen have the ambition to be efficient, well posted foremen. The builders—those who do a general building and contracting business—stand for good work, the building up of their communities and the improvement of conditions in the building world. The architects and architect-builders are planning and building *well*, alert to furnish permanently satisfactory work to their clients.

Every one, whether mechanic on the job or architect in the office, is ambitious to get ahead, to work into more responsible positions, to handle larger and more important work.

There are ways of getting ahead.

There is a *right* way to do most everything.

And this right way leads to success.

In this department we want to point out some of these right ways which lead to success in the building business.

Let's Get Together

In this department we want the readers of the AMERICAN CARPENTER AND BUILDER to compare notes on methods. An interchange of ideas will benefit all. What is the secret of YOUR success? And that time you fell short, why was that?

We have all had experiences as builders which have taught each one of us, personally, some valuable lesson. Why not compare notes so that each can profit from the experience of all the rest? This is the idea of this section of *your* building journal. Will you practical, experienced builders kindly assist in making these *real* HELPS TO BIGGER BUSINESS?

Hustling for Business

Under this title the well-known architect, Charles E. White, Jr., of Chicago, has presented some very interesting thoughts in *Building Progress*, the organ of the National Fireproofing Company.

The building business is not precisely like others, he says, though it has many qualities in common with them. A trade, it is really something more. In truth, the building business is much like a profession and the man who succeeds at it practices more or less on professional lines. Personality counts for everything. Sometimes, of course, it is his price that obtains work for the contractor, the entire proposition frequently being on a competitive basis of "lowest price gets the job." As a matter of fact, however, after a builder's reputation for honest dealing and efficiency has gone abroad he is more apt to get business on his personality than on low prices he is able to quote.

Every prominent builder who has become prosperous knows that he has an advantage over others not so well known. He is given preference, oftentimes customers taking prices charged by other builders as a sort of basic figure to which they add an increase for the services of a builder of reputation, the man they wish to employ if it is possible to get him.

Wide Acquaintance

Reputation is the first aid for business getting and the second aid is energy. Without reputation no builder can succeed and unless he shows energy enough to hustle he might just as well give up. Starting in a small way any contractor can build up his business if he only understands how to go about it. Business laws are known and the experience of others points the way. The world's estimate of a builder is largely his own estimate of himself; if he puts a low valuation on his services and does cheap work at a low price he will have a cheap reputation. How many times you have heard the remark: "If you want

a cheap job get Jones, but if you want first-class work go and see Smith." Some work is necessarily cheap and this sort Smith, who figures higher than Jones, is not able to get, but Smith secures the good jobs, the jobs where the owner wishes the best of work and is willing to pay a fair price for it. Such contracts are always the most desirable, the best paying.

How to Get Business?

Every contractor is up against the same proposition—how to get business. Every builder rightly longs to see his business grow to the point where jobs come in automatically—so many each year without great effort on his part. Building the buildings is difficult enough without adding the energy required to get the jobs. An ideal building business would be one in which the proprietor could devote his entire time to doing the work; jobs coming in one after another without so much running around and figuring and time-consuming talk.

There are many steps the builder may take to make business come in automatically. First, he can become well known. His name may be made to come naturally to the lips of every prospective owner, so that each will consider him in every building project. Thus he gets a chance at every building proposition as fast as it is on the market. Second, after his name has become well known the builder's reputation can be such that it will have weight enough to cause owners to desire his services, providing his price is right. Owners continually tell contractors they "have no preference," but all contractors know that they really have. Unconsciously, perhaps, most owners when they are considering any piece of work prefer a particular builder, providing they feel that the price is fair, and usually such preference is for the best man, the man whose reputation for honesty and efficiency is highest.

How to become well and favorably known? One method adopted by many successful builders is to make a specialty of some staple work for which there is demand by every property owner in town. Sidewalk building is one of these and some builders keep a special gang of cement workers busy the year around, though it is really but a side line. They are careful to convey the idea to each customer that they are building contractors, not merely sidewalk men, and the result is, doing business in a small way with so many people each year, they secure general building contracts as a matter of course.

Take on the Small Work

Other side lines can be developed in order to come

in contact with the most property owners and get into the game. Making cement flower boxes has proved a good side line for some, as well as building steps, retaining walls and garden accessories. Other firms have gone extensively into garage building and get practically all the garage work in towns where they operate. The whole idea is to secure as many of these

CASH PRIZE CONTEST

Letters Wanted Telling YOUR Personal Experiences as a Builder.

You can help your brother builders (and at the same time be paid for your trouble) by writing out your own experiences in getting ahead as a builder. We want a dozen or more extra strong and practical letters from our readers, to get this new department started *Right*.

Never mind the *Literary* (with capital L) flourishes; this isn't a poet's contest. We want solid helps for builders. If you have been "up against it" and have pulled through, we want to hear how you did it. Never mind if you can't *write*; that makes no difference to us men who *accomplish*. Just tell us your experience.

We want letters from wide-awake builders, that will hit the following nails right square on the head:

HOW I BUILT UP A REPUTATION THAT IS NOW WORTH MONEY TO ME AS A BUILDER.

For Best Letter on THIS Subject.....\$10.00

For 2nd Best Letter on THIS Subject..... 5.00

FROM CARPENTER TO GENERAL BUILDER—HOW I MADE THE JUMP.

For Best Letter on THIS Subject.....\$10.00

For 2nd Best Letter on THIS Subject..... 5.00

THE METHODS I HAVE FOUND BEST FOR WORKING UP NEW BUSINESS.

For Best Letter on THIS Subject.....\$10.00

For 2nd Best Letter on THIS Subject..... 5.00

HOW MY BUILDING JOURNAL HELPS ME TO BE A SUCCESSFUL BUILDER.

For Best Letter on THIS Subject.....\$10.00

For 2nd Best Letter on THIS Subject..... 5.00

Letters must be at least 400 words, and not more than 800 words long.

This Contest Closes June 15th. SO ACT QUICKLY

All letters submitted shall become the property of the **American Carpenter and Builder**.

The Prize Winning letters will be published in "Helps to Bigger Business," July **American Carpenter and Builder**. They will appear over the names of the authors, unless otherwise requested. In addition to the Prize Winning letters, all others of real value and general interest will also be presented.

Let us have a full and free discussion of these subjects which are of vital moment to every builder.

Address all contributions to

"Bigger Business" Editor, American Carpenter & Builder, Chicago

little jobs a year as possible, not turn them down the way so many builders do because "small work doesn't pay." Whether it pays directly or not, take on the small work, all you can get of it. Increase your professional acquaintance in this way and watch how your general business will grow.

Many builders make the mistake of trying to build up a large business in too small an area. They lose sight of the fact that they might easily operate over larger territory, thus increasing possibilities for new

business by having a larger area to draw new business from. One contractor in Milwaukee accidentally discovered there was much building going on all the time in small towns near by. After giving the matter some attention he took his map of the state, marked off a circle with fifty-mile radius from Milwaukee and decided he could do business profitably within that area without increase of his organization. Then he visited a town of 1,200 population at the outer edge of his circle and landed a factory job, originally designed to be built mill construction, but which he finally convinced the owners to build fireproof. Once built, this factory proved to be the pride of the town. After that came the banker's house, followed by other important buildings, many of which were given him outright on a percentage basis. Nearly every job of importance in that town now comes to this builder, who started as a stranger in that locality not much more than twelve months ago.

Business in Surrounding Country

Much business outside of any medium-sized town can be secured by the builder who is hustler enough to go after it. Prosperous farmers are continually building new barns and outbuildings and modernizing their houses. Great demand for hollow tile and other silos just now prevails and many builders have made a specialty of this work, causing in a few months good, healthy, permanent increase in their business.

Most builders who do work in the country have an automobile in order to cover the ground rapidly. This brings up the question, is an automobile a good investment for business building? So many contractors have answered in the affirmative, the expediency of owning one is almost unquestioned. Automobile trucks offer economical, rapid means of rushing material to a job and such trucks are considered excellent advertising. Small cars frequently pay, as they permit the contractor to quickly visit work distributed over a wide area.

Importance of Good Location

One most common mistake many builders make is locating their office on some out-of-the-way street, not easy for customers to find. Walk up the main street of any small town and how rarely you see the sign of a contractor, yet builders should always locate where possible customers can find them as easily as they can find the banker, grocer or the druggist. Locating in a cheap place for the sake of saving rent is a poor way to build up business. No business man would consider it wise to bury himself in obscurity. Neither should the builder, who depends upon a prominent location just as much as any other business or professional man.

Proof of this fact recently came to the writer's attention. Two brothers established a contracting firm in a town of about 15,000. Each is in temperament diametrically opposed to the other, one being a live wire

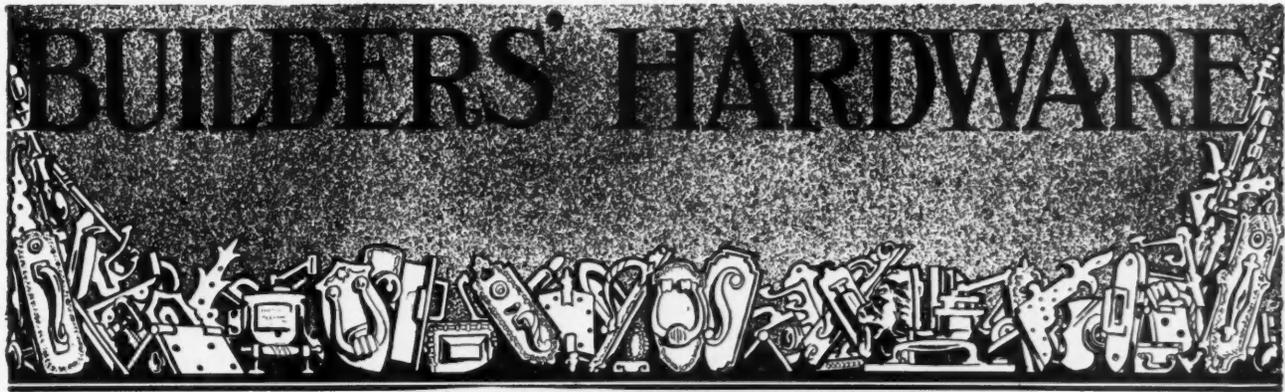
who believes in pushing ahead and the other conservative and afraid to make any sort of venture that requires capital. The firm drifted along with only moderate success, until finally the two decided to split. So one brother took a good office on Main street, fitting it up neatly, and installed a clerk to keep books and maintain the office. Brother Number Two secured a little corner in a small shop around on one of the back streets where rent is low. It is interesting to see the result of these two methods. The builder who "put on the lugs" noticed an increase in business almost immediately, while the business of the other has gone steadily downward. Both men are equally proficient as builders.

The psychological fact that a well-dressed business man in a well-equipped office, properly located, makes a favorable impression upon almost every one is equally applicable to the builder. With the right kind of headquarters such a builder can go after business with the assurance he has an advantage over the others not so well equipped. In many instances, a builder, stranger in town, has located his modern, well equipped office near the old, poorly arranged quarters of another contractor, finally taking the bulk of the business away from the man longer established. After a good location is secured the builder should immediately get in touch with real-estate men and architects; with the former to secure tips about new building projects, with the latter to get a chance at some of their work.

Make Your Office Information Bureau

Never seem too busy to give free advice to any one who asks it. No doubt it is an injustice for owners to ask questions when, many times, they are really intending to employ your competitor. It is kind to answer questions freely, however, and it is wise to be kind. Other ways to hustle for business will occur to you once your facilities are sharpened and your determination to win is paramount. Go after all the repair work you can get. Do it at the lowest price that will permit good work and reasonable profit. Repair jobs are really great feeders for the building business. Never overcharge. Demand too little rather than too much, for your reputation will be greatly forwarded by contented customers whose repair work you have accomplished with skill, promptness and economy.

Carry at your office a good line of sample materials to show prospective owners. People are accustomed to walking into a store and selecting from a stock and they expect to do the same in your office. Always push for first-class building methods and push hard. Let the other fellow do the cheap work. Study new methods and inform yourself about their advantages. Every professional man keeps at the head by informing himself about new processes as fast as they appear, and you must do likewise or drop into a rut. Hustle for business and you will get your share.



Sliding Doors and Outside Blinds

DETAILS SHOWING RECOMMENDED PRACTICE FOR SINGLE AND DOUBLE SLIDING DOORS—OUTSIDE BLINDS TO WORK WITH SCREENS

By Our Hardware Expert

DETAIL Number 13 shows single and double sliding door. The band moulding is designed to keep the sliding door from rubbing against the stops on the rear jamb. It is also desired by the hardware trimmer, because almost all of the cup escutcheons of ornamental designs protrude about 1/4-inch, and if the doors do not have a band moulding, the stops attached to the rear jambs will have to be cut so the door can be shoved back into the pocket.

This is a wood-butcher-job and no one likes a wood-butcher-job.

Detail Number 14 shows a typical double hung sash, having the so-called half screen covering the outside of the lower sash.

This detail also shows outside blinds.

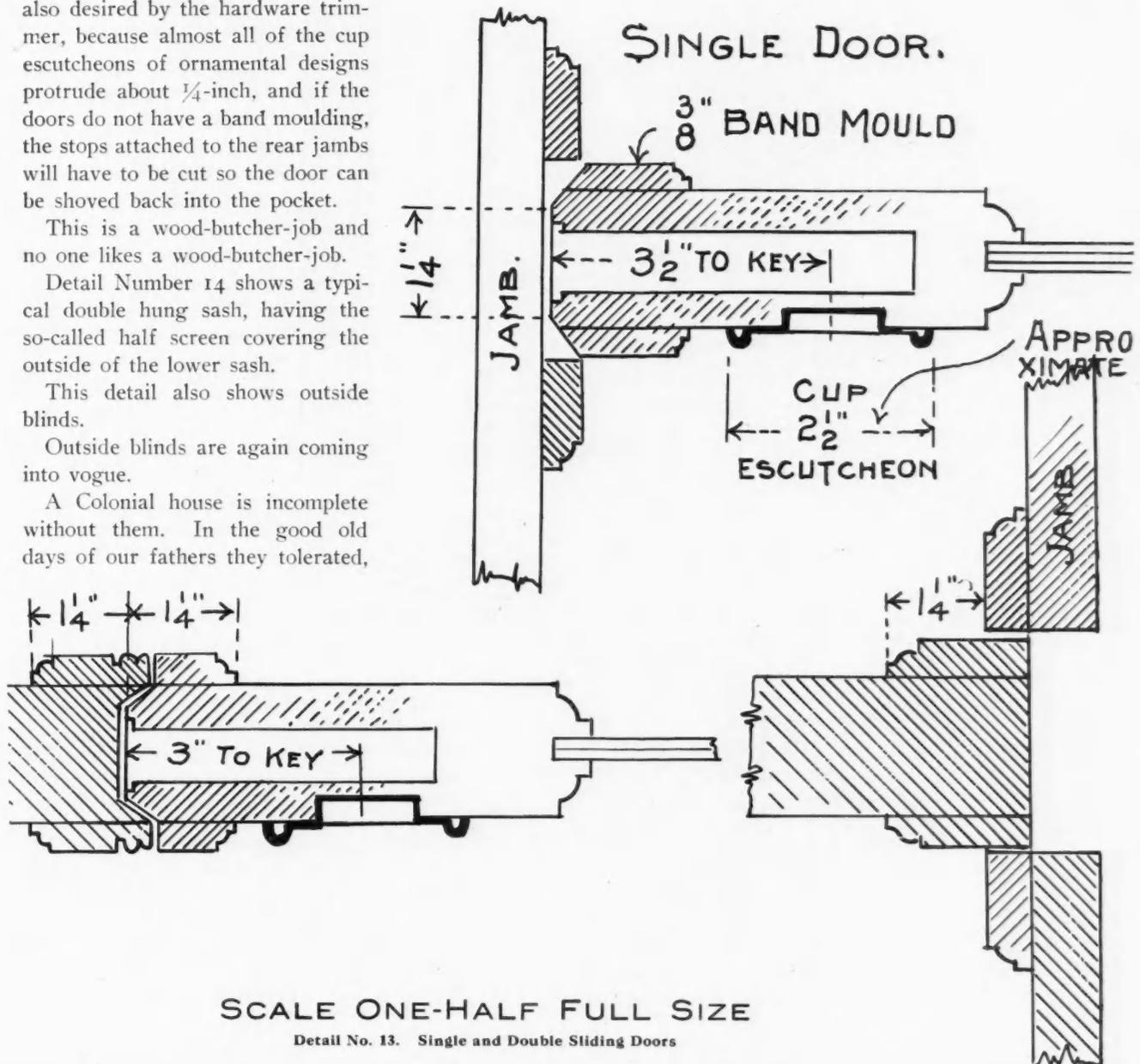
Outside blinds are again coming into vogue.

A Colonial house is incomplete without them. In the good old days of our fathers they tolerated,

if not loved the little harmless fly.

Screens were unknown.

If you must have the outside blinds, you must erect



SCALE ONE-HALF FULL SIZE

Detail No. 13. Single and Double Sliding Doors

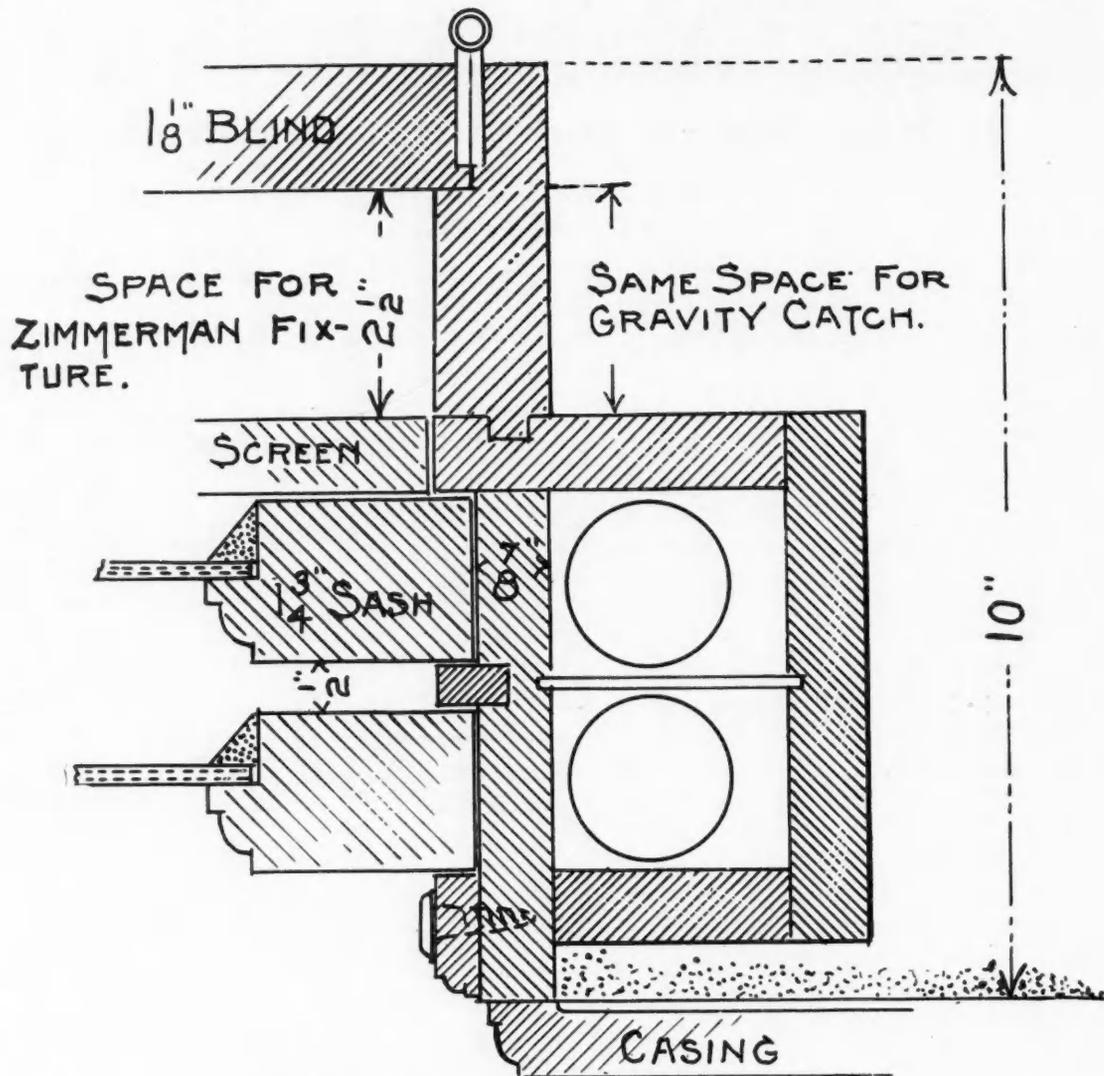
a house having a wall at least 10 inches in thickness, for a space of at least $2\frac{1}{2}$ inches must be provided between the blinds and the screen in which the old fashioned Zimmerman blind fixtures or the Gravity catch is applied.

If this space of $2\frac{1}{2}$ inches is not provided, you cannot close and latch the blind, unless screen is lifted and kept up during the time the blind is closed.

casing. The crank fits on to a $\frac{5}{16}$ square rod which connects with a worm gear in the bottom hinge.

The blinds can be held tight shut or tight around against the wall or they can be held in such position as to exclude the sun but give free access to the air.

Care must be taken to supply a $1\frac{1}{8}$ -inch pulley stile so the mechanic can bore the $\frac{1}{2}$ -inch hole for the operating rod. This hole should be $\frac{7}{8}$ inch to center



SCALE ONE-HALF FULL SIZE

Detail No. 14. Outside Blinds for 10 Inch Wall.—Note that there must be a space of at least $2\frac{1}{2}$ inches between Screen and Blind for Zimmerman or Gravity Fixtures

Now if you must have blinds and cannot afford to erect a house having a 10-inch wall and blinds be equipped with the old fashioned fixtures, you can erect a house having walls not less than $7\frac{1}{2}$ inches in thickness, and equip these blinds with the modern up-to-date Mallory Shutter Worker.

Detail Number 15 shows the exact measurement required for this device.

No space is required between screen and blind, as this device has no catches to hold the blind closed.

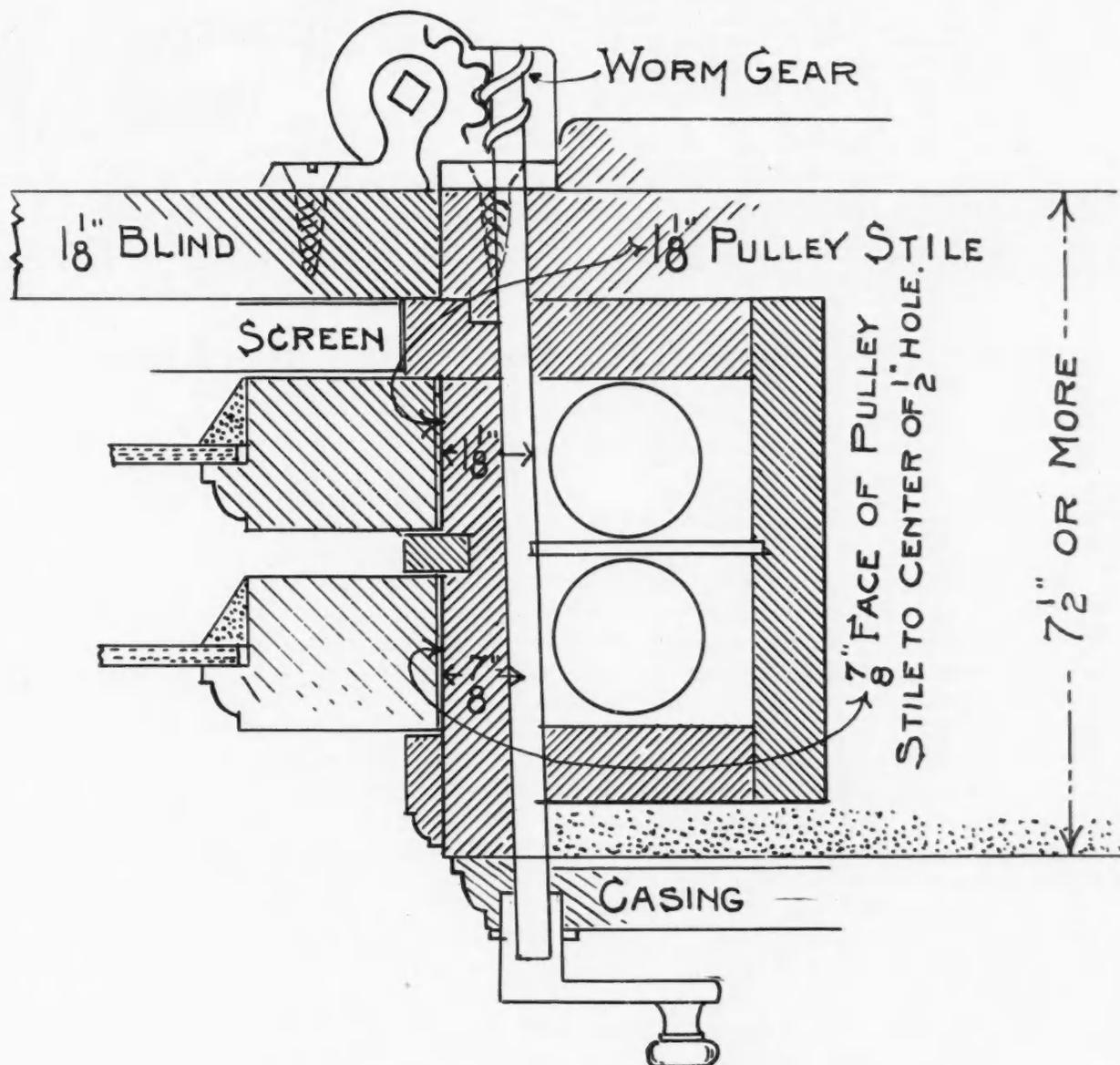
The blinds are operated by a crank attached to the

from the face of the pulley stile.

You can readily see that $\frac{7}{8}$ -inch pulley stile won't do. If this device is to be applied to a frame having $\frac{7}{8}$ -inch pulley stile, the mechanic will eat his head off spending time in gouging out the back of the pulley stile for this connecting rod.

The Mallory shutter worker can be supplied with any length of rod, so it can be applied to blinds for any thickness of wall. They can also be had to throw around a $3\frac{1}{2}$ -inch and $5\frac{1}{2}$ -inch brick reveal.

The Hardware Editor urgently requests that the



SCALE ONE-HALF FULL SIZE

Detail No. 15. Outside Blinds for 7½" to 8" Walls, Showing Arrangement for Mallory Shutter Worker

architects take greater care in detailing these frames so the hardware trimmer knows where he is at and can supply the trimmings best adapted to the requirements.



Waterproofing Canvas

What would be the best preparation to put on a canvas tent to make it waterproof?

There are numerous formulas for waterproofing canvas, one of which is as follows: In a glue pot or hot water bath mix a half-pound yellow beeswax and one-half gallon turpentine. Apply one or two coats of this to the canvas and, when dry, paint with pure white lead and pure linseed oil, mixed rather thin. The wax sizing will keep the oil from any possible tendency to rot the canvas, while the lead and oil will shed the water.

Combination of Reinforced Concrete and Concrete Blocks

The E. E. Woodward Building at Rockford, Ill., is particularly notable in that the construction is a combination of reinforced concrete and concrete blocks. The entire frame, including columns, floors and stairways, is of reinforced concrete, while the walls and partitions are constructed of concrete blocks. No wood is used except for the window frames. It is interesting to note that the blocks carry none of the load of the building and contents except their own weight. The building is 143 by 70 feet, five stories high with basement. The concrete used was proportioned 1:2½:4. The Simpson Construction Co., of Chicago, were the contractors for the concrete work, while the building was designed by Francis M. Barton of the same city.



For the Shop With Only One Machine

WITH INGENUITY AND A FEW "RIGS" MANY KINDS OF WORK CAN BE DONE ON ANY ONE OF THE STANDARD WOODWORKING MACHINES

By Chas. Cloukey

THE subject of adapting certain machines to uses other than those primarily intended by the builders is of special interest to workmen in small shops where the number of machines is necessarily limited to a few of the old standards. The variety saw, the shaper, the jointer, the turning lathe, the band saw, the pony planer, the arm sander can all be adapted to a greater or less degree to uses beyond the ideas of their builders.

It is also a fact that the men who need to make use of this adaptation the most are the men with the least experience in a wide range of work which begets the ideas of the makeshifts of adaptation. They are usually carpenters who have either gotten out their mill work by hand or had it made by trim factories. The idea of the contractor in putting in some machinery was to cut down his mill work bills and to cut out much of his delay in waiting for odds and ends needed to complete jobs. So instead of buying as many machines as he thinks he may need, he buys as few as he thinks he can get along with. And it is usually a fact that these few are much greater and more important possessions than he has any idea of.

The Versatile Saw Table

The idea a carpenter has of a circular rip saw is that it is made to cut boards and planks into strips lengthwise of the grain, and while this conception is a true one, it is also true that if we put on a cut-off saw blade we have a *combination saw*. And further, if we buy a saw with a tilting table, we have a *variety saw*, and this is the best kind where there is but one saw table in the shop.

There should be sufficient length of arbor and thread to permit putting on a good sized *dado head*, say one that will make a 2-inch cut. If the shop does not afford a jointer, a *narrow jointer head* may be used on the saw arbor and so as to get good service out of that machine for this purpose.

The subject of *grooving* is one that can be pretty well covered with saw practice, and for grooves too narrow for the dado head, the common saws may be

used and two or more cuts made if necessary to obtain the proper width of cut.

By the use of thick saws with a small number of teeth, they may be shaped like *shaper cutters* and ground or filed to edges and so be able to do forming or moulding of the edges of table tops, or to stick mouldings of any kind on the edges of base boards, casings, etc. However, the cost of these cutters will be considerable and it would not pay to have them made except for such patterns as were likely to be made quite often.

The making of tenons on the saw table is one of the tricks common to men of experience who have the saw and not the tenoner. The shoulder cuts are made first with the cross-cut saw and then the table lowered or the saw raised, as the case may be, and the two sides of the tenon ripped by passing the piece over the saw on end. Of course it will be impossible to cut tenons on the ends of pieces so long as to interfere with the ceiling. These may be cut on the band or jig saws if either of these are in the shop, and if not the rip cuts will have to be made by hand, or possibly on the shaper.

The cutting of spiral threads with the rip saw may be done with great accuracy provided the die or gauge is correct. In this work the piece is fed across the saw at an angle and the advance and turning of the blank must be in proportion to the lead and size or pitch of the thread.

Our Friend the Jointer

Jointers for small shops should have slotted heads so that it is convenient to put *pattern or moulding knives* on to make all kinds of face and edge cuts. Not only straight but circular mouldings of many patterns may be made on the jointer. If there is no shaper in the shop it is surprising what a large per cent of the legitimate shaper work can be handled by the jointer. And this is true of all the other common machines. For instance, panels are supposed to be raised on a *panel raiser*, but if there is no panel raiser we can do very well on the shaper. If we have no

shaper we can put the right kind of knives on our jointer head and raise them there. But suppose we have neither of the foregoing machines, we can raise them on the saw. If we have a tenoner and the panels are not too long, we can raise them that way, and anyway we can raise them across the end of the tenoner and it would not be so hard to raise the sides by hand.

Column fluting is another function of the jointer in the shop where there is no shaper with its fluting attachment. Even columns with swell or curved tapers may be fluted on the jointer with great beauty and precision. *Staves for columns* may be beveled and tongued and grooved on the jointer, and as the panels, if there is no jointer, they may be made on the saw. If there is a moulder in the shop it is the best machine for making column staves, for they may be tongued and grooved at one operation, even if it is necessary to make them with a taper. It is true that this same work may be accomplished by the use of the shaper after the staves are properly ripped, but it takes one or two handlings more than on the moulder.

The Busy Little Shaper

We will find that the jointer has very little to brag about over the shaper, for while the jointer can do some of the shaper work, it is also true that the shaper can do a lot of work properly belonging to the jointer. By putting a proper straight edge on the shaper table for a guide, and straight knives in the spindle, it may be used to do regular jointer work. Now, this is not so much, for the same thing can be done with the cope heads of the tenoner. Also the sticker will do jointing or rather edge surfacing, if the material is not too wide, but it should be straightened at least at one edge when being ripped.

The use of the thick and thin saws on the shaper spindles with the necessary outfit of collars will do a wonderful variety of work. *The slotting of sash stiles* and checks is one of the most useful things when that work cannot be done on the tenoner or chain mortiser, or when there is no slotter in the shop, as there is very apt not to be if the plant is a small one. The making of *tenons* on the shaper is a common practice with cabinet makers who have no access to the tenoners, and the slot and tenon joint is a popular one in the shop having a good shaper. *Panel raising* and *fluting* of various kinds have come to be the common work of the shaper, although they are both properly the work of other machines.

Special cutter heads for making *matched glue joints* are frequently used on the shaper, and the best of them show the same cut on both pieces, so that all that is necessary to get a perfect joint is to get the matching in the middle of the edges of the stock to be glued up.

The nosing of *stair treads* and *window stools* can be done with facility on the shaper, jointer, sash sticker

or moulder. The same is true of stair and porch rails, and, indeed, in some shops all of the *special stair rails* are made on the shaper, as it is much less work to make a set of shaper knives than a set for the moulding machine.

Another accomplishment of the shaper is that of using a small sand drum for *sanding the inside of small circles*, or any curved or straight surfaces for that matter, which can be brought to bear against the drum.

And while we are talking about sanding, I may say that one of the best little tricks with a sand wheel is in connection with the combination saw table, and especially if the saw has a slide or rolling table. Take a disc and cover one side of it with sandpaper and put it on the arbor in place of the saw with the sanding surface out. This is fine for sanding the tops and edges of base and head blocks, the edges of casings, small brackets, etc.

What the Tenoner Can Do

Perhaps the tenoner is one of the most versatile machines commonly found in the work shop. With a little ingenuity displayed in the fitting up of tables, guides and fences, a great variety of operations may be carried out by the assistance of this simple machine.

In the first place, the tenoner has two main heads running in opposite directions, and these heads may be adjusted laterally or may be removed entirely from their respective shafts. The machine also has two upright spindles whose real or primary function is to carry the two cope heads, and they run in opposite directions and at a high rate of speed.

Considering the above facts, we find that if the tenoner does not already have a *trim saw*, it is an easy matter to fit a saw to either one of the main arbors for ripping or for cutting, and also that the saw may be fitted to either of the cope heads if it will better serve the purpose that way. As has been said, the cope heads may be used as *jointer heads* by building a proper table and then running the lumber flat down. Even the lower main head may be used for jointing thin stuff on the edge, by slipping the lower head out on the shaft far enough so that the board will miss the upper head. The regular carriage of the tenoner will have to be removed for some of the special work. By putting up a special table it is quite practical to *surface both sides of narrow boards at once*, if they are held down to the table by means of strong springs. The main drawback to work of this kind is that it has to be fed by hand. But suppose we had a couple of thousand feet of 1 by 4 to surface two sides and it was either do it by hand or ship it a hundred miles and back wouldn't we be glad to rig up and surface and size it on a machine at hand? Besides two men ought to feed it without undue exertion if the springs are adjusted right.

If we take the tenoner heads off of this machine

and replace them with *slotted heads* for using *pattern knives*, it will be seen that we can do a variety of moulding work by using the same tables necessary with the planer and rip saw work. In addition, we may use the cope spindle to get a cut on the edge of the stock at the same time.

It would seem that if a man had to get along with one simple machine, he could not do better than to make that one a tenoner, and then fit up the extra appliances himself as far as possible and buy the necessary heads and knives for the extra work. There are some 20 odd distinct and separate operations possible to the tenoner, and perhaps an ingenious fellow spurred by necessity could add materially to the list.

Many Uses of Turning Lathe

The turning lathe is another little machine which is often called upon to do the work of another machine, and while it is not so versatile as some already mentioned, we find it is a mighty handy thing to run a *spindle sander*. On the face plate we make a *disc sander* similar to the one mentioned in connection with the saw table, and it has the advantage of having its surface all exposed at once.

The lathe is often used for *boring* in the place of the boring machine, especially in the case of small objects such as balls and carvings, the bit being fastened in the chuck or else stuck into a small face plate. *A good way to make a bit chuck* for the lathe is to take a piece of wood about an inch thick and 3 inches in diameter and bore a couple of small holes in it at the center, but not deep enough to interfere with the screw in the face plate. Make the hole $\frac{1}{2}$ inch deep and in the bottom of it make a little hole just the size of the bit to be used. This little hole should be turned in so that it will be exactly true and in the center. Now grind the shank flat near the end so that the bit will not turn and fill the holes with melted babbit metal. This will make a chuck cheap and serviceable.

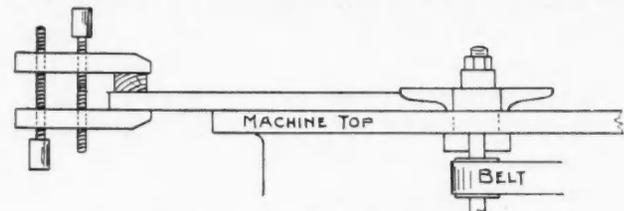
It is easier to use the lathe for *buffing work* than it is to put the buffing wheels on the emery wheel stand, for we can make them like face plates and cover them with any substance we choose, and when through with using them, simply unscrew them and lay them up.

The lathe has been used as a *dowell machine* for many years, and by the use of a special cutting device any size of dowels may be turned out at a good rate of speed.

Work much too large to be swung over the shear of the lathe may be handled effectively by turning the lathe one-quarter way around so that the face plate will stand facing the operator. The belt will have to be guided to the pulley in this case, and perhaps the turner will have to rig up a separate tool rest from the floor up, but he can swing anything that will clear the floor, and the main caution is not to run the big stuff too fast or it may fly all to pieces.

After all is said, it is quite impossible for a man to sit down and give all the points of machine adaptation, for new necessities will suggest new possibilities, and the workman who has his eyes once opened to a few of the things he really can do with machines will speedily add to their repertoire until it will be a difficult piece of work indeed which will stall him.

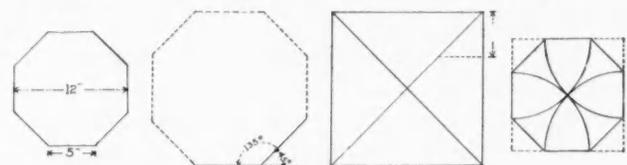
To Hold Wide Boards in Place. I have seen mechanics have trouble in the mill in keeping large panels flat while running through or raising the panel, on a variety molder. One way that proves very efficient is to clamp a piece of stuff across the



Hand Screw to Keep Wide Work Flat

opposite end from the one being raised; clamp it with a hand screw on each end of the cross-piece. When the panel is raised on one edge change the cross-piece and clamps to the raised edge, as shown in the accompanying illustration.

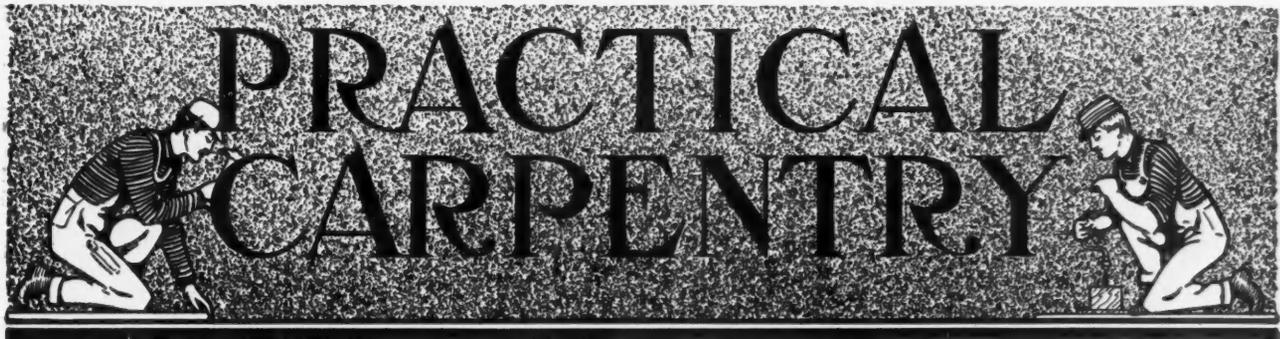
Something About Octagons. It seems that every mechanic one comes in contact with has a different way of laying out an octagon. So here goes a fusillade of octagons for your observation. Multiply the square by 5 and divide by 12. Say it is a 12 by 12 square; 12 multiplied by 5 equals 60 divided by 12 equals 5, Ans. Here is another: Multiply the 12-inch square by the decimal .4142, so 12 multiplied by .4142 equals 4.9704, width of side which is more accurate than the first way given.



Here is another: Take half the diagonal distance on the compass and put one point in the corner and scribe a quarter circle, touching the side; this occurs four times and the intersections with the sides will give the points to cut off of the square. Now, when we have a given length of a side to form the octagon to match, draw the line, say 5 inches long, at one end of same length to an angle of 135 degrees from it and so continue on all the way around until the figure is completed, as shown.

Then again, there is the octagon scale found on the steel square used by some fellows, and is as follows: Draw the square and diagonals and measure off the side of the square on its diagonals, square from a side to the point thus found on the diagonal line, then gauge this distance on all four sides, as shown.

WM. C. JASBURY.



To Make Frame Houses Fire Resisting

A SENSIBLE INEXPENSIVE PRECAUTION TO RETARD AND STOP THE SPREAD OF FLAMES IN FRAME WALLS

By C. W. Older

A FRAME residence cannot be made fireproof, but it can be made to resist the flames enough to prevent loss. By keeping the fire confined to one room, or one floor, there is a great deal better opportunity to save the whole house from destruction. A few precautions in building would be of great assistance, at such a time, to avert a calamity.

Notice, for instance, the course of a fire. Often when it starts in the basement, the flames are visible under the eaves as soon as they have made much headway below. And, considering the construction of the walls, it would be impossible for the result to be otherwise. Even if the fire should start in

This can be accomplished, before the lathing is done, by spiking sheet iron between the studding, and on this pouring horizontally a good pasty mortar. This will fill the openings that may be left around the edge of the sheet iron, and by being placed on a line with the floor, has no undesirable feature whatever, besides causing the fire to burn so slowly that there is a greatly increased likelihood of being able to extinguish it altogether.

This method of precaution from fire is by no means new, and is not represented as such, but a more frequent use of it should be demanded. With the number of frame buildings being erected, it is surprising to note how few make any pretense of a safeguard of this kind. In some localities almost everyone observes a great amount of care, but in other communities the opposite extreme prevails.

As it represents but little expense, compared with benefits likely to be derived in an emergency, there is very little argument against its more general use.



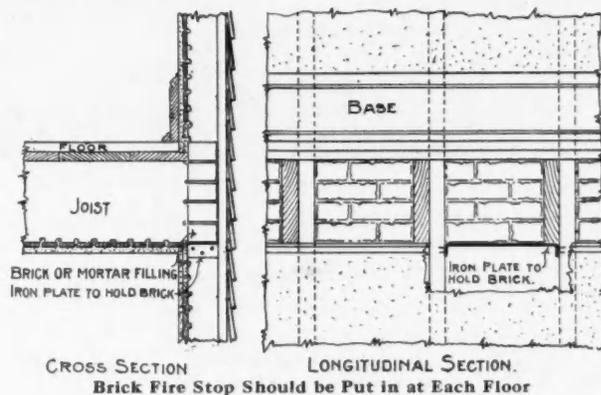
Responsibility for Blasting Accident

One engaged in blasting on his own property is held, in *Hieber v. Central Kentucky Traction Co. (Ky.)*, 36 L. R. A. (N. S.) 54, not to be liable for injury to a blacksmith employed on neighboring property, by the plunging of a horse which he is attempting to shoe when frightened by a blast, of which the blacksmith had not been notified, although upon his request the former had been accustomed to notify him when a blast was to be exploded, so that he might protect himself.



How High Should the Vise be Placed? Many times I have heard mechanics say: "How high should the vise be set from the floor?" I mean the vise to make cutters and for filing purposes (not wood worker's). Some say one height, some another. Now, take an average height man, say, 5 feet 9½ inches, and let him put the tip end of his fingers under his chin and stand erect with forearm plumb and the point of his elbow will be the proper height from the floor.

WM. C. JASBURY.



a room on the first floor, it does not make remarkable headway until it has burned a hole through a wall, then in a very few minutes the entire structure is ablaze. It seems to be one of the failures of a frame structure for the wall to act as a flue between the lath and the siding. There are ways by which this can be considerably relieved, but we constantly find this type of buildings erected with an air space in the wall open top and bottom. Some take the precaution to see that the bottom is closed, usually by a layer of brick, or perhaps only mortar. This is a great help, as it shuts off the greater part of the draft. If the builder would go a step further and shut off this air space at each floor, it would have the same effect on the fire as closing up a chimney, for by leaving no outlet above in the wall there would be no chance for a draft.



“SPLASH-DAMMING” on the BIG SANDY

By H.H.GIBSON

The Splash-Dam at the Moment of Explosion

This article treats of a phase of lumbering probably little known to the majority of builders. How the virgin yellow poplar forests of the Alleghanies, Blue Ridge and Appalachian mountains are being successfully lumbered is told most graphically by an eye witness of the first and largest of these “splash-damming” events, Mr. Henry H. Gibson, Editor of the “Hardwood Record.”

—Editor.

THE public hears much about forest denudation and the extinction of forest growth, but there are but few types of American forest trees that are nearing their end. One of the splendid varieties whose lumber product is not increasing, owing to timber scarcity, is yellow poplar (*Liriodendron tulipifera*), which has been known for years commercially in the Eastern section of the United States as whitewood; and in Great Britain and the Continent, where it is a favorite, as yellow wood, or tulip wood.

There is only one variety of tulip wood, that of the United States. The original range of growth was extensive, ranging from Massachusetts southwest to middle Georgia, with a heavy growth in Ohio, Indiana and the southern part of Illinois, a scattering growth of inferior quality in other sections; and even along the seaboard of the lower Atlantic, it is found in tide

level areas, but here the color and quality of the wood is not of as good a type. The original forest growth of poplar in Ohio and Indiana is said to have been excellent, but these forests practically have been denuded for more than a quarter of a century.

The real home of the highest type of poplar is in the Alleghanies, Blue Ridge and Appalachian mountains, where it often attains a length of bole of one hundred feet, and a diameter of five to eight feet at the stump line, and specimens ten, eleven and twelve feet are not infrequent.

Poplar is a wood of almost universal utility. From it were made the canoes of the aborigines; from it were rived the shingles and siding of the homes of the pioneers; from it were carved the chopping bowls and tubs of the housewives of a departed age. In a latter day it was the general house-building material of the

middle West, antedating white pine. The wood is soft and of a rich yellow tinge of heart wood and very thin and white sap-wood. It withstands alternate dryness and dampness, and holds paint in a most wonderful way. Therefore for years it has been the favorite material in woodwork constantly exposed to the weather. Every Pullman car, passenger coach, express and baggage car that has been built up to the last year or two, when steel coaches came into questionable vogue, was sided with poplar. Every street car panel is of poplar; likewise nearly every sign board on the front of merchandising establishments. The wood is also used almost to the exclusion of all other material in the making of coach and carriage

and feet, seeking higher altitude in its southern ranges and is intermingled with hickory, hemlock, buckeye, chestnut, cucumber, the oaks, the walnuts, and various other varieties. However, the poplar trees, growing in the deep coves of the mountains, are predominant in the forest, although rarely existing in groups, as the growth generally is scattered, one, two or three to the acre; but they have shot straight up with their beautiful and perfectly formed boles and massy tops, until they not only exceed the height of the other trees, but are conspicuous for their large size. The best type of poplar, the veteran of the forest, is often from four hundred to seven hundred and fifty years old.



A Typical Logging Camp in the Cumberland Mountains

bodies, high class automobile bodies and the bodies of grocers', butchers' and laundrymen's wagons. It has always been popular for the interior finishing of houses, where permanent paint or enamel work was desired, and also for general furniture and cabinet work. As a matter of fact poplar has been the chief material of general utility for the making of everything from the cradle of the pioneer to the coffins of his sons.

The forest in which poplar has its habitat is a splendid sight. Its best growth occurs at elevations above the sea level of from one thousand to four thousand

feet, seeking higher altitude in its southern ranges and is intermingled with hickory, hemlock, buckeye, chestnut, cucumber, the oaks, the walnuts, and various other varieties. However, the poplar trees, growing in the deep coves of the mountains, are predominant in the forest, although rarely existing in groups, as the growth generally is scattered, one, two or three to the acre; but they have shot straight up with their beautiful and perfectly formed boles and massy tops, until they not only exceed the height of the other trees, but are conspicuous for their large size. The best type of poplar, the veteran of the forest, is often from four hundred to seven hundred and fifty years old.

From the location of growth in the deep recesses of the mountains, and the difficulty of hauling large logs, or lumber made on portable mills, to lines of transportation, the total product is not comparable in quantity to woods like white pine, yellow pine, some of the Pacific coast forest products, or other varieties growing in a comprehensive way. Very often every tree has to have a separate trail swamped out for the logs. Therefore poplar logging operations are very expensive, and the cost of the lumber is comparatively high.

The estimation and value of poplar lumber has



Skidding the Logs to Skidway

induced heroic efforts on the part of lumbermen to secure it, with the result that many mountain forest areas have been largely denuded of the growth. It is only in exceptional localities, where the transportation of logs and lumber, at present, is a physical impossibility, that any considerable quantity remains uncut. It is anticipated that during the next ten years essentially all of the poplar producing country will be denuded, and after that the wood of this variety that reaches the market will be small in quantity.

The last grand stand of poplar timber, in anything like comprehensive growth (and here it grows intermingled with white oak) to the extent of perhaps twenty per cent of the forest, is in Eastern Kentucky, West Virginia, East Tennessee and western North Carolina and in Virginia, at the headwaters of the Big Sandy River, which flows into the Ohio at Catlettsburg, Kentucky. For more than thirty years this stream has had the reputation of supplying from its watersheds the highest type of yellow poplar, and the remainder standing in its upper reaches exists owing

to the physical difficulties of the transporting of logs to floating water in the lower stream, which for years were deemed insurmountable.

The upper Big Sandy River breaks through the Cumberland mountains, and runs at the bottom of a stupendous gorge often not more than one hundred and fifty feet in width, with embattling cliffs that rise in places in a sheer wall more than a thousand feet from the water. This gorge is tortuous, and the river bottom is strewn with immense rock masses and boulders. For years attempts were made to "run" the breaks of the Big Sandy, but they were abortive, as the logs were "hung up" in jams or were broken and ground to pieces from their impact with the rock walls and boulder-strewn course of the river.

Recently an enterprising lumber company, which has manufactured poplar lumber for many years on the Ohio river, and which was the owner of a tract of virgin timber on the upper Big Sandy, conceived the idea of "splash-damming" the poplar logs through the gorge to rafting water below it. Splash-damming is not new in mountain logging operations. For years small dams of logs have been built in minor streams, and by taking advantage of the Spring and Fall "tides," logs have been driven out to the larger streams where they could be floated. However, splash-damming the breaks of the Big Sandy was a stupendous proposition in dam building, when it is considered that the terminus of the last mile of railroad penetrating the country, was more than twenty miles distant, and the only way of getting materials to the proposed dam site was across two mountain ranges on cattle trails.

In this region were a hundred million feet of splendid poplar timber, which if converted into lumber meant a value of more than three millions of dollars. The profit in this enterprise was the prize sought.

The suggestion that the author would be a welcome



The Biggest Log Dump in the History of Yellow Poplar Lumbering. Located in Russell Fork of Big Sandy River in Dickinson County, Va. About one mile above the "Breaks of Sandy". This Dump is two-thirds of a Mile Long and 50 feet Deep, Contains 36,000 large Virgin Forest Yellow Poplar Logs; Total Log Scale 27,000,000 feet.

guest at the logging camps in this remote mountain region, and would have the opportunity of witnessing the initiation of the big concrete dam that was designed to splash out a million dollars worth of poplar timber annually, was inducement enough for him to catch the first train headed towards the operation. After reaching the saw milling point on the Ohio river, it was a full day's journey on the tortuous one hundred and fifty mile stretch of the railroad up the Big Sandy, (the dividing line between Kentucky and West Virginia), to its terminus against the solid embattlement of rock—the Cumberland mountains. From this point it was a tote-wagon ride across the mountains over a road that had no license to be designated as such.

The destination was "headquarters camp," a crude cabin in the very heart of the mountains from which went forth directions for the clearing of the poplar timber from fifteen thousand acres of land in a single season.

The big lumberman and his staff of cruisers, woods bosses, railroad men, mechanics, swampers, choppers, teamsters, cooks and men-of-all-work had come into this unbroken wilderness less than nine months before, and had nearly accomplished the task set before them. Into Dickinson County, in southwestern Virginia, an area one-fourth the size of Rhode Island, containing not a mile of railroad or other transportation facilities, these woodsmen had come bent on a gigantic and risky undertaking.

Scores of tote-teams were employed to drag along the trails portable sawmills for the making of wooden tram rails; food supplies for hundreds of men and mules; logging locomotives, tools, and all the rest of the necessary paraphernalia. Beyond all this building of a great concrete dam across the main stem of the Big Sandy was undertaken. For more than six months



Two Veterans. A Seven Hundred Year Old Yellow Poplar and a well-known Mountaineer of the Old School

relays of four-mule teams were employed in hauling cement across the broken country to the dam site, and scores of men were employed in its building.

For a certainty transportation facilities of some sort had to be devised to take this forest wealth out through the hitherto impassible Breaks. It was an experiment, and it took courage to invest more than a million dollars in logs piled in a gorge of a mountain stream, which never had delivered more than ten per cent of those put into it.

The crude log camp "shacks" where these stalwart denizens of the forest were housed would scarcely appeal to the resident of a modern city apartment, but here these husky woodsmen, often accompanied by their wives and children, took up their temporary abode year after year as the forest was penetrated farther and farther.

To those who have never seen a virgin forest tree it is a revelation. The widely branching, short-bodied park tree bears little resemblance to the monarch of



With the Aid of a Concrete Splash Dam, 350 feet in Length and 25 feet in Height, Located One-half Mile below this Log Dump, these Logs were Driven through the Breaks of Big Sandy River to Pikeville, Ky., and there Rafted and Floated down to the Ohio River at Catlettsburg, Ky.

Photographed Nov. 17, 1909 by H. H. Gibson, Editor "Hardwood Record"

the forest. The bark, the leaves and the flowers are the same, but here the similarity ends. The Almighty planted these trees in the remote ages. They strove upwards, and certain particularly favored ones outstripped the others. They covered the minor growth with their shade, weakened it and killed it. These



Steam Log Loader

great poplars of the upper Big Sandy are the survival of the fittest, and stretch skyward until often they rise to a height of two hundred feet, with trunks from three to seven feet in diameter. They are straight, bark-covered giants, and their foliage is so far distant that its form of leaf scarcely can be recognized.

To the layman the felling of one of these trees with axe and cross-cut saw is an alluring sight. When the great tree falls it crashes among the smaller growth, and its resounding impact with the earth jars and reverberates through the mountain coves. After the body of the tree is cut to log lengths, the bark is removed, (or "scalped" as the local vernacular has it), so that they may be hauled more easily, and also to eliminate the danger of borers working under the bark and injuring the sap-wood. Each log is also slightly chamfered at one end to facilitate snaking to the skidways.

After the logs are snaked by four-mule teams to the skidways, they are loaded on to cars with a steam hoisting apparatus, and in train loads are hauled by a geared locomotive to the "dump" in the gorge of the river.

On building the concrete dam intended to splash out these logs it was found necessary to blast out monstrous rock obstructions along the canyon. These masses that had fallen from the mountains would have caused the logs to form in great jams, and have defeated the object of the enterprise. Thousands of pounds of dynamite, coal, drills and forges were packed on men's backs down into the gorge, and the rocks were drilled and blown to pieces.

It must be known that no union scale of hours for a day's labor prevails in mountain logging operations.

At all camps the rising bell is rung at three o'clock and breakfast is served a half hour later. Every axeman and cant-hook man is at his post at the first streak of dawn, while relays of railroad crews work in succeeding shifts both day and night. It is an everlastingly hustle in the woods work of the Big Sandy country, from the time a big job is started until the logs are on their way to the mill.

At the river terminus of the main logging road above the Breaks, for months had been piled in the gorge, (with the aid of a steam engine and its accompaniment of drums and steel cables), nearly forty million feet of yellow poplar sticks of timber, ranging in length from twelve to thirty-eight feet, equal to more than eighty-one thousand logs of saw mill length. Here was the largest assemblage of poplar ever made at one point in the history of its manufacture. The log dump was more than two-thirds of a mile in length, and the timber was closely piled in the gorge to a depth of fifty feet.

The big splash dam at the head of the Breaks, a half mile below, was nearing completion. The dam consisted of several concrete piers, between which were immense "flues" or flumes, temporarily filled with a series of beech spars and oak splash board planking. The wooden false-work was to be released by the explosion of wooden "triggers," which held in place the big logs running from pier to pier. These logs in turn supported the upper end of the spars, the lower ends of which were held in place by the toe-sill of the dam.

One evening the presiding genius of the undertaking announced, "We are going to turn 'er loose tomorrow."

For months he had been piling dollars in the form of poplar timber into the gorge; for months he had been piling dollars into this great splash dam. There



Hauling Train of Logs to the Dump

had been no rainfall on the water shed of the upper streams since the winter before, and one could wade the Big Sandy and not get over his shoe tops. Right now there had been some rain—not much, but a little. It helped the flow of water in the five main branches above the dam. The splash boards were in place, and

the water was gradually rising in the dam.

There were no laggards when the camp bells rang the "getting-up" call next morning. Every man was to see if his last nine months' work for the big corporation meant success or failure. The early morning was gray to the point of impenetrable darkness. There was no familiar outline of mountain tops. The streams were obliterated by the dense folds of the fog. The

familiar, save as it was obscured by the fragments of mist which hung here and there in deep coves, or floated about the top of a timber clad summit.

A regiment of woodsmen and natives had encamped along the battlements of the gorge to see the great spectacle. But few mountaineers believed that it were possible to "drive" the Breaks. They had tried; their fathers and their fathers' fathers had



The Bottom of the Gorge after the Great Rocks were Blown Out—Ten Miles of this to Rafting Water Below

wind shifted the masses of vapor now and then, revealing the familiar heights. The rising sun finally diffused the fog, but the perspectives were still weird and indistinct. Shadowy forms appeared suddenly and disappeared unexpectedly. The chug and grind of the locomotives were indistinct. The harsh voices of engine-drivers were softened and made musical, and floated uncertainly on the eddying air.

In the great penned-in mass of water above the dam logs crunched one against the other. There was a slight forward movement of the timber mass. As the sun climbed towards the meridian the light increased. The fog rose slowly, and the mountain tops protruded. A soft breeze billowed the fog before it in great clouds. One valley was seen clearly and then another. By noon the landscape had become

tried; all former efforts had been failures.

Along the dam active preparations were seen. Electric wires were being strung and tested. Sticks of dynamite were taken out across the piers and inserted in the great triggers. At noon every detail was complete, and expectation was at its highest pitch.

"All's ready" came the cry. The man in charge of the electric battery crouched in his shelter. A few, heedless of the risk, retained their exposed positions.

"All's ready" again came the cry, followed almost immediately by "Let 'er go!"

Down shot the plunger of the battery. Five great blocks of wood were lifted from the tops of the piers, their rise being followed by a volleying crash as the report echoed and re-echoed through the narrow

canyon.

The shattered triggers rose as great black balls, and passed away into nothingness as had the fog. Five fifty-foot poplar logs leaped and rebounded from their impact with the rigid steel posts set in the concrete piers. The spar logs jumped from their places against the toe-sills, their lower ends swept forward, and following came a mad tide of timber, foam and



Splash Dam After Head of Water was Exhausted

water that rushed through the five great sluices with a deafening roar. The weight of the flood shook the hills, and there were great masses of spray that filled the gorge to the hill tops. One could scarcely see what was actually happening. One thing was sure, a moment before one could pass dry-shod across the gorge below the dam, and now it was a raging torrent of water and huge logs.

The surface of the water above the dam hollowed out, while the pent-up flood below bulged in the center



Making the Popular Logs into Rafts down the River

several feet above the outer water level. Great sticks of poplar became jammed one with the other, and jumped clear of the water, and then fell back into the hurrying flood.

"I guess it's all right," said the big boss. "We'll know pretty soon, but I believe that five hundred acres of water with a twenty-five foot 'blue-head' turned loose through the Breaks will take some logs with it."

Forty-five minutes after the dam was exploded, the telephone bell at Bart's Lick camp, just above the dam, rang vigorously. The voice at the other end of the line said: "The blue-head is here. The head of the drive has passed the mouth of Grassy, and the logs are in rafting water."

The length of the Breaks of the Big Sandy is an even ten miles, and the great drive had thus made the run at the rate of twelve and a half miles an hour.

Two mountaineers had periled their lives by climbing down the precipitous cliffs that encompassed the river, in order to get the best possible view of the drive. They stood on a cliff just above the mouth of Grassy creek when the mass of logs, foam and water came dashing past them. At one time in their career they had had the exceptional opportunity for mountaineers of visiting Niagara Falls.

"Lige" said one of them, "Hit makes N'gree Falls look like four bits' worth of blockade whisky in Dave Lockhart's camp, don't hit?"

"I reckon it do, Bill," vouchsafed his companion.



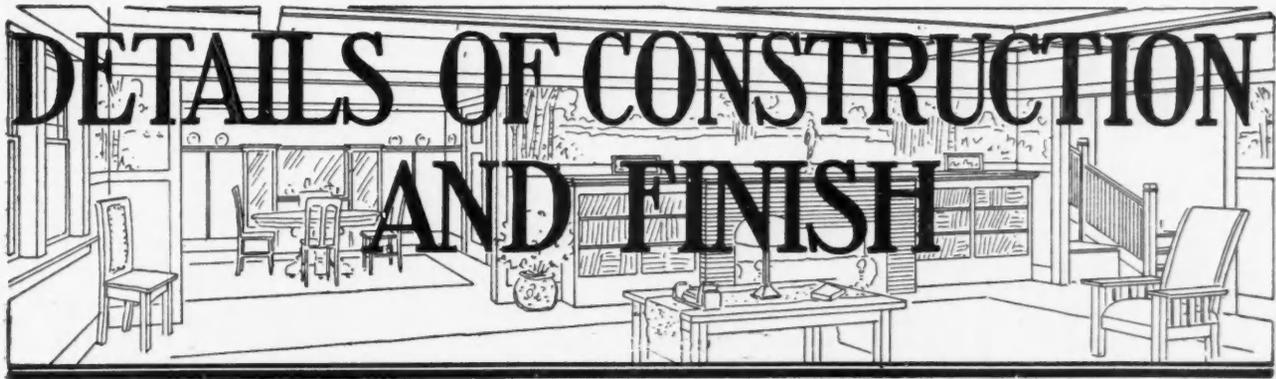
Boiling Ice

Every scientific student knows of the laboratory experiment whereby water may be boiled and frozen at the same time, but not every layman is aware of this. The temperature at which water boils depends simply upon the air pressure upon its surface. If there is high pressure the water has to be made a good deal hotter to boil than at low pressure.

On mountains where the air pressure is a good deal lower than at sea level water boils easily at a low temperature. In cooking vegetables that require a certain degree of heat, where the water boils before that degree is reached the vegetable will not get done. Consequently they have to be put into a closed boiler, so that the generated steam will create enough pressure for the water to boil at or beyond the required temperature.

In the experimental proof of this fact the water is placed in a vessel and the air exhausted from above the surface of the water. As the process of pumping goes on the water will boil violently, the steam congealing on the sides of the exhaust vessel. If the pumping is continued long enough and the outside is cooled below the freezing point of water, the water will continue to boil and bubble until it is frozen into a snowy mass of ice.

This fact is made use of in estimating the height of a mountain. Ordinarily at sea level, where the pressure is about 30 inches of mercury, water boils at 212 degree Fahrenheit. Now, if it is noticed that at a certain place it boils at a few degrees lower, the height of that place can easily be ascertained by comparison with a table made out for this purpose. In general, for every degree the boiling takes place under 212, a height of about 500 feet is counted.—Harper's.



Some Practical Stair Arrangements

DETAILED DRAWINGS GIVING MANY VALUABLE SUGGESTIONS FOR PLANNING AND CONSTRUCTION OF ATTRACTIVE STAIRWAYS

Detail Drawings By C. E. Schulze

TOO little attention is generally given by both builders and owners to the stairway problem of the house about to be constructed; with the very frequent consequent result that the stairs convey a more or less awkward and out-of-place appearance.

Architects, contractors and builders seem prone to consider the stairs of any structure in the light of a necessary evil, rather than as a necessary element of construction, which should receive due consideration in the planning and which further can be developed in a certain artistic manner and brought to a point of decorative usefulness as well as mere practical service.

On the following two pages are presented complete working plans of four types of stairway construction, which have proved practical in every way and which will distinctly add rather than detract from the general interior arrangement and appearance of any home.

Carpenters and builders are urged to give stairway planning and construction its due consideration and they may profitably make use of these accompanying stairway working plans in their future work.

Go over these detailed plans carefully, first for your own benefit and then make use of them in submitting to the prospective builder for his criticism.

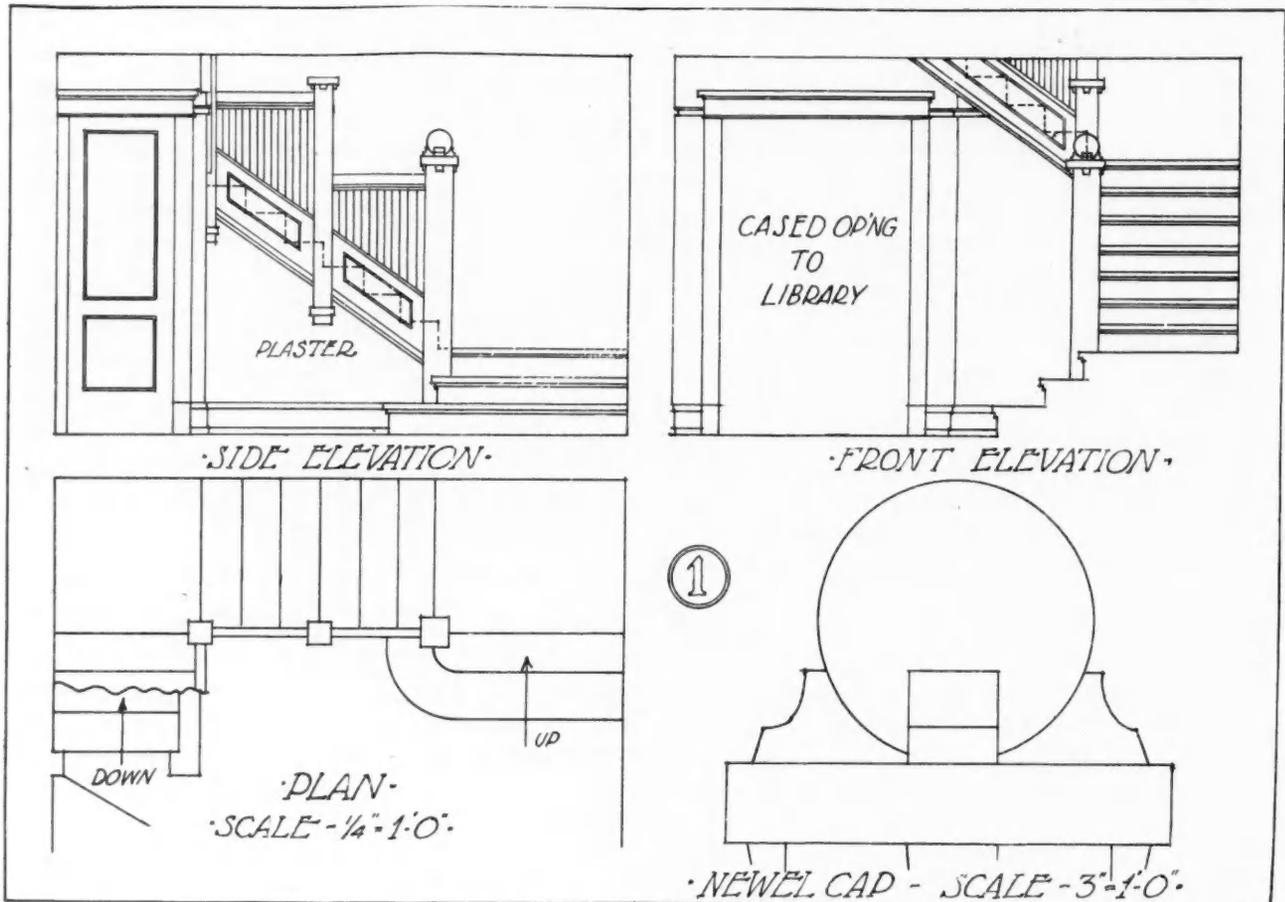
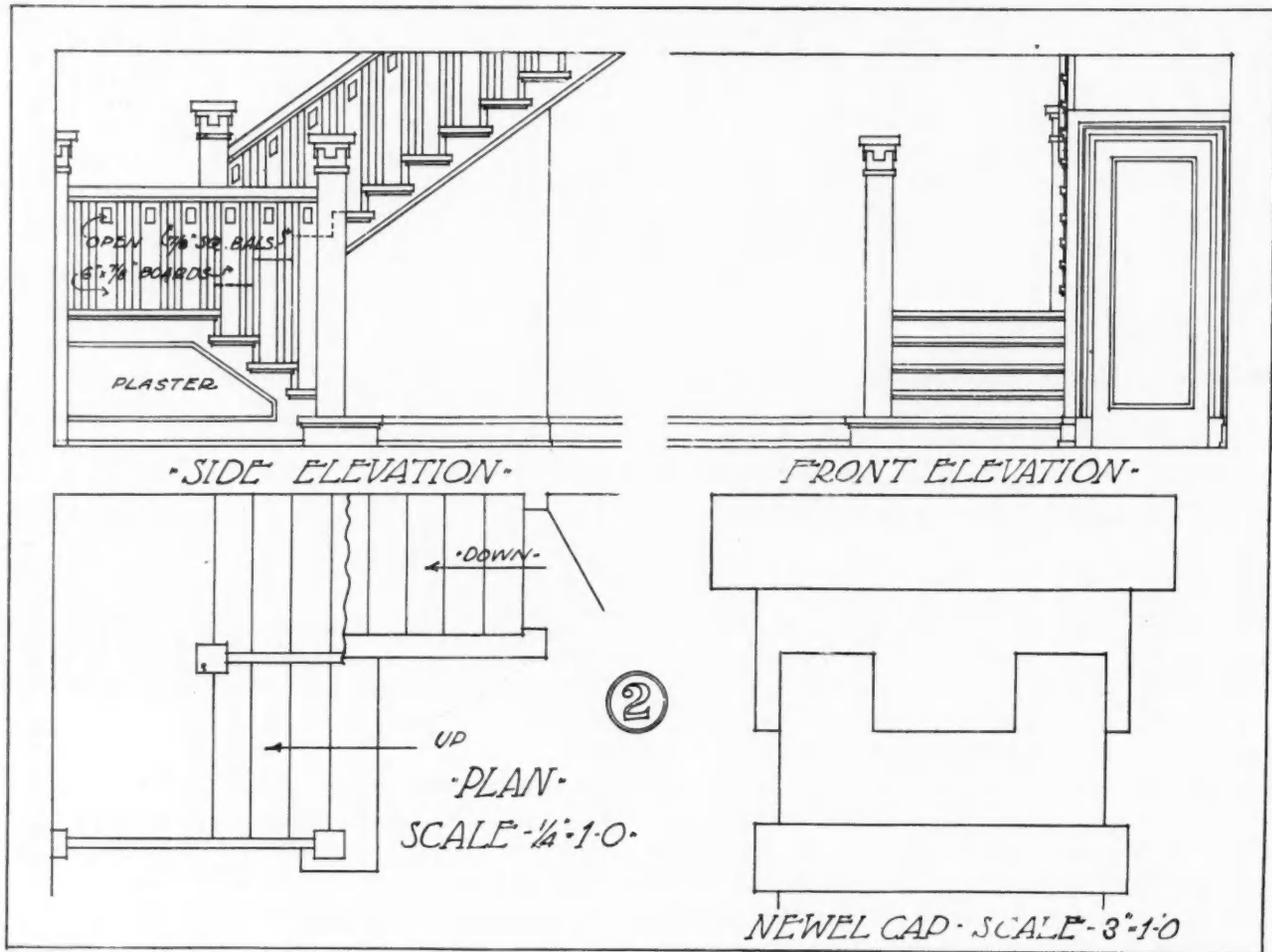
By referring to the plates reproduced upon the two pages following it will be seen that the type of design and construction to be followed in set No. 1 includes a flight of three steps to the first landing, a flight of eight steps from first to second landing and the same flight from second landing to second floor. A newel post and cap is used at the first landing to break hand rail, and square balusters forming an ornamental enclosure support this hand rail. That portion of wall under steps, as they rise, is plastered and the space formed by the second landing can be utilized for either entrance to basement steps, or for clothes closet, or possibly a convenient noiseless toilet arrangement. The scale used is $\frac{1}{4}$ inch equals one foot. Newel cap scale is 3 inches equals one foot.

Type No. 2 embodies a flight of four steps to platform landing and from there a continuous flight, without any break, to floor above. Square balusters are used, together with panel boards which have a decorative square opening, to form enclosure and support for hand rail. Wall under flight is plastered and space formed by flight rising from landing is intended for closet, or basement steps entrance. A square type of newel post and cap is used to finish landing and to form support for short flight and hand rails. Scale is $\frac{1}{4}$ inch equals one foot.

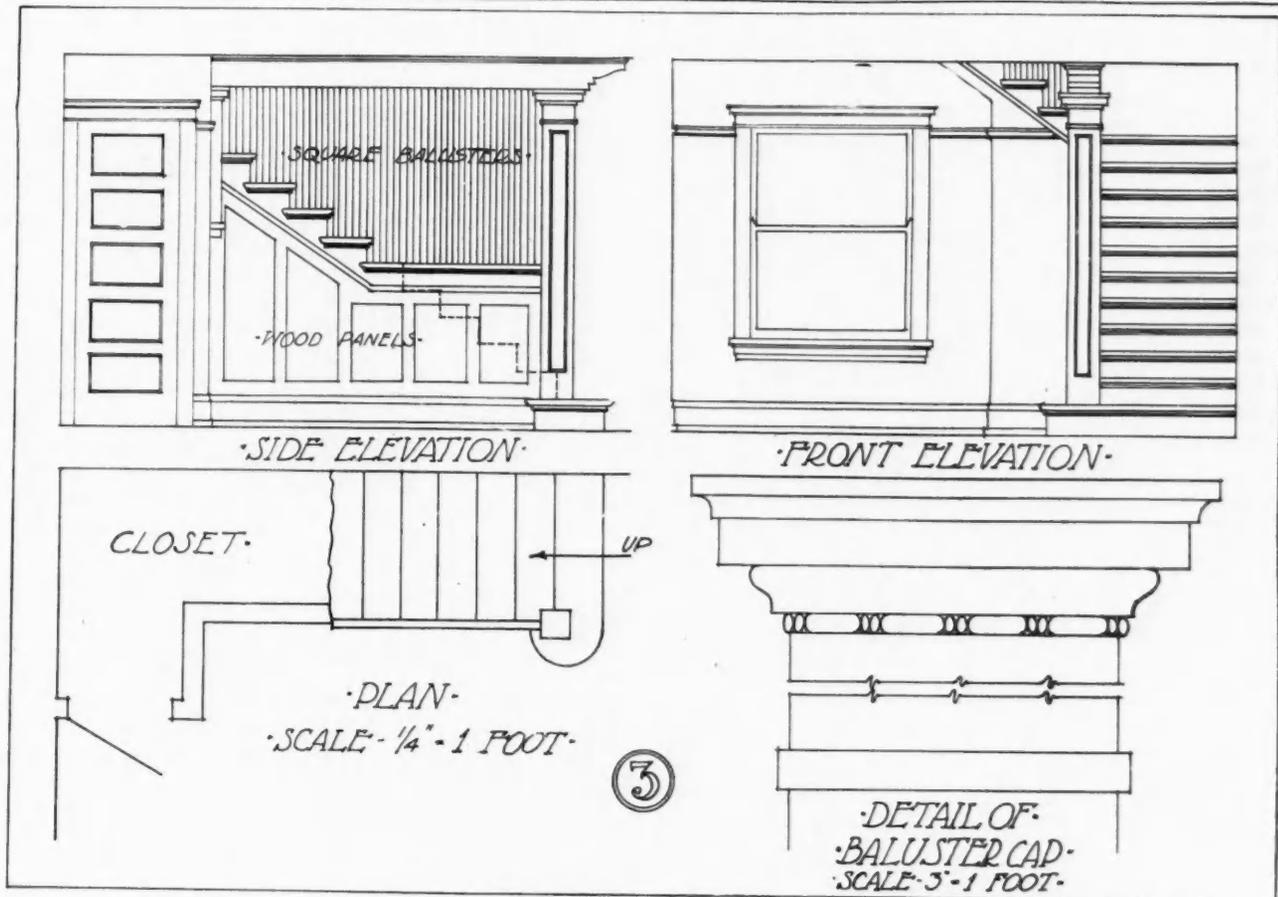
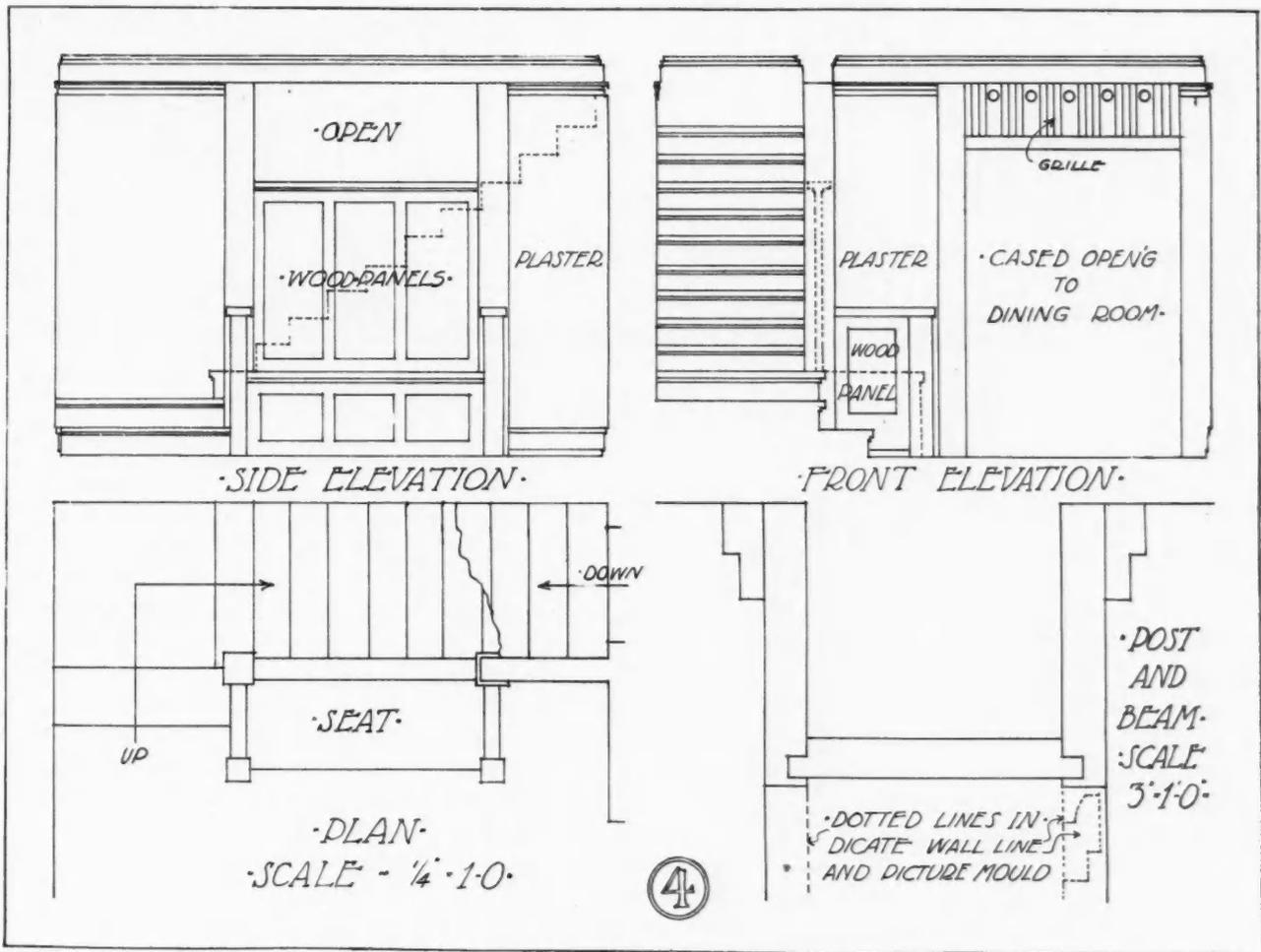
In type No. 3 a most distinctive and attractive design is adopted. First flight is of 11 steps to platform landing, then a short flight to floor. Square balusters in a sort of decorative network form enclosure. Baluster caps of square design are used. That portion of the wall under flight is paneled, rather than plastered. This can produce a most pleasing effect. Paneling now-a-days is quite popular and it is comparatively inexpensive. Any number of various woods and matchings can be used in this work. The space which is formed by the platform landing may be utilized for closet purposes. Scale is $\frac{1}{4}$ inch equals one foot. Baluster cap scale is 3 inches equals one foot.

Type No. 4 offers the post and beam built in seat and paneling design. It can be developed into a most pleasing type of stairway construction. A flight of two steps reaches landing from which runs continuous flight to second floor. The seat is built in space formed by rising flight and the wall forming back is paneled. Paneling from floor to seat ends forms arm rests and completes the solid built in effect. To the left of this seat, the wall, as flight rises, is plastered. Above seat, paneling and plaster the post and beam type of construction will in effect give an open frame design. Front elevation of this type, No. 4, shows manner of finishing wall, also wide door and decorative grilling above it.

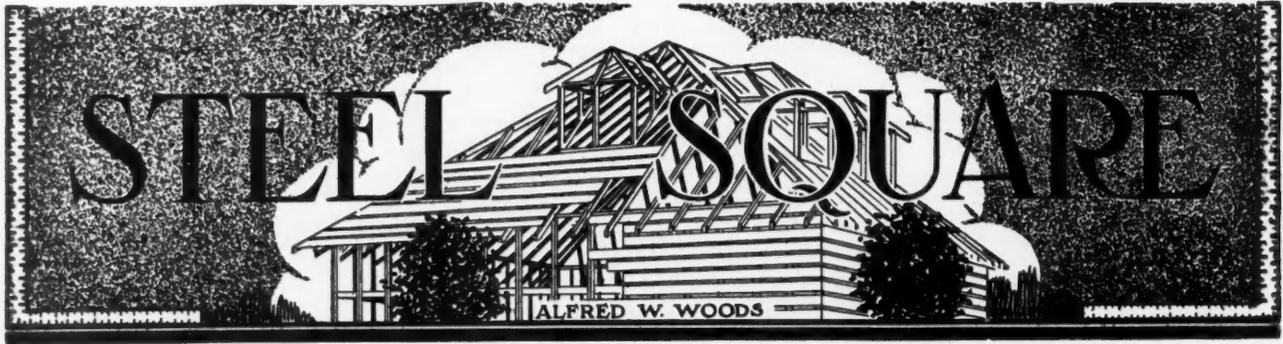
FULL PAGE PLATES SHOWING COMPLETE DETAILS ARE PRESENTED ON THE TWO PAGES FOLLOWING



TWO STAIR DESIGNS



TWO STAIR DESIGNS



Possibilities of the Steel Square

THE STEEL SQUARE AND WHAT MAY BE ACCOMPLISHED WITH IT IN CONNECTION WITH A TABLE OF TANGENTS, VERSUS THE PATENT MITER BOX

WE are going to take for our subject this time, the steel square, versus the miter box. However, in doing so, we do not wish to be understood that we are trying to put the patented miter boxes out of business, or in other words, belittle their usefulness, quite the contrary, will say, they are alright for the purposes for which they are intended, namely to cut the miters for moldings. The degree markings and the set to any angle makes a patent miter box a very useful adjunct to any carpenter shop, but the shape and weight of same make them unhandy to carry around from one job to another. But the main point we wish to bring out is that many carpenters have allowed themselves to depend too much on the use of the new fangled miter box almost to the exclusion of the

use of the steel square for such purposes, and when forced to resort to its use, other than for the more common cuts, they are at a loss to know how to proceed or even what determines the angles. Of course in cutting miters, and especially for moldings, it is necessary to use a guide to have the cut true and plumb.

The shape of the molding or stock does not always permit of accurate placing of the square to get the angle and for that reason it is necessary to have a miter box or guide, which can be quickly made of three dressed boards, nailed together trough shape

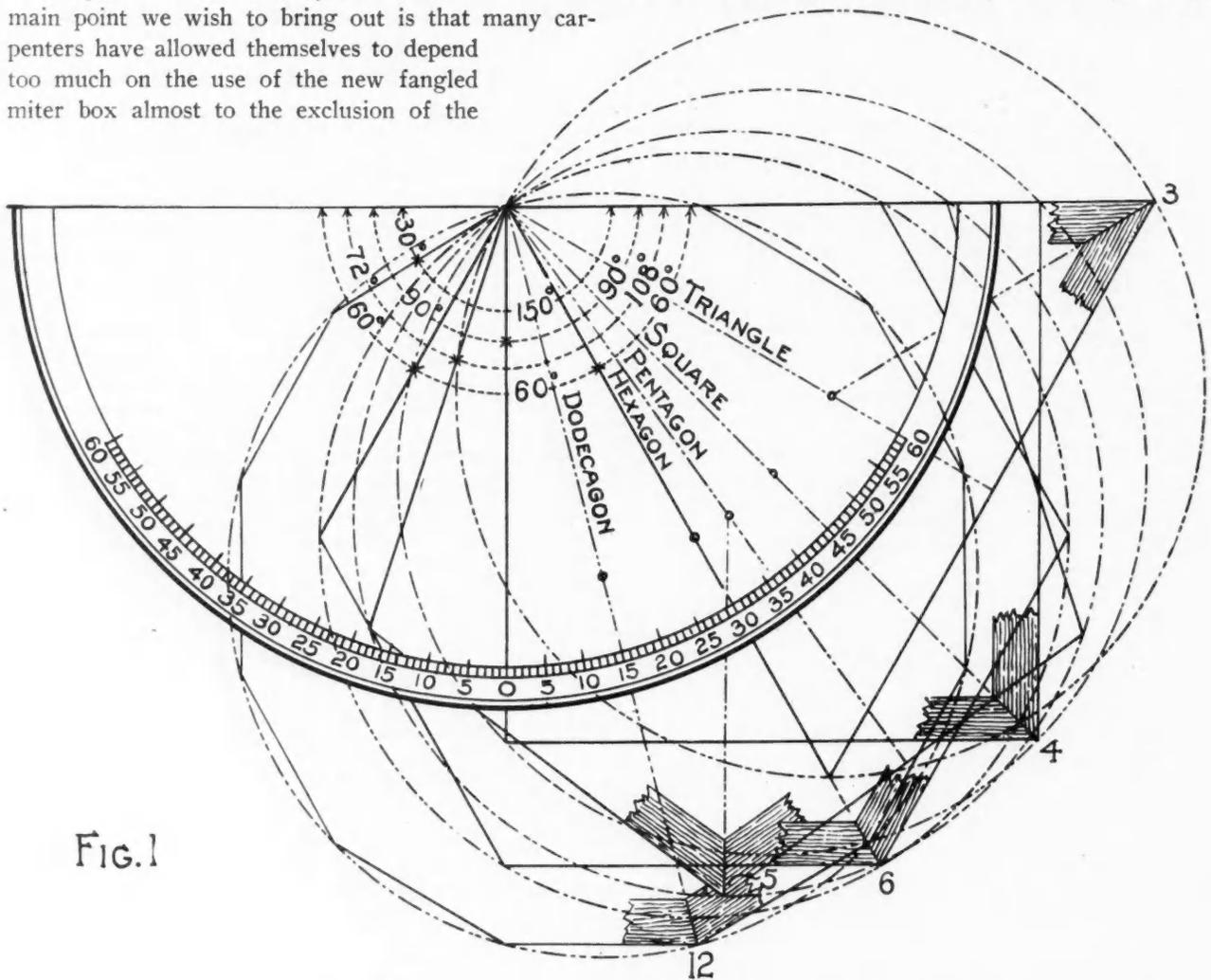
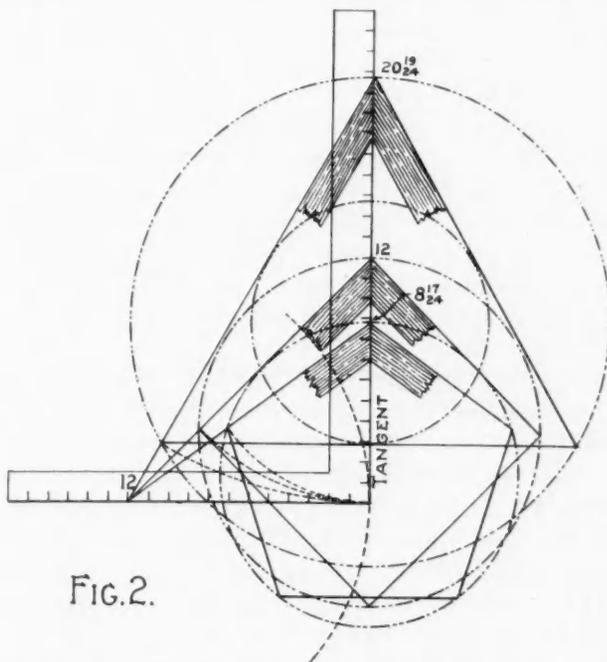


Fig. 1

and to this the steel square may be accurately placed to obtain the angle for either vertical or oblique miters.

Fig. 1 shows the degree angles as applied to the miter box. The square cut is at right angles to the box and stands at 0 and the degree markings are right and left from this point to 60 degrees, which is farther than most of the patented miter boxes will permit of giving the angle. To find the angle for any polygon, all that is necessary is to divide 180 (degrees in the semi-circle) by the number of sides in the polygon and the quotient will represent the degree of angle required for the miter. Thus 60 gives the angle for the triangle; 45 for the square; 36 for the pentagon; 15 for the dodecagon, etc. All of the above are illustrated in Fig. 1. The dotted circles in connection with each is shown as proof of the correctness of same. NOTE:—for the dodecagon or 12 sided polygon the angle is 15 degrees. The decent from the triangle thus far is 45 degrees; the more sides in the polygon the less the degree from the square cut. Therefore in a polygon of 180 sides, the angle is but one degree and as the number of sides increases, the shorter become the sides until finally in the infinitesimal the sides are no longer discernible and are lost in what we call a true circle. Therefore the seemingly humorous saying in describing a circle as being made up of innumerable short lines is theoretically correct.

We will now pass on to illustration No. 2. In this



is shown the steel square instead of the protractor and by referring to the accompanying table of degrees and tangents, any angle may be readily obtained with the common steel square. In the illustration, owing to the multiplicity of lines, only three of the polygons are shown, viz., triangle, square and pentagon. From this, it will readily be seen, that when 12 is used on

the tongue, the tangent for the desired polygon should be used on the blade and the latter will give the miter as shown. Another point, too, in favor of the steel square method, is that the tangent is equal to one of the sides when the inscribed diameter is one foot. For instance, the angle for the pentagon is 36 degrees (found as described in the former illustration) and

DEGREES.	TANGENTS.	DEGREES.	TANGENTS.	DECIMAL & COM-FRAC.
1	2.095	24	5.3427	.0416 = 1-24
2	4.100	25	5.5957	.0833 = 1-12
3	6.289	26	5.8327	.1249 = 1-8
4	8.392	27	6.1143	.1666 = 1-6
5	1.0499	28	6.3805	.2083 = 5-24
6	1.2612	29	6.6517	.2500 = 1-4
7	1.4733	30	6.9262	.2916 = 7-24
8	1.6865	31	7.2103	.3333 = 1-3
9	1.9005	32	7.4984	.3749 = 3-8
10	2.1160	33	7.7929	.4166 = 5-12
11	2.3325	34	8.0941	.4583 = 11-24
12	2.5507	35	8.4025	.5000 = 1-2
13	2.7704	36	8.7185	.5416 = 13-24
14	2.9920	37	9.0426	.5833 = 7-12
15	3.2154	38	9.3755	.6249 = 5-6
16	3.4410	39	9.7173	.6666 = 2-3
17	3.6688	40	10.0692	.7083 = 17-24
18	3.8990	41	10.4315	.7500 = 3-4
19	4.1319	42	10.8048	.7916 = 19-24
20	4.3676	43	11.1902	.8333 = 5-6
21	4.6063	44	11.4683	.8749 = 7-8
22	4.8484	45	12.0000	.9166 = 11-12
23	5.0936			.9583 = 23-24
				1.0000 = 1.

the tangent is shown by the table to be 8.7185 inches and by referring to the table of equivalents, as shown in the third section, the decimal is nearer 17/24 than any other common fraction; then 12 and 8 17/24 will give the miter, as shown.

Now, suppose a pentagon frame is desired with an inscribed diameter of 25' 5". Then multiply 8.7185 by 5/12; this will give the proper length of the sides in inches. It is for this reason that the tangents are shown to the fourth decimal place. The tangent for the triangle falls into the co-tangents and is 20/7846 and is not shown in the table, but the miter may be readily found by subtracting 60 (the degree required) from 90, which leaves 30; and the tangent for 30 is found to be 6.9283, which is practically 6 11/12 inches. Then take 12 on the tongue and 6 11/12 on the blade and the tongue will give the miter for the triangle. The length of the side then must be reckoned as one foot is to 6.9282 inches of the inscribed diameter. From this, it will be seen that any angle may be obtained from the quadrant of 45 degrees, as shown by the accompanying table.



What "Half-and-Half" Solder Really Is

"Half-and-half solder" is not half lead and half tin, but 45 per cent lead and 55 per cent tin, as one of our clients found upon analysis, writes Mr. Arthur D. Little, president of the American Chemical Society, in a recent paper on "The Abuse of Brand." He said to the salesman: "This is not half-and-half solder." The salesman replied: "It certainly is. If you want 50 and 50, you should have specified strictly guaranteed half-and-half."



Some Things About Painting of Interest to Carpenters and Builders

By R. H. Fargrave

I HAVE often noticed carpenters using white lead in oil to cement floor boards together when they are being laid, and often as a paint for the underside. White lead in oil makes a good cement, yet, for such work it is not equal to white lead in varnish. The latter is much stronger and has fewer objectionable features inasmuch as it dries more quickly, which is a most desirable thing.

White lead in oil is a slow dryer, and, the addition of dryers does not help any. Hence when the flooring is damp at the time of laying it is liable to dry and shrink before the lead-oil cement is sufficiently dry to hold it. Lead and oil do not hold well until perfectly dry. On the other hand, lead and varnish cement dries and hardens more quickly and holds better. On account of the gum it contains, which is generally Copal or Kauri, it makes a good cement by itself.

When lead and varnish is used it serves a double purpose—cement and crack filler. It should be mixed very stout and plentifully applied, filling the groove, in part, thus, when the boards are clamped in place, the cement will be pressed out of the groove into the cracks between the boards. The excess may then be removed with a putty knife. This cement filler should be colored to match the wood. The usual coloring matter used for colors to match all kinds of natural wood is either chrome yellow, burnt and raw umber, burnt and raw sienna, or a mixture of two or more of them. Try until the right shade is obtained.

More Red Lead Should be Used

While the foregoing, used in the way I have described, makes good cement and crack fillers, red lead in varnish is much better than either. Also, red lead in oil is superior to white lead in oil, but, when a natural finish is used the color is against it, as the red will show in the crack. For a floor which is to be painted it is all right. It will do if the floors are to be in very dark tones. Red lead in oil dries very quickly, and, still quicker in varnish. Owing to this characteristic it is usually bought in dry form and mixed just before it is used; for, if it is allowed to stand in oil for only a short time, it will get hard.

Hence dryers should never be used with it. As a paint for underneath floors where there is liable to be moisture, it is superior to all other paints.

In all cases possible, red lead in varnish will be found to be more satisfactory for a cement, or to paint surfaces that are exposed to constant moisture than any of the waterproof paints. I think I have tried nearly all of them. In my opinion it surpasses all other paints for metal, such as roofs, priming for steel railroad cars, bath tubs, etc. Every painter of experience knows how difficult it is to get paint to stand on galvanized iron for any length of time. If it is primed with red lead, then the next coats may be any kind of good paint desired; it will stand longer than by any other method. In view of these facts, I cannot understand why more red lead is not used.

The late Mr. V. B. Grinnell, who was an experienced painter and an authority on metal painting, cites instances where exposed metal painted with red lead was in perfect condition after forty years, there being no rust under the paint. Red lead should always be mixed in raw oil just before it is to be used. Roofs and other exposed metal should never be painted with anything that includes varnish in its composition.

Shellac Finish for Bowling Alley Floors

A subscriber in a contemporary publication asks for the best method of finishing bowling alley floors. The floor finishing question has always been, more or less, a bugbear to the painter, owing to the hard and different kinds of hard usage to which they are subjected. Outside of dwelling house floors there are more failures recorded in this branch of the painting trade than in any other. On any surface that gets hard usage, the finish must, necessarily, be a part of the surface. The finish and wood must wear away at the same time, and as it wears must remain hard and smooth. Varnish, more or less of which is above the surface, won't do, as the incessant pounding and rolling of the heavy balls soon starts it to chipping and scaling off in places, while soft oil paint is out of the question entirely.

To finish such a floor so it will last the longest possible time, get it smooth and free from imperfections, then take grain alcohol shellac, quite thin, so that it will penetrate far into the pores of the wood, and with a stiff brush work it thoroughly into the wood so that every portion is perfectly filled. Smooth with sand paper. If one coat does not fill perfectly, another will be necessary. As shellac goes into the wood farther than anything else and becomes very hard, one becomes a protection to the other, and, as both wood and shellac wear away at the same time, and, owing to the hardness of the gum, the operation is slow, nothing further need be done to it until the wood has worn away as deep as the shellac has penetrated, when the floor should be redressed and finished in the same way again.

Glue Sizing Saves in Painting Weathered Surfaces

Every one who has had to do with painting old weather beaten boards, brick and stone walls, knows it requires a vast amount of oil for the priming coat, and two subsequent coats to do a good job. Now a job that will last just as long and look as well as three coat work on old buildings may be done with two coats of oil paint, which will save, perhaps, half the oil, at least one-fourth.

Make a size in the proportion of one pound of ground glue to one gallon of water. If the surface is very bad, use a little more glue. Allow the glue to soak in cold water over night or longer. Then melt it in hot water. Have the water just hot enough to melt the glue thoroughly. If the water is too hot it destroys the tenacity of the glue to some extent.

If the subsequent coats are to be in light tints, stir in some whitening, enough to show a little when brushed on. If it is a brick wall that is to be finished in red, use Venetian red instead.

Keep this sizing warm, and brush on with a large brush. This will fill all the small cracks, and two coats of oil paint will make a good job.

A job done in this way will stand any ordinary exposure just as well as three coats of oil paint. The writer, during his thirty years experience as a painter, has always had good results by this method. Why won't it stand? Because the moisture will affect the glue, you say. Let me tell you, if the work absorbs enough moisture to affect the glue, the same would destroy any oil paint also. No. There is no danger of any trouble from the glue. A first coat of glue sizing and color will stand anywhere that oil paint will. Furthermore, a coat of glue sizing and color fills better than oil priming, consequently a smoother job when finished.



Skepticism—Touch and See

"If you want to know how little confidence people have in your word," said the milk toast philosopher, "paint your fence and put up a Wet Paint sign."



IT is better to be called a high-price man than a poor mechanic.



As a Last Resort

"Father, do lawyers tell the truth?"

"Yes, my boy. Lawyers will do anything to win a case."



Sick!

A Wichita, Kansas, child who had been absent from school brought back the following excuse when she returned: "Dear Teacher—Please excuse Jennie. She was sick and had to stay at home to do the washing and ironing."



The Things that Count

The harder you're thrown, the higher you bounce.

Be proud of your blackened eye.

It isn't the fact that you're whipped that counts,

But how did you fight, and why?

And though you be done near to death, what then?

If you battled the best you could,

If you played your part in the world of men,

Then the critic will call it good.

Death comes with a crawl, or comes with a pounce;

And whether he's slow or sly,

It isn't the fact that you're whipped that counts,

But how did you fight, and why?

—"The Colorist."



Be the Fellow that Your Mother Thinks You Are

While walking down a crowded city street the other day

I heard a little urchin to a comrade turn and say:

"Say, Jimmie, don't yer know I'd be as happy as a clam,

If I only was the feller dat me mudder tinks I am.

"She t'inks I am a wonder, and knows her little lad
Would never mix wit' notting dat was ugly, mean or bad;

I often sit and t'ink how nice 'twould be—gee whiz,
If a feller was de feller dat his mudder t'inks he is."

So, folks, be yours a life of toil or undiluted joy,

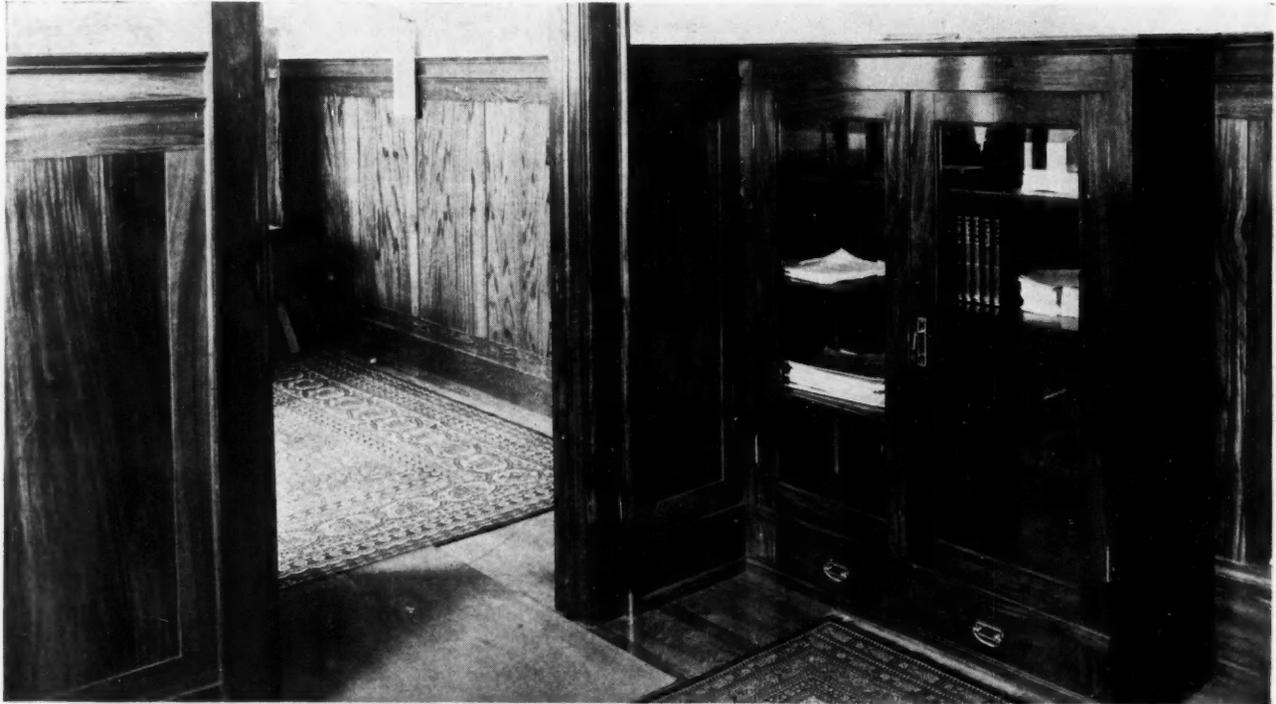
You still can learn a lesson from the small unlettered boy;

Don't try to be an earthly saint, with eyes fixed on a star—

Just try to be the fellow that your mother thinks you are.—*Scranton Times.*

Red, Sap, and Unselected Gum

THE GROWING POPULARITY OF ROTARY CUT VENEERS OF THESE WOODS FOR PANELING AND OTHER INTERIOR FINISH



Red Gum Interior Finish—Natural Colors and Grain—in the Offices of the Hardwood Products Co., Neenah, Wis.

THE beauties of gum for the finishing of fine interiors are becoming more and more appreciated by architects, builders, and owners. The latest development is the use of this "new" wood in offices.

The accompanying photographs of the offices of the Hardwood Products Company of Neenah, Wisconsin, are examples of rotary cut veneered panels in red and unselected gum, and show the remarkable



Book Keeper's Desk and Paneling in Unselected Gum

similarity of the red gum grain to Circassian walnut. The red gum panels in this particular case were finished in the natural color of the wood, by applying a coat of linseed oil, followed by a coat of shellac and two coats of varnish, the last coat being rubbed down to a dull finish with pumice stone and oil. The resulting finish is a very warm and soft shade of brown, which has all the beauties of grain and texture of the expensive Circassian walnut. The bookkeepers office is paneled in unselected gum, which takes a remarkably beautiful mahogany finish. The character and texture of the grain of this wood closely resemble that of mahogany and when properly stained and finished it gives an almost perfect imitation of the imported wood.

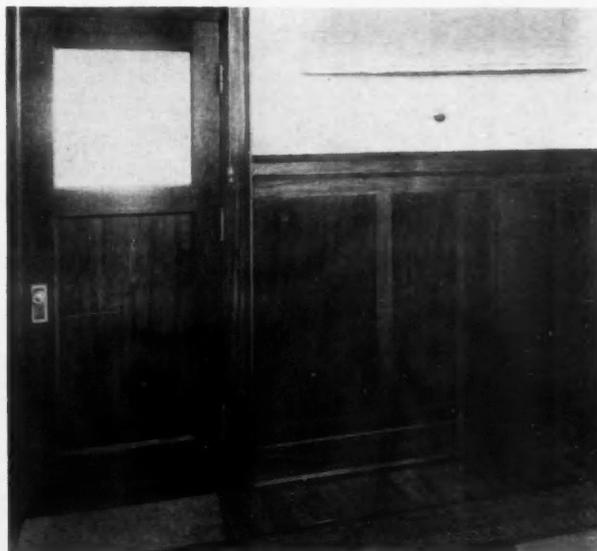
Until comparatively recent years gum wood was not widely used, and as the proper drying of the wood was not generally understood, it was found to have a tendency to warp excessively, which made it unpopular among architects and contractors. It was later discovered that if properly air and kiln dried, the stringent sap, which causes the warping, could be eliminated, and the warping tendency so entirely removed. Since proper drying methods have been introduced, the popularity of gum has increased at a remarkable rate, and architects and contractors have come to realize that one of our native hardwoods has a beauty of grain and texture, which rivals that of

any of the imported hardwoods. The enormous supply of gum in our southern forests insures an ample supply for years to come.

The grain in a gum tree shows a very marked difference between the heart and sap of the log. The so-called red gum (sometimes known as "satin walnut," "hazel," etc.), comes from the center or heart of the tree, and has the striking grain which has come into such great demand for decorative purposes in many of the most expensive hotels and public buildings in this country and abroad. The sap gum has little grain or color, and is one of the best known woods for white enamel work. The wood is very close grained, and takes paint unusually well, setting to a hard and brilliant face which does not crack or blister.

As gum has only recently come into use for doors and interior paneling and trim, the price of this wood is very low, and effects may be obtained resembling in every way the most expensive imported woods, at a price within the reach of the most moderate class of building. In many of the larger cities red and sap gum have been used with excellent results, not only in expensive hotels and club buildings, but in apartments and private residences, where very beautiful effects in Circassian walnut, mahogany and white enamel work have been obtained at a fraction of the cost of imported woods.

The unselected grain of this wood is particularly adaptable where a mahogany stain is to be used. As the name implies, the unselected grain is a mixture of



Doors of Gum Veneer to Match Balance of Interior Trim

the heart and sap, and when mahogany stain is properly applied, presents a striking similarity to the real wood. In the accompanying photographs, the book-keeper's office is paneled in unselected gum and the character of the grain can be seen very readily. Veneered doors and panels in this wood can be bought in many localities at a low figure and have so many points of excellence that builders are using them freely.

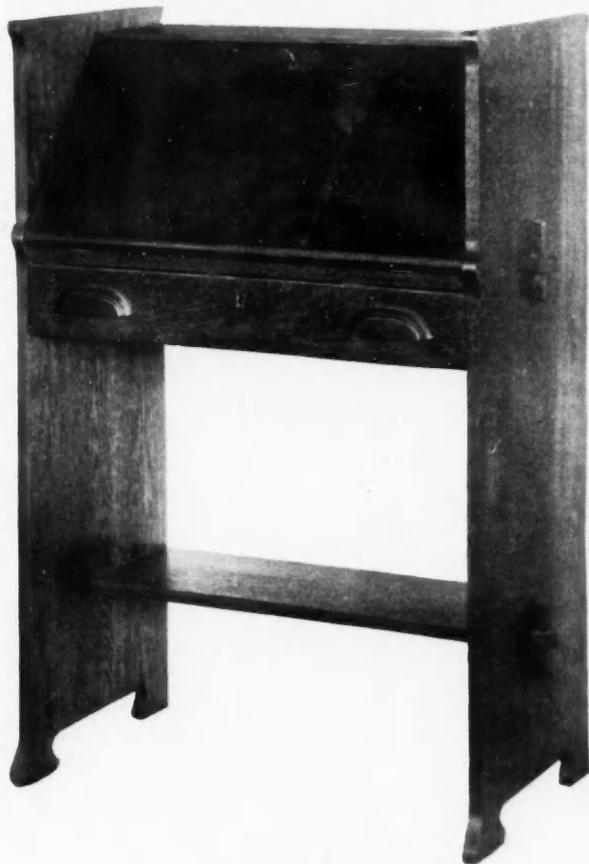


Paneling of Rotary Cut Red Gum—This Finish Produced with one Coat Linseed Oil Followed by a Coat of Shellac and Two Coats of Varnish, the Last one Being Rubbed to Dull Finish

so as to give a rigid piece of work. The whole is hung from the top of the main compartment. This is done after the finish has been applied.

For a finish the following will be suitable: After thoroughly scraping and sandpapering all the parts apply a coat of stain of a color desired. Allow this to dry over night, then sandpaper lightly with fine sandpaper, number 00. Again apply the stain, this time diluting it by the addition of an equal amount of solvent. This second coat will help to bring out the highlights. Sand this when dry with fine paper and then apply a coat of thin shellac. The shellac coat will prevent the coloring matter that is in the filler coat which is to follow from discoloring the highlights, but does not in any way interfere with the filler.

Sandpaper the shellac lightly, then apply a coating



Writing Desk

of filler rubbing off the surplus in the usual manner.

After the filler has hardened over night sand it lightly and apply a coat of shellac. Upon the shellac after it has dried apply several coats of wax. Sand the shellac lightly before applying the wax and do not have the shellac very thick unless a high gloss is wanted.

How to Make a Book Rack

For the benefit of the boys a simple piece of woodwork is appended—a book rack. It is simple in its construction, but thoroughly correct and substantial.

STOCK BILL FOR BOOK RACK.

Base, 1 piece, $\frac{3}{4}$ by $5\frac{3}{4}$ by $15\frac{1}{2}$ inches, S-2-S.
Ends, 2 pieces, $\frac{3}{4}$ by $4\frac{3}{4}$ by $5\frac{1}{4}$ inches, S-2-S.

A boy will probably find a piece of hard wood, such as oak, too much for his strength when it comes to the vertical paring of the mortises. It will be well, therefore, if he can secure it, to make use of chestnut. This wood is easy to work, yet has the beautiful grain like that of the oak and will finish just as beautifully and with the same wood finishing process as was described above for the desk.

Square up the base in the usual manner, but do not put on the chamfer until the mortises have been laid

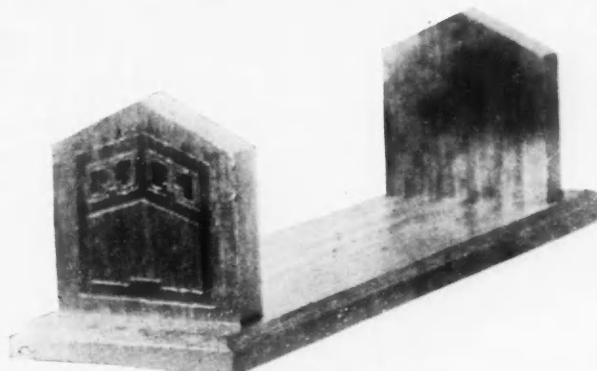


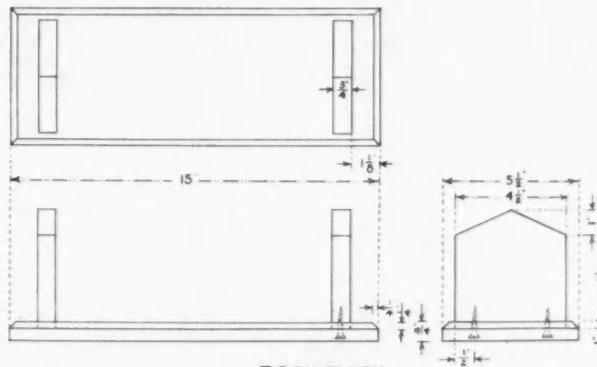
Table Book Rack

out. The mortises are best laid out after the end pieces have been shaped and the mill-marks removed from their board surfaces. The reason is obvious.

Locate one side of each mortise and score a knife line across. By superposition locate and score a second line at each end. Gauge for the ends of the mortises and then chisel them to proper depth.

Thoroughly sand the parts, then fasten the ends by means of screws, as shown. Glue will assist in holding the parts rigidly, though a well chiseled joint fastened with screws makes a firm fastening.

The ambitious beginner may, if he so desires, place a decorative design upon the ends. This is done by first making a design upon paper full size. Trace this on the wood by means of carbon paper. With a small



BOOK RACK.

chisel or a nail filed to a chisel edge make a slight groove about the design, just deep enough to break the grain. This is to prevent the stain from "running." Apply wood dyes or spirit stains as fancy dictates, then finish over these with filler just as if they were not there. The filler will clear off and leave the stains the proper color.



Plans for Modern Type Barn

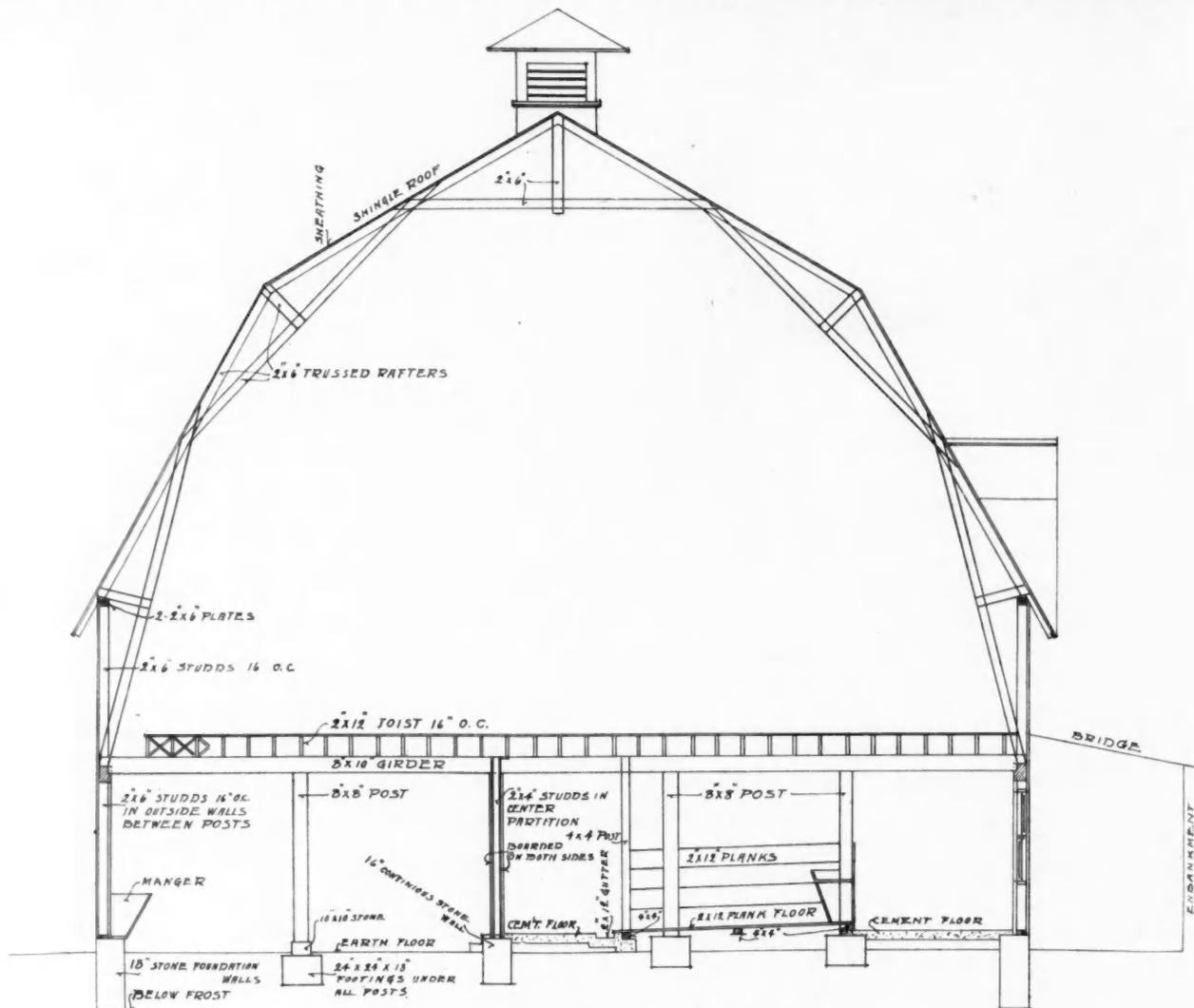
COMPLETE SET OF WORKING DRAWINGS OF A LARGE GAMBREL ROOF BARN

NO buildings of the present time are receiving more serious consideration in their design or construction than are our barn buildings. And there is a big reason for this carefulness in the erection of buildings of this particular type.

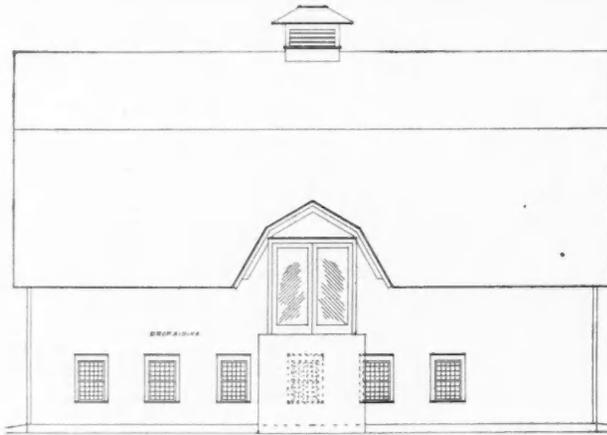
Farmers have come to know through bitter experience the great harm dilapidated, unsanitary, barn structures can do and do do every minute they are in use. They have realized that any live stock whose bodily function is one of production, must have comfort in its widest sense if they are to return a profit

to their owner. And it has further been demonstrated many times within the past few years that the barns of the "older" type were no more economical, than efficient, when compared with present day standards.

In the construction of any type of barn building at the present time it is essential that certain particular purposes be absolutely accomplished. Chief among these important features are the keeping of animals and farm produce dry; provide for maintaining at all times a proper temperature; plenty of light and pure air; cleanliness and arrangements for easily cleaning



Cross Section Showing Self Supporting Roof Framing



Front Elevation

and the various details followed throughout ground and embankment floors.

The embankment floor has all necessary grain bin and hay mow space, haychutes, barn floor and storage room.

Exterior finish is of drop siding and the roof is shingled.



Mineral Wool as a Mouse Stop

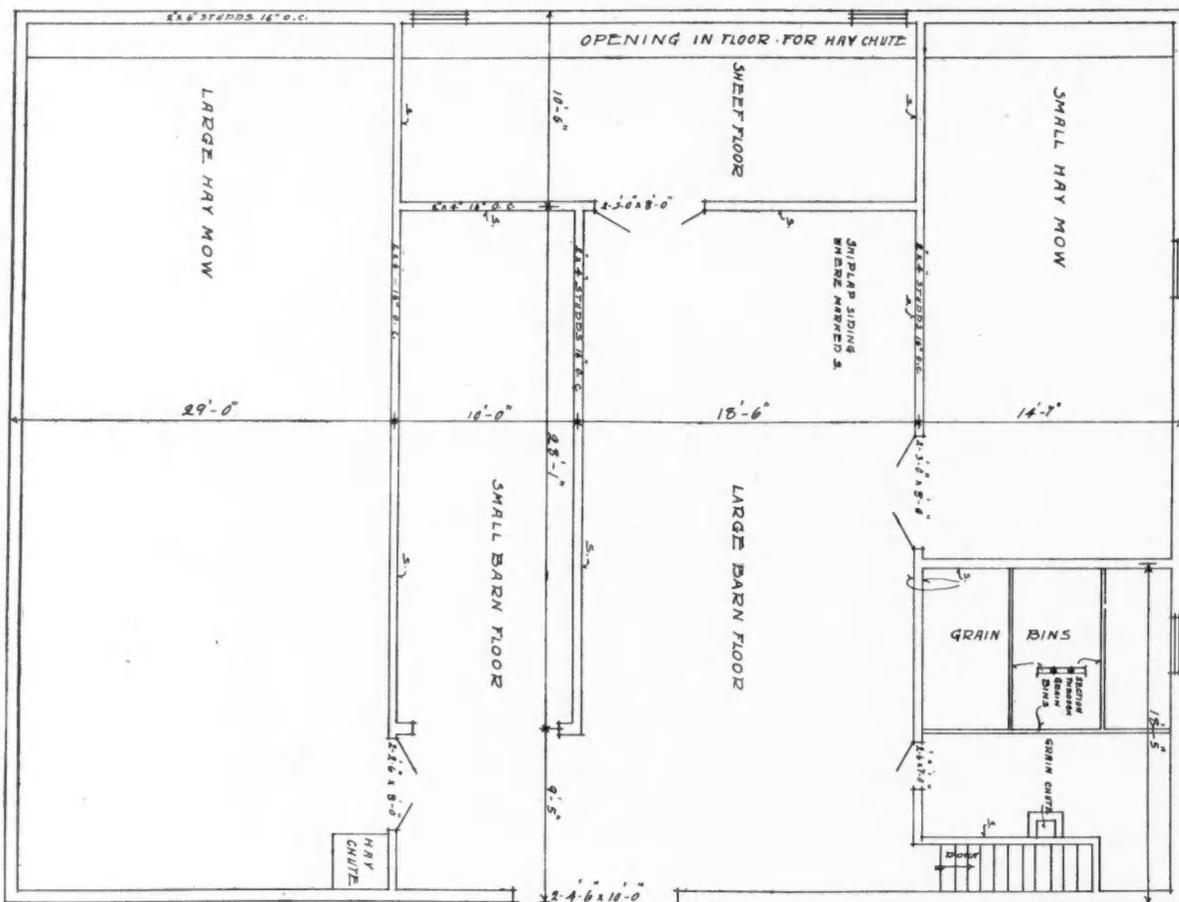
In every well-built house provision should be made against rodents. Tin has proven cheap and effective

for this purpose, if placed so that they cannot work their way between studding and floor joists. The first step in this process is to extend the floor boards against the outside sheathing, or if it be a brick house against the bricks, carefully cutting the boards around all studding. Those floor boards where they project should be covered from stud to stud with tin turned up one inch and thoroughly tacked to sheathing and studding. But where salmon brick or any other light, porous brick may be bought for \$4.00 or \$5.00 a thousand it would be about as cheap to fill in between the studs with a half dozen courses of brick laid in mortar. This has the advantage over tin of forming a very efficient fire stop.

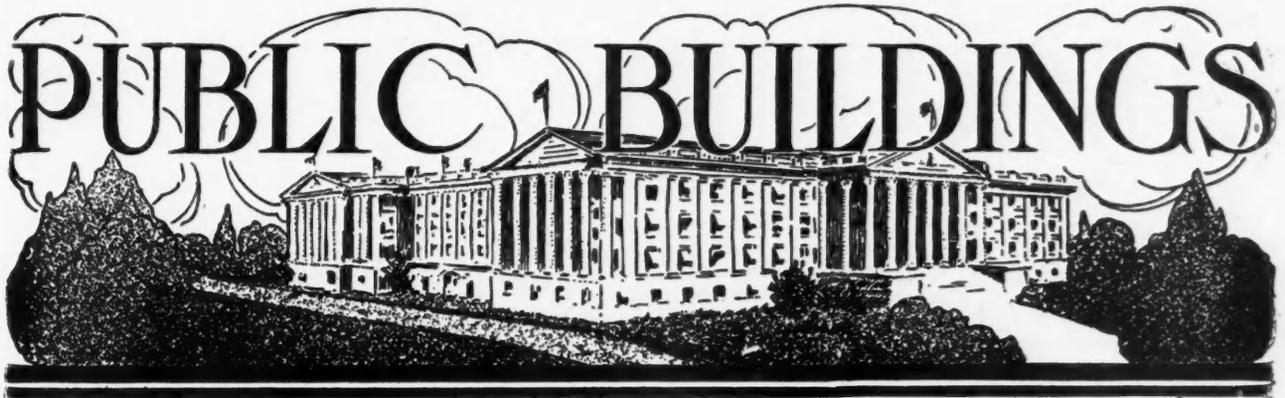
Better than either of these mouse stops, if the owner will stand the expense, is to fill all spaces in outer walls or partitions with mineral wool. This offers considerable sound and heat insulation as well and burns slow enough to discourage an ordinary fire.

Where partitions are set on the flooring or on a sole piece, a continuous strip of tin two inches wider than the studs should be set under them and tacked down.

These precautionary measures make no showing for the money spent on them, and require close inspection while in progress, but they do much to increase the comfort of the inhabitants.—*The House Beautiful*.



Embankment Floor Plan of Barn



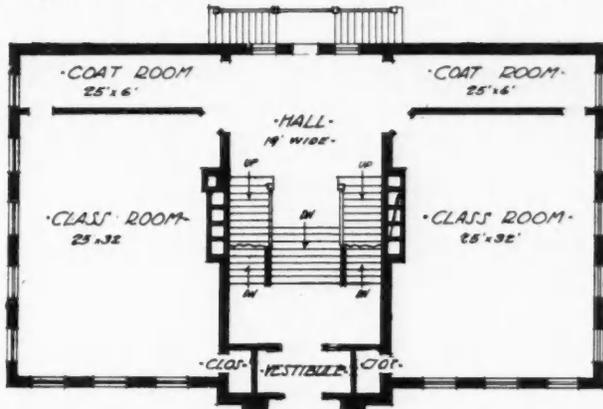
School House Planned for Future Growth

ARCHITECT'S PERSPECTIVE AND FLOOR PLANS OF SCHOOL HOUSE DESIGNED TO PERMIT ADDITION WHEN REQUIRED

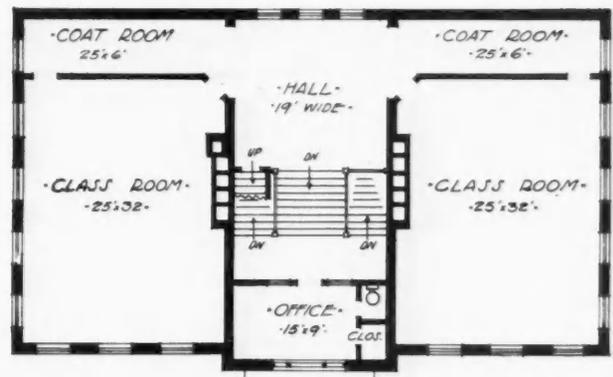
THE accompanying perspective and floor plans are those of a school house planned by G. W. Ashby, Architect, of Chicago. The unique feature of this design is that provision has been made to permit the erection of an addition similar to stand-

ing structure, at the rear of building, when attendance demand would so require.

Note that as designed ample class room, cloak room and hall space, also excellent lighting has been provided.



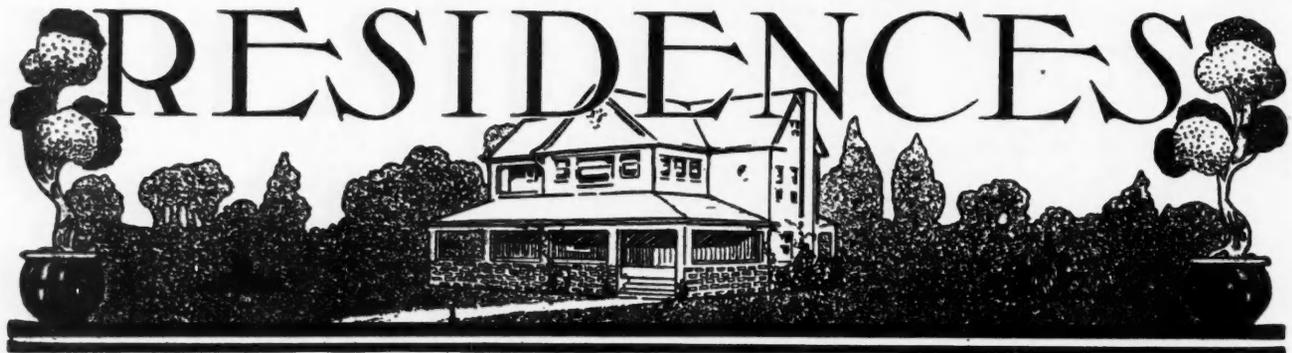
First Floor Plan



Second Floor Plan



Front Half of Future Eight-Room School Building—G. W. Ashby, Architect



Plans for Five-Room Bungalow

ARCHITECT'S PERSPECTIVE AND COMPLETE SET OF WORKING DRAWINGS OF AN ATTRACTIVE BUNGALOW

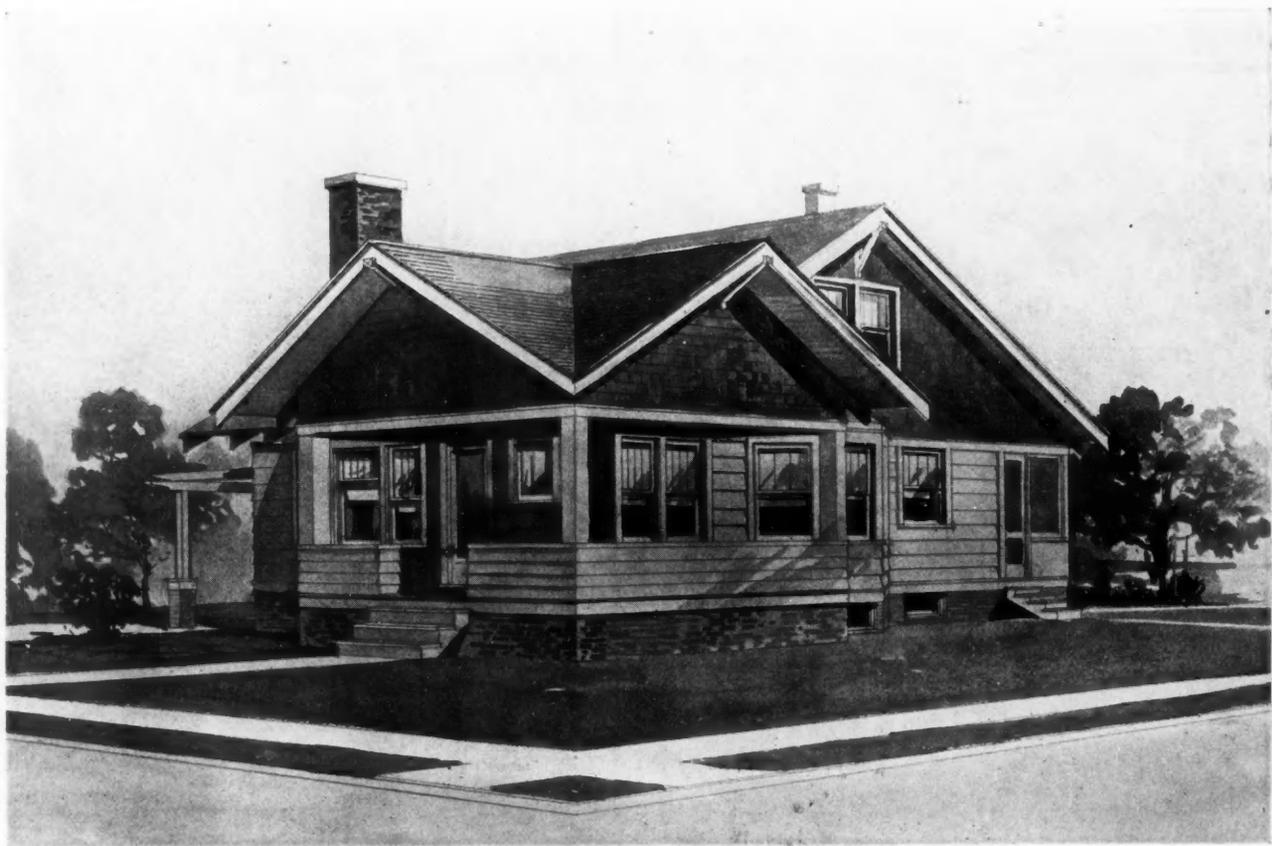
PEOPLE, generally, are reaching the point where they demand that every bit of space in their home—regardless of its size—be utilized in a practical, as well as pleasing and attractive manner. And with the advent of the bungalow and its almost immediate rise to widespread favor the end of the awkward, waste space, type of building came.

The modern bungalow makes for a concise, practically useful type of construction—if nothing else. And you, who are called upon time and again to advise and recommend as regards the building of a home, best keep this in mind.

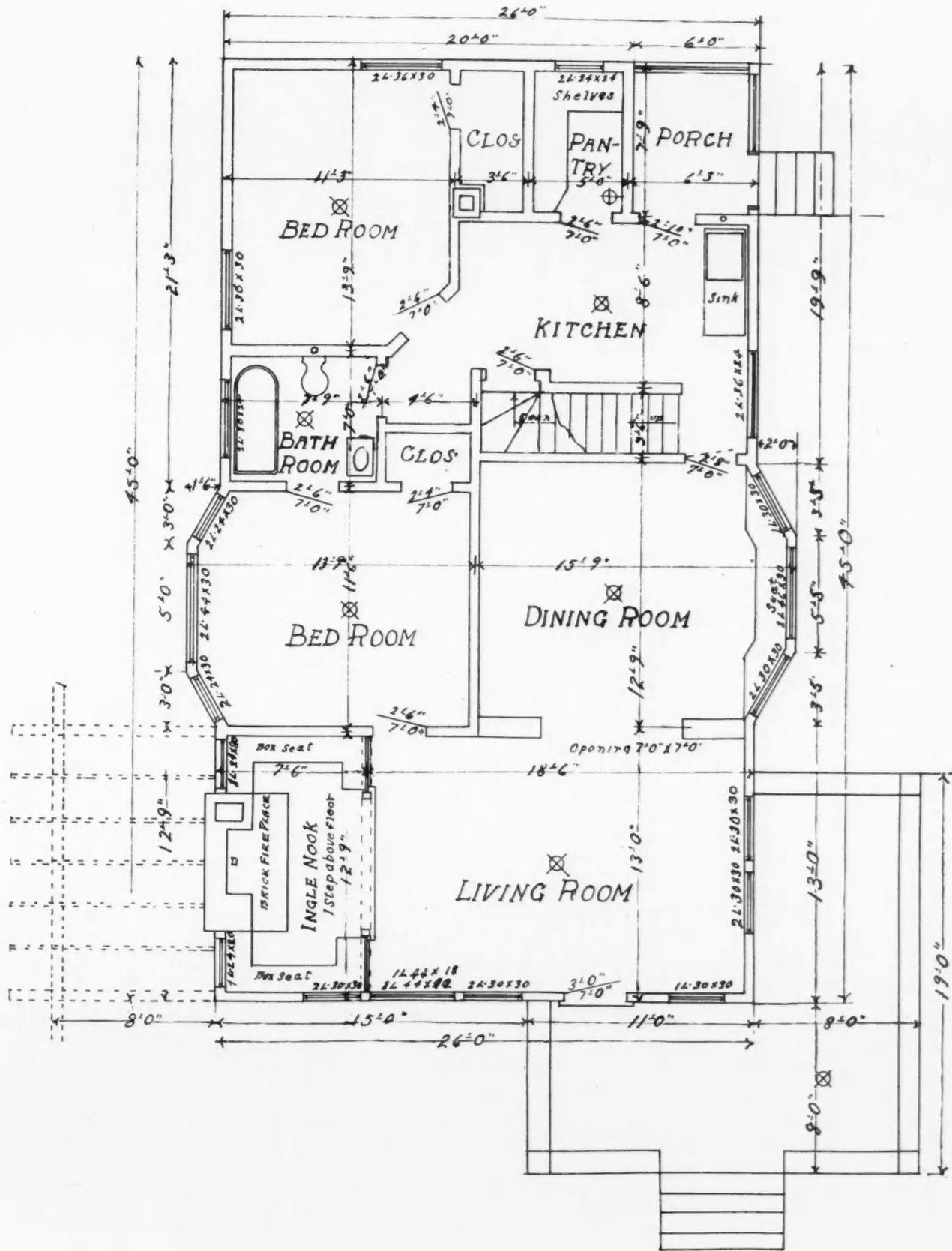
The readers of this department are afforded an opportunity, this month, to delve into and solve the mysteries pertaining to the design of a modern five room bungalow.

This bungalow, of which perspective and detailed working drawings are shown, was designed for S. A. Helch of Grayville, Illinois. Exterior finish is clapboarding with shingled roof. Reference to the floor plan will show that a sufficiently large and pleasantly arranged porch has been provided. Entrance is had direct into large well lighted living room, which features in its design an angle nook, raised one step above living room floor. This nook has the large brick fire place that is so universally popular and upon each side the built in wall box seats. The paneling effect is used in the nook to emphasize the substantial type it suggests.

From the living room direct entrance is had into dining room and also bedroom. Both rooms are well lighted.

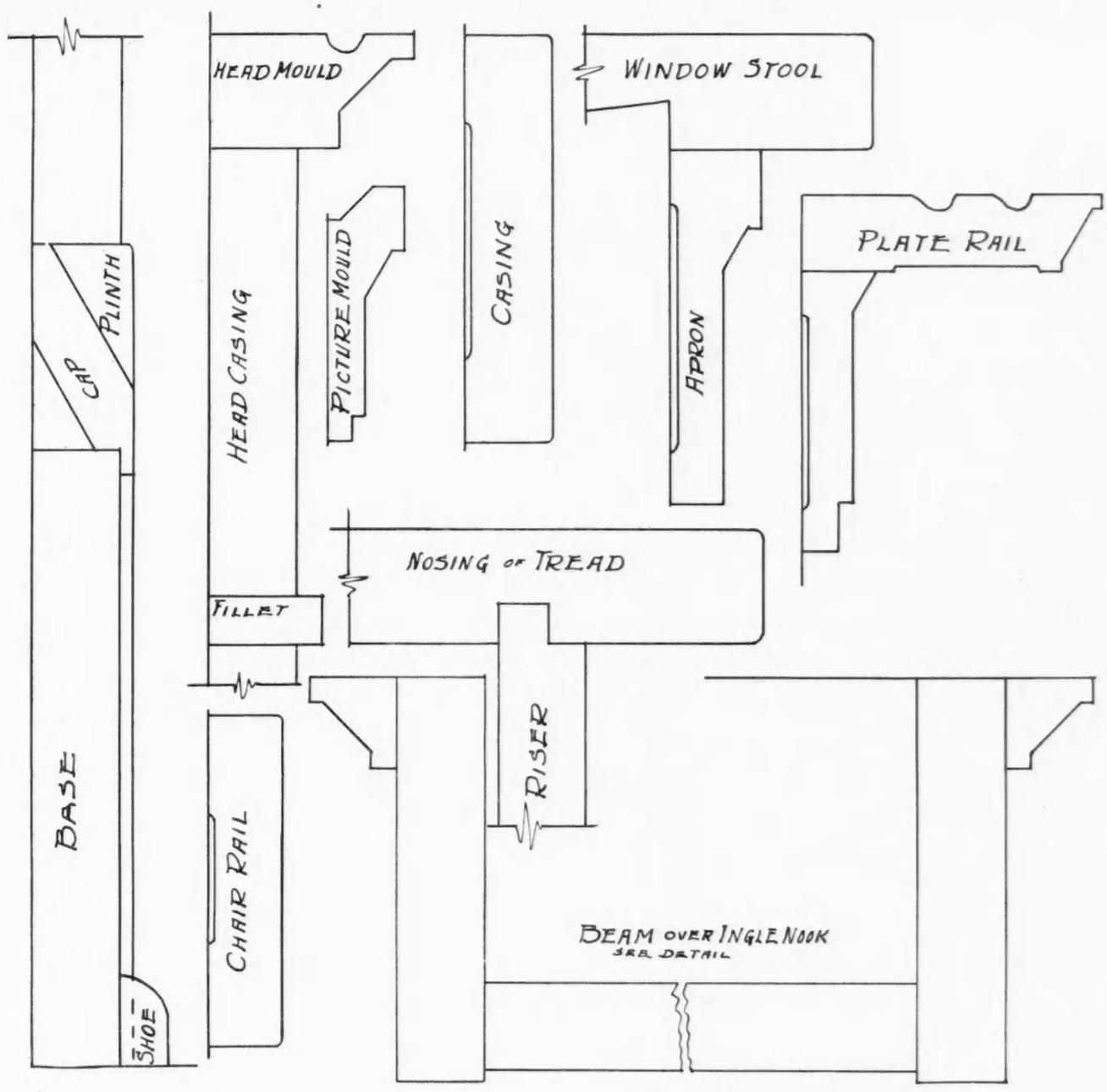


5-Room Bungalow, Designed for S. A. Helch of Grayville, Ill.
COMPLETE WORKING DRAWINGS FOR THIS HOUSE ARE PRESENTED ON THE 4 PAGES FOLLOWING



MAIN FLOOR PLAN

(Bungalow Shown on Page 70)



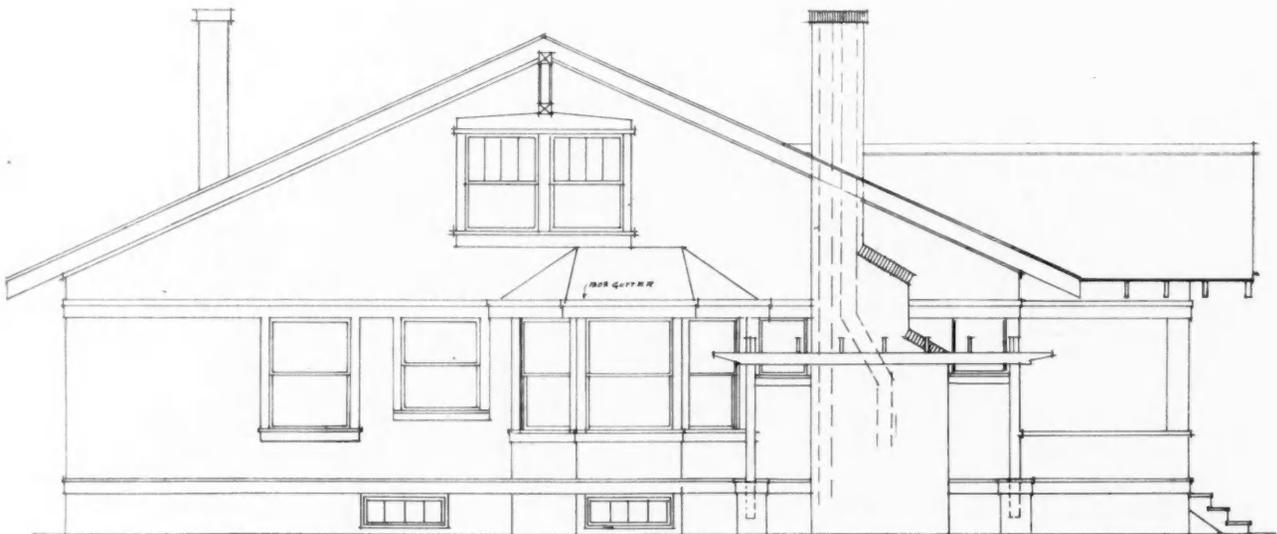
RIGHT SIDE ELEVATION
 (Bungalow Shown on Page 70)



FRONT ELEVATION

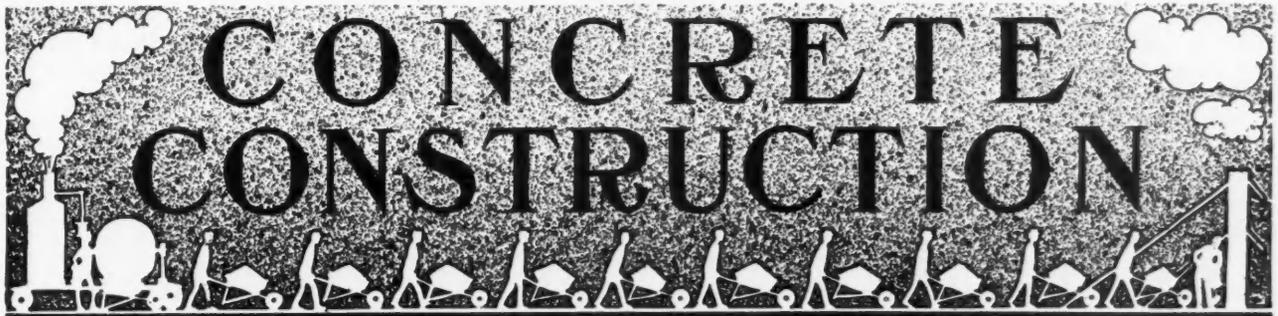


REAR ELEVATION



LEFT SIDE ELEVATION

(Bungalow Shown on Page 70)



Everlasting Water Tanks

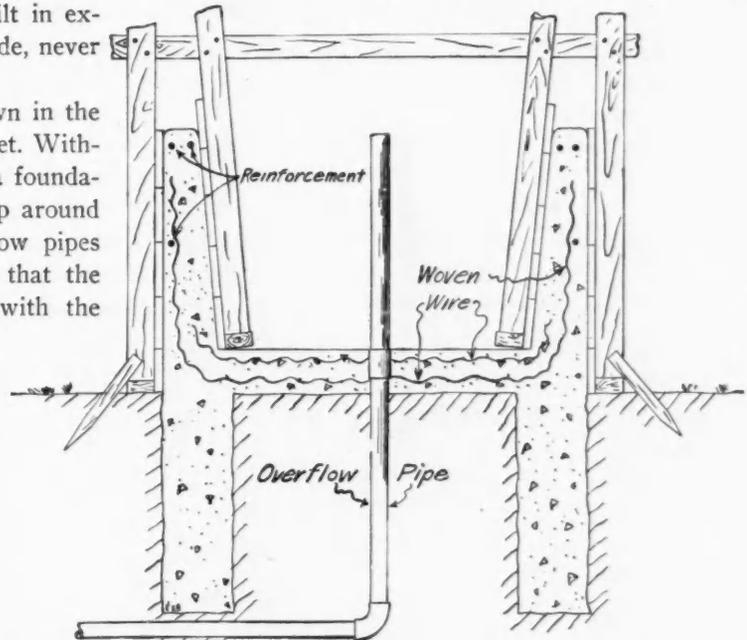
HOW STOCKMEN BUILD THEIR OWN CONCRETE TROUGHS—METHODS RECOMMENDED BY THE ASSOCIATION OF AMERICAN PORTLAND CEMENT MANUFACTURERS

MANY farmers and stockmen want to know how to build their own concrete watering tanks and troughs. The method is easy and a tank is not expensive. To explain the plan, a horse and cattle tank is described below which holds 30 barrels of $31\frac{1}{2}$ gallons each. If desired, smaller or larger troughs, round or square, may be built in exactly the same manner. Such tanks, well made, never crack, wear out or cause mudholes.

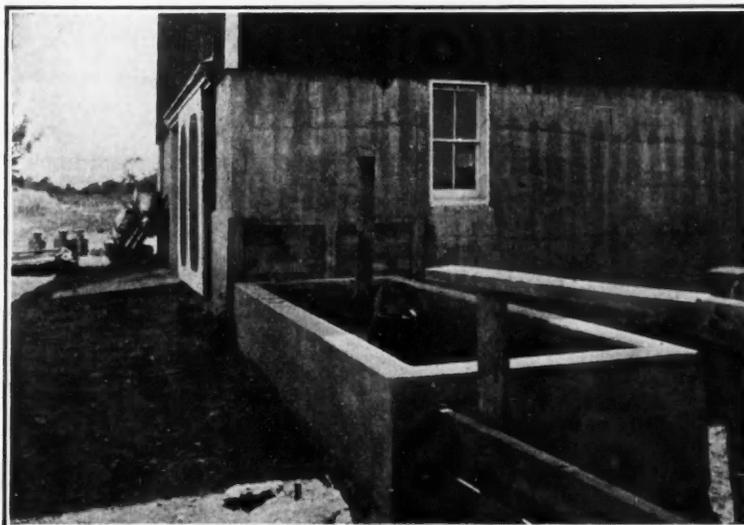
To build an oblong tank like the one shown in the picture, mark out the ground plan 5 by 14 feet. Within these lines scrape away all trash and dig a foundation trench 10 inches wide and $2\frac{1}{2}$ feet deep around the entire tank. Lay all in-flow and overflow pipes (not less than $1\frac{1}{2}$ inches in diameter), so that the ends, fitted for connections, will be even with the finished bottom of the tank.

Before digging the foundation trench, build the forms and have all materials on hand. For forms use 1-inch siding on 2 by 4-inch uprights spaced 2 feet apart. The outside form is a bottomless box 5 feet wide by 14 feet long, inside measurements. Make it 3 feet high to provide for a 6-inch floor and a clear depth of $2\frac{1}{2}$ feet. The inside form must be narrower and shorter to make provision for walls 5 inches thick

at the top and flaring to a thickness of 8 inches at the bottom of the tank. When ice forms, this slope allows it to slip up the tank walls instead of pushing directly against them. The sides and ends of the forms may be made separate and put together in place; or, if there is sufficient help, each form may be entirely



Cross-Section Showing Forms and Tank with Reinforcement



Concrete Tank with Removable Tank Heater

completed and set up as one piece. The forms are held in position by 2 by 4-inch liners at top and bottom and, if necessary, by sloping braces nailed to stakes driven in the ground. Cut strips of heavy woven wire fencing long enough to cover the bottom of the tank crosswise and to project up into walls to within 6 inches of the top, and likewise a strip 4 feet longer than the inside length of the tank.

With the forms ready, mix the concrete 1 part Portland cement to 2 parts sand to 4 parts crushed rock. In measuring the materials, count 1 bag of cement equal to 1 cubic foot. If bank-run gravel is used, mix the concrete 1 part cement to 4 parts gravel. Fill the foundation trench with concrete. Set the outside form in place. See that it is level, so that the

tank will be level and can be entirely filled with water. Lay the 6-inch bottom reinforced 1½ inches from the under side with the short lengths of woven wire crosswise and 1½ inches from the upper-side with the long strip of fencing. Bring up the extra length of wire so that the ends will project up into the future side-walls and can be fastened to the reinforcing rods. (This wire reinforcing in the bottom will prevent possible cracking due to heaving by frost.) Finish the surface of the bottom the same as for a sidewalk. Do not let concrete get into the in-flow and over-flow pipes.

With the bottom finished, immediately set the inside form in place and fill the wall space with concrete mushy wet. Half-way up the side, and 1 inch from the outside, lay a ¾-inch rod (or several hooked together) entirely around the tank. Again 2 inches from the top and 1 inch from both inside and outside, imbed two more ¾-inch rods in the concrete. Round the top edges of the tank with a trowel or a sidewalk tool. If a tank cover is desired, insert ½-inch bolts, heads down, in the soft concrete with sufficient length above the top of the wall to pass through the wooden cover and to receive a nut and washer.

When the tank is three days old, remove the inner form and paint the inside of the tank with a mixture of cement and water as thick as cream. Screw into the over-flow connection the necessary length of over-flow pipe. The tank may be used in ten days provided the outside form is left in place. If the outer form is removed at the same time as the inner, do not use the tank for two weeks.

Bill of Materials

Crushed rock.....	6½ cu. yds. @ . \$1.10.....	\$7.15
Sand.....	3½ cu. yds. @ . 1.00.....	3.25
Portland cement.....	10½ barrels @ . 2.50.....	26.25
12 Rods.....	¾" x 10', 45 lbs. @ . 0.02½.....	1.00
Total.....		\$37.65

By getting prices from local dealers, the cost may be found to be less. Such a tank is by far the cheapest to be had, since it never needs repairs and never wears out.



Reinforcing Through Expansion Joint

WHY SOME REINFORCED CONCRETE WALLS ARE RUINED IN COLD WEATHER

By C. W. Older

One of the greatly discussed features of every concrete job is the expansion joint. The joint itself, of course, is familiar to all engineers, but, in many cases there is no provision made for the reinforcement of it.

When reinforcing bars are allowed to stop at both sides of the joint, a number of inconveniences may result. In low temperature the joint will open. In a heavy retaining wall with a well anchored footing, this may not be very serious. A thin wall would be different. Take, for instance, the spandrel wall of a concrete arch bridge. The expansion joint will be

located where the wall butts against the pilasters. When the bridge is completed, there will be a great pressure of back fill from the inside, tending to force

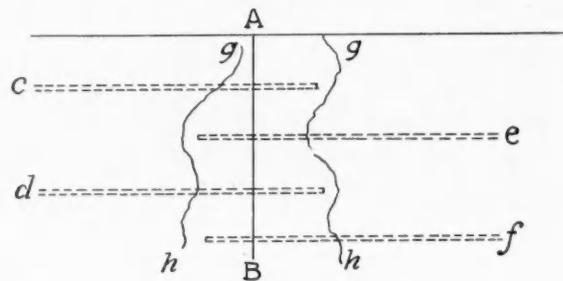


FIG. 1.

the wall outward. By using a triangle or socket joint, this can be avoided, as long as the weather is warm, but in cold weather the joint opens. This action the first year may not be noticeable, but eventually this wall will crack just above the arch. In a concrete house there is a little tendency of the floor beams to force the wall outward, although not to a very pronounced degree. Walls can be designed heavy enough to overcome, this, but that is expensive. The strength of the walls should be in their unity instead of their weight.

In attempting to overcome this condition, some designers have made a bad matter worse by running the

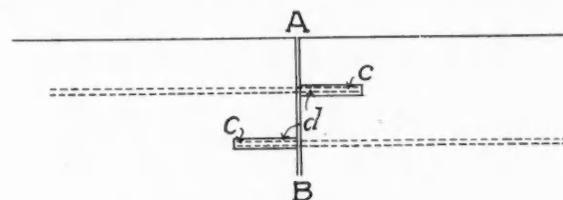


FIG. 2.

horizontal reinforcing bars through the expansion joint. A number of such examples could be cited. When the temperature dropped to around zero, the concrete and steel contracted considerably, with the result that the bars from one side cracked the wall on the opposite side of the joint. As in illustration, A B is expansion joint, c, d, e and f are reinforcing bars and g h are cracks caused by the contraction of both concrete and steel. It is a well known fact that concrete is a very good adherent to steel. Now, if provision had been made to allow the ends to slide a short distance in the concrete, these cracks would never have occurred. An iron sleeve or tube about one-eighth of an inch larger in diameter than the rod extending from the joint end of the reinforcing bar, would allow for the contraction and would also hold the rigidity of the wall. This design can be illustrated by A B representing the expansion joint, c the open end sleeve or tube, and d the reinforcing bar. It can be easily seen that by allowing the reinforcing rod d to slide in sleeve c, there will be no tendency to crack the concrete by contraction, but we have the longitudinal benefit of the bars also.

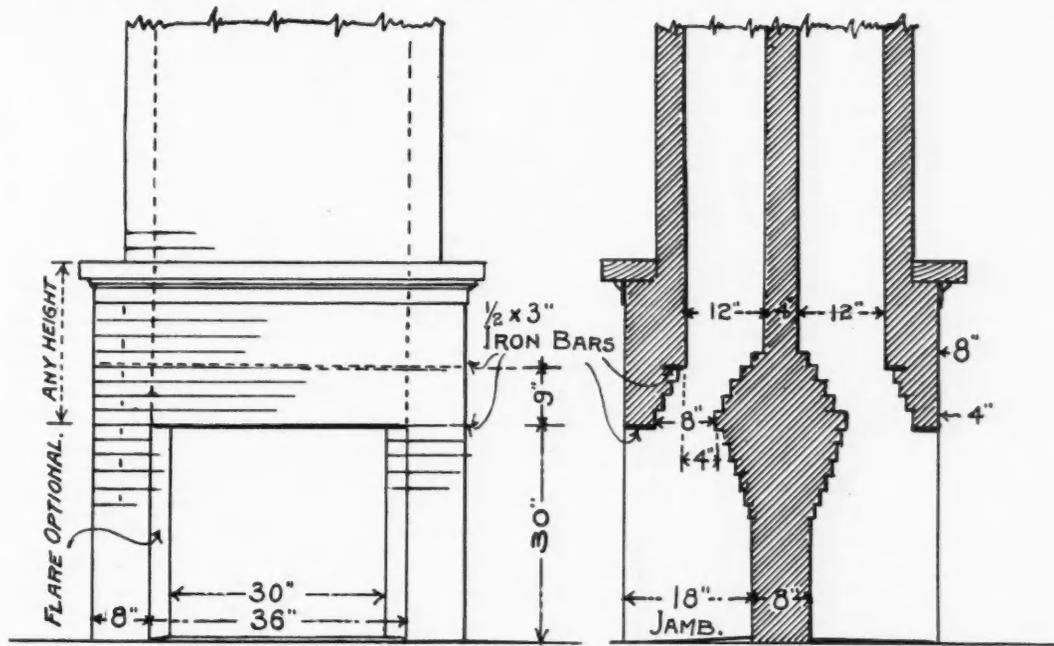


Our Readers are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Carpenters and Builders

A Smokeless Wood Burning Fireplace

To the Editor: Convent, La.
 In the interest of Mr. Clare, of Georgia, inclosed are details of wood burning chimney that will give the required demands. It is very simple to build a chimney that will not smoke; but it requires a little more material, and, of course, a little more labor. Now one cause of bad chimneys is that they are not usually deep enough; that is, in the jambs. Never make same less than two brick deep, and the throat 6 to 8 inches at first iron bar.
 Now, from that bar, your draft is formed. See that incline? Insist on getting it; and, as I said before, the deeper the

carpenter has poor chance," in which the author, a gentleman in St. James, Minn., who styled himself "Architect and Builder," asserts it to be his opinion and belief that when a boy decides to learn the carpenter's trade he deliberately chooses the very worst of all the occupations carried on in this world today. "If a boy wants to learn a trade, let him learn one that will bring him on a level with the rest of the world" are the words in which he expresses his contempt for the carpenter's trade.
 He sees an alluring prospect of advancement for the boy who will get a job in a general store or around a railroad office; but for the boy who would learn the trade of carpenter



FRONT ELEVATION OF WOOD BURNING FIRE PLACE.

SECTION THROUGH DOUBLE (BACK TO BACK) FIRE PLACES.

jamb the better the draft. It gives more incline, and it is the change in the direction of air that does the work in a syphon-like fashion.
 I use good brick and mortar. All walls above mantel one brick, 4 inches; I never use any flue lining, only plaster, good and smooth on inside and bring chimney up straight. Study this and try one.
 BENNY TUREAUD.

the outlook is dark and gloomy, without a ray of hope.
 Now if the boy is one of those who want to keep their hands clean and soft and to wear patent leathers and high collars every day, he had better take the job in the store and, at some time in the future, he may become floor walker and draw as much as fourteen dollars every Saturday night. For it is true that there are cases where the messenger boy has become the general manager and the delivery boy the junior partner, but these were the ambitious boys who minded their own business and learned a little every day, and these same boys, if they had learned a trade, would have gone straight to the top and soon have been carrying on a big business of their own.
 Yes, a boy will get out of any trade or occupation an exact

Success in "The Best of All Trades"

Bluehill, Maine.

To the Editor:
 While looking through the March number of the AMERICAN CARPENTER AND BUILDER I noticed, on the very first page of the correspondence department, an article entitled "Mere

equivalent for what he puts in; if he contributes the ability to do a day's work he will get only a bare living in return, but if he comes equipped with even a little knowledge, if he has the determination to get more, he will gravitate to the place of leadership and responsibility.

My opinion, backed by observation and experience, is that nowhere in this world is there to be found a more pleasant or profitable line of business than that of building and the surest and only practical way to get a start in this line is by learning the carpenter's trade, for, as Mr. Hicks remarks, the carpenter has to furnish brains for all the other trades and so learns something of each of the building trades.

Of course, we all pity the old carpenter who is still trying to do a day's work in competition with younger men, but such a man who has not kept up to date, learned a little every day and advanced with the times, would, at sixty years of age, be a pitiable object no matter what line of work he had chosen.

The young carpenter's chance lies in pushing forward all the time, and when he is ready for an advance the place for him to fill will be there ready for him for there are never enough capable foremen and expert builders to fill the demand, and from these positions it is only a step to a business of one's own.

Of course the farther a boy has advanced at school the easier and more rapid will be his advance in the building line, but I totally disagree with J. C. Jetmore, of Fort Huachuca, Ariz., when he gives it as his opinion that it is "impossible for anyone to become a carpenter unless he has mastered mathematics far enough to thoroughly understand square root, circular measure, and has a fair knowledge of elementary geometry. for," he says, "unless the carpenter has this knowledge he cannot take a set of plans and sit down, with only pencil and paper, and figure out the lengths and cuts of every timber in the building."

I do surely hope that no young fellow without this mathematical knowledge will let Mr. Jetmore's article deter him from learning the trade if he feels inclined that way, for I do not believe Mr. Jetmore really intended that we should take him literally, for he must know that no one thinks of getting lengths, cuts, etc., by the square root process in these days, all such work being done by graphics, which is only another way of saying that it is drawn to scale. This method is not a makeshift for the use of those who cannot figure sq. root, but is in use in the offices of architects and engineers. The more important the work the larger the scale and the more carefully it is drawn, but for common frame buildings a carpenter's square and a wide board are all that is needed. Lay out the rise and run to the scale of one inch = one foot, using the back of the square where the inches are divided into twelfths.

To learn to use the scale is fifty times easier than to learn square root and many times easier and quicker to apply after it is learned.

I am not writing in criticism of the views and opinions of these gentlemen, for older carpenters understand that they did not intend their words to be taken too seriously, but the danger of such articles is that they may discourage many young fellows who, if rightly advised, would learn the best of all the trades and become very successful in their chosen line.

W. R. HINCKLEY.



That Leaky Roof Question

To the Editor: Tyler, Minn.

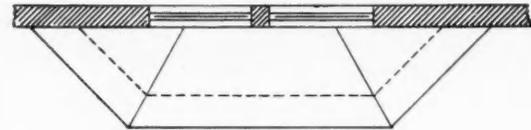
I would like very much if you will tell me through the columns of the AMERICAN CARPENTER AND BUILDER, the correct or best way to put tin shingles on a bay window like enclosed sketch, so the tin will not show outside of the siding

or shingles, and so it will be perfectly tight. I have built several of these bays and have had some trouble in making both a neat and a good job of it, and possibly there are other brother readers that have had the same trouble.

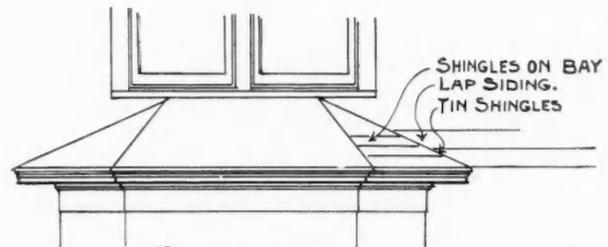
I think the AMERICAN CARPENTER AND BUILDER is the best paper out and I enjoy very much the Correspondence Department.

HANS P. LARSEN.

Answer: We do not go much on concealed flashings under



PLAN.



ELEVATION.

Octagon Bay. Roof Should Not Run Clear to Sill

shingles; we have seen it placed that way, but it certainly cannot be as effectual as when placed on top; and when it is done properly it does not mar the effect of the roof. Of course, it should go under the siding and should extend up far enough to prevent back water from melting snow.

The illustration shows the roof running clear up to the window sill. This is a serious mistake, as it is hard to keep beating rains from working up over the flashings. There should be at least one full width of weather board run under the sill and the sill should be ploughed to receive it. This gives a chance to run the roof flashing up behind the board and besides it makes a much better looking job when finished.

EDITOR.



Sand Paper Block

To the Editor:

Oakdale, Cal.

Here is a sand paper block that can be made in ten minutes and will save any amount of time besides the fact that your sand paper is always *on the block*. Paper is usually seven by eleven here, so I make a block from seven-eighths stuff about $3\frac{1}{4}$ by $5\frac{1}{2}$ inches. Notice that the front edge is slightly beveled. Saw a kerf in this, as shown, for the end of the paper.



Wire Holds Sand Paper in Place

Make two small holes at "A," "A" and bend a piece of wire to the shape and size to just fit snugly into the holes and come down onto the beveled edge. Insert the paper in the kerf, hold with two fingers and bend down under and on around the block until you can clamp it fast with the wire.

H. J. BLACKLIDGE.

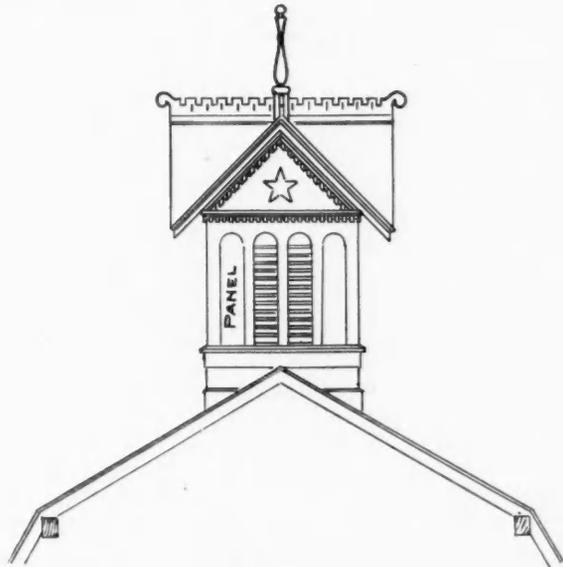
A Design for a Cupola

To the Editor:

Lisbon, Iowa.

I have been a subscriber to your valuable magazine only a few months and find many valuable helps.

I notice in the May number, a brother carpenter asked for a design for a cupola. I am sending you a drawing of a favorite style in our locality. This is a rather expensive style,



Showy Cupola

but it is very ornamental when painted in three colors. If any one wants to know more fully about the construction of same, further information will be gladly furnished.

Now, I have a question to ask. Does any one know about the lasting quality of bay poplar for drop siding, to be used for barns and granaries? Also about gum for beveled siding for residences? Any information will be gladly received.

E. M. LIGHT.



Question for Planer Men

To the Editor:

South Otselic, N. Y.

I would like to ask a question. Can any brother that uses a planer tell me if there is any way to grind planer knives so they won't tear when running against the grain? Will it help to bevel from the face side?

If not too much trouble I would like to hear from some one that has had experience in this line.

J. C. McMILLAN.



Criticises Gutter Construction for Northern Use

To the Editor:

Rumford Falls, Me.

Referring to the question by John W. Rendenbaugh, of Vasser, Kan., and your reply to the same, in the April issue of the AMERICAN CARPENTER AND BUILDER, I would like, with your permission, to offer a few comments.

The construction of the gutter as shown in the illustration is all right for buildings in the southern and middle states, but where there is so much snow and ice to contend with during several months of the year, as we have in the northern states, it will not give satisfaction.

After a snowstorm, the heat inside the house causes the snow to melt as far down as the plate, but beyond that point, the roof being cold, an ice dam is formed, the height of which is determined by the depth of snow, and a dam of a

few inches will cause the water to find its way through the joints between the shingles, and sometimes, after a heavy snow, the ice will be ten or twelve inches thick, and then the house gets a bad wetting down. By placing the gutter plumb over the plate this trouble can be avoided. In localities where no precautions against snow and ice are necessary I think I would prefer it placed as shown in the illustration.

I would not think of trying to do business without the "Best Building Paper published."

A READER.



Paint to Prevent Moths

Crowley, La.

To the Editor:

I have built a store room in the basement of a house, to keep winter clothing and other articles in. The floor, ceiling and half of the side walls are built of wood (pine). The other half brick.

In your next issue please recommend something to paint the inside of this room with that will keep out insects, something that will be permanent.

Think your paper is all right.

JAS. McDANIEL.

Answer. It is probably moths that are to be guarded against. I have just read in an agricultural publication a letter from a woman who tells how she did with a moth infested house she had moved into. She simply applied paint liberally in the closets where she hung clothes, and painted the floors of same, and filled all cracks with paint. She states that it rid the place of moths. Moths do not like paint. Any kind of paint will do for our Louisiana friend's basement room, assuming that the place is dry. In cities furs are stored in refrigerated rooms. Moths don't like cold. Tar or camphor balls they laugh at. They will not eat cotton, hence articles wrapt in cotton or muslin will be safe. It is not the moth, but the larvae that do the eating. Keep the moth from depositing its eggs and there will be no damage done. I have no faith in tar as a paint for this case. Just good white lead and oil paint, stopping all cracks with putty, is all that is required.

A. ASHMUN KELLY.

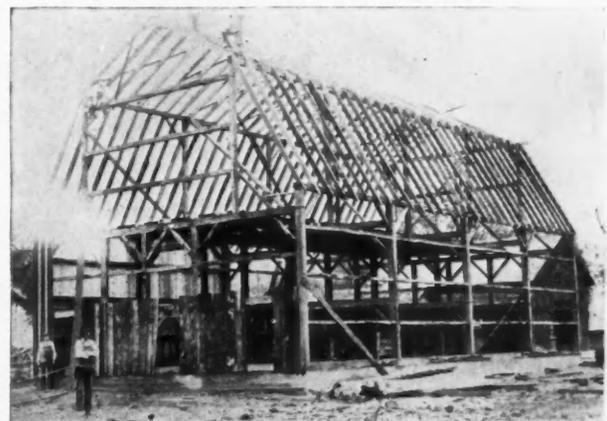


How they Build Frame Barns In Wisconsin

To the Editor:

Potosi, Wis.

I am sending you a picture of a frame barn. Wish you would find room in the AMERICAN CARPENTER AND BUILDER to show how we frame barns here. The lower rafters are at



Built by Joe Weid at Potosi, Wis.

an angle of 60 deg. and the upper at 30 deg. The lower rafters have a 21 in. rise to the foot, the upper rafters a 7 in. rise to the foot. Wishing the AMERICAN CARPENTER AND BUILDER good luck.

JOE WEID.

Not Satisfied with Carpet Problem Solution

Omaha, Nebr.

To the Editor:

In the April number of your paper appeared the problem to find the length of a piece of carpet. I have been unable to solve the problem and would like to see a correct solution by some subscriber. The answer to Mr. Hummel and Mr. Parrish are, in my opinion, incorrect. In Mr. Hummel's figure he makes the assertion that the sides of the triangles are in the proportion of $\frac{2}{3}$. The four triangles are similar as can easily be seen. We will work with D for convenience. The diagonal of the room forms two triangles with the sides

100" having the ratio $\frac{2}{3}$ or $\frac{2}{3}$, by the dimensions of the room.

150" Now, if the triangle D is in the ratio of $\frac{2}{3}$, its hypotenuse must be parallel to the hypotenuse of the first triangle. This is, of course, impossible. Again after his assumption that the small triangles have sides in the ratio $\frac{2}{3}$ he gives answers for the large triangles that are not in the ratio of 2 to 3, but 70 to 132.

In the second solution the diagonal of the room is found and the sides of the small triangle found from this. I am unable to see any possible connection between the two that would give his answer. I wish to state that my remarks are not made in a knocking spirit, but I have spent considerable time on the problem without success and so do not like to accept such flimsy solutions without a protest. I am a new subscriber to your paper and find it an invaluable publication.

J. P. MACKIN.



A "Mad" Solution

To the Editor:

Wilmette, Ill.

A rather firm belief in the hopelessness of the case kept me from interfering with the Carpet Problem sent in by Mr. Russell, of Minneapolis.

Since others have been so bold, however, as to send in a full-fledged solution, and as I cannot agree with their method of solving the problem, I will also send in a solution, somewhat to madness near allied; yet, as it has been constructed quite carefully, the scaled measurements cannot be far off.

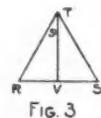


FIG. 3.

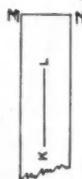


FIG. 2.

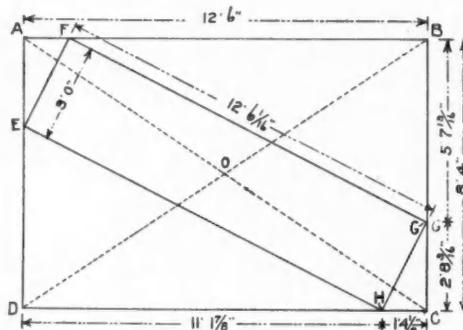


FIG. 1.

First (in Fig. 1) I located the center of the rectangle A-B-C-D, by drawing the diagonals A-C and B-D and O the point of their intersection being the center. This point would also be the center of any other rectangle inscribed within A-B-C-D.

Then, from a piece of cardboard, a rectangle was cut, the required width of the carpet and of indefinite length (Fig. 2). In the center, a slot K-L was cut, as shown. A pin through this slot was set at point O, in Fig. 1, and by careful maneuver the points M and N of the cardboard were made to coincide with two sides of the rectangle, and lines were drawn about the cardboard. This was then reversed and

the other end of the inscribed rectangle E-F-G-H found. Though this method is not mathematical, it would be practical on the job, its accuracy depending on the skill with which the work is performed.

The length of the carpet, then, would be approximately 12 feet, 6 1/16 inches.

Mr. C. C. Hummel's solution had several errors in it, which are quite evident. One was in assuming the ratio of 2 to 3, between the sides of the triangle H-C-G. While the sides of the room are in that ratio, to each other, it is plain to be seen that the sides of the inscribed rectangle are not parallel with the diagonals, and hence the angle D-E-H would differ from the angle D-A-C.

Another error was in assuming that if the sides of a right triangle were in the ratio of 2 to 3, the angles would be 30 degrees and 60 degrees. Draw any equilateral triangle, as R-S-T (Fig. 3), and its angles will all be 60 degrees. Draw a perpendicular T-V from the vertex to the base. This bisects angle T and the base. Hence the triangle R-V-T is a 30-degree and 60-degree triangle, but its shorter side is equal to one-half of the hypotenuse, which will be true of any 30 and 60-degree triangle. Then by taking any given length for the hypotenuse, half of this for the shorter side, the other side can be found to have a different value than 3/2 of the shorter side.

If there is a mathematical solution to this problem (the carpet problem) it would have to be worked along the following lines, geometrically:

Required, to inscribe a rectangle in a given rectangle, having given one side of the inscribed rectangle.

And to be on the safe side it would be well to assume a length for the given side between zero and the width of the given rectangle or between the length of the given rectangle and a diagonal of the same.

But, as I stated in the beginning, it looks hopeless; more so than finding a method of trisecting an angle.

This is quite a lengthy letter, but I intend this for the Editor, primarily; yet I hope it will be as clear a solution as any, for I fail to see where others can apply mathematics, until they show me how they would go about it to inscribe a rectangle within a given rectangle.

These problems are quite a source of study and are quite welcome to many, no doubt.

FRED DIETEL.



Another

To the Editor:

Halifax, N. S.

Since becoming a subscriber of your interesting paper I have taken special interest in the correspondence column.

I cannot quite agree with Mr. Hummel regarding the carpet problem.

In the first place, to solve right triangles, two parts must be known besides the right angle. In the second place, the short side of the triangles is not two-thirds of the long side.

If, as he claims, the short leg of the large triangle is 5 feet 10 inches and the small angle is 30 degrees, then by trigonometry the hypotenuse or length of carpet is 11 feet 9 inches.

I think the carpet is exactly the length of room and the center of the carpet comes exactly in center of room.

N. BENVIE.



A Square Deal

To the Editor:

Ithaca, N. Y.

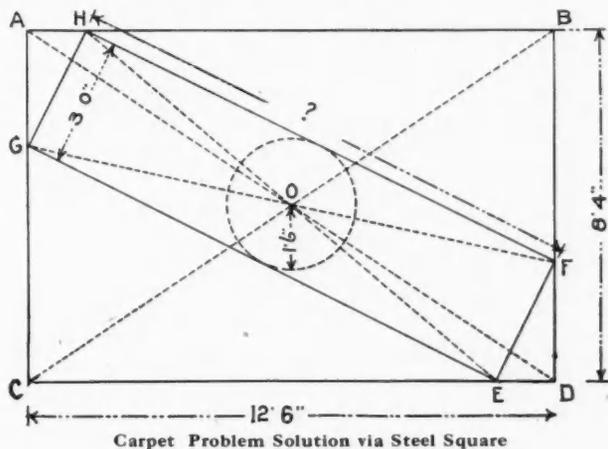
As there has been considerable attention paid to the carpet problem proposed by Mr. N. W. Russell in the April issue, and thinking there might be room for one more effort toward its solution, I offer the above as an excuse for what follows:

Now, I am not going to mention the length of the carpet, but to show graphically and by reference to general prin-

principles how such problems may be solved, and, by the way, to conscript Mr. A. W. Woods into this battle because the steel square is an important factor in this problem.

By geometry, we determine the diagonals of a rectangle bisect each other, as at O in diagram. Now, this point O is also the common point of intersection of the diagonals of all other rectangles whose angles touch the sides of the rectangle, A-B-D-C. Consequently the diagonals of the rectangle G-H-E-F intersect at O. Now, this rectangle may represent the size and position of the carpet of any width, say three (3) feet; and to determine its position and length, we proceed as follows:

With O as a center, describe a circle having a diameter equal to the width of the carpet—in this case, three feet. Now, Mr. Woods, please step forward with your steel square



and place blade tangent to the circle and shove the heel against one side of the rectangle A-B-D-C, say B-D; at the same time watch the scale width three feet on the tongue; slide the heel along the line B-D until you have found the points E-F. Whoa! There you are. Now, draw the tangents F-H and E-G and you have the length and position of the carpet. Thank you. It will be seen that the right triangles E-F-D and A-G-H are variable and not similar to A-C-D, as has been stated in the May number of the AMERICAN CARPENTER AND BUILDER.

CHARLES GRAY.

Note: This is the easiest battle we ever fought. Did not know we were in it until out of it, and won on the square, too. But we are a little inclined to believe the mathematically inclined will not be satisfied to let a scale solution settle the question. But we hope, if they do conclude to wage the battle longer, they will not conscript us into service, as we may not fare so well and might not be able to make our get-away.

As to the accuracy of Mr. Gray's method, will say that we have tested it on as accurately made diagram as we could lay out, and find the answer to be 12 feet 6 inches.

A. W. WOODS.

Cost of Unlisted Sash

To the Editor: Brownwood, Texas.

Will some reader or brother carpenter tell me through the AMERICAN CARPENTER AND BUILDER how to figure the cost of sash and windows that are not listed?

I have asked this question before and the only answer I received was to figure them by the square foot surface, but I find this will not do, for the larger sizes cost more and the square foot rate will not apply.

I hope some practical mill man will tell through your paper how it is done.

JOSEPH KRISCHKE, JR.,
Contractor and Builder.

Question for Boat Builders

To the Editor:

Sutter, Cal.

I have been a reader of the AMERICAN CARPENTER AND BUILDER from the first issue. I have them all on file and



Boat Seam for Calking

refer to them very often. I get lots of good information from each number.

Now, I would like to ask a question in regard to boat calking; the question I wish to ask is: How deep and how wide should the opening be left to give room for the oakum? The planking to be 2 inches thick and as shown in the sketch.

WALTER J. EACHUS.

Note: Will some of the readers with experience on the subject come forward and give the desired information?

EDITOR.

Gothic Roof Construction

To the Editor:

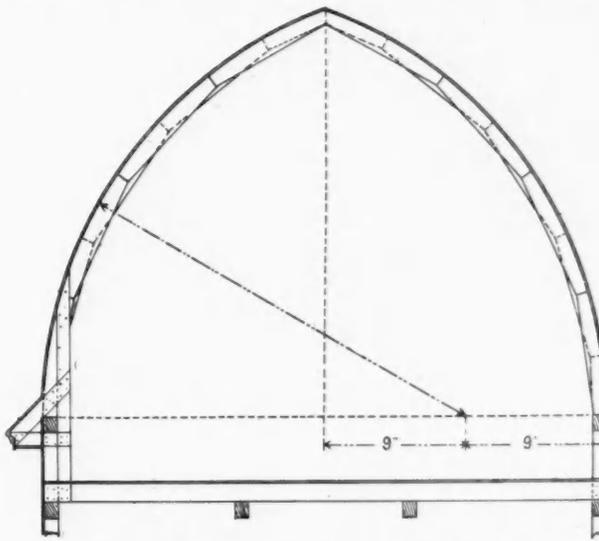
Kensol, N. Dak.

As I have been a reader of your paper for some years past and expect to continue in the future, I beg to have you advise me in regard to how to construct a round roof on a barn instead of a gambrel roof. I have reference to a gothic round. A half circle does not look good, as it is too flat on top. Now, I wish you would tell me how to lay it out and what kind of lumber to use for rafters and how far the rafters should sit apart. Also how to brace the floor upstairs.

Kindly take this up in your paper.

GUNNAR BERG.

Answer: If you will look over some of your back numbers, you will find several illustrated articles on gothic roof construction by Mr. Albert Gonne, of Highland, Mich. We call to mind now the February, 1911, number, also April, 1912,



Gothic Roof Curve Built up of 1-inch Plank

in which it will be seen that Mr. Gonne uses built-up rafters of one-inch boards, sprung to the desired curve.

The rafters may also be built up of one-inch plank in sections, as shown in the illustration. The pieces should be well nailed together with joints lapping, as shown, and should not be less than six (6) inches in depth at the ends, and if properly put together, two thicknesses will be sufficient when used as for the ordinary straight rafters.

A. W. WOODS.

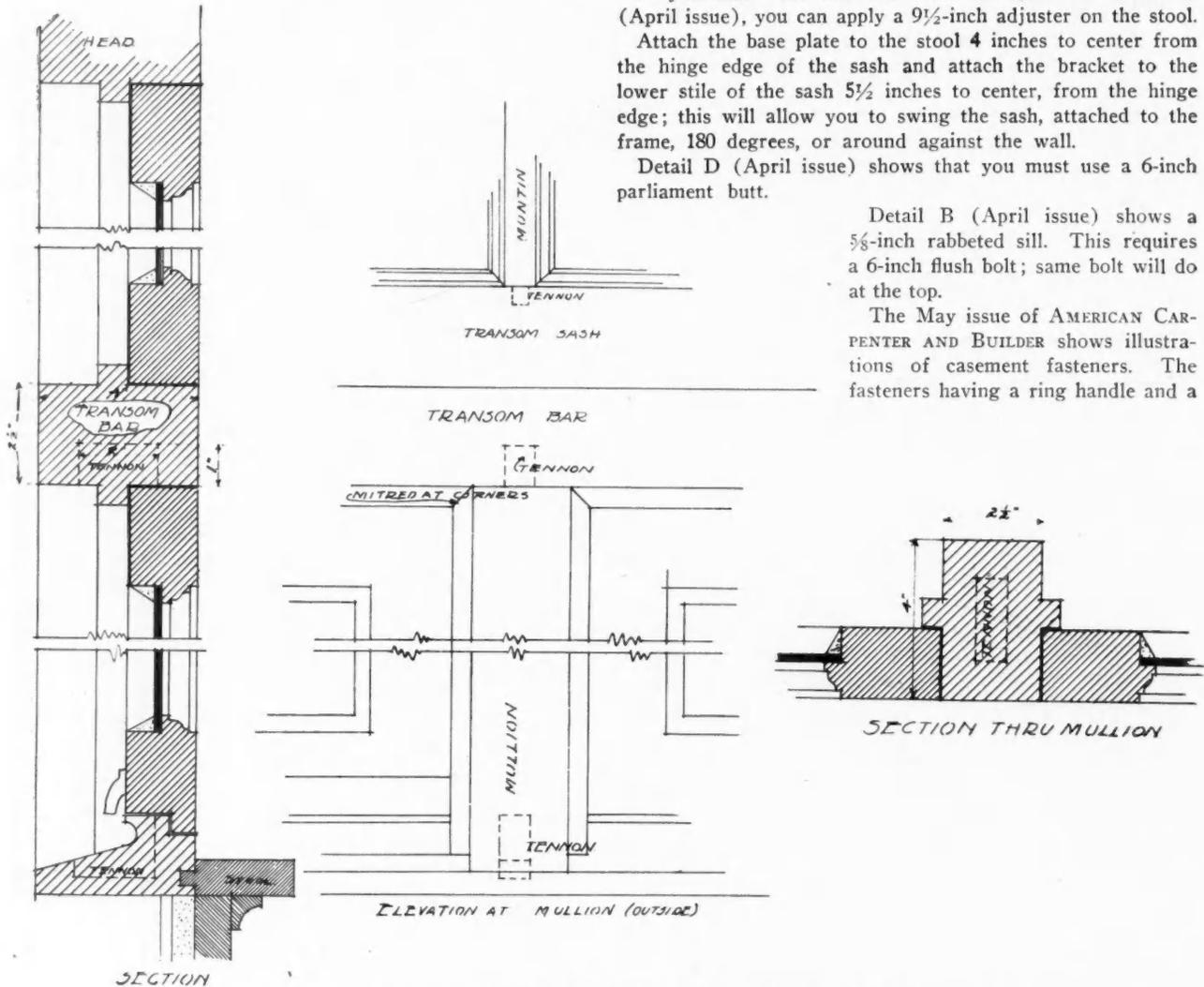
Open-in Casements

Spokane, Wash.

To the Editor:

I have been a reader of your magazine for the past two years and think it has no equal. I am a young carpenter and have a job building some casements having two sets of sash in lower part of frame, swinging in and a transom above extending the full width of frame. I do not understand how to build my frame for this window as they do not want a wide casing in the center as we use in making an ordinary double window frame for check rail sash hung with weights.

I wish to know size, materials and how to frame into



Details of Double Pair of Inward Opening Casements Having Stationary Transom Above

sill and jamb and how center jamb is to be framed to transom bar. I wish to make windows like cuts A B and D on your Detail No. 11 in the April number and put on adjusters; but I do not understand how the sill in B is to be framed to jamb to make a good job. The transom is to be stationary.

W. E. STONE.

Answer: In the April number of THE AMERICAN CARPENTER AND BUILDER, Detail No. 11, Detail B shows vertical cross section of sill. I suggest that this sill extend the entire width of the two pairs of windows, in one piece. Same holds good for the transom bar.

Herewith please find drawing of the mullion. Same should not be narrower than drawing shown because the screws holding the butts are 1 1/4 inches long.

You will attach the butts to this mullion exactly opposite to each other hence the mullion must be at least 2 1/2 inches thick, because the screw holes in the butts are exactly opposite to each other; they are not staggered.

The transom bar must be an exact duplicate of the mullion. The soffitt of the frame must be an exact duplicate of the side frame.

The mullion must be mortised into the sill and the transom bar.

The transom bar, the sill, and the soffitt must be housed into the frame at least half of the thickness of the frame.

I feel sure that this will make a good strong method of making the frames for this pair of windows.

In your sketch you show each sash to be 15 inches wide.

If you make the sill and stool as shown in Detail B (April issue), you can apply a 9 1/2-inch adjuster on the stool.

Attach the base plate to the stool 4 inches to center from the hinge edge of the sash and attach the bracket to the lower stile of the sash 5 1/2 inches to center, from the hinge edge; this will allow you to swing the sash, attached to the frame, 180 degrees, or around against the wall.

Detail D (April issue) shows that you must use a 6-inch parliament butt.

Detail B (April issue) shows a 5/8-inch rabbeted sill. This requires a 6-inch flush bolt; same bolt will do at the top.

The May issue of AMERICAN CARPENTER AND BUILDER shows illustrations of casement fasteners. The fasteners having a ring handle and a

strike having three screw holes is the best of its kind.

I trust that these suggestions will help you towards making a good job of open-in casements.

OUR HARDWARE EXPERT.



Want to be Shown

To the Editor:

Hempstead, N. Y.

I notice in the February issue of the AMERICAN CARPENTER AND BUILDER some remarkable shingling that has been done. We have been carpenters for the past 20 years, have often heard of such remarkable shingling, but have never been fortunate enough to see any of it done. We are not from Missouri, so would like to be shown. SMITH & SCHULTZ.

Quite a Boat Load

To the Editor:

Convent, La.

I am in the same kind of boat as Mr. Pond of Topeka, Kans., only I have a larger load. He wants information to distinguish between porch, piazza, portico and verandah. I will include all these in my boat and add balcony and gallery.

Quite a while ago I consulted Mr. Webster on the subject and this is how he answered:

Porch, an entrance to a building, a portico.

Portico, a piazza or covered walk.

Piazza, a covered walk.

Verandah, an open portico.

Balcony, a frame or gallery before a window.

Gallery, a covered walk.

Trusting that some one with a good working knowledge of calculus will work it out, I am,

BENNY TUREAUD,
Contractor and Builder.

Some Terms Defined

Waco, Texas.

To the Editor:

I believe every builder, at sometime or other, has wished for a treatise on the definitions of terms used in the building trade. Here come Mr. H. M. Pond, Topeka, Kans., in the May number and wants to know the difference between the terms porch, piazza, veranda and portico. He asks for only these four but in answer I will treat the some eight or ten more common terms. I do not claim any superior wisdom, nor am I a walking encyclopedia; but I believe I have the right conception of these different kinds of porches. Common usage makes some things right that are otherwise wrong and the word porch has come to be the universal word to designate any kind of outside room, entrance, etc., and properly so, too, I guess. Usually it is modified by some descriptive word such as front, back or rear, open, closed, covered, screened, sleeping, dining and so on.

A **PORCH**, properly speaking and discarding what I have said relative to common usage, is a covered and enclosed entrance to a building. It may be taken from the inside having the steps inside as a sort of vestibule or simply be a covered and inclosed walk entrance on the outside. It is however used exclusively as an entrance and is not large.

A **PIAZZA** is a covered walk or passage having a series of columns on either side supporting the covering. It is usually large and sometimes it so built as to give a closed effect.

A **PORTICO** is strictly a colonial entrance with a series of columns supporting the covering and set comparatively close together and parallel to the entrance wall.

A **VERANDA** is a covered out of doors sitting room, wide and spacious.

A **LOGGIA** is similar to a porch and veranda but differs from a porch in that it is not strictly a covered entrance and from a veranda in that it is more elaborate and conforming strictly to the main structure in architecture.

A **STOOP** is a small platform above steps at an entrance door and without covering, at least not supporting its covering, if any.

A **PORTE COCHERE** is a covered space over a driveway at an entrance door and usually at the side of building. It is sometimes closed but need not be.

A **BALCONY** is a long and narrow platform inclosed by a parapet either supported by brackets underneath or rods from above. Is most always placed at a door or window on some upper floor and used for viewing parades, etc.

A **TERRACE** is similar to a balcony but usually on a level with the first floor and is always roomy and uncovered.

I just recently came to Texas from Ohio and the Texans almost universally call a porch a gallery, using it in the

more general term. It seems to me this word gallery is far-fetched, yet, as I have said above, common usage can make it correct.

Now, Brother Pond, you can see that we have to split hairs, so to speak, to distinguish between some of the above and where a porch leaves off and a piazza begins, etc., etc., I am not able to tell; but you can get some idea of the difference between them.

Although I was one of the charter members of the AMERICAN CARPENTER AND BUILDER and have the first issue, yet for a long time I was a backslider, I am glad to say that now I am in the amen corner.

JESSE P. MONTZ.

Contractor and Builder.

Glad to welcome you up front, Brother. Maybe you can tell us, even, what a "bungalow" is? EDITOR.

Metal Etching Mixture

To the Editor:

Vale, Oregon.

If Mr. J. B. Robertson will try the following etching fluid he will find about what he wants. I have used it for several years and it does the work quick and cuts deep:

Sulphate of copper	1 oz.
Alum	¼ oz.
Salt	⅛ oz.
Vinegar	4 oz.
Nitric acid	20 drops.

W. F. LYMAN.

Hardware for Transom

Moline, Kansas.

To the Editor:

I am a charter member of your excellent paper and certainly read it from cover to cover as soon as it comes. I would like to ask if any of the craft can tell me how is the best way to fix transom windows hung at top to keep the wind from blowing rain between the bottom of the sash and the window sill; also what is the best kind of a fastner to hold them in place when shut. A transom lift does not hold them back tight nor raise them open full width. The windows are on the shed part of roof in a bungalow.

GEO. H. CRANER,

Contractor and Builder.

Answer: The writer suggests that the bracket of the transom lifter be placed near the hinge. This will necessitate placing the transom lifter higher up on the casing, by doing this you can open the transom to a greater angle, but you cannot open the transom much over 45 degrees.

You state that you cannot keep out the rain at the bottom.

Please examine the drawing, B, Detail Number 11, in the May issue of the AMERICAN CARPENTER AND BUILDER. This sill detail may give you a hunch as to what you can do.

Please note the gouged out stop, just beneath the sash. This is designed to keep a driving rain from climbing up over the rabbet; it causes the water to curl back.

You can have a piece of metal formed like this planted onto the sill now in place, and fitted up one-half of an inch above the bottom of the sash.

Note the drip strip attached to the outside of the sash. This drip strip must be extended out over this piece of metal to keep the water from dropping on to this piece and flowing into the house.

The transom lift will not crush up and make tight the sash, I suggest that you use a casement fast having a ring handle and a strike having 3 screw holes in it.

This strike requires a space of ⅞ inch in the sill.

This casement fast is illustrated in May issue of THE AMERICAN CARPENTER AND BUILDER.

OUR HARDWARE EXPERT.

To Find the Length of Jacks

To the Editor:

Nash, Texas.

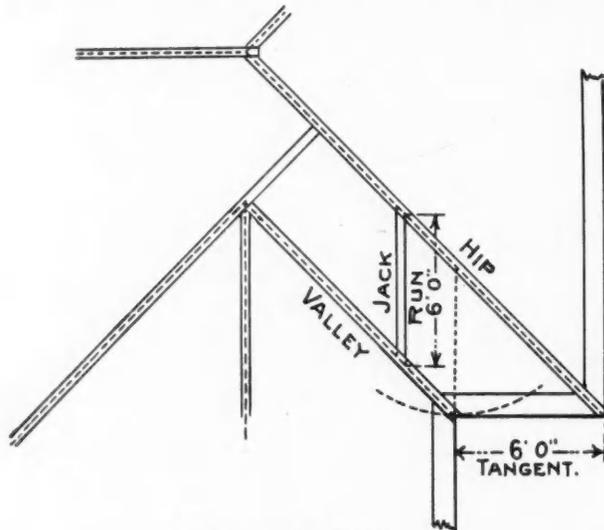
I would like some information on how to frame a hip and valley jack. How can I get the length with the steel square? Suppose the distance between the hip and valley is six (6) feet, how would you get the length?

Your paper is the best of the kind I have ever seen; the Correspondence Department is very helpful.

TILLMAN GULLATTE.

Answer: Take 12 and the rise on the square and lay it off six times on the rafter or by the one inch scale, take six and the rise for six feet and measure across from one point to the other; this will give the length of the jack. Suppose the roof has a nine inch rise to the foot; then the required rise would be 6 times 9, or 54 inches, or 4-6/12 inches, and the length thus found will represent the length of the jack; but the measurements must be very accurately taken, because a variation of a twelfth of an inch is multiplied twelve times.

It must be remembered, too, that the length by either method is from center of hip to center of valley and there



Framing of Hip and Valley Jacks

must be a reduction in the length of the jack which amounts to the diagonal thickness of either hip or valley (provided they are of like thickness) and this amount should be set off square back from the plumb line found for the full run. To find the cut across the back, take the tangent and the length of the jack for the full run and the side of the square that represents the length will give the angle for the cut.

Note: The tangent and run for the square cornered building are equal, which does not occur in any other angle of building. Therefore the rule as given above holds good for any angle the building may have.

A. W. WOODS.

Builder Should be Allowed to Buy Direct

To the Editor:

Haynes, N. Dak.

There is one question that I have always wondered about. Why do so many companies advertise their goods in the AMERICAN CARPENTER AND BUILDER and when we write them they don't want to sell direct to us but want to sell to some hardware company and say that we should buy from them?

Why not sell direct to the user of the goods?

I am also going to offer a suggestion to the article by Owen B. Maginnis on raising the roof. I was called on to do a job of somewhat the same kind a few years ago; it was to raise a store building from a 10 foot ceiling to a 14 foot. I cut the sides and one end only as the other end had a glass front in it. But instead of cutting all the studding on a level, I cut one-half of them 4 feet from the ceiling,

and the other half 8 inches from the ceiling. My idea of doing that was that it made a stronger job when the studs were spliced in, as all the points didn't come in a line with the same sheathing and siding.

Also in Mr. I. P. Hicks' article are some very good things. I have caught myself a great many times doing the act of marking more than once. It works like this; you mark once and nearly always mark correct, but if you mark again possibly your square has moved and when you come to saw off you will find two marks in place of one, and then which one are you going to cut on? Measure again and see; that means a great deal of lost time, as anyone can easily see.

I don't know where he got his idea of anyone using a divider while siding—that is each one siding doing his own spacing. I have been working for 10 years at the trade but have never seen that done. I have always made a stick the same length as the building is high, then mark all windows and doors on that and make one job of marking the spacing, or all on one side of the building at base.

Will also add that it is not necessary to square both ends of any board of siding. If I have more than the length of one or two boards I simply run the one in under the other and mark it by the end of the other so it fits whether it is square or not.

A. H. THARIO.

How about This?

To the Editor:

Buffalo, N. Y.

Here is something for wood working machine hands. Which is the best way to run a belt, smooth or hair side or the inside of skin next to the pulley? Up to within a year I noticed were I work that all belts were run with hair side in. I believe this is wrong, as it will crack the belt sooner. If you notice a new belt when bent to a small circle with smooth side in, you will see it form a lot of small blisters; and that is where the belt will break. I now run belts with smooth side out and I like it better. I find that it pulls as well as before; of course I run the laps so that the driver does not peel it. Would like to hear from others on the subject.

ROBERT L. RAGUSE.

Blames Fast Shingling

To the Editor:

Lane, Kansas.

As you ask all of us to write and give our explanation on the nail question, will give mine.

I don't want it to be understood that I am against better building. I am in favor of better building.

I have used wire nails for about twenty-five years. I read and hear more about shingle nails rusting out than any other nails. In 1895 I built an addition on to a house in the country. I sent to town for 3d nails and there was none in town, so they sent me 3d fine, or what we call lathe nails and I used them. The sheathing was 1 by 4 Y. P. and the shingles red cedar. Those nails are still in good condition and no shingles blown off, but they are nearly worn out. The nails will outlast the shingles.

Another job the same year: Cedar shingles, green hickory sheathing, 3d common wire nails. Nails still bright—shingles nearly worn out. This roof is 10-inch rise to the foot.

Another part of this house, with flat shed roof, rise about 4 inch to 1 foot, has Y. P. sheathing and 6-inch dimension cypress shingles laid 4 inches to the weather. The shingles are rotted and nails badly rusted; had to recover it two years ago.

I think the greatest trouble with the shingle nails is with the fast shinglers. They don't drive enough of them and don't drive them in the right place. If shingles are lain 4½ inches to the weather the nails should not be less than 9½ inches from the butt of shingle. I agree with Mr. W. M. Mackenzie in regard to fast shingling.

J. P. WELLS.

Responsibility for Cave-In

To the Editor: Paynesville, Minn.
 I would like to ask who is the responsible party:
 Some years ago there were two buildings erected on separate lots—one a bank, the other a jewelry store. Both were two story brick veneer, without basements. The bank burned down, and is being rebuilt. In excavating for a basement the wall has been caved from under the jewelry store.

Must the jeweler build a new wall and stand the damage done to his building?
 H. M. HAINES.

Answer: Where two buildings are built on adjoining lots and attached to each other by a party wall, it is the duty of each owner to do nothing in the way of excavating which will negligently endanger his neighbor's structure. He is not obliged to absolutely insure against the caving of his neighbor's wall, however, and if he can show that he did nothing negligently in the excavating of his own ground, he cannot be held responsible for the caving in of his neighbor's building, even though this was due directly to the excavations.

The rule is different where the damage is due to the caving in of the land, rather than of the buildings. An adjoining owner owes his neighbor the absolute duty of support for his land, and if he causes caving, whether negligently or not, he is liable for all actual damages sustained. But if the damage is from the caving in of buildings, negligence must be shown before damages can be collected.

ELTON J. BUCKLEY.



Square or Beveling?

Hurdland, Mo.

To the Editor:
 I think it will take much time and thought to improve the AMERICAN CARPENTER AND BUILDER. I read everything inside the wrapper and enjoy it very much. But I like the correspondence best of all.

Now I would like to know this. Should the edges of corner boards, outside casing of door and window frames be made square or beveling for siding to fit against. I make mine square.

If Mr. Ott of Novinger, Mo., has a copy of the AMERICAN CARPENTER AND BUILDER of July, 1909, he should turn to page 469; he will find information he asks for about cutting hood rafters for barns.

G. R. WARD,
 Carpenter and Builder.



Polygon Table

To the Editor: Espy, Penna.
 Since I have mailed your office my answer to the carpet question of Mr. N. W. Russell's, I have also decided to send for publication one of my tables, referring to polygons in securing the cuts for numerous rafters.

I have published it exclusively for almost six years and have from time to time put this table into practical use myself, and I earnestly believe it may be of commercial value to the readers of your valuable publication.

This table refers to Polygons in securing the cuts for numerous rafters.

Sides	Name	Tangent on Square	Degree	Length of Run	Included Angle
3	Triangle	20¾ to 12	60°	24 in.	120°
4	Square.	12 to 12	45°	17 in.	90°
5	Pentagon.	8¾ to 12	36°	14⅞ in.	72°
6	Hexagon.	7 to 12	30°	13⅞ in.	60°
7	Heptagon.	5¾ to 12	25¾°	13⅜ in.	51½°
8	Octagon.	5 to 12	22½°	13 in.	45°
9	Nonagon.	4¾ to 12	20°	12¾ in.	40°
10	Decagon.	4 to 12	18°	12⅝ in.	36°

The "Tagents on Square" referred too, would be the

acquired inches and fractions thereof to 1 foot on the steel square, if it was placed within or upon a circle with respect to the sides of a polygon.

Thus the "Degree" as shown would then be the necessary lines or "Mitre-cut" through this circle to determine or separate the various sides of the polygon.

And the "Length of Run" will now be observed as the hypotenuse of these tangents, or usually called the common run when taken in respect to rafters.

The "Included Angle" would thereby be formed by placing together two of these parts thus cut or lined, and will produce unparallel lines, these sections or parts joined form a polygon and are found with respect to both the tangents on a square and the degrees of a circle.

In the table it will again be observed that the "Degree" is one-half the "Included Angle," it may also be said that the "Included Angle" multiplied by the respective number of sides to the polygon would give the degrees contained in a circle.

In reference to roof construction the "Included Angle" would be the outside or the most distant point to be obtained; this would be best demonstrated by going from the plate on one side, up the roof to the ridge and down to the plate on the opposite side—thus the cut seen at the ridge or the mitre-cut now would be the "Degree" of the angles involved relative to a circle.

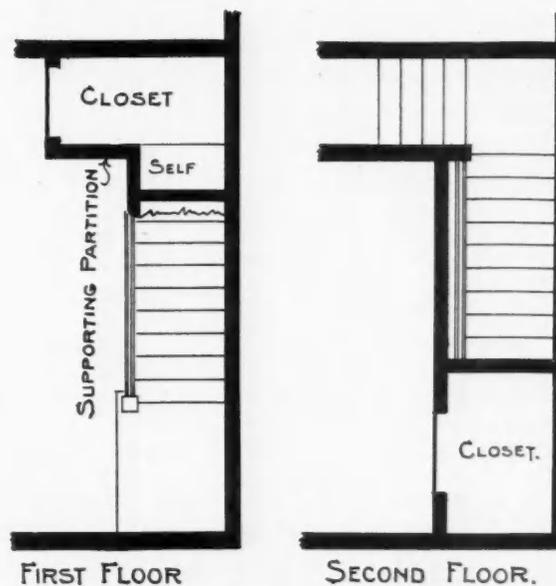
CHAS. C. HUMMEL.



To Frame the Well Hole

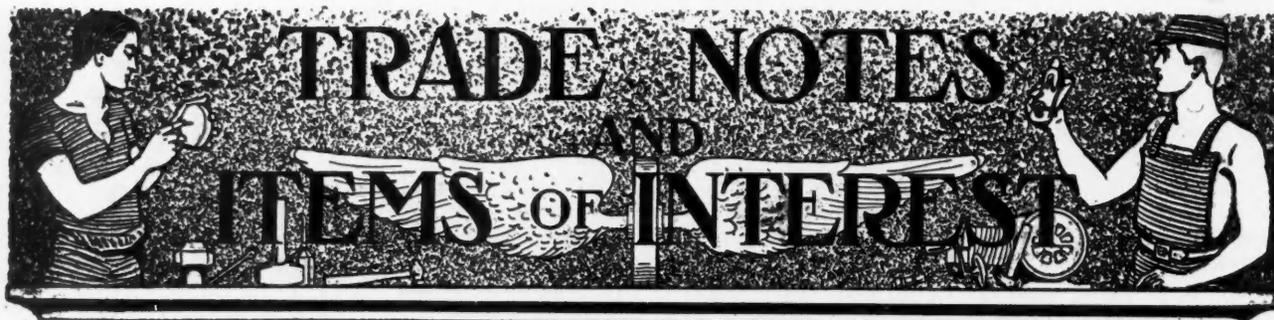
To the Editor: Pocatonia, Ill.
 Enclosed find my subscription for the AMERICAN CARPENTER AND BUILDER. I have every one yet, from the first one on; they are a great help to me.

I have a house to build with an open stairs in it like plan



herewith. The stairs have panel work below. Can you give me any idea as to how to frame the joist for the second floor around the stairs?
 J. H. MEYER,
 Contractor and Builder.

Answer: In cases of that kind, it is a good plan to let that part above the platform be a box stair, as shown. Then the partition forming that part can run down to a solid bearing on first floor and by letting the partition project enough to receive the hand railings, makes a good stopping place for same and gives an excellent bearing to frame around the well-hole at second floor.
 EDITOR.



There Should Be No Confusion

It has been brought to the attention of the Editor that in our last month's issue two illustrations of "Beaver Board" interiors were used in connection with an article describing another type of wall board. (See page 152, May number). This was done by mistake, which we sincerely regret.

There should be no confusion in the mind of anyone between "Beaver Board" and any other brand of wall or plaster board. "Beaver Board" is characterized as being a "pure wood fibre" wall board. Carpenters and builders are well acquainted with it; they understand how to use it; and



Anna Katherine Green's dining room shows Beaver Board possibilities for arched ceilings and original wall-treatment.

they are familiar with the artistic and pleasing paneled wall effects which are had where "Beaver Board" is used.

The Beaver Co., 435 Beaver Road, Buffalo, N. Y., the manufacturers of "Beaver Board" have been presenting during the past six months in the *AMERICAN CARPENTER AND BUILDER*, an exceedingly interesting and instructive course of lessons, called "The 'ABC' of Beaver Board Construction." A good many of our readers have noticed these and are getting the benefit from them. All should. Every person engaged in building should be profiting by this full course of lessons; Look up Lesson VI. now; it's in this present issue.

From one of the previous lessons we note that "Beaver Board" has many advantages for Arched or Beamed Ceilings, Cove work, Partitions, etc.

Carpenters often fail to understand that "Beaver Board" meets unusual wall and ceiling requirements as easily as ordinary ones. This is because they confuse it with plaster-board or some other material which is hard to handle.

It can not be too strongly emphasized that "Beaver Board" is wood. It is made of pure-wood-fibre, pressed into sheets or panels about 3/16 in. thick.

It seasons tough and hard like lumber, but is so elastic that it can be modeled to curved forms and when nailed in place presents a firm, stiff surface for painting. Thus it is ideal for arched ceilings and cove-work.

This same combination of lightness with strength makes it a most convenient material for permanent, temporary or movable partitions; for office-wallings, telephone-booths, closets, exhibition-booths, show-windows and so on.

You can enclose a stairway or put in a drop-ceiling quickly and economically.

You can cover an old, cracked plastered ceiling, add false beams and get a finer effect than with lumber.

Whatever a wall is—paneled, panel-and-wainscot, or panel-and-frieze—makes no difference to "Beaver Board."

The work is done with saw, hammer and nails, and you always get the effect of a solid, unyielding wall.

At the same time the decoration is simple, artistic, sanitary and durable. "Beaver Board's" unique pebbled surface when painted, gives effects that you can't get either with lumber or wall paper.



Mr. Geo. W. Klewer has found that cove-work is anything but difficult with Beaver Board.

There isn't any wall or ceiling problem without a "Beaver Board" answer.

Write the Architectural Department of the Beaver Co., and they'll tell you how to handle any job you're not quite sure of. "Beaver Board's" endless possibilities for all kinds of uses are fully described in their free booklet "Beaver Board and Its Uses" with many pictures of different interiors. Write for it today.



How to Build Dairy Barns

How many contractors and builders, when they get a dairy barn job, know just what should be done and provided for in its construction? Time was when very little attention was given to the details of such work. It was thought most anything would do, and so most anything was done.

Sanitary conditions today, however, demand that a certain amount of mechanical detail be followed in the construction of dairy barns, etc. And those contractors and builders who are liable at any moment to be asked to begin the construction of a dairy barn will find it very much to their advantage to procure from the James Manufacturing Company, of Fort Atkinson, Wisconsin, their intensely instructive booklet, "Helpful Hints for Barn Builders."

This concern are makers of sanitary dairy barn equipment. They are dairy barn experts and have prepared this booklet to guide barn builders in this important field of work. Every essential feature about dairy barns and their construction is dealt with completely—plank frames; King system of ventilation; proper width and arrangement; lighting; stable floors;

site, size, appearance, design, drainage and equipment.

The James Manufacturing Company will mail this booklet to any AMERICAN CARPENTER AND BUILDER reader, who, in requesting a copy of them, will answer a few simple questions they ask. Namely—"from whom, where and when do you expect to begin the erection of a dairy barn."

The James Manufacturing Company in their making of dairy barn equipment endeavor, at all times, to provide the best in type of construction and materials. They make a special offer of complete working blueprints of dairy barns of various types and sizes, and further offer, under certain conditions, the help of their architectural department.

Complete information concerning their equipment and special offers can be had by addressing them direct—The James Manufacturing Company, 8475 Cane Street, Fort Atkinson, Wisconsin.



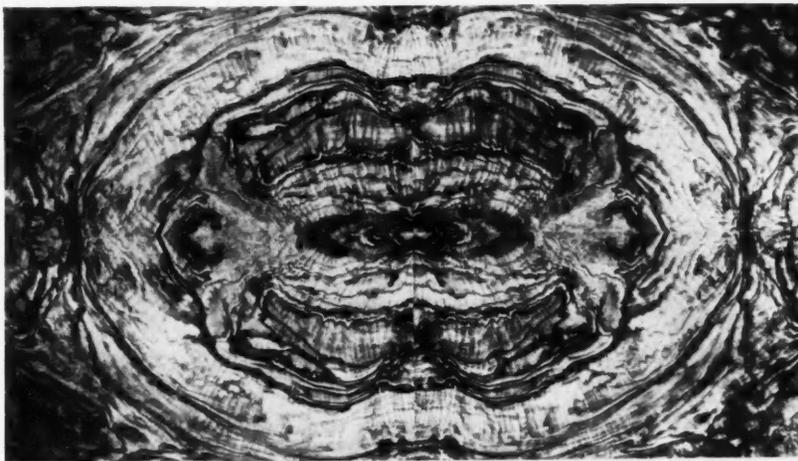
Circassian Paneling

One of the most popular and satisfactory modes of decoration in this day of modern homes is found in the use of veneered panels. Paneling is extremely popular, inasmuch as the decorative effect is both beautiful and distinctive.

Every person building a home wants that home distinctive; that is, different from the rest, and when you consider the added worth and the beautiful effect panels give to the home, they are not expensive. Imagine your dining room, your den, or your library decorated with panels similar to those shown here. Whatever room it is used in, that room is partly furnished and furnished in a way that cannot be improved upon.

The F. Eggers Veneer Seating Co., of Two Rivers, Wis., is probably the largest concern in the United States manufacturing built-up veneers or panels. Their plant is equipped to turn out panels larger than any other in this line of work. They are advocates of flush panels, and their factory equipment is such that they are able to turn out panels of almost any size desired, that is up to 17 feet in length. If longer lengths than this are required they can be readily spliced.

To every carpenter-contractor reading this paper: "I think that these panels will act as a business getter for you. Their use enables you to produce distinctive work, work that is imitated a great deal, but even the best imitations don't even imitate the true built-up veneers. Imitation is,

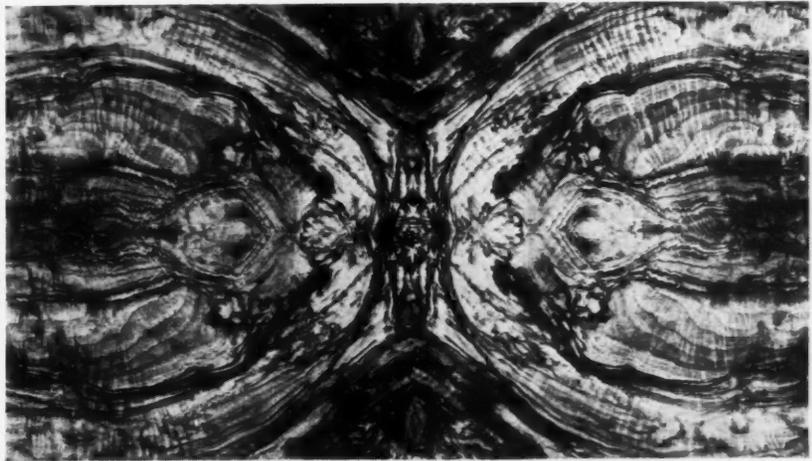


Circassian Shows Many Beautiful and Curious Markings

of course, the sincerest compliment that can be given. Don't be an imitator, however. Produce original things. These built-up veneers are original. Their use gives a standing to the user. People admire them and want them, and the man that can furnish them naturally is the one sought after."

The panels made by the F. Eggers Veneer Seating Company can be had in any domestic or foreign solid wood effects. They are essentially different in their appearance and make-up than any other paneling manufactured. They represent quality all the way through. A poor panel is a poor investment. It is to your own interest to get the best panel that can be made, and there are no better panels made than those produced by this company. Now, Mr. Contractor, look around your vicinity and on some of those better jobs consult the owner in regard to these panels. They will appeal to him immediately, whether it be in his home, or in his office, or building of any kind wherein good work is the first essential. Remember that the price is not prohibitive.

These panels open a new field for you. Be the first to get in this field. Write to-day to the F. Eggers Veneer Seating Co., of Two Rivers, Wis., and learn more about their proposition. It is an extremely attractive one and one that will be productive of good profits to you.



Flush Panel of Circassian Walnut Produced by the F. Eggers Veneer Seating Co.

Good Building Paper a Profitable Investment

It is a great mistake for carpenters and builders to follow a policy that the cheapest to them is the best for use in their work just because it may net a few more dollars on the job.

Such a plan of action, while gathering a small additional profit, invariably brings its full quota of dissatisfied customers with their complaints. And in the long run it means a loss of dollars where very likely cents were gained.

A particularly poor place to practice saving is in the buying of building paper. A good building paper can save the house owner or dweller dollars. And as it is to the direct interest of every builder to save the owner money in the long run only a good building paper should be used.

There are being manufactured today quite a number of good building papers, among which are the F. W. Bird & Son's Neponset building papers.

Neponset building papers are in extensive high-grade use. Their first cost is comparatively insignificant compared to the saving they can effect. They are a positive insulator against dampness, cold and ex-

cessive heat. They are made in a thorough manner and have proven entirely serviceable and durable under the most severe conditions.

The F. W. Bird & Son organization are also large manufacturers of roofing materials and their Neponset Proslate roofing has given entire satisfaction in actual service.

General information concerning the entire line manufactured by F. W. Bird & Son may be had by addressing them at the home office, East Walpole, Mass.



Aladdin and the Lamp Post

A typical instance of the growing civic pride of modern American communities is the attention which cities, towns



City Street Lighted with "Toncan" Sheet Metal Columns

and villages are paying to the methods of lighting their streets.

The people in general are taking a deep interest in the appearance of their communities and in line with this forward movement is the securing of an artistic as well as efficient lighting system.

The electric arc drop lights, while very good in their way, produce such an ugly appearance on the streets and are so much of an eye-sore that it is desired to get a lighting system that not only will illuminate, but will improve the appearance of the streets and harmonize with and enhance the architectural surroundings both by day and by night.

To obtain this result many ideas and inventions have been brought forth.

One day some modern genius conceived the brilliant idea of using a lighting system similar to that which was in wide use not so many years ago and which can still be seen in many rural districts, namely, the old cast iron lamp post, which, surmounted by its dingy oil lamp, has served as a guiding star for many a midnight wanderer and as a support for many uncertain steps.

And this old iron post, after passing through the hands of our modern Aladdin, emerged so changed and improved that it bore no more resemblance to its forbears than the butterfly does to the ugly worm from which it evolves.

This wonderful transformation was brought forth by and through the invention of machines and dies whereby a perfect column or lamp post can be made at a low cost of sheet metal; and these handsome columns or lamp posts—their name after metamorphosis

from the old, crude cast iron post—can now be obtained in marvelous varieties of artistic designs. Surmounted by gas

or electric lights, they are a "thing of beauty and a joy forever."

The views accompanying this article illustrate the excellent lighting effects and at the same time the artistic results that can be obtained by using sheet metal columns for lighting systems. The columns used in these cities were furnished by the Union Metal Manufacturing Company, of Canton, Ohio. In order to secure greater durability than is possible with ordinary sheet metal the columns were made of either copper or Toncan metal, a rust-resisting, anti-corrosive metal that will stand up under the exposure to which these columns are subjected.

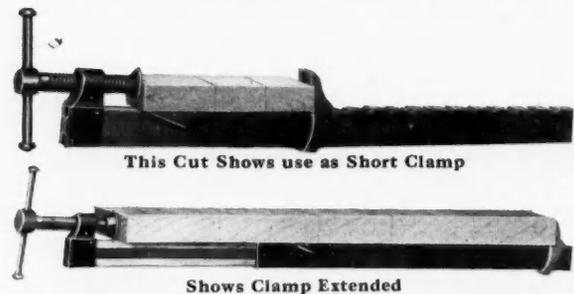


The Cobb Extension Clamp

Probably every carpenter and wood worker has at some time or another felt the great need of something better in clamps. Other tools have been improved and perfected year after year, but the old style clumsy wood clamp has held its place in the tool chest—not by virtue of its merit, but because the market has offered nothing better.

Now comes the announcement of the Cobb Extension Clamp made by the Root-James Co., Ltd., of Moline, Ill. Mr. Cobb, the inventor of this clamp has put into its making the benefit of 25 years experience at the bench; and users are enthusiastic over the merit of this—"The Handiest Tool in the Tool Box." Mr. Cobb appreciated fully the slowness, the clumsiness, the inconvenience, the weakness and the awkwardness of the old style clamp and as a result the Cobb Clamp was made to fill a personal need. Its great convenience led to its adoption first among his personal friends in the trades and finally the demand became so general that capital was interested, The Root-James Co., Ltd. was organized and the Cobb Clamp put on the market.

Briefly, here are the advantages of this clamp. It is made from steel plate formed into shape under great pressure, thus permitting of light weight and exceptional strength and rigidity. These features in combination with its compactness



and neatness of design commend it to all workmen. The Cobb Clamp can't break or slip or wear out. Its construction permits it to be adjusted more quickly and accurately than any other clamp. The bottom side is flattened so it will stand in position while work is being inserted. While it weighs but a few ounces more than a wood clamp of the same size and can be carried in any tool box that will take a rip saw yet when extended it can be used on work far beyond the capacity of the ordinary clamp. For example the smaller size 3, weighs only 6¼ pounds and when closed measures 23½ inches and can be used to clamp work varying in width from 1½ inches to 3 feet 2 inches. The larger size 4, weighs only 8¼ pounds and when closed measures 29½ inches and has a clamping limit of from 1½ in. to 4 feet 2 inches when extended. Stated in a nutshell, *the Cobb Extension Clamp will do everything any ordinary clamp will do and many things no other clamp can do.*



Sheet Metal Lighting Column



PAIN T

of Guaranteed Quality
at 25% to 50% Less Cost

Buy "Quality" Paints at Dealers' Prices

\$1.17
Per Gallon
in 5-Gallon
Kits

\$1.10 Per
Gallon in
25-Gallon
Half-
Barrels

Ready to Use
Quality
Guaranteed

\$1.22
Per
Gallon
in Gallon
Cans

\$1.75
Per Gallon
5 Gallons
for \$8
Finest
Quality

21 Cents
for 2-lb. Can
Floor Filler

We have gone into the Paint business on a big scale and are making the lowest prices in America on Paints of the highest guaranteed quality. We carry an immense stock of House and Barn Paints, Varnishes, Stains, Floor Finishes, Enamels, Roof Paint, White Lead, Wood Filler, Wood Preserver, Shellac, Putty, Brushes and Miscellaneous Supplies.

Carpenters and Contractors can now secure lower prices on Paint than the Local Dealers themselves pay at wholesale. Why longer submit to the "highway robbery" of prevailing retail prices on Paint?

Saving and Satisfaction Guaranteed or Money Refunded

We stand back of every item we sell with an absolute guarantee of quality, saving and satisfaction or money refunded and freight paid both ways.

The FORMULA Printed on Every Can, Kit and Barrel

As a further evidence of good faith, we print the full formula on the label. "Quality" Paints are all that the name implies. You know exactly what goes in the can.

We give full measure of honest value.



\$1.95 Buys Enough "Quality" Paint for This House—Two Coats

Paint Bargains for Carpenters Contractors and Builders

The bargains listed on this page are samples of hundreds offered in our big color-illustrated "Quality" Paint Catalog. You save many dollars on every job of painting and decorating by using our "Quality" product.

Send for "Quality" Paint Catalog

Seeing is believing. The prices in the handsome color-illustrated "Quality" Paint Catalog speak for themselves.

We carry an immense stock—that's the secret of our ability to offer sensationally low prices on

- | | | |
|-------------|--------------------|----------------|
| House Paint | Varnishes | Wood Filler |
| Barn Paint | Wall Paint | Art Stains |
| Roof Paint | Decorative Enamels | Kalsomine |
| Floor Paint | Floor Finish | Wood Preserver |
| | Brushes | |

And hundreds of other items used in painting and decorating all classes of buildings.

The Gordon-Van Tine Reputation for Quality and Satisfaction and the Gordon-Van Tine Guarantee are back of everything we sell. Send the coupon now.

GORDON-VAN TINE CO., 617 Federal Street, DAVENPORT, IOWA

America's Largest Independent Building Material Plant

(132)

GORDON-VAN TINE CO.
617 Federal St., Davenport, Iowa

Please send me your new color-illustrated
"Quality" Paint Catalog

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

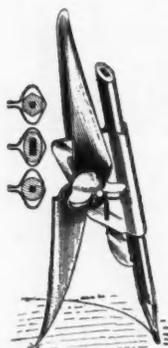
When Writing Advertisers Please Mention the American Carpenter and Builder.

Peerless Tools Have Many Superior Features

The only combined compasses and scribes that will hold pencils of any length and of various shapes and with steel points that can be moved up or down to suit pencil, are the claims made for the Peerless Line of tools manufactured by Potter Bros., 610 W. 110th St., New York. This line includes



Peerless Flexible Bit Gauge



Peerless 3 1/2-inch Scriber

the Peerless 3 1/2 in. scriber, (No. 30), the Peerless 5 1/2 in. double compass and scriber, (No. 57), and the Peerless 5 1/2 in. "Stork's Beak" combined compass and scriber (No. 55). Potter Bros. also manufacture the Peerless flexible bit gauge, (No. 100).

The 3 1/2 in. scriber is illustrated herewith. This is made of sheet steel and will accommodate hexagon, oval or round pencils. There is a broad point to prevent scratching plaster walls, fine woodwork, etc., which is also used as a protector to the pencil point. It can be moved out of the way as desired. The sharp point is for compass work and for entering into quirks, mouldings, etc. The 5 1/2 inch compasses and scribes,

mentioned above, are, of course, larger in size and have many useful features. The 5 1/2 in. "Stork's Beak" combined compass and scriber, (No. 55), has a double joint with a thumb screw on each side, making it very secure and rigid. It can be used in much narrower places than the ordinary compass. It can be converted into a scriber easily, and quickly by simply inserting a pencil in place of the steel compass leg. The double compass and scriber (No. 57) has many exclusive features. It does away with the old style, clumsy, quadrant compass. It has the double locking device; in fact this tool has all the best features of Potter Bros. scribes and compasses combined into one.

Carpenters and builders should be particularly interested in the flexible bit gauge, which is illustrated with this article. This gauge will not mark the wood, nor slip upwards, nor interfere with chips. It is light and durable and particularly suited for mortising locks.

Further particulars regarding these tools can be obtained by writing to Potter Bros., 610 W. 110th St., New York. They are sold direct in any quantity, or dealers can secure them from Sargent & Co.

Potter Bros. are well known for the excellence of their goods, the sales of which have reached nearly 2,000 dozen, and the demand for their devices has been constantly growing. They are not only manufacturers but are experienced carpenters and artisans as well, and the tools they are now selling are the result of their own experience and acquaintance with the needs of workmen in this line.



Plastic Ornaments

Ornamental decoration is an indispensable factor in architecture and upon its intelligent application depends in a great measure the subsequent effective attractiveness of a structure. Plastic and composition ornaments are more in

You are Interested in This Test, Mr. Builder

This Nail
Made of



NO LOSS
Under Test!



These
Parts
Tested
Alike



Specifications
American Society
Testing Materials



This is a
Regular

STEEL

Wire Nail

Nearly Destroyed!

You Use Good Material. Why Not Use Durable Nails?

Toncan Metal nails are sold under a positive 25-year guarantee against disintegration and corrosion. They are the **cheapest non-corrosive nails** on the market. They will last about three times as long as ordinary nails (when exposed to the weather), and about twice as long as galvanized nails. Unequaled for shingles, tin and slate roofing, porch and fence work, etc., or for any purpose requiring outside nails. Send for price-list and free sample.

IGOE BROS., 61-75 Metropolitan Av., Brooklyn, N. Y.



When Writing Advertisers Please Mention the American Carpenter and Builder.

The Power That Produces Profits!

THE "Multimotor" Shop Engine increases your profits and cuts down your pay-roll. And this *without* strikes, lay-offs and loss of time.

The "Multimotor" does the work of *three* men, at an expense of *less than a cent an hour*. There never has been such a *labor-saving and profit-making* shop engine as the "Multimotor." It is a "wonder-how-I-did-without-it" machine in hundreds of large and small shops.

"Multimotor" *your* shop and stop pedal-pushing and crank-turning. Let the



The "Multimotor" Working in the Shop Like Three Men

Fuller & Johnson "Multimotor" Shop Engine

turn the wheels in *your* shop. This wonderful engine is small, but, my! what a giant in power. Day in and day out this mighty little worker goes on piling up profits for its owner. It never gets sick or tired—never wants a "raise"—never wants *anything* but a few cents' worth of grocery-store gasoline and a little lubricating oil. On this fare the "Multimotor" runs all hand-power or foot-power machines—jig saws, lathes, emery wheels, grindstones, drills, etc. The "Multimotor" is "just-what-the-doctor-ordered" for carpenters, contractors and owners of small workshops. Think of having *ample* power "on tap" all the time for *less than a cent an hour!* Why, the "Multimotor" is as handy as a pocket in a shirt.

Perfectly Simple

The Fuller & Johnson "Multimotor" Shop Engine is the simplest, neatest, strongest and most reliable little engine ever built. Comes to you *complete*—there's no "extras" to buy—

nothing but gasoline and lubricating oil. In design,

material and construction the "Multimotor" equals the best automobile engines. Everything we have learned in our many years of engine building has been put into this masterpiece of engine construction. No "theories"—no "maybes"—no impracticable "hunches" are in the "Multimotor"—nothing but bed-rock, scientific engine construction—the fruit of decades of successful engine building. Every "Multimotor" is tested and guaranteed.

Absolutely Safe

The "Multimotor" is air-cooled, fool-proof and cannot freeze or overheat. Every important working part is protected by dust-proof case. It is a marvel of simplicity and needs no attention while running.

The "Multimotor" only weighs 250 pounds and is easily moved anywhere. Mount it on trucks and pull it wherever the job is. For *indoor* use it has *outdoor* fuel tank if desired, insuring perfect safety.

This marvelous power-maker is making machinery hum all over this continent. Set it anywhere, fill the tank, oil up and start the engine. It is work-hungry all the time.

Engines for Every Use

We are the builders of the famous Farm Pump Engine, which is practically the same as the "Multimotor" with pumping gears added. Needs no belts, arms, jacks or special platform. Pumps 270 to 2,450 gallons every hour.

We've just brought out a new line of high-grade, popular-priced gasoline engines which meet the requirements where larger engines than the "Multimotor" are needed. Prices are absolutely the lowest at which high-grade engines can be built and sold for.

Send for Free Engine Book

Write for full information about the "Multimotor" and Farm Pump Engine, also our new line of popular-priced, high-grade, all-purpose engines. Let us send you the name of the nearest dealer, who will show you the engine and explain what it can do.

If interested in larger engines, ask for catalog of Fuller & Johnson's famous Double-Efficiency Engines.

Fuller & Johnson Manufacturing Company

6 Ames Street (Estab. 1840) Madison, Wis., U. S. A.



The "Multimotor" mounted on hand truck. The front legs of the truck are provided with holes for bolting to the floor if desired. Truck furnished at small additional cost. (348)

Patented in the United States, Canada and other foreign countries. Other patents applied for.

When Writing Advertisers Please Mention the American Carpenter and Builder.



You have probably taken your Simonds saw in just this same way and displayed it to the admiring gaze of some friend.

Like the fellow in the picture you probably said—"Simonds I tell you it's a great saw."

No the Simonds Hand Saw isn't a very old product—even though The Simonds Co. has been in business eighty years. We made other kinds of saws for a great many years before we yielded to the demand for a Simonds hand saw.

Ten years on the market has proved the Simonds Saw, has tested it, has shown the undoubted call for an extra high quality saw. The story of public approval is shown by public demand.

Every Simonds saw is fully warranted. Ask your Hardware Dealer. Tell your friends about this saw—send for a free copy of Simonds carpenter Guide. If your Dealer doesn't sell Simonds Saws write us saying what kind of a saw you want.

Simonds Manufacturing Company

Fitchburg, Mass.	Chicago, Ill.	Montreal, Que.
New York City	New Orleans, La.	Seattle, Wash.
Portland, Ore.	San Francisco, Cal.	London, Eng.
Vancouver, B. C.	Lockport, N. Y.	St. John, N. B.



demand than ever before, which but indicates that decorative features are receiving fully as much consideration at the present time as during any past years.

An old establishment and well known concern in this field of manufacturing is the Plastic Relief Manufacturing Company of Chicago, Ill. Their influence in the decorative field is universally recognized.

The range of service given by an establishment so comprehensive as theirs, is not always understood. Successful production of attractive and effective architectural ornamentation, is not a thing of chance, but of knowledge, experience, judgement and taste. Their organization has every facility for producing both quality and quantity. The volume of business and high grade work done requires a staff thoroughly trained to the highest state of efficiency along their various and special lines.

The company issue two very interesting and attractive catalogs, also circular matter upon the lines of their manufacture.

Their catalog "D" treats exhaustively of capitals, and brackets in composition in connection with wood; interior plaster finish and exterior composition, also composition carvings, in connection with wood; and further shows a wide range of architectural ornaments. It should be of special interest to architects, cabinetmakers and contractors.



Side Wall
Fixture

Bowl for Indirect Lighting

Their catalog "IV" is exclusively a book of staff ornaments and shows a line of coves, cornices, panels, gables and practical ceilings. This number should be of great assistance to decorators in this special line.

At the present time among this company's most popular features are their compo electric lighting fixtures, designs of two of which are shown here. Compo fixtures are made in many designs and there is practically no style or architecture which cannot be appropriately matched.

Compo presents the greatest possibilities in securing artistic effects. It is preeminent for developing to the highest degree the full beauty and richness of design. The material will take a great variety of finishes. There are but a few types of decoration with which the fixture will not harmonize.

Catalog, circular matter, etc., may be obtained by addressing the company—the Plastic Relief Manufacturing Company at 949 N. Halsted St., Chicago, Ill.

When Writing Advertisers Please Mention the American Carpenter and Builder.

CAST IRON COLUMNS

IN ALL LENGTHS UP TO 12 FEET
CARRIED IN STOCK

CHEAPER
THAN WOOD,
STRENGTH
AND
DURABILITY
CONSIDERED



A-5
Special Cap

FIRE AND
WEATHER
PROOF
PRACTICALLY
INDES-
TRUCTIBLE

Immediate shipment will be made on orders for cast iron columns from our stock as follows:

Net Prices F. O. B. Foundry, Coshocton, Ohio

		A-3 Plain Cap and Base	A-4 Moulded Cap and Base
5 inch columns	12 feet long, each	\$ 6.40	\$ 7.10
7 " " "	12 " " " " " " " " " " " "	9.60	10.60
9 " " "	12 " " " " " " " " " " " "	13.00	14.50

The above prices are given on a column 12 feet long over all including cap and base. For columns of different lengths deduct per foot

5 inch columns.	\$.25
7 " " " " " " " " " " " "	.35
9 " " " " " " " " " " " "	.50

A-5 Special Cap, each, 5-inch \$1.75, 7-inch \$2.50, 9-inch \$3.25

Prices on larger size columns on application.

A-3 Plain Cap
and Base

A-4 Moulded
Cap and Base

Safe Load in Pounds for Cast Iron Columns

Made Up from Base and Top Castings	5-inch Column		7-inch Column		9-inch Column	
	Cap and Base 10 in. Square		Cap and Base 12 in. Square		Cap and Base 14 in. Square	
Length	Approximate Weight	Capacity	Approximate Weight	Capacity	Approximate Weight	Capacity
6 Feet	135 Pounds	38,400	222 Pounds	71,800	288 Pounds	90,500
6 Feet 6 inches	145 "	37,000	239 "	69,800	310 "	90,500
7 Feet	155 "	35,600	256 "	69,200	332 "	90,500
7 Feet 6 inches.	165 "	34,200	273 "	67,600	354 "	90,500
8 Feet	175 "	32,900	290 "	65,500	376 "	90,500
8 Feet 6 inches.	185 "	31,500	307 "	64,500	398 "	90,500
9 Feet	195 "	30,300	324 "	62,900	420 "	90,500
9 Feet 6 inches.	205 "	29,000	341 "	61,300	444 "	89,100
10 Feet	215 "	27,800	358 "	59,700	466 "	87,400
10 Feet 6 inches.	225 "	26,600	375 "	58,100	488 "	85,700
11 Feet	235 "	25,500	392 "	56,500	510 "	84,200
11 Feet 6 inches.	245 "	24,400	409 "	54,900	532 "	82,500
12 Feet	255 "	23,300	426 "	53,400	554 "	81,000

JAMES B. CLOW & SONS

HARRISON STREET BRIDGE, CHICAGO

FOUNDRIES: COSHOCTON, OHIO.

NEW COMERSTOWN, OHIO.

SAVE THIS PAGE FOR FUTURE REFERENCE.

OTHER CAST IRON SPECIALS WILL FOLLOW

When Writing Advertisers Please Mention the American Carpenter and Builder.



There is
Beauty
in
**BRIDGEPORT
STANDARD**
Wood Finishes.

Send for Sample Panels

in order that you may see what beautiful results can be obtained by the use of

**BRIDGEPORT
STANDARD**
WOOD FINISHES

By using these superior wood finishes you will please the owner, satisfy the architect and save money.

Cut out the coupon and mail it to us today.

**The Bridgeport Wood
Finishing Co.**

The
Bridgeport
Wood Finishing Co.,
Still River, Conn.

New Milford, Conn.

New York
Chicago
Boston

Gentlemen:—Please send me set
of sample panels. Yours very truly,

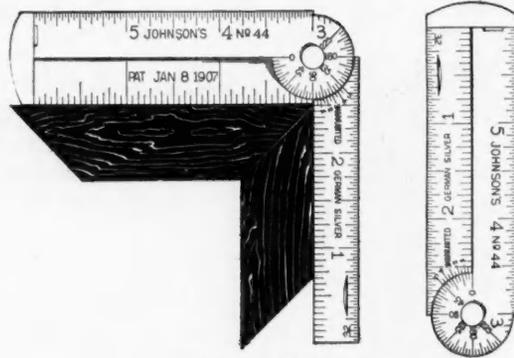
Name.....

Address.....

A. C. & B.

Handy Pocket Rule and Gauge

A very remarkable little folding rule is being manufactured by the E. P. Johnson Rule Manufacturing Company, 565 W. Washington Blvd., Chicago, Ill. This rule is made of spring



Johnson's No. 44

German silver accurately and distinctly graduated. It can be used as a hook rule, caliper, gauge, protractor, triangle or try-square. To every carpenter this rule is almost indispensable, as it takes the place of several tools. The protractor on this rule is divided to five degrees and the vernier reads to one-half degree.



We Learn all About Luther Grinders

The editor likes to get around once in a while and call on the different firms whose goods we are advertising. Last week we went up to Milwaukee and called on the Luther Grinder Manufacturing Company. They certainly have a fine equipment in the way of factory and office. Mr. Luther, president of the company, took us around and showed us the way they make their grinders and some of the special features connected with them.

He took us to their sample room, where they have on display all the different grinding machines that they manufacture. To say the least we were surprised; we never believed that there could be such a variety of sharpening machines. There were on benches at least 32 different styles of machines. He explained each different design and showed why it was adapted to its particular class of work. Naturally, a machine that sharpens plow points, would not be the one to use when you have a razor to sharpen. They seem to cover all these requirements very thoroughly. In fact, he showed us grinders of all sizes and descriptions, from one so small that we could easily carry it in our coat pocket, to the big Hummer foot-power grinder.

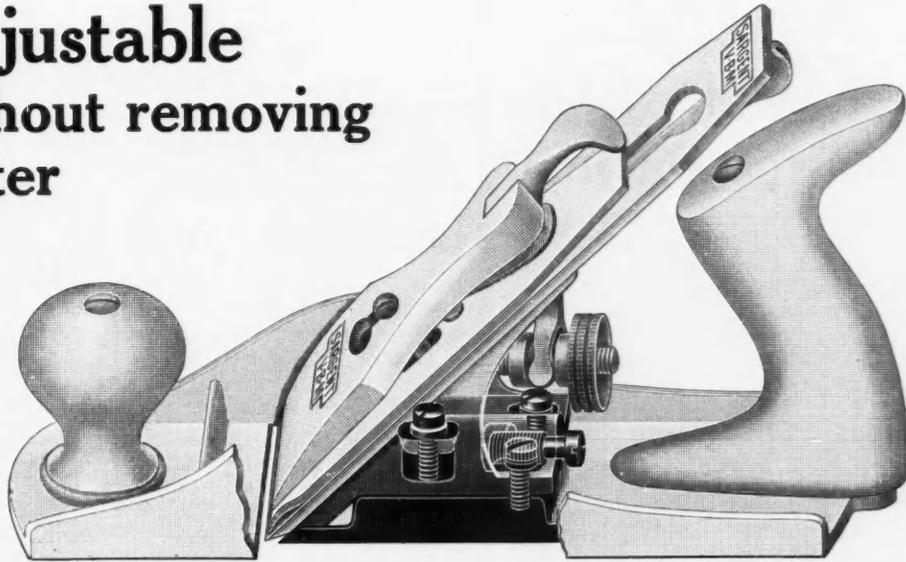


Luther's Hummer Grinder

Naturally, we were interested in the Hummer grinder that has been illustrated all season in these columns. So we asked him to show us that machine and some of the things that it would do. The first thing he did was to sit down at this machine and give it a few turns of the pedal. It seemed to run very easily and without much noise. Then he took a file and held it on to the grinding wheel. Now, we know something about tools, and we know that a file is made of the hardest steel it is possible to produce. As soon as he touched it to the rapidly revolving grinding wheel the sparks

When Writing Advertisers Please Mention the American Carpenter and Builder.

Adjustable without removing cutter



SARGENT

PLANES

FROG ADJUSTMENT

FINE WORK requires a very narrow opening between the front of the mouth and the cutting edge of the cutter. *Coarse work* requires support close to the cutting edge of the cutter to prevent chattering. By this improved construction, the frog with the cutter still clamped in position on it may be adjusted forward for *fine work* or backward for *coarse work* and at all times it is so supported as to prevent chattering. The Frog is moved forward or backward on a line parallel with the base so that no adjustment of the Cutter is required after the frog adjustment has been made.

The clamp and Cutter may be left fastened to the Frog while the adjustment is being made.

SOLID—RIGID—FIRM

These Planes have the double seat, giving two points of contact of the bottom of the Frog with the Bed or Bottom of Plane. At these points both the Frog and the Bed are profiled or milled insuring accuracy of fit and a solid firm seating of the frog on the Bed.

Made with both Smooth and Corrugated Bottoms in the following sizes:

Smooth, 7, 8, 9 and 10 inch; Jack, 14 and 15 inch; Fore, 18 inch and Jointer, 22 and 24 inch.

THE SARGENT TOOL BOOK—Free on request—gives a description of the full line of Sargent Planes and other tools. Send for your copy.

CUTTERS

The Cutter is made from improved Sheffield Steel tempered and drawn by an improved process and tested for proper temper by a hardened tool, then polished and sharpened ready for use and is *warranted*.

KNOBS AND HANDLES

The Knob and Handle are made of East India Mahogany, very durable, of rich dark red color which makes them very attractive in appearance. The handle is shaped to fit the hand of the user and for this purpose has a wide curve where the palm of the hand naturally rests.

WARRANTED

Every Plane is tested before leaving the factory and each part of every Plane is also put through a rigid test so that weak construction is almost certainly avoided and an absolute guarantee is therefore made by the makers, not only on the plane as a whole but on each individual part.

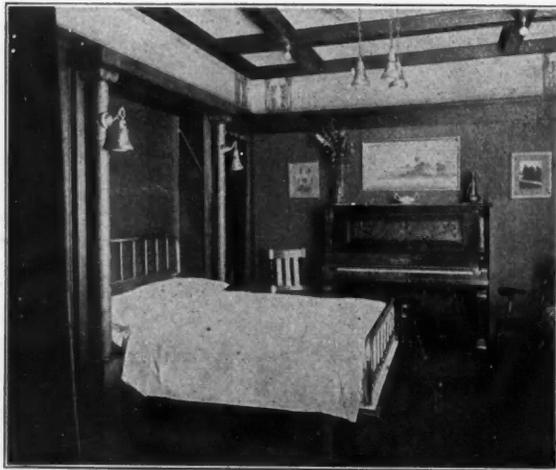
Sargent & Company

1149 Leonard Street
NEW YORK

When Writing Advertisers Please Mention the American Carpenter and Builder.

**How to Utilize Every Inch of Space to
the Greatest Advantage**

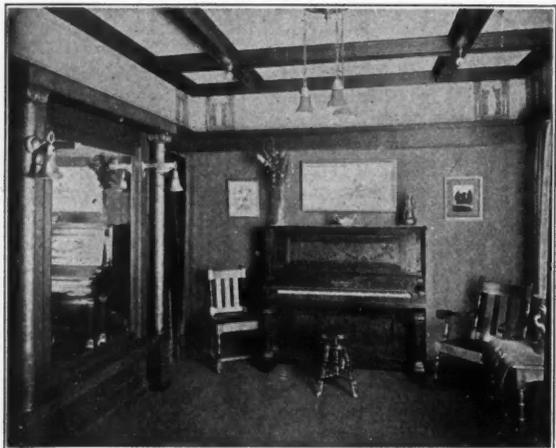
PERFECT WALL BEDS Solve the Space Question



Space utilization means increased area for the builder, consequently increased income. It means that the owner can provide a more attractive and convenient home for tenants with greater profits to him.

Three Rooms Equal to Five

Require less furnishing and are made more attractive by the richly finished console or side board which conceals the bed.



Ample ventilation is provided—More sanitary than the old style bed, for the reason that the space beneath can be kept clean without the laborious moving of the bed.

Prospective tenants will appreciate builders efforts to give them the best.

Builders:— Investigate before building. Let us plan for you how to utilize every inch.

PERFECT WALL BED CO.

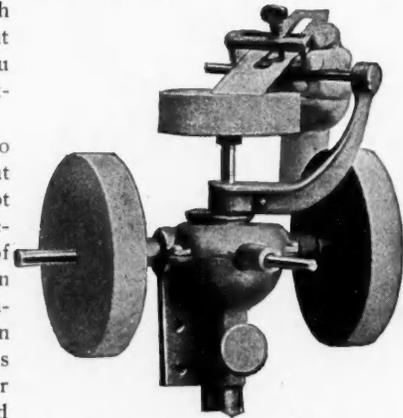
430-2 S. Wabash Ave.

CHICAGO, ILL.

began to fly until the file looked like a comet.

We thought to ourselves then, that we were sorry we had recommended this grinder at all, because it certainly would take the temper out of steel tools. After he had been holding the file on the wheel for what seemed to be quite a time, he suddenly touched the file to our hand. Now we didn't want to be burned, so we jumped back, but were surprised to find that the place he had been grinding was as cool as though it had been lying on the bench all the time. The wheel had cut a great gash into the hard file, but not a mark could you see on the wheel itself.

Then he went on to explain why it is that "Dimo-Grit" will not hurt a tool. It is because the particles of the wheel have been brought to such diamond hardness in electrical furnaces that they are harder than any steel could possibly be. Unlike



Plane Bit Sharpening Attachment

emery or corundum, they shave away the minute pieces of steel instead of grinding it away. Because these particles of the wheel are so hard and sharp they cut without friction. This same hardness also means that the wheel cannot glaze over and always presents a sharp cutting surface on the outside. Then, too, he explained how it is that on account of the "cleavage" of this wonderful sharpening substance, the edge it leaves on a tool is smooth instead of rough and uneven.

We were also very much interested in the large number of attachments that can be used on this grinder. It is, in fact, a full equipment for a work shop. The various attachments that can be used on this machine make of it about as fine a jig saw, lathe, circle saw, and many other things, as can be bought separately. We were particularly attracted by their arrangements for honing plane bits and sharpening twist drills. These two attachments are included in every mechanic's outfit.

We asked Mr. Luther how long these wheels would last, but he said that he didn't know. This new substance has been on the market only a few years so they haven't had a chance to find out just how many years it actually will last. They say that they guarantee the entire machine for 5 years, but he sees no reason why the machine and the wheels should not last for 15 or 20 years.

It is astonishing how the grinder business has grown in the last ten or twenty years. When Mr. Luther first started in business, 17 years ago, there was scarcely a carpenter in the whole country who was not using the old-fashioned grindstone. It took him a long time and cost lots of money to educate the public to the great amount of time wasted in trying to sharpen tools properly on the old-fashioned grindstone. In fact the grinder business seems to be the same as that of almost all other inventions have been; although it took time to get people to using them, when once they are known and introduced, no one ever thinks of going back to the time and tool-wasting methods of the grindstone. There are now nearly a million Luther grinders in use.

Mr. Luther also stated that although they enlarged their factory and business within the last two years they have to move into still larger quarters. This is a splendid testimonial of the way a business will grow when good values are put out under a policy of strict honesty and square dealing.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Good Business for the Architect and Builder



IT PAYS the Architect to *write* Green Label Varnishes *into the contract*. It pays the Contractor and Builder to *make sure* that genuine Glidden quality goes on the *job*.

Not "*or equivalent*"—for there is *no* equivalent.

It's this matter of proper finishing—of beautiful permanent protection of the woodwork and floors that insures the future satisfaction of the owner—and reflects *lasting* credit on the man who wrote the specifications and the man who carried them out.

So it is good business to go by the Green Label—*always*.

The Glidden name has stood for *quality* varnish for nearly half a century. We made our standard the highest—and *kept* it there.

We do not know "all there is to know" about Varnish—never expect to. But we've been busy learning all the time—*Perfecting Good* Methods, supplanting *Good* materials with *Better* ones which we search the world to secure regardless of cost—and training here, under Glidden guidance, a corps of expert varnish makers and chemists—every man of them a specialist—the greatest varnish organization in America.

Glidden's Green Label Varnishes of Vitality

are full of life, elasticity, durability. The Glidden way of perfect blending and refining—of long time aging—means a product of perfect *Uniformity*. Glidden Varnishes dry just quickly enough but not too quickly, and set without dust. They bring out *all* of the natural beauty of the wood. They are proof against *Hard Knocks* and *Heel Nails*.

There's Quality in Every Drop

Five splendid specialties—each grade has its special purpose:

M. P. Durable Exterior	- -	\$4.00 Per Gallon
M. P. Durable Interior	- -	3.00 Per Gallon
M. P. Durable Floor	- -	3.00 Per Gallon
Velvet White Enamel	- -	5.00 Per Gallon
Superior White Enamel	- -	5.00 Per Gallon

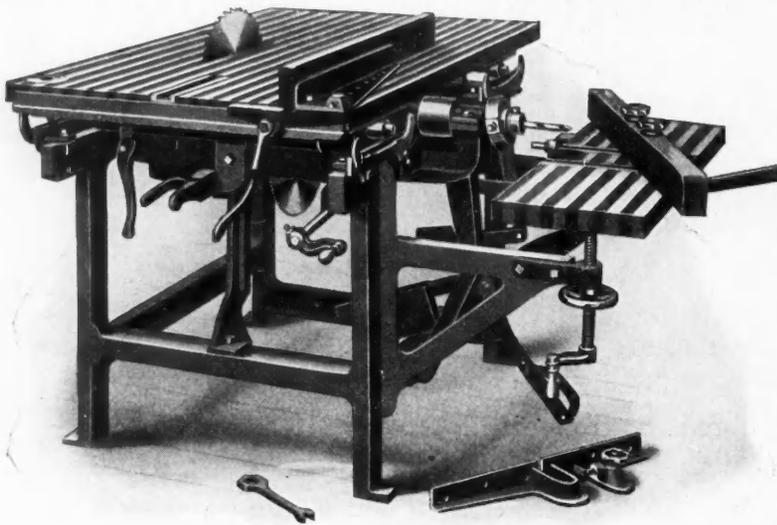
The Glidden Varnish Company

Factories: CLEVELAND OHIO TORONTO, CANADA
Branches: NEW YORK CHICAGO LONDON

When Writing Advertisers Please Mention the American Carpenter and Builder.

Portable Saw Tables Can Effect Saving

Building contractors for many years have been making highly successful and profitable use of saw tables. On practically any job they have proved to be big time and labor



Double Arbor Saw Table of Beach Mfg. Co.

savers, which has resulted in a certain increasing demand for saw tables and a resultant effort on the part of all manufacturers to develop to a high degree all the possibilities afforded by the saw table.

Among the large manufacturers of saw tables and wood-

working machinery are the Beach Manufacturing Company of Montrose, Pa. The machines are widely known and in extensive general use.

This company are now featuring their double arbor rip and cut-off saw machines, which are made with either iron or wood frames and with extension table if so desired.

This machine is portable and can work in very little space. The company claims for it that it can cut the work of from twelve to thirty men; that it can make any cut any carpenter can in but a fraction of the time hand sawing would require; that it should be used on every job where fifty thousand feet of lumber has to be used; that it has repeatedly shown a saving to owners of \$50 per day in labor alone.

This double arbor trip and cut-off machine can be changed from a rip saw to a cut-off saw or dado head almost instantly. This provides both rip and cut-off saw in this machine, and ready for use at any time. In addition the machine has boring, bevel gauge, mitre gauge and dado head attachments; is provided with a rolling top equipment capable of carrying 1,000 lbs. easily, and has the table

extension feature.

These machines are fully described in a booklet the Beach people issue, a copy of which can be obtained by writing them direct—The Beach Manufacturing Company, Montrose, Pa.



The rent agent calls attention to the Wolff Plumbing Fixtures as the best guarantee to the prospective tenant of the high grade of the plumbing system—indeed, the type of the whole building is many times inferred from the use of WOLFF material throughout.

The worries from "assembled" plumbing, contrasted with the perfect service of the all-built-by-one-house Wolff Plumbing, makes it easy for the architects to use Wolff specifications.

L. WOLFF MANUFACTURING COMPANY

MANUFACTURERS OF

PLUMBING GOODS EXCLUSIVELY

The Only Complete Line Made by Any One Firm

General Offices
601-627 W. Lake St., Chicago
Trenton, N. J.

Showrooms
111 N. Dearborn St., Chicago
Denver, Colo.

Omaha, Neb
Minneapolis, Minn.

St. Louis, Mo.
San Francisco, Cal.

Branch Offices:
Cleveland, Ohio
Washington, D. C.

Kansas City Mo.
Cincinnati, Ohio

Buffalo, N. Y.
Dallas, Texas

When Writing Advertisers Please Mention the American Carpenter and Builder.

ORR & LOCKETT

Established 1872

L HARDWARE CO

Most contractors and builders doing business in Chicago and vicinity know that they save time, trouble and money by sending us their orders for

Builders' Hardware

But there are others who do not realize what an advantage it is to have the benefit of our service, forty years of experience and tremendous buying power, and this advertisement is intended for them.

In the first place we carry at all times the largest and most complete line of builders' hardware in the country, so we seldom have to hold up an order because something is "out of stock." And this huge assortment (including the well known brands), gives you the greatest possible choice of kinds and prices.

We very seldom fill an order with the goods of any one manufacturer exclusively, but select those pieces which are acknowledged to be the leaders in each manufacturer's line. Thus the entire order contains only the highest grade articles—not a weak link anywhere.

In packing our goods for shipment we sort and label each piece from the specifications so that the workmen on the job lose no time in handling. Any contractor will appreciate the great advantage of receiving his hardware in this shape.

Send us your plans or specifications so we may show you

ORR & LOCKETT

Established 1872

L HARDWARE CO

14-16 W. Randolph St. CHICAGO, ILL.



Here is something to interest you. We have a Flat, Washable Oil Paint, the only paint of this kind furnished in liquid form ready for use. It comes in white and 15 tints.

It is cheaper, more brilliant and permanent, easier prepared for use and covers better than paste paints of this character. Does not settle or harden in the can. It is sanitary—a disinfectant—so much so it's been adopted in hospitals, laundries, bakeries, etc.

Johnson's Nuwal Paints do not change color, dry harder and quicker than any paint on the market, and will stand more washing and scrubbing. Finally it's put up in convenient packages, from quart cans to barrels, and the quarter, half and gallon cans have friction tops that keep the material in perfect condition.

It is a beautiful, economical, durable paint for interior walls of homes, stores, office buildings, hotels, etc. and gives greater satisfaction than anything made—and it's all ready for use.

Doesn't this interest you? Drop us a line today and learn all about it.

The R. F. Johnston Paint Co.
Pearl and Main Sts.
CINCINNATI, - - OHIO

Olmsted's Mitre Boxes

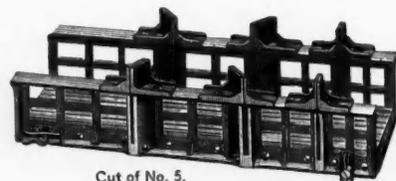
L. H. Olmsted's Son, Terrace Avenue, Hasbrouck Heights, New Jersey, manufacture several tools which are of particular interest to the builder and carpenter worker. These include their mitre box and their knife, scissor and tool grinder and sharpener.

Olmsted's mitre boxes are made in six styles, Nos. 1, 2, 3, 4, 5 and 6. Illustrations of Nos. 1 and 2, and No. 5, are shown here. They are made in sizes which will take work from 1½ by 3 up to 4 by 6 inches.



Cut of No. 1 and 2.

Their mitre boxes Nos. 1, 2, 3 and 4 are made of the best quality selected hard wood. They have adjustable iron saw guides for any thickness of saw blade. Their boxes Nos. 5 and 6 are made of iron and steel. All boxes are painted and oiled finished, making them impervious to the action of the atmosphere.



Cut of No. 5.

The knife, scissor and tool grinder and sharpener does rapid work and does not require any particular skill to operate it.

Other tools made by L. H. Olmsted's

Son are a power hack saw machine and a mole trap. Full particulars concerning the articles of their manufacture may be obtained by addressing the L. H. Olmsted's Son, Terrace Avenue, Hasbrouck Heights, New Jersey, for their circular matter.



The Porter Hand Jointer or Buzz Planer

Prominent among the machines of the C. O. Porter Machinery Co., Grand Rapids, Mich., is the one illustrated on page 102, "The Porter" Hand Jointer or Buzz Planer. This is the result of years of experience in the manufacturing of Wood Working Machinery in a city of world-wide reputation where the use of wood working machinery prevails.

The uses of the Hand Jointer are many and varied, and it is now considered an indispensable tool in any wood working shop. It is most commonly used for jointing and planing out of wind, but other operations such as rabbeting, grooving, gaining, chamfering, beading, beveling, squaring up or making any shape of moulding can be performed.

This cut illustrates the rear view of the 8-inch "The Porter" Style "A" or Heavy Pattern machine, made in three different lengths. 5', 6' and 7'.

The frame is cast hollow and in one piece, and is strongly ribbed and braced. The base bears on four corners, insuring freedom from jar and vibration. The caps are planed and fitted.

The Tables are ground perfectly true by a special process, are steel lipped, arranged for rabbeting and are made extra long. They are mounted on inclines which are adjustable at either corner, making it easy to keep them in alignment, and the depth of cut is gauged by means of an independent handwheel and screw at the end of each table. They can be drawn back away from the head without interfering with their relative heights, thus permitting the operator to have free access to same for sharpening or removing the knives, or for placing on moulding cutters which work in a larger circle than the knives, and are kept in place by means of a stop.

The Spring Joint attachment, as is shown in this cut, is regularly furnished with these machines, and is a very de-

When Writing Advertisers Please Mention the American Carpenter and Builder.

Soon Pays for Itself THE UNDERFEED Cuts Coal Bills $\frac{1}{2}$ to $\frac{2}{3}$

HERE'S PROOF

"My Underfeed installed in 1908 has given perfect satisfaction. As my fuel bill averages less than \$30 per winter it has paid for itself."
M. S. KANE, 3525 Evergreen Avenue, Chicago.

MR. CONTRACTOR: You will *add* to your reputation as a builder by specifying the Underfeed, because it insures *clean, even and always comfortable* heat at *least possible* cost. The UNDERFEED soon pays for itself and does *more*—it *makes money* for its owner by effecting for a *lifetime*, an annual saving of one-half to two-thirds in fuel expense.

Underfeed Systems are adapted for *all* buildings—large and small—Homes, Apartments, Churches, Stores, Theatres, Armories and Halls.

The economy and efficiency of Underfeed heating is easily explained. Cheap slack soft coal and pea and buckwheat sizes of hard and soft coal yield in the Underfeed *more* heat, *cleaner* heat and *more even* heat than higher priced coal burned in other heaters. These facts are emphasized in our *continuous* national advertising which tells of the exclusive *money-saving* advantages of

THE PECK Williamson Underfeed FURNACES BOILERS

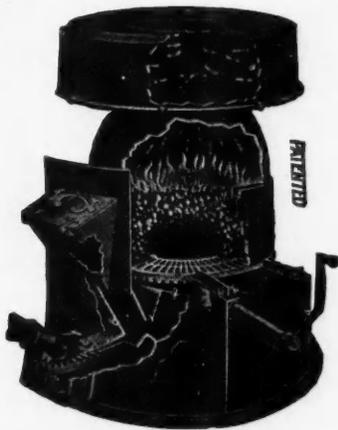
You will make no mistake in *recommending* the Underfeed. Send us your building plans and the expert services of our Engineering Corps are yours—FREE.

In the Underfeed coal is fed from below. Fire is on top and sides, in direct contact with the most effective radiating surfaces. In top feed furnaces the reverse is true—fresh coal blankets the fire, causing alternating chill and overheat, discomfort and coal waste. In the Underfeed, smoke and gases must pass up through the fire, are consumed and make more heat.

The Underfeed insures *perfect* combustion—the utilizing of all heating elements. No smoke, no soot, no clinkers and but few ashes.

Proof of the efficiency of the Underfeed is to be had in abundance. In this month's magazine advertising, these testimonials are used:

The Underfeed Furnace, with casing removed, cut away to show how coal is forced up under fire which burns on top.



Ralph Reiman, 932 Saville Avenue Ft. Wayne, Ind. wrote April 4th, 1912—"The Underfeed furnace installed in my 7 room house four years ago, has proved to be the best investment I ever made. It has more than paid for itself in coal bills saved."

H.J. Johnson, 4122 Colorado Ave., Chicago, writes: "Below zero, with a 40-mile northwest wind, open on all sides to the full effects of the cold, thanks to the Underfeed, we kept our house of seven rooms, hall and bath up to 75 degrees. We had no trouble to keep warm while my neighbors were crying for heat. I could never get heat in two of my rooms with another furnace and I had the maker try it himself but it was a bad job. But with the Underfeed I can say Eureka! I have burned only eight tons of pea coal at a cost of \$32, saving half the coal bills with LESS dirt and MORE heat."

Let us send you a lot of fac-simile letters just as cheerful as the above with Underfeed Furnace Booklet or Boiler Catalog—all FREE.

THE PECK-WILLIAMSON CO.,
436 W. Fifth Avenue
CINCINNATI . OHIO

This illustration shows the Underfeed Boiler



When Writing Advertisers Please Mention the American Carpenter and Builder.

sirable feature for making long joints. By loosening the two cap bolts at the intersection of the two pieces of the frame and turning the little end screw which connects these two pieces, the top can be lowered when spring joints are desired, and then by turning the screw back, the top will

a hand jointer. The cylinder is housed in cast iron walls which makes an extra support or brace for the boxes and also makes a chute for the shavings, the outlet being the hole on the back side of the machine and the square cylinder acting as a fan. As the safety cylinder does not act as a fan the machine is furnished with a special base to use where there is no blower system. In ordering a jointer equipped with a safety cylinder be sure to state whether there is a blower system.

The Fence or Gauge can be tilted to an angle of 45 degrees, requires very little time to adjust and can be locked when the desired angle is obtained. Material can be planed up to the full width of the cut without removing the gauge.

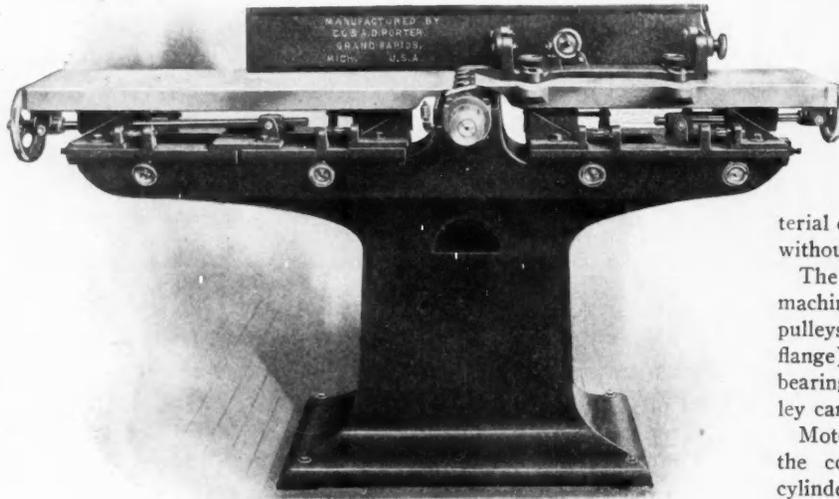
The Countershaft regularly furnished with each machine includes one drive pulley, tight and loose pulleys (the loose pulley is self-oiling and has a flange), shaft, adjustable hangers with ring-oiling bearings, shifter, etc. Nelson patented loose pulley can be furnished at a slight additional cost.

Motor Drive is obtained by doing away with the countershaft and belting direct from the cylinder pulley to the pulley on the motor. When this is desired, they do not ship the countershaft, and make allowance accordingly.

"The Porter" Patented Jointer Guard is furnished with square head machine, but not with the round head, as the round head is a protection in itself.

Each machine is thoroughly tested before shipping and is regularly furnished complete with countershaft, one pair of knives, oil cups and wrenches.

For further information address C. O. Porter Machinery Co. 666-668 Front Ave. N. W., Grand Rapids, Mich.

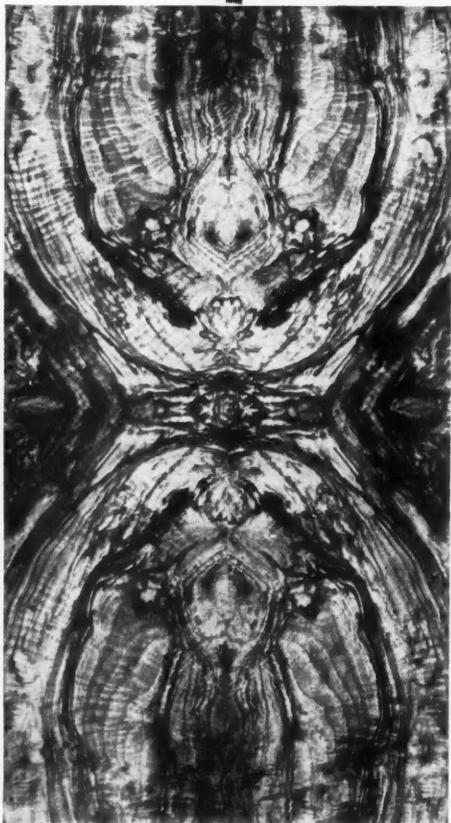


8-Inch "The Porter" Hand Jointer or Buzz Planer

become straight without having changed the alignment.

The Cylinder Head is forged from crucible machinery steel and the journals are perfectly ground. These are regularly furnished square (4-side) or round. The 4-side heads are all slotted for bolts, with two knives on two sides and bolts for special knives on the other two sides.

The Shaving Draft is a new and most desirable feature on



Panel with Circassian Walnut

Paneling is popular—Contractors and Builders—with all home owners and home builders because it produces a certain decorating effect that is both beautiful and distinctive.

That is just what everyone building a home wants in their place—something a little more attractive and different from the rest—and that is just why paneling is demanded.

And when you consider the added worth and effect it gives paneling is not expensive.

For example you can panel with our Circassian Walnut Built-Up Veneers at a really moderate figure. And what an effect you can obtain through using our Circassian Walnut Built-Up Veneers.

Note particularly the accompanying reproduction of a Circassian Walnut Built-Up Veneer. Note the distinctiveness of this panel—the perfect and pleasing effect it produces.

Contractors and Builders, you can secure business through our Built-Up Veneers. They give your work a certain standing. People admire them and they want them.

Get ahead of your competitor and secure your paneling from us. You can with our paneling control the panel business of your locality.

Our Built-Up Veneers are made in many highly figured, also domestic and foreign solid effect woods. They are essentially different in their appearance and make-up than any other paneling manufactured. They represent quality all the way through. They are up-to-date in all respects.

We want every Contractor and Builder—whether you intend doing any paneling work this season or not—to get in touch with us and learn about our Built-Up Veneers. Let us show you the many effects you can create with them.

The F. Eggers Veneer Seating Co.
TWO RIVERS, WISCONSIN

When Writing Advertisers Please Mention the American Carpenter and Builder.



Can You Intelligently Meet Your Own Varnish Needs and Your Customers' ?

A CARPENTER or builder is not supposed to be a varnish expert. He's not the man who wields the brush or is held responsible for results.

But he ought to know something about varnish.

He ought to know the good varnish from the bad. He ought to know how various woods can be treated. He ought to know some one high-grade label that means good results.

He ought to know enough to advise his

customers, when his opinion is asked. He ought to see that his handiwork is not spoiled by improper finishing!

To know Berry Brothers' Varnishes is to know good varnish.

But you can add much valuable information to that knowledge by owning our free book:

BERRY BROTHERS' VARNISHES

"Natural Woods and How to Finish Them"

Send for a copy today

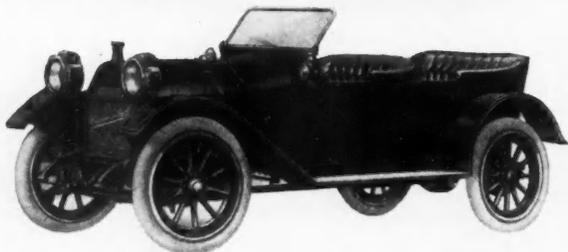
BERRY BROTHERS, Ltd. DETROIT

Address "Technical Dept. Detroit, Mich."



When Writing Advertisers Please Mention the American Carpenter and Builder.

Hupmobile



Hupmobile Long-Stroke "32" Touring Car, \$900.

F. O. B. Detroit, including equipment of windshield, gas lamps and generator, oil lamps, tools and horn. Three speeds forward and reverse; sliding gears. Four cylinder motor. 3½-inch bore and 5½-inch stroke. Bosch magneto. 106-inch wheelbase. 30x3½-inch tires. Color, Standard blue. Roadster, \$900.

Not the Price; Not the Specifications; But—the Name added to both

You would do this car less than justice if you judged it by its price.

You would fail to do it full justice even if you judged it by the generous specifications.

It is what the car has always stood for, that renders the price remarkable.

It is the Hupmobile record and the Hupmobile reputation that emphasize the extraordinary character of the specifications.

The price is not, in itself, sensational—but the high standard of Hupmobile practice, at that price, is sensational.

You do not buy certain large cars of highest price because they boast a longer wheel base; or more generous proportions in any part of the chassis.

You buy them because their name and their word have always been synonymous with service and worth.

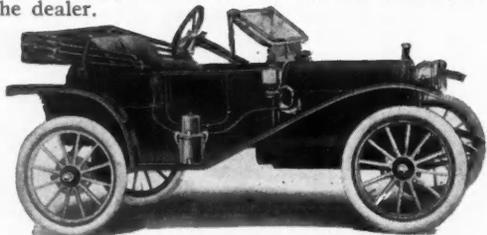
And, in its class, the Hupmobile has always held its ideals as high as cars of the highest worth.

It has shown itself worthy of a place beside them—worthy to share the same garage; it has fulfilled its mission as efficiently as they fulfill theirs.

Bear these things in mind as you study the cars in detail—then, and not till then, will you fully realize the remarkable value embodied in the price and in the specifications.

We are quite willing that you should compare this new Hupmobile with cars which sell for several hundred dollars more.

We will cheerfully abide by your decision, if it does not demonstrate either equality or superiority in any definite and positive test which you may designate to the dealer.



Standard 20 H. P. Runabout, \$750.

F. O. B. Detroit, with same power plant that took the world-touring car around the world—4 cylinders, 20 H. P., sliding gears, Bosch magneto. Equipped with top, windshield, gas lamps and generator, oil lamps, tools and horn. Roadster, 110-inch wheel base, \$850.

Hupp Motor Car Company

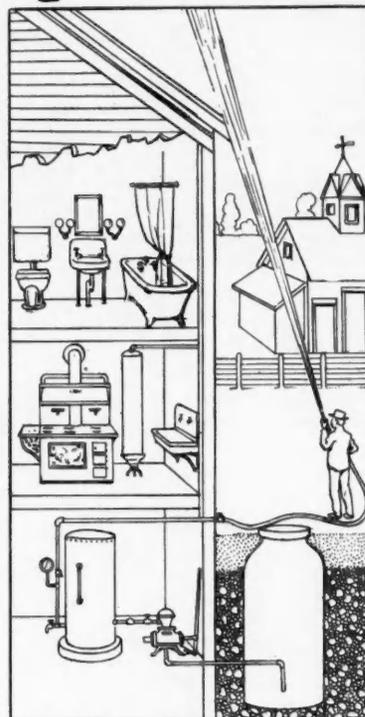
1255 MILWAUKEE AVENUE, DETROIT, MICH.

Canadian Factory, Windsor, Ont.

A Simple Method for Water Systems

One of the most remarkable methods for the aid of builders and home owners is that perfected by M. J. Gibbons of Dayton, Ohio. It is a practical, simplified, working method for installing water systems, plumbing of all kinds and heating plants. It does away with the necessity for skilled labor. Any carpenter or builder or any farmer can buy his material direct from Gibbons and the plan and instructions that go with it free are so perfect and simple and so practical that the average home

owner himself can install the plant or system so well that Gibbons will put a two years' guarantee on it. The result of this protected Gibbons method is that every home owner in a small town or on a farm can now have all the comforts and luxuries of running water, bath rooms, and heating plants without going to the expense and trouble of calling in skilled labor. The only expense is the actual cost of the material you use. You can imagine, therefore, how popular this Gibbons method is becoming, particularly on the farms and in the smaller towns and cities.



Pressure for both Sanitary Conveniences and Fire Protection

Everything related to the installation of running water in your house has been simplified by the Gibbons method. For instance, with a Gibbons hand pump and a pressure tank in your basement you can put hot and cold running water on every floor at an astonishingly small outlay. It is possible for the average owner to heat his house with hot water which is becoming so extremely popular in all the cities. It is just as easy, however, to install steam heating plants with the aid of Gibbons plans and instructions which are furnished free.

This Gibbons method is a result of 36 years of practical experience, scientific investigation and careful study. The thing that Mr. Gibbons was working to all of these years as he explains was to make it possible for every home in the entire country to have the comforts and advantages of running water and economical heat.

The Gibbons method is explained in a book which he will send to you free. He will also send you the most complete catalog relating to water systems, plumbing and heating plants and all accessories as well as to gas engines, rams, hydraulic rams, pipes, valves, electric lighting systems, acetylene lights. It makes an extremely valuable reference book which should be in every home. Simply send your name and address on a postal card to M. J. Gibbons, Dayton, Ohio and he will send you a copy post-paid free.

Contractors find this book valuable in estimating costs on plumbing, water and heating systems. It also helps them out of many small difficulties by showing where to get some fitting or accessory not usually carried by local dealers. Home owners who want to make some small improvement about the house, barn or well, can use this book to great advantage. Every article Gibbons sells is guaranteed high quality.

When Writing Advertisers Please Mention the American Carpenter and Builder.

The "ABC" of BEAVER BOARD Construction

The sixth of a series of twelve monthly talks to carpenters about the practical use of *Beaver Board*, the Pure-Wood-Fibre wall and ceiling material that is durable, economical, artistic; has none of the disadvantages of lath, plaster and wall-paper; and is appropriate to any type of building new or old.*

Beaver Board is essentially a proposition for Carpenters and Builders

CHAPTER VI

BEAVER BOARD IS SPECIFIED BY ARCHITECTS

This, as you know, is a great help to the Carpenter, Builder and Contractor, especially to those who handle and sell Beaver Board, as well as looking after the construction.

It is due to the genuine merit of Beaver Board and also to the fact that we are always actively engaged in explaining to Architects its many advantages and uses.

This advertising is directly in your interest and has been very successful.

READ THIS LETTER: IT'S TYPICAL

L. A. H. KOETH,
Architect,
Room 2, Masonic Temple.
Wilmington, N. C. March 1st, 1912.

The Beaver Co.,
Buffalo, N. Y.

Dear Sirs:—

Sometime ago your firm wrote me as to what I thought of your Beaver Board that I used on Mr. George Sloan's residence at Winter Park Gardens, Wilmington, N. C., and in reply I beg to say that I am more than pleased with same as it was used all over his house. This house has been built now going on two years and I have seen the walls several times since they have been finished and they improved with age.

I was in conversation with Mrs. Sloan only a few days ago and asked her if they found during the recent cold spell. She stated to me that the house was very comfortable. Now, Winter Park Gardens is a very cold place in the winter, as it is located in a place that is open where the winds can come from all directions.

I will take great pleasure in recommending your board to all of my clients that desire something that is not only beautiful but practical and am now figuring with several parties that will use it in several fine residences that will be built this spring.

If this letter will do you any good, why use same with my compliments.

Yours very truly,
(Signed) L. A. Koeth.

*These chapters began in the January number. If you missed the back numbers, write us and we'll mail them.

The BEAVER COMPANY of BUFFALO
436 Beaver Road, Buffalo, N. Y., U. S. A

The BEAVER COMPANY, LIMITED
376 Beaver Avenue, Ottawa, Canada
16 Eastcheap, London, E. C.

When Writing Advertisers Please Mention the American Carpenter and Builder.



Mr. Sloan, Wilmington, N. C., chose Beaver Board for his walls and ceilings. He is not only delighted with their artistic beauty, but finds that they have freed him from lath-and-plaster troubles.



Mr. Sloan's Beaver Board walls and ceilings also made his home warmer in winter and cooler in summer.

BEAVER BOARD

PURE-WOOD-FIBRE
WALLS & CEILINGS



Look for
this
mark

on back
of each
panel.

THINK HOW MUCH IS BEING DONE TO GET BEAVER BOARD WORK FOR YOU

1. A big, national advertising campaign, every year, reaching owners of every kind of building, besides architects and contractors.
2. Local advertising by our agents and distributors, locating good prospects.
3. Co-operation by our Architectural Department; placing jobs for you, making estimates, interesting owners, giving you any kind of help in our power to ensure the satisfactory results that produce letters like Mr. Koeth's.
4. Recommendations cheerfully given by Beaver Board distributors to men who show they can put up Beaver Board and get uniformly satisfactory results.

Hunt up the nearest Beaver Board distributor and get an early chance to try your hand. And meantime write us for the early chapters in this story as well as our free booklet, "Beaver Board and Its Uses".

Fortieth Anniversary for Orr & Lockett

The Orr & Lockett Hardware Company of Chicago celebrates its fortieth anniversary May 27. Keeping pace with the city of its birth, this concern has grown from a very small beginning to be the foremost institution of its kind in the world. No firm is more intimately associated with Chicago's wonderful progress, or holds the confidences and good will of architects and builders to a greater degree than does this one.

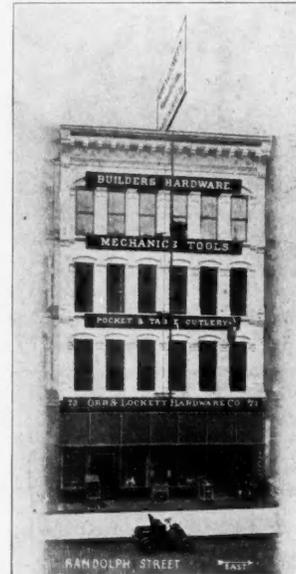
Both Frank B. Orr and Oswald Lockett were experienced hardware men before they started this business. Mr. Orr received his training in Mansfield, Ohio and Mr. Lockett had taken an active part in both the wholesale and retail hardware business of Chicago and the West since 1863.

Today when every detail about a building is given such careful consideration, it is hard to realize that at the time this company was organized practically no attention was being paid to the ornamental or artistic possibilities of builders hardware: And that even in some very costly buildings there would be a grotesque contrast between the expensive wood and marble used in their construction and the hardware.

The influence of this aggressive firm, not bound by tradition nor hampered by prejudice, was immediately felt. Designs in hardware which compelled attention from both the stand-point of artistic value and practical worth were submitted to the building fraternity. The preeminent merit of these designs, combining beauty with practicability was convincing; and their adoption created a standard which has made Chicago famous for the quality of hardware used on her public and business buildings and fine residences.

Mr. Lockett's innovations as shown in the following well known Chicago buildings, mark distinct periods in the history of builders hardware. Statuary bronze hardware was introduced when the Western Union Telegraph building was

erected in 1886. Cast iron made black and rustless by what is known as the Bower-Barff process was first used for builders hardware on the Rookery Building in 1887. The lower floors of the Monadnock Block were furnished with



Present Retail Store of the Orr & Lockett Hardware Co. 14-16 W. Randolph St., Chicago. Be sure to visit This Store when in Chicago.

the first aluminum hardware ever manufactured. Hardware made of solid German Silver was first used on the Marquette Building, which is the most expensively furnished office building in the world.



Cheap Roofing Is Money Wasted

THIS PICTURE PROVES IT

Here's an actual photograph. It speaks louder than words. A section of this roof was covered with Rex Flintkote and the remaining section was covered nearly four years afterwards with some other brand claimed to be just as good.

Notice the cracks, wrinkles and insecure seams in the just as good kind.

What is roofing good for unless it gives **permanent** protection?

Cheap roofing may fool you but it **can't fool the weather**, sun, rain, snow, frost and cold. In a little while it gives out.

Who loses then?

Rex Flintkote Roofing is all Quality---

It is made to wear **and it does.**

It makes good under all conditions. **It has to.**

It gives permanent protection for the property owner.

Samples and Booklet sent on Request

FLINTKOTE MANUFACTURING CO.

188 Pearl Street

BOSTON, MASS.

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GOING TO BUILD?

See These Bargains From Our FREE NEW CATALOG

WHETHER you expect to build or make repairs, now or later, by all means send for our magnificent new Catalog of Millwork and Building Material. It is the *biggest, best and most complete* book of the kind ever published. 3000 superb illustrations and 8000 dollar saving prices on up-to-the-minute building material of every kind, for every purpose are shown on its 176 pages. Why pay dealer's prices when you can buy bright, new stock at wholesale? Everything in lumber, flooring, doors, windows, mouldings, porchwork, building paper, hardware, tinwork, roofing—everything in building supplies *direct to you*, the user. *Quality, safe delivery* and satisfaction absolutely guaranteed. Write for the book today. It's free.



Plans of Modern Homes, another valuable book shows splendid views and floor plans of 50 beautiful modern houses and barns ranging in price from \$360 to \$6,000. Do not figure another bill or plan another house until you get these *two valuable books*.

H. B. Munger, President



FOR \$880 we will furnish complete all lumber, millwork, hardware, paint—everything except masonry and labor to build this 8-room house, and include plans free. Design A101.

Economy Rubber Roofing

- 1 Ply, 35 Lbs. \$1.10 Guaranteed 5 Years
 - 2 Ply, 45 Lbs. \$1.35 Guaranteed 7 Years
 - 3 Ply, 55 Lbs. \$1.60 Guaranteed 10 Years
- Rolls Contain 108 Sq. Ft.



100 ft. of Quarter Round, Dealer's Price \$1.00 — our price only 25c

Glazed Windows of all kinds ready for quick shipment.

- 2 light 59c up
- 4 light 59c up
- 12 light 67c up



Porch Spindles 1c



Hardware

Porch Post

CLEAR FIR 4 x 4 8 Feet 50c



Fir Porch Newel 4 x 4 4 Feet 30c



\$24.50

Buy This \$40.00

MANTEL

Equipped with Grate Complete

Don't buy a mantel until you examine the many beautiful designs in our free catalog. You will find just what you want at the price you want to pay.



FOR \$569 we will furnish complete all lumber, framing, timber, plank flooring, roofing, hardware, sash, doors, paint—everything except masonry and labor to build this barn and include plans free. Design A144.

Wearwell Paint

Perfect guaranteed house paint—

Single gallon cans only \$1.25

We have all kinds of paint at wholesale prices.



All kinds of building hardware. You can't beat our goods or our wholesale prices.

Save Money Buy Direct

CLEAR LATTICE 30c Per 100 ft.

PLAIN OAK FLOORING



5c Per Sq. Ft.

Only \$19.38

For These Stairs Complete, Dealer's Price

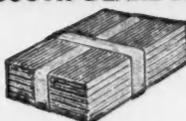
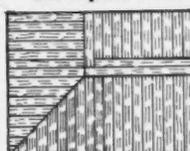
\$65.00

Is such a big saving as this of any interest to YOU?

You Save \$45.62



Fancy Flooring 12c Square Foot



Tin Shingles

For leaky roofs can't be beat—5x7. Per 100 7x10 inches—\$1.50 per 100

Doors of all Kinds



Glass Doors \$1.99 Up Panel Doors \$1.02 Up



FREE

These 2 Valuable Books

DON'T DELAY

2c CORNER BLOCKS

CHICAGO MILLWORK SUPPLY CO.

AMERICA'S GREATEST SASH AND DOOR HOUSE

623 SOUTH DEARBORN STREET, CHICAGO

WRITE YOUR NAME HERE AND SEND IT IN TODAY FOR OUR 2 BOOKS

DATE

Chicago Millwork Supply Co., 623 So. Dearborn St., Chicago, Ill.

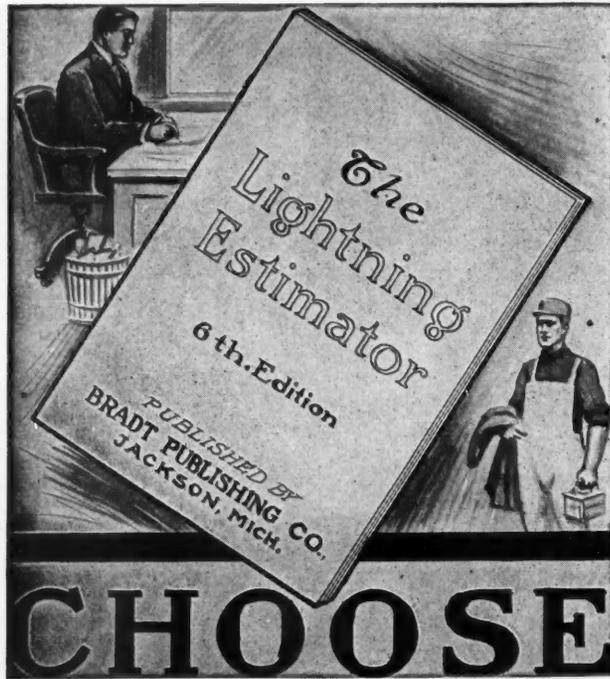
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Address.....

CATALOG—No. 43, of Building Materials PLAN BOOK—No. 53, House and Barn Plans

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

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

The LIGHTNING ESTIMATOR

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

The New Sixth Edition of the LIGHTNING ESTIMATOR

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

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

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

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

BRADT PUBLISHING CO.

1260 Michigan Avenue

JACKSON, MICH.

The New North-Western Terminal Station was equipped by this company under the personal supervision of Mr. Lockett, who gave it the benefit of his lifetime experience. Chicagoans are proud of the fact that the hardware in this building is superior to that used on any other railway station in the world. It is all of special design, made extra heavy of solid brass with an antique finish. All the special work and much of the hardware was made in the Orr & Lockett shops.

To sum up, this firm has equipped practically all of the better buildings erected in and around Chicago since 1872: Beginning with the Union Passenger Depot, built the year they started business, to the new North-Western Station just finished, the list includes such well known examples of modern architecture as the Auditorium, Congress Hotel, New University Club, Hotel La Salle and the Blackstone Hotel. The activities of this firm extend to all parts of the country, and include the equipping of the State House in Jackson, Mississippi, the Burlington Station in Omaha, the Government Buildings of the Norfolk Navy Yards, and many other well known structures.

The cooling room, refrigerator, restaurant and market work has been under the direct supervision of Mr. C. B. Orr. This department is famous and has to its credit such well known installations as the Hotel La Salle, Sherman House, Blackstone Hotel, New University Club and hundreds of other large and small plants all over the country. Wherever the element of quality has received first consideration, the Orr & Lockett equipment has invariably been installed.

Their manual training, domestic science and arts and crafts



The Orr & Lockett Hardware Co. Factory,
22nd and Jefferson Streets, Chicago

departments are most comprehensive, and like the departments just named have a business that extends to all parts of the country.

The complete stock found in the different retail departments of this company are unexcelled. Supplies of all kinds and every imaginable tool and device used by the various building trades is always kept on hand. Their cutlery stock is famous. Some idea of the size of the stock this firm carries can be judged from the fact that it is comprised of over 100,000 different articles.

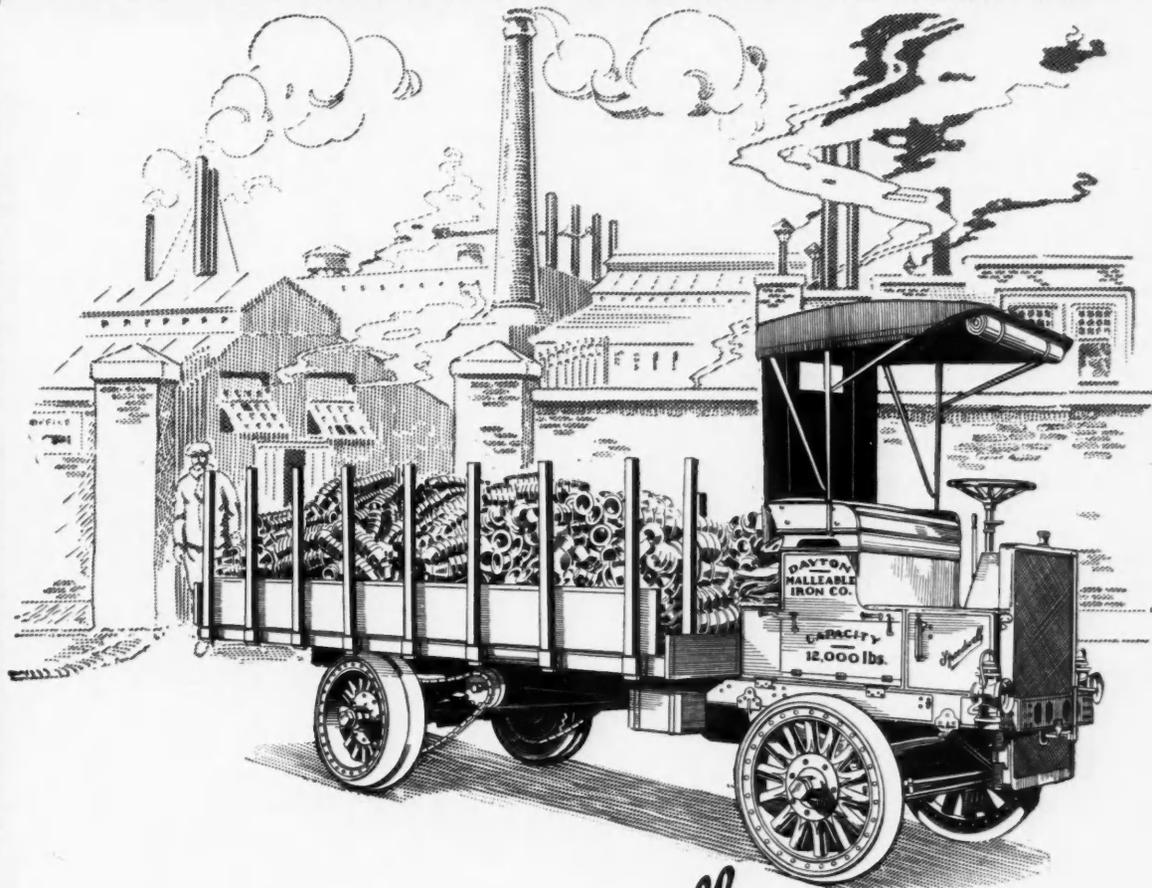
This company has made but four changes in its location in forty years, which in a rapidly growing city like Chicago is quite remarkable. They moved to their present location, 14-16 West Randolph Street in 1893 and occupy the entire building, consisting of five floors and basement. The Orr & Lockett factory where their refrigerators, cooling room and market fixtures, and manual training outfits are manufactured is located at 22nd and Jefferson Streets.



Northwestern and Miracle Consolidate

What is considered to be the largest deal ever consummated in the history of concrete machinery manufacturing—in importance of the transaction, the money involved, and in the interests affected—is the consolidation of the Miracle Pressed

When Writing Advertisers Please Mention the American Carpenter and Builder.



Speedwell MOTOR TRUCKS

2, 4 and 6 ton
capacities

Why a Speedwell Motor Truck, at full price, is the best possible investment.

In the first place, Speedwell Trucks of 2, 4 and 6 ton capacities are built in the best possible way, of the best possible materials and designed in the best possible manner for efficient continuous service—the truck itself is verification of this.

To the cost of such a truck is added a sufficient margin to cover a fair and equitable profit and to provide for future exigencies to co-operate with truck owners in giving continuous service.

It is a fixed and inviolable Speedwell policy never to discount prices and it is to the interest of the truck owner that this policy is absolutely maintained.

When a truck manufacturer or dealer discounts prices, the truck buyer suffers in one of two ways and probably in both. Either the original price discounted is based on a false standard of value, or there is no margin left to provide future service to the user which is of greatest possible importance if his investment is to be a profitable one.

In the first case, either the original price is inflated above real value or the quality standard of the trucks has been lowered to make the lowered price possible—an undesirable condition to the buyer in either event.

In the second case by discounting price there is no margin left to render future service and keep the truck running—a disadvantage to the buyer that concerns the most vital factor of the entire field of motor trucking.

The whole matter resolves itself to this: it costs money to build a good machine product like a truck and it costs money to keep it running, to give attention and service to the buyer. If you pay the price you'll get all this, but if you do not pay the price obviously you won't.

In the Speedwell, you get a good product and you get service which cannot be obtained at anything less than Speedwell fixed prices.

Consider this carefully before you buy any truck.

Literature on request

THE SPEEDWELL MOTOR CAR CO., 610 Essex Avenue, DAYTON, OHIO

When Writing Advertisers Please Mention the American Carpenter and Builder.

Stone Company, of Minneapolis, Minn., with the Northwestern Steel & Iron Works of Eau Claire, Wis., for the manufacture of concrete machinery and tools.

Both concerns are very well known, do an enormous business and enjoy a high reputation among concrete workers and contractors, both for the quality of their products and the excellent service they render. One can gather an idea of the immensity of the transaction from the fact that this consolidation will give them distinction of being the largest makers of concrete machinery in the world.

The Northwestern line has been established for the past decade and its concrete making machinery and tools are used in every country on the globe where concrete work is the form of construction. It meets the big demand for medium priced machinery and is considered to be the most complete line on the market, offering every conceivable kind of machine, tool, or mould necessary for successful results in all kinds of concrete work.

The Miracle line, consisting of concrete machines of single and double staggered air-space, two-piece wall block machines, brick machines, mixers, tile moulds, ornamental moulds, and moulds for cornices, chimneys, piers, burial vaults, etc., is one of the oldest lines in existence. It is thoroughly known to all contractors and concrete workers in the United States. It has a reputation for its many exclusive features and established quality.

The consolidation of these two giants of the concrete manufacturing business means a great deal to the trade and all interested in concrete construction. It enlarges the scope of the company to the extent of doubling their entire output, thereby greatly reducing manufacturing cost to contractors.

The Minneapolis plant will be abandoned and all machinery, stock, etc., will be moved to Eau Claire, where the manufacturing will be done in the immense plant of the Northwestern

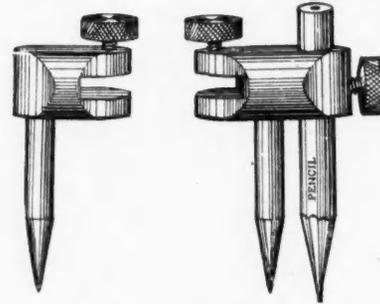
Steel & Iron Works. This last step was taken because of adequate facilities, added conveniences and more space afforded at the Eau Claire plant.



"Kwik-Fix" Trammel Points

Two handy little devices that the draftsman will find convenient to attach to his T square, the wood-worker to his foot rule or saw, and the iron-worker to his rule, band iron, sheet iron, etc., are illustrated herewith. They are known as the "Kwik-Fix" trammel points, and are made and sold by Campbell & Son, 119 Marshall St., Elizabeth, N. J.

With these trammel points, no special beam is required, and

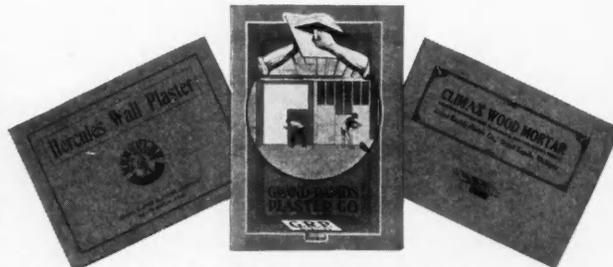


"Kwik-Fix" Trammel Points

no pencil clamp needed. They fit anything with a thickness of 3/16 inch or less. They can be nested snugly together to make them convenient to carry. Carpenters and builders will find them of particular value, as they can be put to a great many convenient uses. They are very reasonable in price.

Campbell & Son also manufacture the Triangle tool, advertised on another page of this issue.

**HARD WALL
PLASTERING**



**These Books About
Hard Wall Plastering
Will Be Sent To You
FREE**

BE SURE YOU GET YOUR SET

Contractors and Builders—you OUGHT to know all about hard wall plastering. Do you know just exactly what hard wall plastering IS? Do you know the many advantages hard wall plasters HAVE over the heavy, crackly, lime mortar plasters?

These booklets we will send you entirely FREE will explain hard wall plastering to you in detail. Will show you the great difference between hard wall plasters and lime mortar plasters. Will prove to you that to obtain positive, permanent plastering satisfaction in your jobs you should always use hard wall plastering—and nothing but hard wall plastering. In using the heavy, crackly, lime mortar plasters in your work you are taking all sorts of chances. Lime mortar plasters do not produce permanently satisfactory results. They always require constant patching, re-patching and filling. You are actually out money on lime mortar jobs in a short time. It is far better for you to use hard wall plasters—do the job once and be through with it. You're bound to use hard wall plasters sooner or later. Why not begin now and be sure of making money and saving time on every piece of work you'll do this season? Our hard wall plasters—Climax Wood Mortar and Hercules Wall Plaster—will give you positive, permanent thoroughly satisfying results. They are made entirely by us from our own gypsum rock. They are the most satisfactory plasters you can buy.

CLIMAX WOOD MORTAR

is extensively used. It is a wood fiber plaster made of pure gypsum rock. It is the best plaster made. The fiber adds about one-third to the bulk of the plaster, making it cover a greater area with less weight and maximum solidity and tensile strength. It is absolutely fire-proof. Its density prevents vermin. It is not affected by water. It is durable, flexible and pliable. Plastic and very easy to spread—any plasterer can apply it. It is adhesive and permanent. It does not contain one particle of sand.

HERCULES WALL PLASTER

is a gypsum rock hair fiber plaster—we do not sand at the factory. It makes a wall that is dense, durable, hard, tough and economical. It is absolutely fire-proof. It dries quickly after applying. It spreads better and with less waste than any other wall plaster. We use only high grade hair in its manufacture and it contains no chemicals, acids or vegetable matter.

We want to send you these booklets explaining hard wall plastering and our particular plasters—Climax Wood Mortar and Hercules Wall Plaster, also our Superior Wood Fiber Plaster, Gypsum Wall Plaster and Sackett Plaster Board. With these books we will send you our room measurement booklet—from it you can tell at a glance the number of square yards in a room. Now don't delay in sending in for your booklets. Drop us a line right away—right now while you have it in mind—and we will forward your booklets by return mail. With them will go the name of the nearest dealer from whom you can buy our plasters immediately.

N. B. We solicit inquiries from Michigan, Ohio, Indiana, Illinois, Wisconsin, Kentucky, Tennessee, West Virginia, and Pittsburgh, district, Pa. only. Freight rates will not permit shipment to other territory.



"Remember the TRADE MARK"

GRAND RAPIDS PLASTER COMPANY GRAND RAPIDS, MICHIGAN

GRAND RAPIDS PLASTER COMPANY

Grand Rapids, Mich.



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This hits you, Mr. Carpenter,
 even stronger than it does your customer,
BECAUSE YOU UNDERSTAND SO WELL

How
 much
 it means
 to be able
 to get
ALL
THE
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 (& Norway)
 Pine
 you
 want!
GET
THE
BOOK

ONE OF THESE IS COMING YOUR WAY, TOO.

JUST PUT YOUR NAME ON A CARD TODAY—MENTION WHY YOU CARE—
 AND "WHY—WHEN—WHITE PINE"—FULL OF VITAL LUMBER FACTS—
 WILL GO TO YOUR ADDRESS AT ONCE. BUY YOUR LUMBER BY IT.

BUY NO LUMBER TILL YOUR COPY COMES!

Send for it—Don't wait!



WE WILL GLADLY GIVE PERSONAL COUNSEL—HELPFUL IN YOUR OWN CASE.
 Anyhow, WRITE US before you buy ANY lumber—for any purpose. DO IT TODAY. This matter of
 WHAT WOOD is best for the given case is much more important than many realize. Our reply will be
 PROMPT and CANDID—and the booklet is ready and will reach you by return mail. WRITE NOW.

NORTHERN PINE Manufacturers' Association
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about*

I d e a l

W a l l B o a r d

IT IS your duty in the interest of your customers and in the name of building progress, to have intimate knowledge of this material.

You ought to be able to recommend ideal Wall Board as better and more durable than plaster; as more convenient and economical to apply; as more sanitary and lending itself to a greater range of decorative effects.

And you will gladly recommend it after you have seen a sample and read our booklet.

All we ask of you is a chance to give you the necessary information.

Ideal Wall Board is being more and more widely used, instead of plaster in residences, churches, stores, public buildings, apartment houses, garages, office buildings, etc., etc.

*Write today for the sample and
the booklet*

**The Roberds
Manufacturing Company**
MARION, INDIANA

"Bed Rock" Planes

The Stanley Rule and Level Company of New Britain, Conn., send us a pleasing leaflet they recently issued regarding their "Bed Rock" planes.

A particular feature of these planes is that the absolute solidity and one-piece effect of them is as much a fact as if the parts were all one, for the reason that the entire under surface of the frog is in perfect contact with the solid seat cast in the plane bottom. The frog and the bottom are so perfectly fitted together, that from the plane iron to the bottom, the plane is as one solid piece of metal. This form of construction positively prevents any chance of vibration.

The frog is made with a tongue on the under side, which fits in a groove in the plane body. This tongue and groove are made to conform, so that when adjustment is necessary the tongue of the frog travels in the groove, which insures its being square with the mouth of the plane, thus preventing any possible shifting or "wobbling."

The cutter, which is thin and of uniform thickness, is backed by the absolutely rigid frog. Advantages claimed for it are 1. Ease in grinding. 2. Less grinding, as a thin cutter can be kept in condition by honing. 3. Less tendency to "stub off" the cutting edge when honing, hence the original bevel is kept much longer. It is easily adjustable and is made of the finest quality English steel, tempered and ground by an improved process. Handles and knobs are of thoroughly seasoned rosewood and highly finished.

The Stanley Rule & Level Company will mail this "Bed Rock" plane folder, together with any of their other descriptive matter wanted, upon request.



Kanneberg Metal Tile in New Form

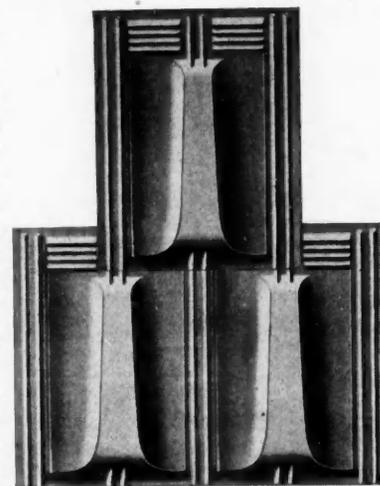
General interest among builders has been aroused by the new "Style C" Kanneberg metal tiling which is now being manufactured by the Kanneberg Roofing & Ceiling Company of Canton, Ohio.

This new "Style C" tiling is formed in long sheets, thus greatly reducing the number of joints which overlap. It fits perfectly, leaving no possibility of a leak. It is said the cost of applying this new tiling is fully one-fifth less than that of the ordinary tile shingles.

The Kanneberg metal tiling is widely known and has been extensively used in roofing work. This new "Style C" type promises to prove as popular among builders as their other metal tiling.

Metal tile make a thoroughly durable as well as an ornamental roofing. For hip and gable finials, hip moulding and cresting blocks the Kanneberg people manufacture in metal form sections for such use, and which match their tiling.

Circular matter describing this new "Style C" tiling as well as the other tiling of their making can be obtained from the Kanneberg Roofing & Ceiling Company of Canton, Ohio. Circular DA covers metal tiling. Catalogs D and G explain their metal ceilings and metal roofings.



Application of three "Style C" Tile

When Writing Advertisers Please Mention the American Carpenter and Builder.

UNCLE SAM SPEAKS ANOTHER GOOD WORD FOR

"THE
WOOD
ETERNAL"

CYPRESS

"THE
WOOD
ETERNAL"

Dept. of Agriculture, Forest Service, Bulletin 95, Page 44, issued June 30, 1911, says of *Cypress*:

"The properties which fit it for such wide use are the freedom of the wood from knots and other defects . . . and the *long period which the wood may be expected to last*. To this might be added handsome appearance, which frequently has much to do with popularizing a wood."



Further on CYPRESS, the same Government Report says: "The wood contains little resin and thus affords a *good surface for paint*, which it holds well. . . . It is a popular wood where it is subjected to dampness and heat. It shrinks, swells or warps but little. . . . For the parts of houses exposed to the weather it serves equally well."



Both quotations above are from Bulletin 95, (page 44) U. S. Dept. of Agr. (Forest Service), June 30, 1911.

"The Money You Don't Have to Spend on Repairs is ALL PROFIT."

When planning new improvements or repairs to old ones, just remember—"With CYPRESS you BUILD BUT ONCE."

WRITE TODAY for **VOLUME ONE** of the CYPRESS POCKET LIBRARY, with Full Text of OFFICIAL GOVT. REPT. Also Full List of 31 Other Volumes. (FREE on request.)

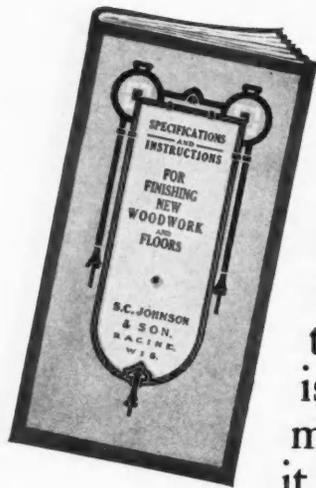
Let our "BUILDER'S DEPARTMENT" help YOU. Our entire resources are at your service with Reliable Counsel.

SOUTHERN CYPRESS MANUFACTURERS' ASSOCIATION
1216 HIBERNIA BANK BUILDING, NEW ORLEANS, LA.

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Will You Read This Book If We Send It Free?



THIS book is the work of expert authorities. It gives instructions how to obtain best results; shows how much material is needed for certain work; lists shades best adapted for different woods; quotes prices on the best wood finishes. It is brimful of information that brings success to every reader. Be sure to get a copy. It is the result of 30 years' expensive experiments and tests. The reason why we give it free is because it tells about

Johnson's Wood Finishes

We want every contractor and builder to know all about our wood finishing materials and try them at our expense, so with the booklet we give you generous samples of Johnson's Wood Dye and Flat Wood Finish.

**Over \$200,000 Worth of Experience Is
Behind This Book—Ask For Your Copy**

We have been manufacturing Wood Finishes for over 25 years and know just what contractors and builders need. Our book and samples will bring you the information you want. Get them today.

S. C. Johnson & Son, *"The Wood Finishing Authorities"* **Racine, Wisconsin**

Generous Samples FREE

To Builders, Architects, Contractors

LET us send you free samples of Johnson's Flat Wood Finish and Johnson's Wood Dye, also a copy of our Instruction Book. Architects, Contractors, Painters and Home Owners are enthusiastic over the results obtained and the big saving made possible with them.



Johnson's Wood Dye

is made in 15 popular shades as follows:

- No. 126 Light Oak
- No. 123 Dark Oak
- No. 125 Mission Oak
- No. 140 Early English
- No. 110 Bog Oak

- No. 128 Light Mahogany
- No. 129 Dark Mahogany
- No. 130 Weathered Oak
- No. 131 Brown Weathered Oak
- No. 132 Green Weathered Oak

- No. 121 Moss Green
- No. 122 Forest Green
- No. 172 Flemish Oak
- No. 178 Brown Flemish Oak
- No. 120 Fumed Oak

Gallons \$3.00—Half-Gallons \$1.50

Test samples on any work you have in hand. Note how quickly Johnson's Wood Dye dries, so that dust and dirt have no chance to settle in the finish. Observe how it penetrates and brings out all the beauty of the grain without raising it in the slightest degree. In addition to this, the fastness of color, ease of application and practical economy will also appeal to you.

Johnson's Flat Wood Finish

is a liquid—an easy spreading preparation, manufactured especially for finishing interior woodwork of new residences and buildings—as well as furniture—and equally valuable for refinishing old surfaces.

This flat wood finish opens a new field for the contractor and builder. By the use of Johnson's Flat Wood Finish, you can make estimates on hand-rubbed effects that will land the contract every time—give your customer perfect satisfaction—and make you a good profit besides.

Don't fail to secure Instruction Book No. A. C. B. 6 and samples at once. If your dealer isn't supplied, write us and we will send them direct on receipt of postal or coupon.

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

"The Wood Finishing Authorities"

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

Please send me
free samples of
Johnson's Flat Wood
Finish and Wood Dye
Shade No. Also
Instruction Book A.C.B.6

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When Writing Advertisers Please Mention the American Carpenter and Builder.

Rixson Pantry Door Check

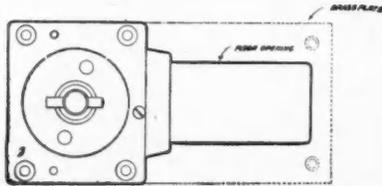
Many new and decidedly novel features are embodied in the latest door check manufactured by the Oscar C. Rixson Company, of Chicago, Ill., well known manufacturers of various types of door checks.

In their new check—the Rixson double-acting pantry floor check—the spring used is exactly the same as that which they have used so successfully in their overhead check for the past ten years.

As in their overhead check, the spring and all other working parts are immersed in the checking oil, and are thereby kept in the best possible condition at all times. The parts cannot rust, dry out nor gum, being constantly lubricated.

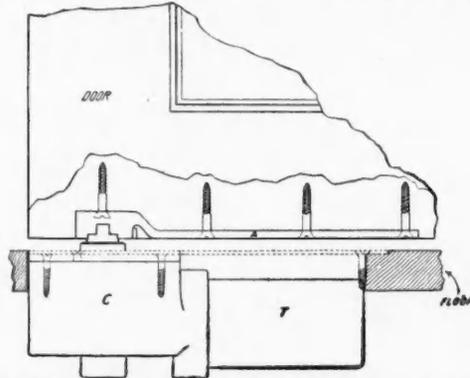
By means of an ingenious mechanism, the door is checked gradually and continuously right up to the center or closed position. The Rixson controls the door in its entire swing, bringing same to a gentle but positive stop at the center. When the door is opened to 90 degrees, the spring mechanism is automatically brought onto the "dead center," which holds the door and permits same to close as usual. This feature is extremely useful to the housewife or maid when preparing or clearing the dining table.

The speed of the door may be instantly regulated from the surface of the floor by use of a screw driver on the checking valve. This is accomplished without removing the brass cover nor displaying any part of the mechanism. There are but few parts in this device and its design is so simple that there is very little chance for it to get out of order. The main



Top view of Check set in floor with brass cover removed

body of the check is cast iron, the checking chamber being a seamless drawn steel shell exactly like that used for so many years in their overhead checks. The spindle and other



Showing position of Check in floor with door mounted on same

driving parts are of hardened steel, built for strength and durability. The cover is of sheet brass.

The overhead pivot is a duplicate of that used in connection with their larger floor checks.

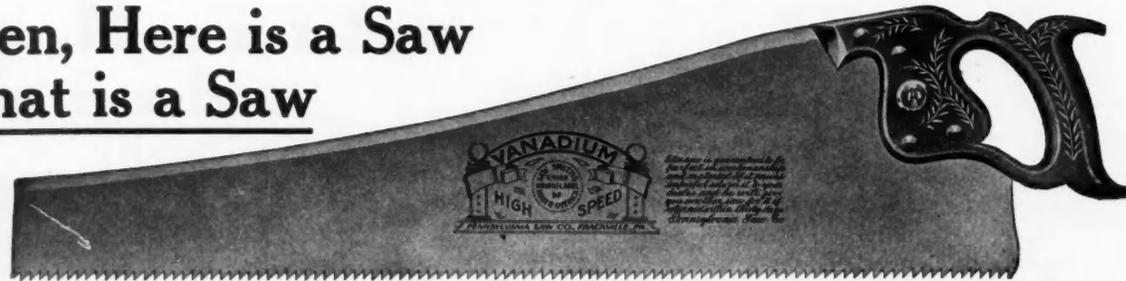
Further details about these and other Rixson hardware specialties may be had by addressing the Oscar C. Rixson Company, 540-542 West Harrison Street, Chicago, Illinois, for their circular and complete descriptive matter.



Geo. Price Makes New Connection

It will be of interest to our readers to learn that Mr. George Price, formerly with the Tide Water Building Company, and later with D. C. Newman Collins and S. Fisher Miller, engineers, has been retained by the Flintkote Manufacturing Company and J. A. and W. Bird & Co., of Boston, to repre-

Men, Here is a Saw That is a Saw



The Vanadium High Speed Guaranteed Hand Saw

The carpenter who once uses our Vanadium Steel hand saw will never use any other. It is beautiful in appearance, will outwear any other saw, is easily filed and set, and is sold at a very moderate price.

It retains a keen cutting edge at least five times as long as a saw made from any other steel—and that means five times the service. It requires sharpening only one-half as often as a saw made from any other steel.

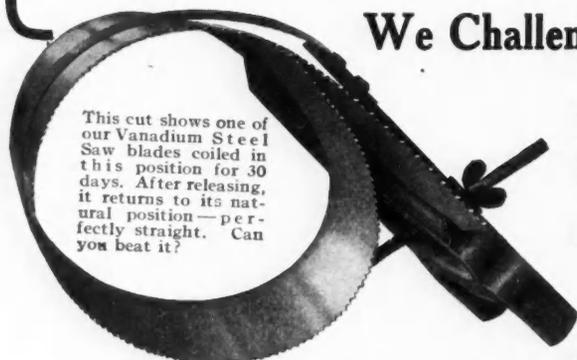
The steel in this saw is very close, tough and ductile and can be perfectly tempered. This insures against chance of kinking or fracturing the teeth while setting and gives permanency to the cutting edge.

This saw contains in perfect combination those greatest saw qualities—"Density, Elasticity and Ductility." There's a Reason—Vanadium and Our Process. Ask us about it.

We Challenge the World to Produce Its Equal!

We have a handsome new catalog describing and illustrating the various kinds of Vanadium High Speed steel saws made by us. Write us for this catalog. Ask your dealer to show you this saw. If he doesn't have it, send us his name and write us for prices.

Pennsylvania Saw Co.
25 Broad Mountain Ave.
FRACKVILLE, PA.



When Writing Advertisers Please Mention the American Carpenter and Builder.



Why Take a Chance on Crude Methods of Mixing Concrete?

Lay down your shovel and look around you. No matter how small the yardage, first class concrete is worth while; and first class concrete is impossible at prevailing prices, unless mechanically mixed. The old shovel and hoe methods are obsolete—they don't pay. But surplus capacity and weight, cost of operating, erection and haulage make a power mixer unprofitable on the small job. There's *no escape* either way. The progressive contractor **MUST** use the

SMITH HAND MIXER

It is a batch mixer with a capacity of $2\frac{1}{2}$ cu. ft.—a thoroughly tested machine, guaranteed to mix in *three turns* of the drum — a **MIXER** capable of reliable service under long, hard service — a **REAL** mixer backed by the best and oldest firm of mixer builders in the U. S. This machine will improve your work and increase your income at the same time.

Write for our special Smith Hand Mixer proposal and booklet No. 17.



The T. L. SMITH CO.
1333 Majestic Building, MILWAUKEE, WIS.

HARWELL PLACE
ATLANTA, GA.

W. J. CULLEN
30 Church Street
New York City

OLD COLONY BLDG.
CHICAGO, ILLINOIS

When Writing Advertisers Please Mention the American Carpenter and Builder.



"Been on 19 Years and Today Look As Well As New," Writes Mr. Fein

Gentlemen:—
 Will say that I have used the Cortright Metal Shingle, and I am greatly pleased with them, especially the Victoria Shingle, with which I recently covered two churches here.
 The shingles are easily put on and give an artistic appearance and entire satisfaction so far as weather and fire proofing is concerned. We have one roof here, W. Underwood's residence, that has been on nineteen years and today they look as well as new and give the same satisfaction.
 Respectfully,
JACOB FEIN.
 Contractor & Builder.

This Contractor's Experience Proves

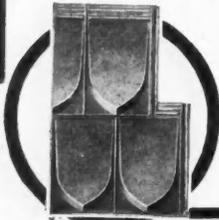
that **Cortright Metal Shingles** are —
 Easily applied.
 Artistic in appearance.
 Weatherproof.
 Fireproof and —
 Last as long as the building.
 Contractors today are realizing more and more what an ideal proposition

CORTRIGHT METAL SHINGLES

make for public buildings, such as schools, churches, railway stations, etc. On this class of work you make big money, and with so many convincing advantages, to offer it is easier to obtain this big business with **Cortright Metal Shingles** than with any other form of roofing.

Mr. Fein, you'll notice (in his letter above) has used them on two churches in his town.

If he can do it, so can you. Let us show you how. Write us today for our special contractor's proposition and complete catalog.



Cortright Metal Roofing Company

PHILADELPHIA and CHICAGO

----- RETURN THIS COUPON -----

Cortright Metal Roofing Co. Philadelphia, Pa.

You may send me book "Concerning that Roof" as advertised in American Carpenter and Builder. 6-12

Name.....
 Street Address.....
 City.....
 Business

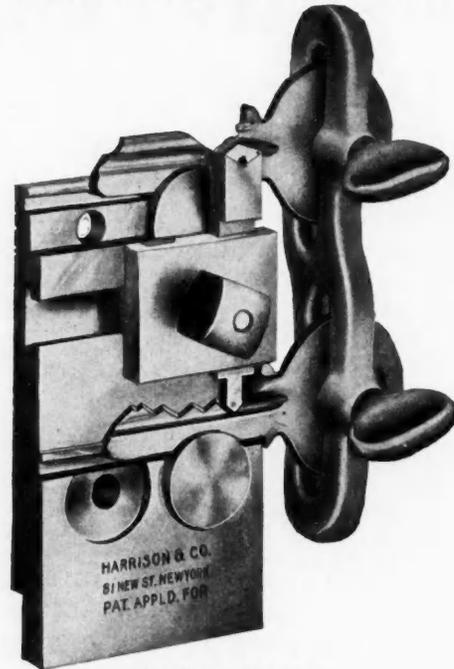
When Writing Advertisers Please Mention the American Carpenter and Builder.

sent them in the metropolitan district on their line of building specialties covering roofing, waterproof, sheathings, waterproofing compounds, "Rex" wall board, cold water paints, "Ripolin" enamels, etc., with office at 66 Beaver St., New York City.

The Harrison M. I. P. Key Filing Machine

Carpenters, janitors and superintendents of office buildings and apartment houses are continually requiring duplicate pin-tumbler keys. In the old way it meant either sending out to a lock-smith or trying to make one themselves, by placing a pattern key and a blank in a vise and trying to get a perfect duplicate, which nine times out of ten, was a failure. It is next to impossible not to touch the pattern key with the file, and the consequence was, when a second duplicate had to be made, a little more was taken from the pattern key, thus making the tumblers in the lock fall too low, and then they wondered why the key did not open the lock.

The pin tumbler lock is as delicate a piece of mechanism as the finest watch ever made, and if the slightest deviation is made when filing, and either too much to too little is cut away, the cylinder will not revolve. With the M. I. P. machine, illustrated herewith, the pattern key is never touched with the file, and as the filing guides are especially case hardened and gauged to a thousandth part of an inch, the moment



Key Filing Machine

the file rasps on the guide it shows the seat of the key has been reached. One very important point in making angular shaped keys is, that if a three cornered file is used, the contour of the angle will not allow the tumblers to fall in place, so for best results always use a square or diamond shaped file.

The machine is so simple that any inexperienced boy with common intelligence can make a perfect duplicate pin tumbler key, and he is always sure to have a true key to follow whenever another is required.

One of the users of the Harrison M. I. P. key filing machines writes: "We made 65 keys in one hour and 16 minutes"; and that proves that it is not only accurate, but profits are derived from it from the start.

The price being so low, enables every one now to be their own locksmith.

Harrison and Co., 87 New St., New York City, will be glad to tell you everything they can about key making, and why you should have one of these key filing machines in your tool kit.

PROVED BY THE PEOPLE

Sears, Roebuck and Co. Actually Save the Builder from \$500 to \$1500 on a House

These Letters and Pictures Prove It. Every reader of the American Carpenter and Builder will surely be interested in the statements printed on this page by the people who have recently built houses according to the plans and with the material furnished by Sears, Roebuck and Co. As will be seen from the builders' letters these houses have been put up in Iowa, Illinois, Indiana, Missouri and Colorado. The carpenters and builders of the great Middle West could not possibly do better than to write to Sears, Roebuck and Co., for their book of 100 Modern Homes, which will be mailed free and post paid upon request. Please mention this magazine. You can also get free for the asking a book of 120 pages containing letters from people in EVERY STATE IN THE UNION, testifying to big savings, prompt service and good quality of the material ordered. This book also contains over 50 reproductions of photographs of houses built in different sections of the country. The experience of the builders as told over their own signatures is both interesting and instructive.



SAVED \$1,500.00

West McHenry, Ill.

Sears, Roebuck and Co., Chicago, Ill.
Gentlemen:—We are in our new house or bungalow as we prefer to call it, and we are greatly pleased with everything. We feel that you have saved us \$1,500.00 on our materials, and you have given us every courtesy that a seller can give a buyer.
Very respectfully, AUGUST M. SCHILLER.

In the May Issue
of the
American Carpenter
and Builder
Sears, Roebuck & Co.
Printed a Catalog

The prices quoted on high grade doors, windows, door and window frames, columns, moldings, colonnades and roofing material on pages 131 to 138 inclusive, explains how such a big saving can be effected on a single house, as claimed by the writers of the letters printed on this page. Please read these letters carefully and then refer to last month's, May, 1912, American Carpenter and Builder.



"BEST HOUSE IN GREELEY, COLO." SAVED \$500.00.

Greeley, Colo.

Sears, Roebuck and Co., Chicago, Ill.
Gentlemen:—The material is the best of any house in Greeley, which is a town of 10,000 population. I am so well pleased that if I were going to build another house Sears, Roebuck and Co. would furnish the material. I saved at the best account \$500.00.
Yours respectfully, W. H. SEGLER.

Gracefulness of Design
Strength of Construction
Quality of Material
Saving in Cost

These are the chief characteristics of the houses built by customers of Sears, Roebuck and Co. Whether you are thinking of building a \$500.00 cottage or a \$10,000 residence, you should not spend a single dollar until you have carefully looked over the designs of houses illustrated in the Book of Modern Homes, which will be mailed free to every reader of this paper by Sears, Roebuck and Co.

Thousands of contractors and carpenters have learned the advantages of purchasing building material at wholesale cost. That is why their orders are being mailed every day from every corner of the country to the largest Mail Order House in the world. Send on a trial order today and you will never regret it.



SAVED \$1,000.00 TO \$1,200.00

Sears, Roebuck and Co., Chicago, Ill.
Gentlemen:—The lumber and millwork that I bought from your firm is satisfactory in every way. I saved from \$1,000.00 to \$1,200.00 on this house.
Very truly yours, CHAS. J. DAHMS.

Dixon, Iowa.

Prompt Shipments
Careful Packing
Honest Dealings
Complete Satisfaction

When one thinks of the distance over which Sears, Roebuck and Co., have shipped lumber and millwork it seems really wonderful that the verdict should be so unanimous regarding the saving which they can make for their customers and the cordial relations that exist between them. A man out in Oregon says that he can purchase millwork from Sears, Roebuck and Co., at a saving of one-third after paying the freight charges, for a haul of 3,000 miles. A contracting firm in Texas states that by dealing with Sears, Roebuck and Co., they can save \$30.00 on 1,500 feet of flooring. A doctor in Cheyenne, Wyo., writes that he saved \$700.00 on the material for an eight room house, and states that delivery is usually effected in from 10 to 12 days.



SAVED NEARLY \$700.00. MATERIAL AWAY ABOVE THE AVERAGE.

Sears, Roebuck and Co., Chicago, Ill. Evansville, Ind.
Gentlemen:—I wish to state that I am extremely well pleased not only with the plans and material furnished, but with the way in which you handled this order. I will further add that I feel satisfied I saved anywhere from \$500.00 to \$700.00 by buying from you. The contractor informs me that the material is away above the average.
Very truly yours, F. N. HILLS.

Look up the May 1912 Issue of this Magazine See the Prices that these Builders Paid for Material

Read the 8 Pages, pages 131 to 138 of last month's issue of this magazine and see for yourself how it was possible for Mr. W. H. Segler to save \$500.00, Mr. F. N. Hills \$700.00 and Mr. August M. Schiller \$1,500.00. Prove the proposition by making up an order from those pages and mailing it to Sears, Roebuck and Co. If you wish you can get a copy of their Building Material and Millwork Catalog free by mentioning the American Carpenter and Builder. Do it today.



THIS GENTLEMAN WILL DISPEL YOUR DOUBTS IF YOU HAVE ANY.

15 Henry St., Fitchburg, Mo.
Sears, Roebuck and Co., Chicago, Ill.
Gentlemen:—I have moved into my new home, No. 34, which I bought of you and find everything just as you represent it, both in quality and saving. If any person interested in your building proposition is in doubt, have him come to me or write and I will give him full information.
Very truly yours, PATRICK B. McNAMARA

Address Your Order to SEARS, ROEBUCK AND CO., CHICAGO, ILLINOIS

When Writing Advertisers Please Mention the American Carpenter and Builder.

Kewanee Boilers

It is a very hard matter as a rule for one who knows not the ins and outs of any business to describe it accurately. This is the position in which our representative found himself when asked to describe for the benefit of the AMERICAN CARPENTER AND BUILDER readers how good boilers are made. However, instead of interviewing others he thought he would go direct to one concern who know all about the business and where he could both see (or rather hear!) and learn for himself. He went to Kewanee, Ill., the home of the Kewanee Boiler Company, and saw alright, but as to the learning part, alas—learning the boiler business in a day is a good deal like doing Europe in four days with \$125, meals on steamers included. In other words, it just can't be done.

The Kewanee Boiler Company started out in 1892 and each year of the twenty that have passed since that time has been a year of development and well deserved success. The plant of this company at that time covered but little over an acre of ground and it required less than 100 men to operate it. Today their plant covers approximately twenty acres and requires 1000 men. This company have really put the town of Kewanee on the map; for, whenever the word Kewanee is used or heard one instinctively thinks of boilers.

At first the Kewanee Boiler Company made boilers exclusively, but later started the manufacture of radiators and garbage burners. Both of these lines have proven themselves extremely popular with the trade, inasmuch as the same honest and well-known reliable merit was embodied in these two lines that had made the Kewanee boiler reputation. Their radiator department flourished as has their boiler business, occupying today almost the same amount of space as that used in their boiler business. To-day in the city of

Chicago alone, there are over one hundred miles of apartment buildings using Kewanee boilers and radiation.

Your representative wishes he could tell all of you readers how a radiator is made; how, from molten iron it can be followed through a process of construction for about half an hour, and at the end of that time we find the completed radiator. It would take a man, however, who knew vastly more than he does to do this. He cannot begin even to describe the boiler shop any more than to say that it transforms a heavy flat piece of steel plate into one of the Kewanee fire-box boilers, and requires at least nine distinct operations. First there is the laying out, then the punching, the beveling, the rolling, the riveting, the putting in of the stayes, the tube work, the calking, and finally the testing. As the plate is traced through the several departments where these operations are constantly going on, one notes with interest the gradual changes, inasmuch as the work necessary is all so different from that seen anywhere else.

A trip through this factory is an education in itself, and until one has really made it, one cannot realize how vast and complete this establishment is. One of the most interesting sights, in the estimation of your representative, in the whole plant is their boiler stock yard, which is what most manufacturers would call their stock room. Here one sees all manner of boilers of different sizes ready to be shipped on a moment's notice. During the season of the year when boilers are not selling as rapidly as they do at others their entire plant is kept running full force in order to have this stock ready to ship when the demand comes. It is safe to say that there is not a town of any size in the United States where Kewanee boilers are not used with the utmost satisfaction, and there are thousands of readers of this paper who really should know more about Kewanee boilers, radiators and garbage burners.

Their Strength Increases With Age and Exposure

J-M Transite Asbestos Fire-proof Shingles, being made of pure Asbestos and Portland Cement (both minerals,) are not affected by the most severe weather conditions, except that the longer they are exposed to the elements, the harder and tougher they become.

J-M Transite Asbestos Fire-Proof Shingles

form an ideal roof covering for high-class dwellings. They never rot or decay, warp or split. Are resilient, and do not break like slate or tile. They last indefinitely, and are positively fire-proof.

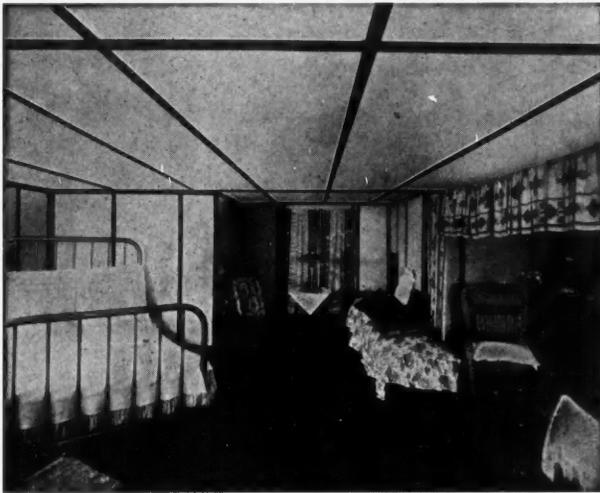
All sizes and shapes for all conditions. Colors: Natural gray, slate and Indian red.

Write Nearest Branch for Booklet

H. W. JOHNS-MANVILLE Co.

Manufacturers of Asbestos and Magnesia Products		ASBESTOS		Asbestos Roofings, Packings, Electrical Supplies, Etc.	
Baltimore	Chicago	Detroit	Los Angeles	New Orleans	Philadelphia
Boston	Cleveland	Indianapolis	Milwaukee	New York	Pittsburgh
Buffalo	Dallas	Kansas City	Minneapolis	Omaha	San Francisco
					Seattle
					St. Louis
For Canada:—THE CANADIAN H. W. JOHNS-MANVILLE CO., LIMITED,			Winnipeg, Man.		Vancouver, B. C.
Toronto, Ont.					(1497)

When Writing Advertisers Please Mention the American Carpenter and Builder.



Did you ever see a piece of Utility Wall Board?

Why don't you write for a sample?

If it is as superior as we say it is you can't afford not to know about it—

If it will make a better and smoother wall and ceiling—if it is more durable, easier to apply and less expensive—you ought to have that sample and you ought to have it *at once*.

Utility Wall Board

is different from any other Wall Board you ever saw—it is tougher, more durable—it is made in a greater variety of sizes—it is absolutely moisture proof—and *it will not warp or shrink*.

Utility Wall Board is a tough fibre board put together with two insulations of natural waterproof asphalt—all rolled under tremendous pressure into one solid, compact sheet and surfaced on both sides with special moisture proofing. It is the only Wall Board made under this scientific moisture proof process—

Utility Wall Board takes the place of lath and plaster—it comes in 32 and 48 inch widths and any length up to 16 feet.

It is attached direct to the studding without any of the muss and dirt and tedious delays of a plastering job.

It makes a very handsome wall without any decoration at all—or it may be tinted, paneled or papered in any style desired.

But about that sample, send your name today and you'll get it.

The Heppes Company 4503 Fillmore St., CHICAGO, ILL.



Largest Apartment Building in the World,
"THE BELNORD," New York.
Oak Flooring Used.

OAK FLOORING

Increases the Renting and Selling Values and Attracts a Better Class of Tenants

Builders and owners will find it a clinching argument to say "It's floored with OAK FLOORING." It is the biggest single feature to look for in any house or apartment building. It imparts an air of refinement and elegance. It is the modern flooring.

OAK FLOORING $\frac{3}{4}$ inch thickness by $1\frac{1}{2}$ inch or 2 inch faces can be laid over old floors in old homes or over cheap sub-floors at a very low cost. It is cheaper than carpets or pine flooring. When laid it has all the appearance of heavy flooring.

There is a solid satisfaction and lasting pleasure in the substantial and dignified appearance of OAK FLOORING.

Contractors and carpenters find it very profitable to lay $\frac{3}{4}$ inch stock over old floors in old homes during dull periods. A little canvassing is all that is necessary to secure jobs. A carpenter or handy man can lay OAK FLOORING successfully.

For durability, OAK is the best. OAK FLOORING laid thirty years ago, after very hard use, is still in good condition.

Write for Catalog

THE OAK FLOORING BUREAU, 881 Hammond Bldg., DETROIT, MICH.

When Writing Advertisers Please Mention the American Carpenter and Builder.



How to Make Wall Paper Last Longer

Mr. H. A. Van Campen, Jr., of Dupree, S. D. writes: "I have sold lots of wall paper to be put on Compo-Board walls and it shows up very nicely and in fact the paper will last much longer on it than on plaster or anything else. I have seen lots of other Boards used but for me I would take the Compo-Board every time."

Compo-Board is the modern wall-lining. It is non-porous and airtight—hence cold proof, moisture proof, vermin proof, fire resisting—tough and durable—outlasts the house. It is simply nailed to the studding, and is ready for decorating as soon as it's on. Saves 15 to 30 days in completing a house. Can be painted, kalsomined or papered either with or without panels.

Contractors, builders and architects—If you want to deliver the most satisfactory jobs in the shortest time at the greatest profit to yourself—learn more about Compo-Board. Send your address on a postal for a sample and interesting booklet.

Northwestern Compo-Board Co.

5777 Lyndale Ave., No.

Minneapolis, Minn.



The Only Successful Substitute for Lath and Plaster

is endorsed by
**CONTRACTORS, ARCHITECTS,
BUILDERS AND CARPENTERS
EVERYWHERE**

If you haven't seen **Plastergon**, you haven't seen the Wall Board that's better.

It is the only chemically treated pulp or fibre Wall Board on the market. Its durability, lightness and the ease with which it can be handled makes it doubly acceptable to builders.

Send for a sample of **Plastergon** today. Then you'll see why the demand for **Plastergon** is rapidly growing every week.

You'll know why this treated Wall Board stands the racket; why it resists heat and cold; is fire and sound retarding; moisture and vermin proof. Why not write today for sample and live information?

Plastergon Wall Board Company
Dept. A. Tonawanda, New York

A Nine in One Woodworker

A machine of practical economy and convenience to every builder and contractor is what the Atlantic Engine Company, of Meadville, Pa., claim their Standard Portable combination woodworker to be.

The many uses of this machine are apparent to every one appreciating the value of machine over hand labor. It comprises nine distinct woodworking machines in one. Cut-off saw, rip saw, dado head, moulder, jig saw, jointer, sander, boring machine, emery wheels. It is of equal value for use "on the job" or in the shop.

The power of the Standard is generated by a 6 H. P. gasoline engine. This engine represents the highest type of gasoline engine construction.

Certain details of the machine include: Its compactness—for with full equipment the maximum floor space required is but 43 by 40½ inches; its weight—it is easily portable, yet heavy enough to withstand hard continuous usage. It has ample table surface for work with any attachment. Attachments can be changed in one minute or less. There are no gears, cams or cogs used in driving any tool—all are fixed rigidly to the mandril. The tools used are standard; and duplicates can be purchased almost anywhere.

AMERICAN CARPENTER AND BUILDER readers desiring detailed specifications of this woodworker should write the Atlantic Engine Company at Meadville, Pa., requesting catalog G. Same will be forwarded you immediately.



The Place to Stop in Boston

We assume that when visiting Boston you are interested in knowing just where to locate, in the right kind of a hotel, at prices entirely satisfactory to you, for the accommodations you desire.

Diagonally across from the State House on Beacon Hill is such a hotel, "The Commonwealth," of strictly modern fire-proof construction, ten stories high, 212 rooms, from and above the sixth floor of which an unobstructed view may be had for ten miles toward every point of the compass.

The elevation on Beacon Hill (the highest point in or around Boston), affords a delightfully cool breeze of fresh uncontaminated air during the hottest and most sultry months of summer. The location is within three minutes' walk of Boston Common, State House, Court House, Scollay Square, Tremont Street, and elevated and subway trains, 6 minutes to theatres, and the principal shopping districts. Five and ten minutes to North and South Stations.

The location is as quiet both day and night as a suburban residential district, thus assuring quiet and undisturbed rest to all.

The ladies and children of your household, so the management claims, are as safe at "The Commonwealth," either with or without an escort, as they are in their own homes.

The sanitary condition of the rooms and entire house is not excelled by any hotel wheresoever situated, while the cafe and restaurant please all who patronize them. Public tub and shower baths on every floor, always kept in a condition of cleanliness both day and night, at once inviting to the most fastidious guest, while private baths are attached to 90 single rooms and en suite.

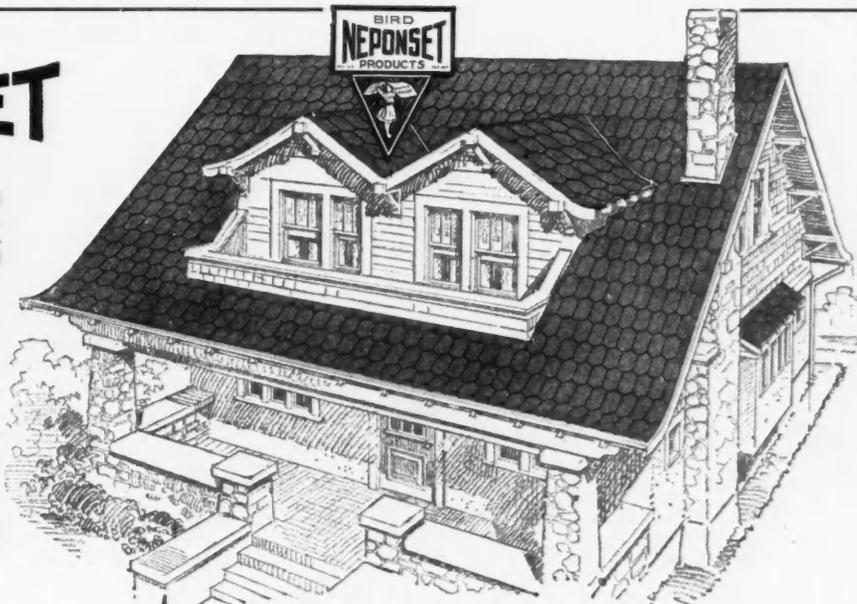
Every room in the house is heated by steam, under immediate control of the occupant, lighted by electricity and equipped with long distance telephone. Hot and cold water day and night in every room the house contains.

Kindly ask those who patronize "The Commonwealth," or come and get a personal experience and see if you are not glad to adopt "The Commonwealth" as your Boston headquarters. "There is no cleaner, healthier, quieter or more cheerful hotel in the city of Boston, for the prices given, than the "Hotel Commonwealth'."

When Writing Advertisers Please Mention the American Carpenter and Builder.

NEPONSET PROSLATE ROOFING

Attractive. Protects against fire. Wears like best shingles. Moderate in cost. Made in red and green colors.



Easily laid in 18 inch strips—special fasteners—*not a single nail hole exposed to the weather.*

Neponset Proslate is a money maker for carpenters and builders. Write for the Neponset proposition.



Branch Offices:
New York
Washington, D. C.
Columbus, Ohio

F. W. Bird & Son, East Walpole, Mass.

Established 1795
Canadian Plant, Hamilton, Ontario

Branch Offices:

Chicago, Ill.
Portland, Ore.
San Francisco, Cal.



Every Builder Knows—

That, after all, no house is ever satisfactory unless it can be the most evenly, cleanly, perfectly and economically heated that is possible. Whether the heating be of Steam, Hot Water or Warm Air, it matters not. The very building of that house demands the best possible consistent with cost of installation, maintenance and operation.

You Can Burn Cheap Grades of Soft Coal or Screenings

as perfectly, cleanly, and easily, and at a much lower cost and with perfect satisfaction with

Warm Air Heaters }

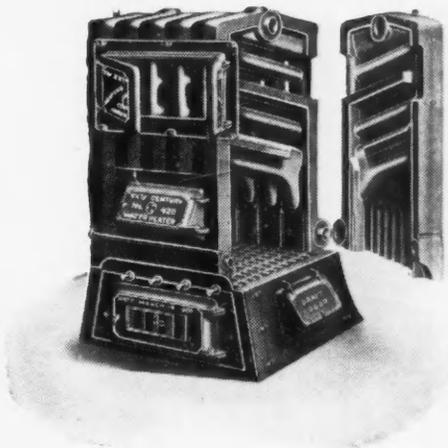
XXth Century Hard or Soft Coal }

Steam and Hot Water Boilers

The remarkable design (our exclusive patent) of our Fire Pot in both Heaters and Boilers, guarantees absolute combustion, ease of operation, and the lowest possible fuel-cost. Examine one and see why.

Every Pound of Fuel is Made to Produce the Maximum Amount of Heat Units—No Heat Units Wasted

Builders: should ask for our catalogue and prices—the most sensible features ever embodied in heaters and boilers that have stood the test for years. Write us.



The XXth Century Heating and Ventilating Co.

Akron, Ohio

When Writing Advertisers Please Mention the American Carpenter and Builder.

California Bungalow by the Van Guilder Method

Steadily growing in popularity among those who do any concrete work is the Van Guilder system of hollow wall concrete construction.

This system, while comparatively new, has proven from the first to be most successful and it is now in representative use



Concrete Bungalow at Riverside, California. Built by W. H. Riley, using Van Guilder System of Hollow-Wall Construction

from coast to coast and there are buildings standing in every section of the country which are effective evidence as to its practicability and general favor.

For the information of AMERICAN CARPENTER AND BUILDER

readers not familiar with the Van Guilder system a brief description of what this type of construction is and includes will be given.

The Van Guilder equipment embodies forms which build on the job walls that are double and monolithic from footing to roof plate, with a continuous air space everywhere between the double walls—a house within a house. The walls are tied together, also steel reinforced horizontally every 9 inches high.

This produces a type of building that is both warm in winter and cool in summer, and is further entirely damp, frost, fire and vermin proof. As the walls are built upon the job many charges are saved which in effect greatly reduces building cost.

Shown here is a bungalow, with floor plan of same, which distinctly conveys the features of Van Guilder construction. This bungalow is built with two 3-inch walls of concrete with a 2½-inch air space between them, making a damp and frost proof structure.

Mr. Riley, who erected the bungalow, is a carpenter and builder. His first experiments with the Van Guilder hollow wall concrete machines were made about two years ago in Rochester, where he was living at the time, and where he built a house for himself.

His experiments were very satisfactory from a builder's point of view. He saw in this construction a means of getting away from the beaten path into a new field where competition was not so keen.

He discovered that he could, by getting out of the old ruts, build houses that would pay him large profits, while costing his clients no more and yet giving them much bet-

Schacht

One to Five Ton Truck

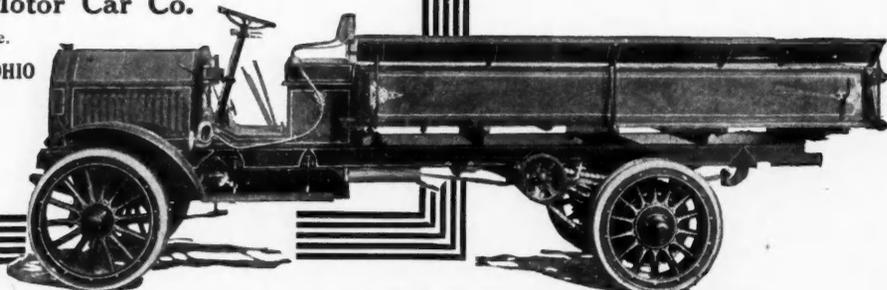
In the (building) field, especially, this powerful truck has *made good*. It cuts your cost—it saves you time—it does away with lots of labor—it *reduces* your number of employees—it *builds your business bigger, no matter how big it is now!*

Speed 10 to 18 miles per hour. Loading space 11 feet 5 inches back of seat on chassis frame. Write today for full illustrated booklet.

The Schacht Motor Car Co.

2846 Spring Grove Ave.

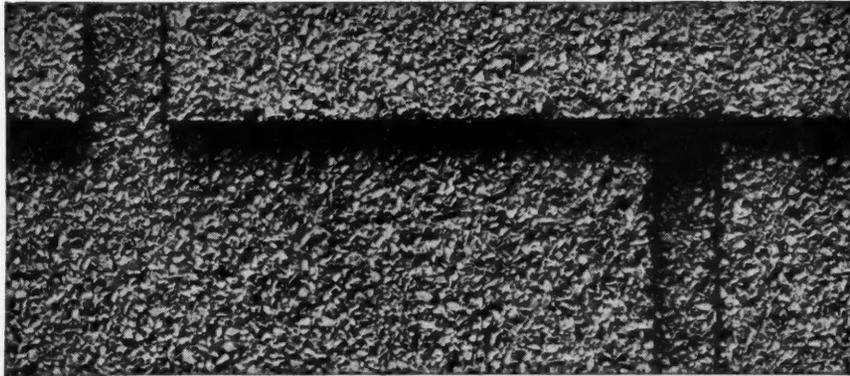
CINCINNATI :: OHIO



A Few Specifications —

45-50 H. P. Motor.
4½ bore x 5" stroke.
Magneto with double system of ignition.
22 gallon gasoline capacity.
10 gallon water capacity with cellular radiator.
Cone clutch lined with thermoid and propeller shaft to jack shaft with drive chain from end of jack shaft.
Service brakes in rear wheels and emergency brakes on ends of jack shaft.
Long semi-elliptic springs and drop forge Timken axles and jack shaft with Timken roller bearings.
Left hand steering, center control levers.
36x4 tires front, 36x4 dual rear.
144" wheel base.
12 ft. loading space in back of seat.
Body design optional.

When Writing Advertisers Please Mention the American Carpenter and Builder.



This Cut Shows the surface of Flex-A-Tile Shingles—Beautiful, Convenient, Durable.

If we offered you a ten dollar gold piece you'd be foolish not to take it—don't you think?

All right—Here's dollars unlimited for the first man in your community who gets acquainted with—and pushes

FLEX-A-TILE ASPHALT SHINGLES

It is the most remarkable roofing material you've ever seen—makes a beautiful, brilliant, tile-like surface—easier to lay than wood shingles—several times as durable—and remarkable inexpensive.

It's a winning proposition for any carpenter or builder

Flex-A-Tile Asphalt Shingles have a chipped slate or granite surface—and this slate or granite is rolled into the asphalt under heavy pressure until it becomes an actual part of it—The natural colors of the slate and granite give the coloring to the shingles—Shades are deep red, greenish gray, silver gray, and brown—They are natural—Can't wear off or fade.

Flex-A-Tile comes in rolls as well as in shingle form.

Write today for a free sample—Be the first in your community to use this beautiful new roofing.

THE HEPPE'S COMPANY 1010 45th Street Chicago, Illinois



HEAT SATISFACTION

When combined with low fuel consumption means a whole lot to the one who lives in the house—the man for whom you are building. The combination is found only in the

Front Rank Steel Furnace

These furnaces are constructed on correct principles. They are built with the idea in mind of giving the very greatest amount of heat. We found out by experience that

Cast Iron Is Not A Safe Material

From which to construct a furnace, inasmuch as the gases leak through cast iron into the outside casing. We use NOTHING BUT STEEL PLATES in all parts which enclose the fire.

Front Rank Furnaces Are Absolutely Gas Tight

It is impossible for gases to get into the outside casing or hot air ducts. There is not a feature of merit in any modern furnace that is not found in the construction of the FRONT RANK. There are, however, splendid features in the FRONT RANK that you will find in no other furnace on the market. THEY ALWAYS SATISFY.

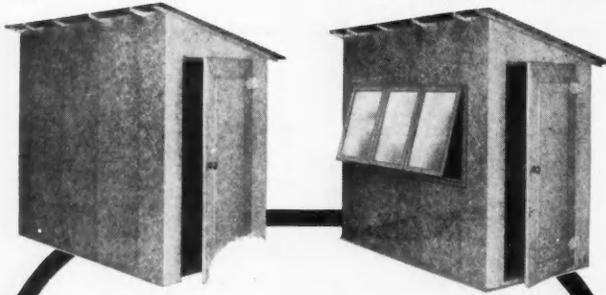
The Front Rank is the Last Word in Furnace Perfection

Burns successfully any kind of wood or coal. Get in touch with us today. We have a splendid proposition for you.

HAYNES-LANGENBERG MFG. CO.

FOREST PARK BOULEVARD
ST. LOUIS, MISSOURI

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Portable Job Offices For Contractors

Fireproof, and Quickly Erected—\$45 Up

Here is a job office that is as easily put up, taken down and moved as a tent. At the same time it is exceedingly strong, and durable—everlasting, in fact. Nothing in it that can burn, warp, rot or decay. Made entirely of galvanized, self-structuring steel units. 7 ft. front wall, 6 ft. back wall. Prices for complete buildings, f. o. b. St. Paul, \$45 up. Write for folder and prices. Already over 250 contractors are handling

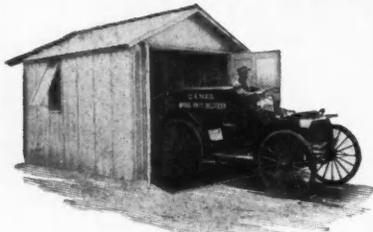
Pruden System

buildings with great satisfaction to themselves and customers. They are strong, durable and handsome as masonry, at **one-third the cost or less.** Widely known and in great demand because of our advertising. You can erect a Pruden Building complete in the time it takes to set up forms for cement or to get ready to build with masonry. Quick and liberal profits. Write for full particulars.

Metal Shelter Company
9-90 W. Water St., St. Paul, Minn.

Prudential Portable Steel Shelters

(Patented)



"Made in Baltimore"

For Garages,
Implement Shel-
ters, Work
Shops, Hunting
Lodges, Storage

Sheds, Boat Houses, Outing Cottages.

Anyone Can Erect Them

They require no frame, no woodwork, nor any foundation. When put up they are very rigid, sanitary, weather-proof and fire-proof. They will not rust and when dissembled occupy very compact space.



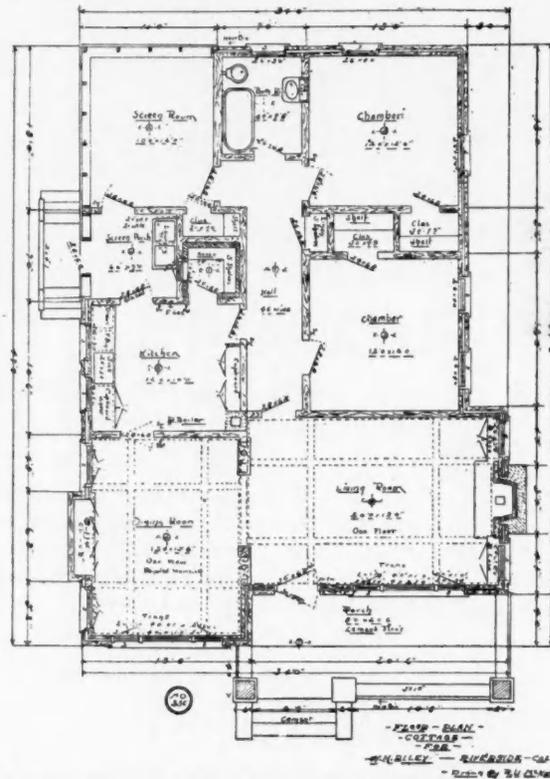
Contractors and Builders! The erection and sale of these buildings open a new and profitable field for you.

Write for prices, catalogues and discounts.

C. D. PRUDEN & CO., SOLE MANUFACTURERS
BALTIMORE, MD., U. S. A.

ter satisfaction, as the houses were more substantial, cost less for repairs, insurance, heat, etc., and were more comfortable in summer and winter.

Mr. Riley subsequently selected southern California for his



Plan of Concrete Bungalow of W. H. Riley, Riverside, Cal., Built under the Van Guilder System of Hollow-Wall Construction

future home, and is directing his attention entirely to this method of construction. He recently built for his own occupancy the bungalow illustrated here.

That the Van Guilder system is entirely practical for silo, farm building and similar type of construction is demonstrated by the endorsement received by the Van Guilder Company from Dr. E. M. Santee, one of the leading sanitary dairy and building experts of the country.

AMERICAN CARPENTER AND BUILDER readers can secure full information concerning the Van Guilder system and Van Guilder machines by addressing the Van Guilder Hollow Wall Company, 717 Chamber of Commerce building, Rochester, N. Y.



Opportunities in Wire and Iron Works

That any contractor, builder or carpenter can pick up a great deal of wire and iron work installation in the course of his regular employment is the claim made by the E. T. Barnum Wire & Iron Works people of Detroit, Mich.

They point out the demand for this type of work was never bigger and that any contractor or worker by obtaining a local agency from them and then keeping his eyes open as to the type of construction that is being done in his locality will find a large and ready field for iron and wire work.

The E. T. Barnum Works are manufacturers of everything in the wire and iron work line. They issue a general catalog covering their field, also several special catalogs upon particular features of their line. These, and any other desired information, may be obtained by any AMERICAN CARPENTER AND BUILDER reader writing the E. T. Barnum Wire & Iron Works of Detroit, Mich.

When Writing Advertisers Please Mention the American Carpenter and Builder.

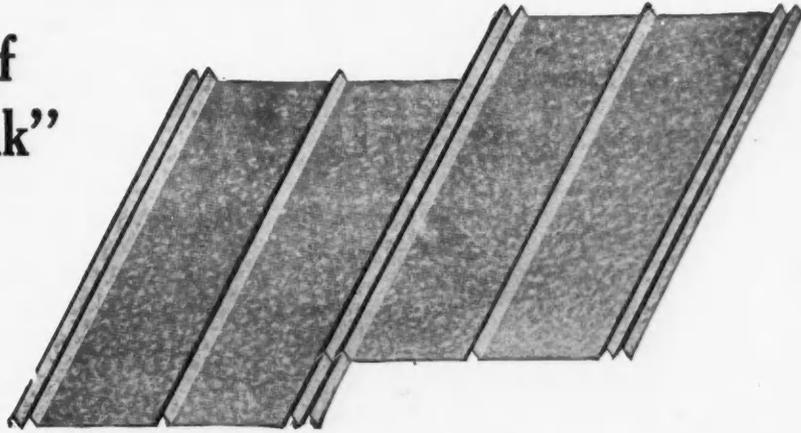
Justright Galvanized Roofing

**"That Simple Roof
That Don't Leak"**

Absolutely Weather Proof

No Wood Strips Required

No Special Tools Required



This wonderful roof will give **satisfaction**. It can be applied by anyone who can apply V Crimp or Corrugated Roofing. Agents wanted in unoccupied territory.

If your dealer does not handle this roofing, write

The Moeschl-Edwards Corrugating Co.

8th Street - - - COVINGTON, KY.

Manufacturers Sheet Metal Building Material—Interior—Exterior

COMPARE THIS WITH WOOD VAN WIE TUBES

The Carpenter-Contractors Best Opportunity

The simplicity of the Van Wie Tubes—the one piece throughout for corners and everything—their interlocking feature, their certainty in time saving, make them *practical for the carpenter to use*.

Van Wie Tubes, made of burnt clay, are used for foundations, or for entire walls.

They are very unlike bricks, or blocks, in construction, as no mortar is used between them when setting them up, and until the plasterer commences, the carpenter may do all the work in connection with them.

Common labor in placing them makes a big saving. The carpenter directs the work only and keeps the lines true.

There is no time lost. The foundation can be made ready without waiting; there is no trouble or delay in putting up joists, plates, etc., as the work goes right on in a practical, *economical* way.

Buildings so constructed have been long tried out with results that have established *entire certainty* as to their desirability. The finished building, with its hollow wall, is frost and moisture proof, strong and durable, at moderate cost.

The field for this construction is large, the possibilities are great, the opportunity is **YOURS**.

Carpenters, Contractors and others interested in building should write for further particulars. Useful and valuable information will be cheerfully furnished.

ELMER E. VAN WIE, 514 Chamber of Commerce, Chicago, Ill.

When Writing Advertisers Please Mention the American Carpenter and Builder.

A Modern Planer, Matcher and Molder

These things are required of a modern planer, matcher and molder, not only in the large mills, but in the smaller contracting and jobbing shops: First. A substantial frame which will carry the working parts without vibration. Second. A



Fay & Egan's No. 2 Planer, Matcher and Molder

capacity which will permit the machine to do a wide range of work. Third. The ability to do this work smoothly and rapidly. Fourth. Rapid and accurate adjustment to all parts. Fifth. Simplicity in construction and operation, and last, but not least, safety to the operator.

All of these features are said to be combined in ideal fashion in the J. A. Fay & Egan Company's No. 2 planer, matcher and molder shown herewith.

The frame of this machine is built up of strong castings, is heavy and free from vibration; it will plane material as wide as 24 inches and as thick as 6 inches and matches 12 inches wide; the powerful driving system, in connection with the cylinder running in self-oiling bearings, enables this machine to produce perfect work on rapid feeds. The adjustments are all within easy reach of the operator.

Every carpenter, contractor and jobber who has any amount of planing, matching or molding to do will find it to his interest to investigate this modern machine.

The manufacturers inform us that they will be glad to send large illustration, together with full details of construction, upon application to their address, which is J. A. Fay & Egan Company, 545-565 W. Front street, Cincinnati, Ohio.

+

Larger Quarters For Johns-Manville Co.

The executive offices and New York show rooms of the H. W. Johns-Manville Company, manufacturers of asbestos, magnesia and electrical supplies, were moved the latter part of April to the new twelve-story H. W. Johns-Manville Building, Madison avenue and Forty-first street, New York City, from their old

quarters at 100 Williams street, where they have been located for the past fifteen years.

This move marks the fifty-fourth anniversary of the company. Under the name of H. W. Johns Manufacturing Company the business was conducted at 87 Maiden Lane, previous to

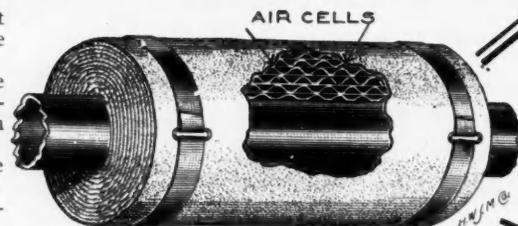
A Few Helpful Facts For Builders About Pipe and Boiler Insulation

As you of course know, insulation is based on the fact that heat cannot pass through dead or motionless air. Therefore, the more dead air a pipe covering confines, the greater its efficiency.

Now, J-M Asbestocel Pipe Covering is the only low-pressure covering we know of which confines air—and lots of it—in an absolutely dead state—the only one which permits no circulation whatever.

In other coverings the air channels run from end to end and the air is, of course, continually traveling back and forth.

But the air cells run *around* the pipe—each cell entirely separate in



J-M Asbestocel Pipe Covering

Thus the spaces are so small that the air has no chance to circulate.

Also, because of this arrangement of the air cells, J-M Asbestocel Pipe Covering is built on the arch principle and is therefore far *stronger* than other low-pressure coverings—doesn't crush down under weight—*lasts longer* than any other kind of low-pressure covering.

If you will investigate, we believe you will find that your clients' interests will be best served by the installation of J-M Asbestocel.

Write our nearest branch for booklet giving the results of an engineering test (made by disinterested investigators) showing how much more coal J-M Asbestocel Pipe Covering saves as against ordinary coverings.

H. W. JOHNS-MANVILLE CO.

Manufacturers of Asbestos and
Magnesia Products
Cleveland
Dallas
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1300
Vancouver, B. C.

When Writing Advertisers Please Mention the American Carpenter and Builder.

The thorough amalgamation of the base plate with the tin and lead coating obtained in our

Copper Bearing Open Hearth Steel Terne

Is in itself sufficient reason why particular builders and buyers of roofing should specify for this material exclusively. Do not fail to send for a free sample and see for yourself.

Write for full information and quotations on high grade Terne Plates, Continuous Roofing Tin, Black and Galvanized Sheets, Formed Roofing and Siding Products, Etc. Send for our book "Better Buildings"—valuable to every builder.

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES: Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis
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Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, Los Angeles, Portland, San Francisco, Seattle

IT MAKES NO DIFFERENCE WHERE YOU LIVE

MAKE MORE MONEY!

IF YOU ARE BUILDING HOUSES, BARNs, OR DOING CONTRACT WORK OF ANY KIND, BUY LUMBER, MILL WORK, HARDWARE AND PAINT DIRECT FROM THE MANUFACTURERS. CUT OUT THE MIDDLEMAN. SAVE HIS FIVE PROFITS. WE ARE OWNERS OF BILLIONS AND BILLIONS OF FEET OF FIR AND CEDAR. WE OWN OUR LOGGING, RAILROAD, OPERATE OUR OWN MILLS, AND NOW WE OFFER YOU THE PRODUCT OF THESE UP-TO-DATE MILLS AT THE MANUFACTURERS' PRICE.

COMPLETE HOUSE BILLS LOADED IN ONE CAR WILL SAVE YOU FROM 25% TO 50%. OUR SERVICE WILL BRING YOU GUARANTEED LUMBER, MILL WORK AND SUPPLIES.

PRICE: YES, THE PRICE IS RIGHT, FOR WE CUT OUT THE WHOLESALER, JOBBER, TRAVELING MAN, COMMISSION MAN, AND THE EXPENSIVE, PROFIT-LOVING RETAIL DEALER.

SHIPMENT: VERY PROMPT, BECAUSE WE CARRY A LARGE STOCK. SEVEN TRANSCONTINENTAL RAILROADS AT OUR DOOR. SHIPMENTS GO THROUGH IN A HURRY, ABSOLUTELY NO DELAY.

QUALITY: WE GUARANTEE BETTER GRADES THAN YOU CAN GET FROM YOUR LOCAL DEALER. THE AVERAGE MANUFACTURER SELLS TO WHOLESALERS. HIS INTEREST STOPS AT THIS POINT. WE GIVE YOU THE BEST TO BE HAD, BECAUSE WE WANT YOUR FUTURE ORDERS. WE MANUFACTURE OUR OWN LUMBER FOR YOU.

YOU KNOW RED CEDAR LASTS FOREVER, AND YOU KNOW THE LONG AGE OF FIR, AND THE BEAUTIFUL FINISH IT TAKES.

LONG TIMBERS, SHINGLES, LAPSIDING

STRAIGHT OR MIXED CARs OF GENUINE WASHINGTON RED CEDAR SHINGLES, AND OLD-FASHIONED NEW ENGLAND LAPSIDING, OR CLAPBOARDS SURFACED ON TWO SIDES. EDGE GRAIN FIRE FLOORING, CEILING, PARTITION CASING, BASE AND FINISH.

WASHINGTON RED CEDAR SHINGLES

EDGE GRAIN CLEAR FIR FLOORING \$29.00

CLEAR 1/2" - \$2.15 EXTRA 1/4" - \$1.75 CARLOAD PRICE

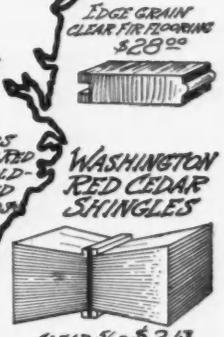
Clear Washington Red Cedar Bevel Siding - \$2.35 per 100 ft.

SEND FOR OUR FREE LIST OF BUILDING MATERIAL, QUOTING PRICES PREPAID TO YOU. TEAR OFF THE COUPON, AND MAIL TODAY

Hewitt-Lea-Funck Co.
623 First Ave.
Seattle, Wash.

Hewitt-Lea-Funck Co.
HIGH IN QUALITY
LOW IN PRICE
FIRST IN SHIPMENT
623 First Ave. Seattle, Wash.

When Writing Advertisers Please Mention the American Carpenter and Builder.



HEWITT-LEA-FUNCK CO.,
623 FIRST AVE.
SEATTLE, WASH.

Please send me your free lumber and building material list, quoting prices, freight paid to my station.

NAME _____
ADDRESS _____
OCCUPATION _____



is for a large, high room, but we have others for smaller rooms.

Ceilings in **Stamped Steel** for Public or Commercial buildings. Ceilings of modern refined designs for private residences. Tilings in **Steel**, for Bathrooms and Kitchens.

Half the labor of erecting a metal ceiling is strictly Carpenters' work, that is, the scaffolding and furring. Once started, they can finish it as well or better than anyone else. Secure our agency and push them.

Catalogue on request

Northrop, Coburn & Dodge Co.

No. 29 Cherry St.

-:-

NEW YORK

UNION METAL COLUMNS

Union Metal Columns

follow the classic designs of ancient Greece and Rome.

In the substitution of steel for wood not an atom of charm or beauty is lost—but a new element of value is added.

Union Metal Columns are indestructible—used in Porch, or Pergola, they will outlast the structure in which they are incorporated.

Specified by the most eminent architects and designers of America, these columns have earned an enviable repute even among those who deprecate the slightest departure from ancient forms.

The catalogue which we will be glad to send you upon request, illustrates the artistic use to which Union Metal Columns have been applied in beautiful homes and buildings throughout the country. We have a special proposition for Builders and Carpenters. Write to-day.

The Union Metal Manufacturing Co.
1401 Maple Avenue
CANTON, OHIO

May 1st, 1897, when it was moved to 100 William street. In 1901 the firm name was changed to H. W. Johns-Manville Company, a consolidation being effected between the Manville Covering Company, of Milwaukee, Wis., and H. W. Johns Manufacturing Company. This last combination brought together two of the largest manufacturers of pipe and boiler coverings, packings, roofings, etc., in the world, and the growth of the company since that time has been almost phenomenal.

They now have factories located in Brooklyn, N. Y.; Milwaukee Wis.; West Milwaukee, Wis.; Hartford, Conn.; Nashua, N. H.; Lockport, N. Y., and Newark, N. J., with an asphalt refinery at South Amboy, N. J., and extensive asbestos mines at Danville in the Province of Quebec, Canada, which are the largest in existence and produce an exceptionally fine grade of asbestos. They also have a branch house in every city of any size in the United States and Canada, as well as representatives in about all foreign countries.

In the new quarters, the company will have the distinction of being one of the few manufacturing concerns which occupy an entire twelve-story office building. In its entirety, the company now occupies over 2,657,160 square feet of floor space, or about 61 acres. The employees number approximately 5,000. They have about 425 salesmen.



Distributing Concrete Silo Book

The interest in silos and silo building has tremendously increased in the last year. A comprehensive discussion and book of design on silos was published by the Universal Portland Cement Co., in their "Concrete Silos" which is now passing through its fourth edition of 20,000 copies.

The farm press and agricultural colleges both give a large amount of attention to silos and are using this publication of the Universal Portland Cement Co. as a source of material and text book. The demand for concrete construction for silos as well as troughs and tanks for farm use has been greater than could be cared for by the local contractors in many districts, and it is probable that a profitable field for construction work can be found in silo building.



Novel Toast to Customers

"To the health, happiness, and long continuance of our pleasant business relations with our customers; and may Yule Tide be to each a happy climax to a year of well deserved prosperity."

The unique feature in connection with the above toast is the fact that it was given in the dining room of a Zeppelin dirigible airship, while soaring over a thousand feet above the earth.

This toast was uttered last winter by Mr. Ed. A. Langenbach, president and general manager of the Berger Manufacturing Company of Canton, Ohio, and in response sixteen



glasses of sparkling German wine were raised to the lips. The airship was a virtual aerial Pullman, equipped with every luxury known to modern convenience and comfort.

"This trip, my second," says Mr. Langenbach, "was delightful in every detail. The weather was all that could be desired,

When Writing Advertisers Please Mention the American Carpenter and Builder.

TRY IT FREE

Why, compared with the grindstone or emery wheel, it is mere child's play to do the toughest job of grinding—and with the patent tool rests and attachments an apprentice can do any job of sharpening, such as gumming saws, sharpening plane bits and twist drills as well as a high paid mechanic. Try it 30 days absolutely free—then if you don't want to keep it, return it at our expense.



JIG SAW



LATHE AND SAW



SAW OUTFIT



BORING ATTACHMENT

A Work Shop in Itself

Extra attachments convert the Luther "Hummer" Tool Grinder into jig and circle saw, lathe, force feed, drill, etc.—you can completely equip your workshop at very low cost—free book illustrates and describes extra attachments,—17 in all. Write for Free Book today.

Dimo-Grit Sharpening Stones

Ask your dealer for Dimo-Grit sharpening stones—the fastest, smoothest sharpening substance for steel. Look for the name, "Dimo-Grit" on the stones.

Cuts Steel as Emery Does Copper

Dimo-Grit, the new artificial diamond abrasive, peels steel away in tiny shavings—25 times faster than grindstone, 10 times more efficient than emery—no need of water cooling, no danger of drawing temper. Will not glaze or wear lopsided. Dimo-Grit is especially adapted for steel. Carborundum wheels supplied when wanted.

LUTHER SHOP TOOL GRINDER

Foot and engine power—built completely of steel and iron, enclosed shaft drive like an automobile, dust-proof bearing—runs as easy as sewing machine—4000 revolutions per minute by foot power.

LUTHER GRINDER MFG. CO.
905 Michigan Street MILWAUKEE, WIS.



14 MACHINES IN ONE

1—Fine Dimo-Grit Wheel. 2—Coarse Dimo-Grit Wheel. 3—Universal Tool rest. 4—Chisel and Plane Bit Guide. 5—Dimo-Grit Razor Hone. 6—Dimo-Grit Scythe Stone. 7—Dimo-Grit Saw (summer. 8—Felt Polishing Wheel. 9—Medium Dimo-Grit Wheel. 10—Cloth Buffing Wheel. 11—Dimo-Grit Oil Stone. 12—Dimo-Grit Pocket Hone. 13M—Plane Bit Honing Attachment. 14M—Twist Drill Sharpening Attachment.

40-Page Free Book

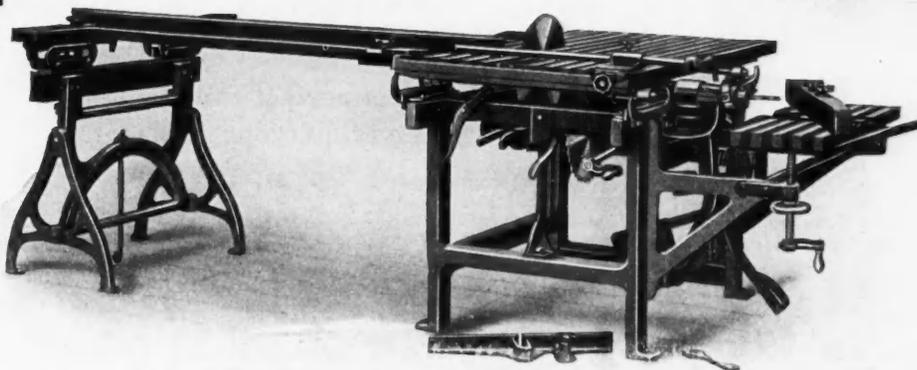
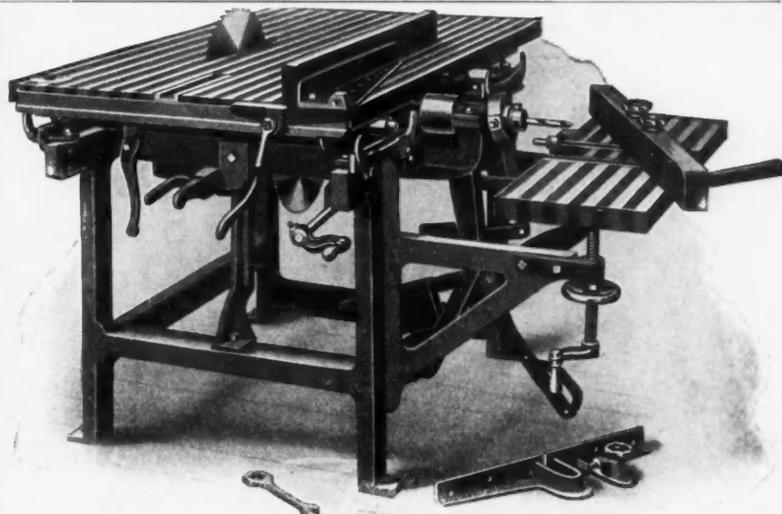
Shows all ways this machine saves and earns money and makes work easier—gives valuable pointers on tool sharpening. Prove this machine's value to you in your own work. Send for full information, then decide if you want to try the shop outfit for 30 days free. Don't delay. Write today.

OUR PORTABLE SAW

Tables Cut Down Your Costs

These Portable Double Arbor Rip and Cut-Off Saw Machines with either Iron or Wood Frames, can save you time, labor and material on any job. The machines are easily portable and require but small space to operate in. They are equipped with either electric motor or gasoline engine.

Our Double Arbor feature gives you in one machine a Rip and Cross-Cut Saw ready for use at any time. It is but a second's work to change Rip Saw to Cut-Off Saw or Dado Head. Other big features of these machines are their rolling tops, carrying 1000 lbs. easily. Their boring attachments which require no pushing of lumber to bit. The bevel gauge which will make any cut that can be made on a tilting top table. The mitre gauge which can be set to any angle—right or left. The dado head which can be used in either saw arbor.

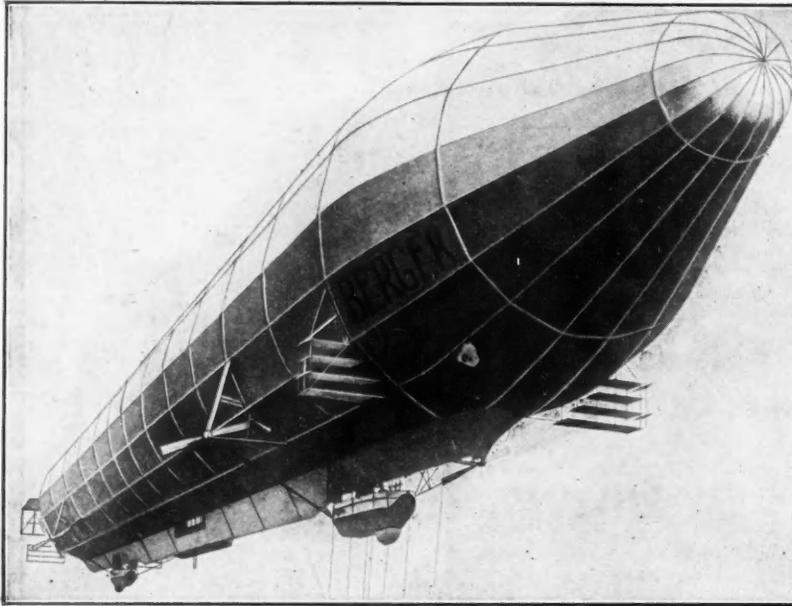


Our table extension is framed together, trussed to prevent springing and provided with steel lumber roll, at outer end. When in place it is solidly secured to main table. It can be easily put up or removed.

We guarantee these machines in every respect. Find out about them before you buy any machines of this type. Let us send you our catalogue "M". Free for the asking and it will interest you. Write us today for copy.

Beach Mfg. Co.
MONTROSE, PA.

When Writing Advertisers Please Mention the American Carpenter and Builder.



Air Ship in Flight Last Winter near Potsdam, Germany, Carrying as a Passenger Ed. A. Langenbach, Pres. Berger Mfg. Co.

and as we rose in the air at the beginning of our 150-mile ride we seemed imbued with new life.

"The natural beauty of Germany can only be fully appreciated after viewing it from such a height.

"High up we rose until the highest of buildings seemed but specks and human beings were no longer discernible.

"Here and there we would perceive a river or lake, and the different hamlets over which we passed were hardly visible

to the naked eye.

"At Potsdam we sailed low and the noise of children playing and shouting below, could be plainly heard.

"We finally landed at Schwaben, there ending one of the pleasantest journeys it has ever been my good fortune to enjoy."

+

New Addition to Sidney Factory

Word comes from the Sidney Tool Company of Sidney, Ohio, the manufacturers of the famous universal woodworker, that during the first part of May ground was broken for a two-story brick addition to their factory.

This addition, which will be used as a warehouse, crating room and paint room, is to be 42 by 140. The added space will enable the Sidney company, so they inform us, to increase their output at least one-third.

This company's Famous universal woodworker is widely known by all carpenters, shop and mill workers, and there are a great many of these machines in use.

Contractors and builders, shop and mill owners find they effect a big saving in turning out mill work, and they do their work in an efficient manner at all times. The Famous woodworker will do sixteen different kinds of woodworking work. It is so constructed that four men can operate four different attachments at one time.

Those not familiar with this Famous woodworker can obtain complete information concerning it from the Sidney Tool Company, Sidney, Ohio.



Carpenters!

A Good Sharpening Stone—A Carborundum Sharpening Stone is as Necessary as Good Tools—and Tools Are Not Good Tools Unless They Are Well Sharpened.

There are two kinds of sharpening stones—Carborundum and the other kind—Carborundum stones cut the edge on the tool—give an edge that is clean and keen—they wear uniformly and show wonderful durability—the other kind rub or wear the edge on the tool—show soft spots—wear quickly—

For a better, quicker edge—to keep your tools always in perfect condition—see that you carry a Carborundum Sharpening Stone in your tool kit.

Carborundum Round Combination Carpenters' Bench Stone, . . .	\$1.00
Quartered Oak Box Holder,50
Carborundum Oblong, Combination Stone,	1.25
Handy Little Pocket Stone in Case,35

From your Hardware Dealer or Direct.

The Carborundum Company, Niagara Falls, N. Y.



When Writing Advertisers Please Mention the American Carpenter and Builder.

THE L. & I. J. WHITE COMPANY
Buffalo, N. Y.

Please send me particulars of your proposition for Carpenters and Builders.

Name.....

Address.....

Occupation.....

The Greatest Opportunity of 1912

We want one Carpenter or Builder in every community in the country to demonstrate and take orders for our celebrated High Grade Tools on a liberal commission. Sign and mail the coupon today.

We have been making Quality Tools for 75 years, and our goods are known all over the world, for their excellence of material, temper and finish. To use them is to save money. Every article guaranteed.



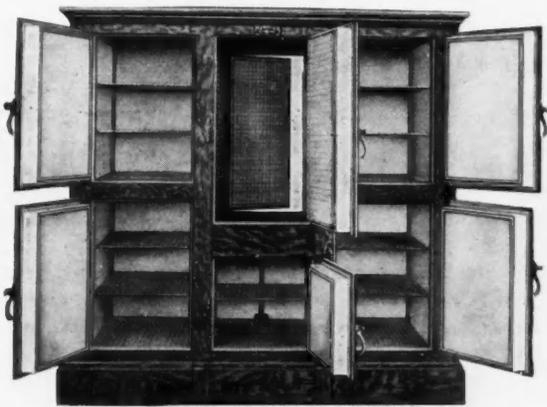
This Trade Mark on a tool means both **insurance** and **assurance**—insurance against tool troubles, and assurance of the most tool satisfaction. Use the coupon and receive interesting information.

The L. & I. J. White Company

Edge Tools and Machine Knives

Main Office and Works **BUFFALO, N. Y.**

Branch Offices:
CHICAGO NEW YORK NEW ORLEANS
SAN FRANCISCO



A Herrick Opal Glass Lined Refrigerator used in some of the finest homes.

Every Builder, Contractor and Architect is interested in the latest improvements and Home equipment and building.

You can give better service, and satisfaction to your customers if you have The **Herrick** Miniature Plan and Specification book No. 41. Hundreds have this now and find it valuable. You may have it free of charge.

Herrick Outside Icing Refrigerators save your customers money and they will appreciate the positive specifications you can secure from the above No. 41.

Ask for it today, **mailed free**

Herrick Refrigerator Co.

WATERLOO, IOWA

“The Handiest Tool in The Tool Box”

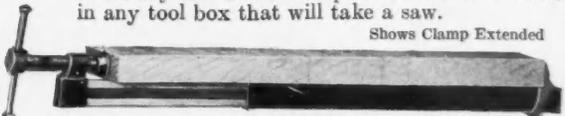


This Cut Shows use as Short Clamp

HERE is the sensation of the year. A new tool that has already become a necessity with thousands of carpenters and builders who have long felt the awkwardness, the clumsiness, the slowness, the weakness and the inconvenience of the old style clamp.

COBB EXTENSION CLAMP

The Cobb Extension Clamp is made entirely of pressed steel; has a closed limit of 1 1/2" and extends to 38" and 50" according to size. It is light, neat, strong, compact, rigid and indestructible, can't possibly slip or mar, has flat bottom to prevent falling over. Weighs no more than a clumsy all wood clamp and can be carried in any tool box that will take a saw.



Shows Clamp Extended

Does Anything Any Other Clamp Will Do
Does Many Things No Other Clamp Can Do

Order a pair direct from this advertisement with the privilege of returning them and getting your money back if you are not pleased.

No. 3, size closed 23 1/2"—clamp limit 1 1/2" to 38".	\$4.25.
Price per pair (2 clamps).....	
No. 4, size closed 29 1/2"—clamp limit 1 1/2" to 50".	\$5.00.
Price per pair (2 clamps).....	

ROOT-JAMES & COMPANY, Ltd.

Dept. 1. MOLINE, ILLINOIS

When Writing Advertisers Please Mention the American Carpenter and Builder.

A Free Book of Money Saving Ideas For Dairy Barn Builders



You will be interested in reading "Helpful Hints to Dairy Barn Builders." It tells many of the things learned by W. D. James—America's foremost dairy barn designer. It will help you make more money.

It tells about the new plank frame construction, the famous King system of ventilation, perfect lighting, proper width and arrangement. It tells about stable floors, site, size, appearance, design, drainage and equipment. And it shows four floor plans of barns that have attracted wide-spread attention.

You can obtain a copy of this valuable, helpful book FREE. Merely answer these few questions and the book will come by return mail. For whom do you expect to build or remodel dairy barns? (Give name and addresses.) When? For how many cows? Address

James Manufacturing Company
8675 Cane St., FT ATKINSON, WIS

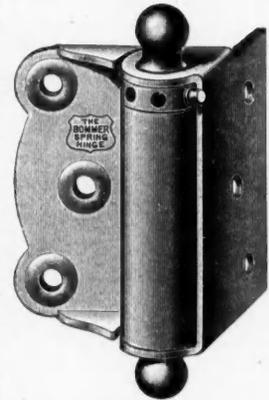
Special Offer of Blue Prints



Mr. James wants to make you a special offer of complete working blue prints of modern dairy barns of different sizes and types. Also ask how to secure free help from our architectural department. Write today.

Half Surface Screen Door Hinge

Bommer Brothers of Brooklyn, N. Y. are placing on the market a new line of screen door hinges, style 2200, herewith illustrated. The principal features are the half surface and half mortise flanges making this hinge particularly desirable and a saver of time for the carpenter where the moulding on the door casing does not allow the use of the regular surface screen door hinge. It has adjustable tension, and the spring can be regulated after the hinge is applied to the door. The spring is entirely inclosed, and is made of the best oil-tempered steel wire. These hinges are made of wrought steel, bronze and brass in a variety of finishes, are handsome in design, possess unusual strength and durability, and are easy of adjustment and operation. The high quality by which Bommer Spring Hinges are well known is maintained.



Half Surface Screen Door Hinge

Labor and Time Saving Cement Tools

There are, unfortunately, a great many people who are prone to linger with and continually advocate the "older method" when some new, modernized way of doing a particular sort of work is offered and proved entirely practical and a vast improvement over the "old time" way.

We feel safe in believing, though, that the majority of contractors, builders and carpenters are not wedded to antebellum ideas and methods when the newer way is shown the best, and consequently are always anxious to learn about the late equipment which tends to ease and simplify their labors.

The cement finishing tools manufactured by the Twentieth Century Manufacturing Company, of Chicago Heights, Illinois, come within the latter class and should interest every one engaged in construction work, as well as particularly appeal to those who actually do any amount of concrete work at all.

These finishing tools, which are all made with long handles, include trowels, jointers, edgers and double action steel floats for concrete sidewalk and floor work.

They are now in extensive use by cement contractors and workers and proving entirely practical in every respect. The advantage gained in the use of long handles permits one man to do the work of a gang, in quicker time and with less actual effort.

In troweling, for instance, the work may all be done from one side of the walk or floor; there is no kneeling or tiring and straining of backs; an expert finisher is not required, and though done by one man, the work is generally far superior to that which a gang of finishers would do.

The mechanical operation and construction of the trowel is very simple. It acts upon a "push and pull" movement, and the blade tips automatically as either pushed or pulled by the workman, thus preventing blade edges from digging into the concrete. Saw-blade steel is used in the making of the blade, while all castings are of malleable. This type of construction gives a long wearing tool.

Any one doing any concrete work, or figuring upon undertaking it, will no doubt find it most convenient to know about these long handled cement finishing tools. A booklet describing them in detail, will be sent by their manufacturers, The Twentieth Century Manufacturing Company, upon request. Address them at Chicago Heights, Ill.

Amatite ROOFING

Why Practical Men Demand Amatite



ROOFING that needs paint every two years can't hold the market against Amatite—which needs no paint whatever.

Practical men know the great advantage of a roof that needs no painting. They know what a nuisance the painting is. They know how much it

costs. They know how liable they are to neglect to paint their roofs at the proper time.

Painted roofings are waterproof only where the paint is. Amatite is waterproof all the way through.

Amatite is sold in the usual convenient rolls of 110 square feet with a smooth lap where the mineral surface is omitted, so as to secure a tight joint. Nails and cement are packed in the center of each roll.

Free sample and booklet on request to nearest office.

BARRETT MANUFACTURING COMPANY

New York	Boston	Pittsburgh	Minneapolis
Chicago	St. Louis	Cincinnati	New Orleans
Philadelphia	Cleveland	Kansas City	Seattle
	London, Eng.		

When Writing Advertisers Please Mention the American Carpenter and Builder.



Don't Miss This Opportunity

We Want One Carpenter or Builder in Every Community to Demonstrate, Take Orders for and Apply Our EDWARDS METAL SPANISH TILE ROOFING on a Liberal Commission.

Here is a chance to build up an independent, profitable business for yourself right at home. Many carpenters are now devoting their entire time to selling our metal roofing. Others have made big profits simply devoting part of their time to selling and laying our Metal Spanish Tile.

Edwards Metal Spanish Tile

Is being advertised in the leading magazines and is now known to thousands of home builders and owners everywhere. Wherever it has been used it has made a decided "hit" because it shows off to good advantage on the roof and has numerous points of superiority over any other style of roofing.

Architects are specifying Edwards Metal Spanish Tile, for they know it will do away with roofing "troubles." Builders like it because of the finished appearance it gives any house on which it is used.

Our Metal Tile are stamped out of the highest quality Worcester terne plate in exact imitation of the most expensive Terra Cotta Spanish Tile. They come either "dip" painted or heavily galvanized size 10 x 14 inches. Our patented interlocking side lock makes it possible to make a perfectly moisture-proof roof without soldering. Edwards Metal Spanish Tile afford the fireproof advantages of Terra Cotta Tile, but are much lighter in weight, cost but a trifle more than ordinary roofing and will last a lifetime.

WRITE US TO-DAY ABOUT YOUR TERRITORY. Our business is growing so rapidly that it is necessary to have an agent in every community. The territory is going fast. One day's delay may mean that some one else will be given your territory. DON'T DELAY. WRITE TO-DAY FOR OUR SPECIAL AGENTS' PROPOSITION.



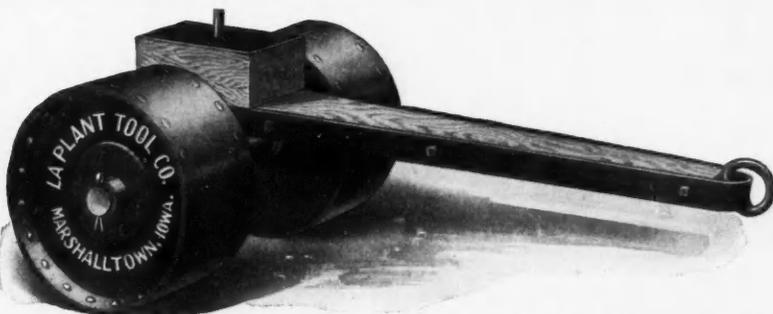
Note the construction of patented interlocking device, protecting nail heads from weather and providing perfectly for expansion and contraction of the metal.

The Edwards Manufacturing Co.

"THE SHEET METAL FOLKS"

401-417 Eggleston Ave. - - - CINCINNATI, OHIO

THE WORLD'S LARGEST METAL ROOFING, METAL SHINGLES AND METAL CEILING MANUFACTURERS



THE LA PLANT HEAVY HOUSE MOVING TRUCKS

When you get a job with an old building on the lot—move it with the La Plant Trucks to another place—instead of wrecking it. There is more profit in it for you.

La Plant Heavy House Moving Trucks are made of steel—on scientific lines—are interchangeable so they can be worked singly, in pairs or in fours.

Write for catalogue O and see how easy it is to wheel a building a mile in a day—and how little the cost is for La Plant outfit compared with the profit to be made in moving houses instead of wrecking them.

LA PLANT TOOL CO.

1100 E. Nevada St.

Marshalltown, Iowa

Contractors for Tile and Marble Work



For interior and exterior purposes in public and private buildings.

Send your plans and receive promptly our estimate and designs.

Write for free catalog of Hardwood, Brick and Tile Mantels, Fire-place Fixtures, etc.

Heitland Grate & Mantel Co. 121 1/2 N. Fifth St. Quincy, Ill.



The boat you can afford to own

FROLIC II LATEST MODEL

15 1/2 to 17 1/2 ft.

Not a speed boat but a pleasure boat, neat and safe, that drives

6 to 8 miles an hour with 2 H. P. engine at cost of 5 cents. Any amateur who can handle tools can build it complete by the Frolic method as easily as finish a K. D. frame and have a better boat at less cost than frame alone by other methods. Complete working drawings, photographs and instructions \$2.00.

FROLIC BOAT CO.

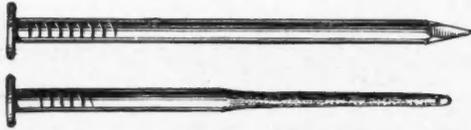
WATERVLIIET :: :: :: MICH.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Toncan Metal Nails

Anyone who has had any experience in shingling work will be interested in knowing about these Toncan nails, which are being manufactured by the Igoe Bros., Brooklyn, New York.

These nails are claimed to be the cheapest non-corrosive nail on the market. They are made from Toncan metal, which is the present successor of steel and iron sheets and sheet metal products exposed to open service and for purposes where



Results of a Test—Upper Nail of Toncan Metal, no Action; Lower Nail of Steel Almost Destroyed

increased rust-resisting qualities are required. This Toncan metal is an iron ore product of great purity, density and homogeneity. It combines durability, toughness and ductility with rust resistance. It is soft and pliable. It works up better than mild steel. It stands forming, stamping, bending and seaming. It has fine welding and drawing properties. It does not crack or break like iron in working.

When it is known that ordinary nails last from 7 to 8 years, when exposed to weather, and galvanized nails about 15 years, the really remarkable wearing qualities of Toncan nails can be seen in the fact that they are sold under a 25 year guarantee against disintegration and corrosion.

The Toncan metal nails are not absolutely rust-proof. They will show a little rust, but the rust has no material effect upon them. It is claimed they will not disintegrate or fall to pieces under years of the most severe exposure. These nails are particularly suitable for roofing shingles, slate, etc., etc., and they can profitably be used in any work which will be exposed to climatic action.

The Igoe Bros., 61-73 Metropolitan Ave., Brooklyn, N. Y., will furnish any AMERICAN CARPENTER AND BUILDER reader with complete particulars, circular matter, etc., of these Toncan nails, upon request for such matter.



Crosby-Frank Paints Direct to You

One of the large paint manufacturing firms selling direct to the user is Crosby-Frank & Co., of Chicago. They make a wide variety of ready mixed paints, stains, enamels and varnishes for house, barn, floor, carriage, wagon and implement uses.

This company issues a very interesting catalog detailing their goods in particular and also containing considerable general information about paints, varnishes, etc., which should prove most useful to any builder. Such features as color combinations and suggestions, how to find out the quantity of paint required and how to properly apply paint are thoroughly dealt with. In addition to the foregoing the catalog contains color charts of their paints, enamels, woodwork finish and varnishes.

This interesting and instructive catalog may be had upon request. Address Crosby-Frank & Co., 300-304 South Peoria street, Chicago, Ill.



A New Speidel Catalog

J. G. Speidel, Reading, Pennsylvania, has but recently issued a new catalog detailing in complete form through illustration and descriptive matter the line of hoisting machinery manufactured in the Speidel plant.

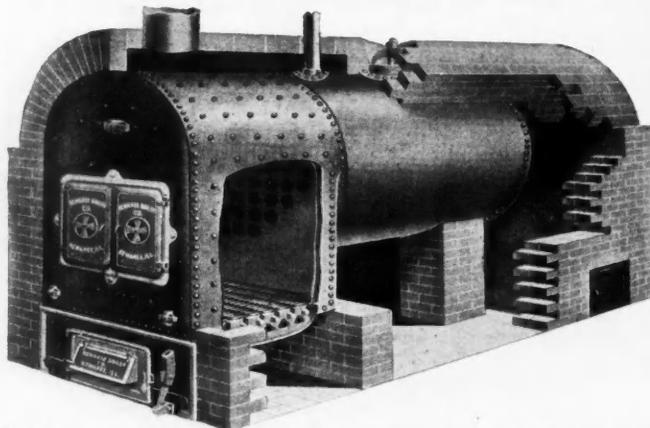
The catalog deals in an interesting and attractive manner with chain hoists; trolleys; cranes; dumb waiters; hand, belt-power and electric elevators; cellar hoists, etc., etc.

This interesting Speidel catalog may be obtained by writing J. G. Speidel, Reading, Pennsylvania.

KEWANEE

FIRE BOX BOILERS —AND— WATER HEATING GARBAGE BURNERS

The Best Heating Equipment you can Install—Mr. Contractor



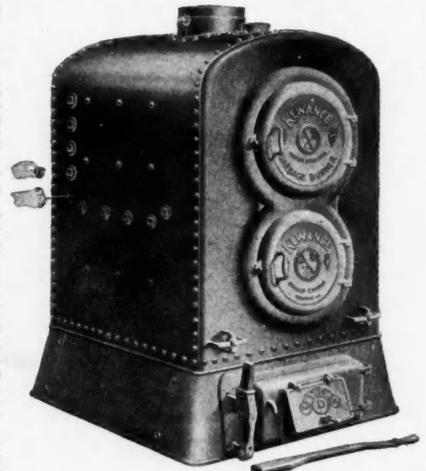
The KEWANEE Fire Box Boiler. Manufactured in 22 different sizes and capacities for steam and water heating.

You want the best of everything for those new homes and buildings. You will advise that nothing but the best be used throughout. You realize the best pays YOU big in final results—more work—larger jobs—better prices—a reputation as THE best of your locality.

What about the water or steam heating system of those new places. That is the most important feature you must decide. Of course you will recommend Hot Water or Steam heating system as the best—and the cheapest in the long run. Right you are. And you can further recommend, absolutely, KEWANEE Fire Box Boilers as the best water or steam system boilers—regardless of price, materials, size, etc.—made.

A KEWANEE is THE boiler YOU want.

The KEWANEE Fire Box Boiler is an all steel boiler. It goes into the building in one piece. There are no joints to leak—no sections to crack. Nothing about it



KEWANEE Water Heating Garbage Burner.

to give away or get loose. And set up in brickwork it costs—yes sir—it costs LESS than the common tubular or cast iron boiler.

The KEWANEE Fire Box Boiler is an economical fuel burner—burns hard or soft coal, wood, coke, oil or gas. It is automatic in its action. It is thoroughly durable. It is entirely safe—tested to a pressure of a 125 pounds per square inch. The average heating plant runs at less than 10 pounds.

The KEWANEE Water Heating Garbage Burner is a thoroughly efficient water heater and practical, economical garbage and refuse destroyer. It operates simply—evaporating and drying the garbage before burning it. It then reduces all garbage to ashes and carries off, through its patented By-Pass feature, all smoke and odors from the burning gases. As a water heater it saves 50% in fuel.

The KEWANEE Water Heating Garbage Burner consists of a water jacket constructed with an inner and outer shell, both of heavy boiler steel, held apart by 2 inch cast steel water space rings, riveted together with large steel rivets and so arranged as to provide a 2 inch water space all around the fire box and garbage chamber.

We want you to know in detail about KEWANEE Boilers and Garbage Burners. We have two very interesting booklets—58 and 59—which will tell you about them. Mailed to any Architect, Contractor, Builder, Owner or Tenant. Be sure you get them and know KEWANEE heating equipment before specifying.

KEWANEE BOILER COMPANY

:-:

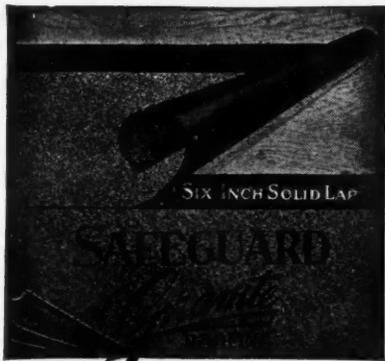
KEWANEE, ILL.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Granite

TRADE MARK

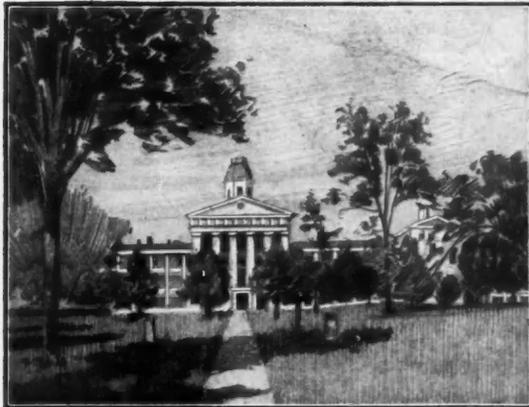
ROOFING



SIX INCH SOLID LAP

A six-inch lap is better than a three-inch lap. It gives better protection against leaks and permits nailing down on the under sheet only, so that no nail heads appear on the surface. Otherwise this is the same Granite Roofing that we have sold for 26 years for use on great factories. It is immune from damage by coal smoke or cinders, and it has a sea grit surface which makes painting entirely needless. Behind it is a reputation that has *Passed the Quarter Century Mark*.

EASTERN GRANITE ROOFING CO.
19 Battery Place, New York Pittsburgh
Chicago



Mississippi State Hospital at Jackson, Miss. — roofed with Asbestos "Century" Shingles by the Hospital authorities on the advice of J. T. Willis, Architect and Builder, of Jackson. From an Artist's Drawing.

When you have a call for *red* Asbestos "Century" Shingles, and price is a primary object — suggest the *Veneered Red*

Asbestos "Century" Shingles

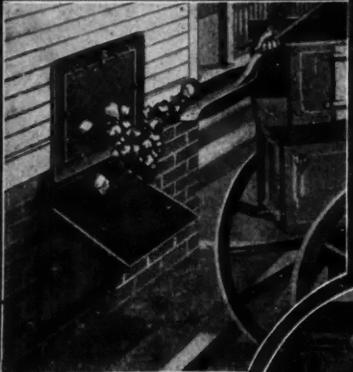
"The Roof that Outlives the Building"

These veneered shingles are made of the standard "Century" asbestos-cement composition. Their upper weather surface is Indian Red, backed with the regular Newport Gray composition. They have all the fire-proof, weather-proof and time-resisting qualities that have given Asbestos "Century" shingles their superior place among roofing materials. Our nearest representative will supply you. Write us for Booklet "Everlasting 1912".

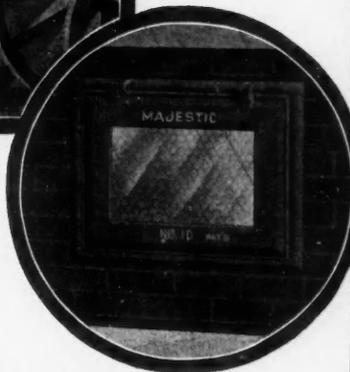
Keasbey & Mattison Company, Factors
Ambler, Pennsylvania
Branch Offices in Principal Cities of the United States

MAJESTIC

FOUNDATION
COAL CHUTE



☐ Protects the building just where most needed — above the opening.
☐ The heavy steel hopper catches all the coal.



☐ When not in use, the hopper lies in the bottom of the chute body. ☐ The door locks automatically either open or closed. Strictly burglar-proof ☐ With 1/4-inch wire glass or steel panel in door.

Write for circular and address of nearest dealer.

MAJESTIC FURNACE CO.
995 to 1001 Sixth Avenue Huntington, Indiana

Hotel Cumberland

New York
Broadway at 54th Street
Near 50th Subway Station and 53d St. L.



"Broadway" Cars from Grand Central Depot pass the door; also 7th Ave. cars from Pennsylvania Station.

New and Fireproof

Best Hotel Accommodation in New York at Reasonable Rates.
\$2.50 with Bath and up.
European Plan. All Hardwood Floors and Oriental Rugs.

Ten minutes' walk to 30 Theatres

Excellent Restaurant

Prices moderate
SEND FOR BOOKLET

HARRY P. STIMSON, Formerly with Hotel Imperial.
Only New York Hotel Window Screened Throughout.

When Writing Advertisers Please Mention the American Carpenter and Builder.



You get your money back on an IRWIN if it fails to suit you

The only solid-center-stem bit made in all styles and sizes for every use. Sold by dealers everywhere. If you fail to find the *Genuine, Guaranteed* IRWIN, write us.

IRWIN AUGER BIT CO.

Largest in the World

Station F-18

Wilmington, Ohio

Common Sense Tools for Common Sense Men

What could be simpler than a turned shank? The new

RUSSELL JENNINGS PRECISION BITS

have turned shanks and can be placed more easily and rapidly with less tightening of the brace than any bit you ever saw. Once placed, they stay put; they can never "wobble". These bits are the well-known Russell Jennings, having the extension lip, double twist, and screw point, which has made them the standard of excellence for more than half a century.

Russell Jennings Mfg. Co.

Chester, Conn.

21-78

Choose Between Success and Failure

When estimating on a job some builders simply look at the plans and say, "That job is worth so much," while others sit down and go carefully over the plans and specifications, measure up and take a few notes of some of the things that will be required. The former are taking great risks, which do not pay, and the latter are adopting very unsatisfactory methods. Now, a builder should give his whole attention to reading off, measuring up and writing down everything required, even if it takes longer time than anticipated.

The question is, can he afford the time to do it? Consider the value of the many hours and days contractors spend in taking off quantities, the neglect of the other work, which requires all their attention, the doubtful chance of obtaining the contract, the sleepless nights spent in trying to come to a satisfactory conclusion in their efforts to figure out what it ought to be, and a hundred and one other worries which help to shorten this brief span of life.

Slipshod estimating and guess work have ruined many a good man. A builder is anxious to get the work and may have inside information that his efforts will be fruitful, but even so, he is liable to overlook something or many things. His familiarity with a particular class of work makes him overconfident. He sends in his tender and is accepted. Perhaps his was not the lowest, but he honestly believed that he gave a fair, reasonable offer to do the work with a marginal profit. When the work commences and as it advances he discovers that he overlooked the ceiling joists, or didn't reckon on the strapping, or some other items. If only one item be omitted, however small, he is that sum the loser. "But," he may say, "what does it matter? I have allowed sufficient elsewhere to cover that." Thus he cuts a piece off the top of his pants to make them longer at the bottom.

No man can be a success until he can make a reliable estimate of the actual cost of everything required in the job and do it quickly. Then, and then only, can he tell how much he will gain, and only a systematic method will enable him to do this, and place him in a position to do good work to the satisfaction of the owner, the architect and all concerned. He then impresses the architect with his sincerity and ability, increases his clientele, and improves his banking account, building up a reputation and obtaining a lasting advertisement which cannot be secured by any other means.

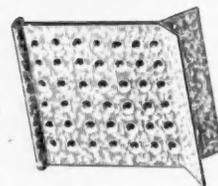
Rapidity doesn't mean so much in making an estimate; but it gives the builder more time for looking after his business.

The Bradt Publishing Company, of Jackson, Mich, emphasize these facts in their ad. this month and offer a solution of these problems to those sending for the last edition of the *Lightning Estimator*.

We might say this concern has advertised in every issue of this journal and we know them to be reliable.

Niagara Galvanized Wall Plugs

This Wall Plug can be put in place in one-tenth the time it takes to dig out mortar and drive in a wooden plug, and it is four-fold more secure. Will last as long as the building. Every Building Contractor should send for sample. Write on your letterhead for Folder 57-C.



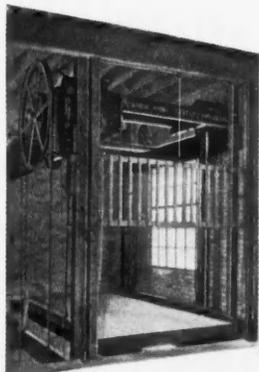
for building into
**Brick,
Stone or
Concrete,
Walls**
as a base
for Nailing

Niagara Falls Metal Stamping Works

Manufacturers of Hardware Specialties
NIAGARA FALLS, N. Y., U. S. A.

Niagara Wall and Veneer Ties for use in Brick and Brick Veneer Walls.
12-inch Galvanized Wall Ties for Stone, Brick and Concrete Block Walls.
Sash Pulleys, Sash Chain, Sash Fixtures. 9M

When Writing Advertisers Please Mention the American Carpenter and Builder.



LEITELT Freight Elevators

We can furnish you with freight elevators for any purpose—and for either power or hand operation.

Let us figure with you and advise you as to the most practical equipment for you to install.

We Make Complete
DOUBLE BELT ELEVATORS
(line shaft drive)

SINGLE BELT ELEVATORS
(electric motor drive)

HAND POWER ELEVATORS
CARRIAGE AND AUTOMOBILE LIFTS
(power and hand)

HYDRAULIC LIFTS
(direct plunger type)

Our freight elevators are in extensive use. They are mechanically right in every detail. They give continuous satisfactory service under the most severe usage. They are built of the best materials.

Take up the elevator question with us. Let us send you our Catalogue C and other descriptive matter. Write now for this and any other information you want.

ADOLPH LEITELT IRON WORKS
GRAND RAPIDS, MICH.



Post-paid
\$3.50
per pair,
including
Pocket
Pump

If your work renders this position necessary, you can't afford to be without a pair of "Kneematics." Fit the knee perfectly and weigh but six oz. Made of finest and toughest leather fitted with heavy inner tubes. Pump them as you would a tire. Will save four times their price in overalls and trousers in a year.

*Don't abuse your delicate knee cap tissues.
Rest on air.*

M. M. M. Co., Inc.
MARSHALLTOWN, IOWA

Antiseptine Registered Shingle Stains

"Wood preserving stains that stay put."

The New Standard in Exterior Stains

Made with the well known wood preserver, Antiseptine, which cannot evaporate from the wood like creosote. Antiseptine insures most lasting coloring effects by permanently protecting the pigments.

Welcomed by all who are building reputations as well as building houses, as the first real step ahead in exterior stains. Cost no more than the ordinary kind. Ask for samples on wood.

Antiseptine Registered Shingle Stains

Made only by

American Wood Preserving Co.

1345-1351 North Branch Street

Incorporated 1892

CHICAGO

Phone, Dearborn 119



The Plastic Relief Mfg. Co.

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ORNAMENTAL PLASTER WORK

CEILINGS PANELS

CORNICES COVES

CAPITALS BRACKETS

ARCHITECTURAL DECORATIONS

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BOWLS**

Ceiling number 16

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Antiseptine Shingle Staining

Staining for shingles, rough siding, clapboards, etc., is continually growing in use among builders, and this treatment seems to be producing exceedingly satisfactory results.

Among one of the successful stains now in general use is the Antiseptine shingle stain, which is made by the American Wood Preserving Company of Chicago.

These Antiseptine stains are a development of the highly effective use made of Antiseptine as a wood preservative. Antiseptine is made from the heavy oil of highest distilling-point existing in coal-tar, which means that it is the highest possible development in the wood preserving line. It has a burning-point that is higher than the burning-point of wood. It will reduce the inflammability of the wood to which it is applied—a feature that has made Antiseptine especially popular for use in mines as a safe and effective wood preserver.

Antiseptine stains are a combination of pigments selected especially for superior permanence and beauty and ground to

impalpable fineness with Antiseptine. The impalpable fineness of the pigments used, together with the permanent nature of the Antiseptine, produces a richness of tone that amplifies the beautiful natural grain of the wood in a subdued, velvety effect.

These stains are especially intended for rough lumber such as shingles, rough-siding, clap-boarding, half-timbering, fences, etc., but may be used with equally satisfactory results on surfaced lumber with the difference that the coloring effects come out lighter in shade because the stains spread out thinner on smooth surfaces, but the grain of the wood is brought out beautifully. Antiseptine stains are applied by dipping and then brush-coating or by simply applying two liberal coats with a brush.

A circular explaining these stains fully, their many uses and effects which can be obtained, can be had from the American Wood Preserving Company, 1345 W. Branch street, Chicago.



SENSATIONAL
NEW
LEVEL

THE LEVEL THAT TALKS. Yes, it almost talks out loud. Your old spirit level registers that you're off "about so much," a regular "by guess and by golly" proposition. The U. S. Gravity Level says "Hold on, Jim, your off just $\frac{1}{16}$ of an inch to the foot." It doesn't leave you to guess how much—the dial registers it unerringly. You shift your job $\frac{1}{16}$ and it's level—you know it—you don't have to use the level again to test; thus you save valuable time. When you see the "U. S." you'll dump your spirit level as cheerfully as you cast aside iron nails for wire ones. Write today for full size picture of level and complete descriptive matter.

THE U. S. GRAVITY LEVEL COMPANY, Dept. H., 1341-48 Nicholas Bldg., Toledo, Ohio



**Total Cost of Concrete Work
in this House \$650**

Start now—the spring business is the biggest. Our large catalog covers the proposition fully. Two cents brings it with full wholesale price list. Machinery for the large and small investor.

Make Cement Blocks

No field offers more attractive inducements than concrete. Building blocks for houses, barns, garages, business buildings, factories, etc. Cement pipe for sewers, drains and irrigation, brick porches, columns and balusters, burial vaults. An unlimited field. Something for every locality.

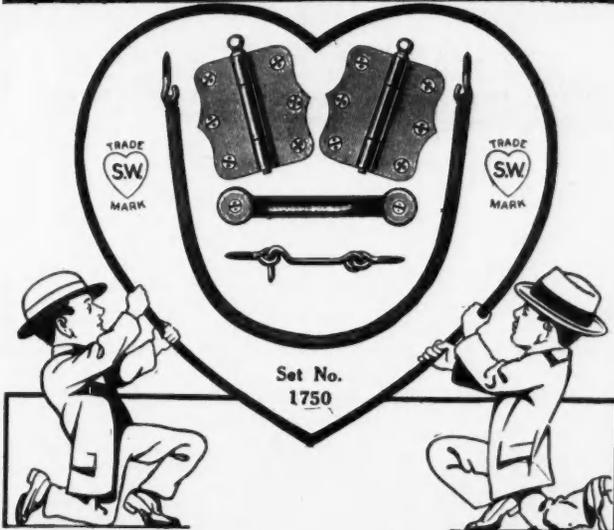


**Northwestern
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NORTHWESTERN STEEL & IRON WORKS, 1094 Spring St., EAU CLAIRE, WIS.

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STANLEY'S



SCREEN DOOR HARDWARE

Each Set in a separate box complete with screws

Well made of high grade Wrought Steel and handsomely finished in Japan, Antique Copper or Dull Brass, or the "Stanley" Sherardized rust proof finish.

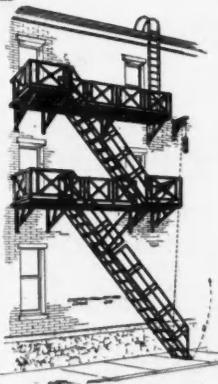
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THE STANLEY WORKS

New York NEW BRITAIN, CONN. Chicago

BIG PROFITS FOR YOU CONTRACTORS AND BUILDERS IN WIRE AND IRON WORK

Why not represent us in connection with your regular work? The field for the selling and installation of Wire and Iron Work was never larger. There is no doubt a wide market for this type of work in your immediate territory. Get a share of this business for yourself through representing us. We are large manufacturers of Wire and Iron Work—we can furnish you with or make anything of this type you can possibly want. Just a few of the lines we manufacture include—



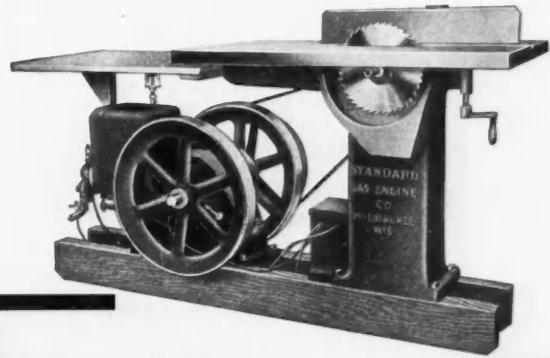
Fire Escapes

Fire Escapes, Folding Gates, Partition and Balcony Railings, Stairways, Window Guards, Shutters, Porticos, Fencing, Stable Fittings, Jail Cells, Vault Doors, etc., etc.

You want to send for our large Builders' Catalogue No. 434 RIGHT NOW. Have it on hand and use for selling and reference. It details our lines fully—sizes, descriptions and prices. This catalogue will point your way in developing a substantial Wire and Iron Work business WITHOUT an outlay for stock. Get your copy at once or some competitor will beat you to this big business opening.

E. T. BARNUM, WIRE and IRON WORK

DETROIT, MICH.



Time Savers

Carpenters, Contractors, Lumber Dealers, Job Shops, etc., save 5 men's time by using one of our

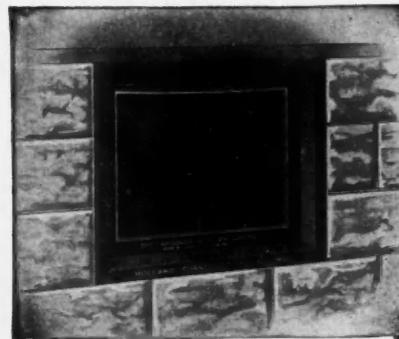
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They are the most rigid and practical Wood Workers on the market—economical in fuel, dependable in service and right in price.

Satisfaction or Money Back

Outfit is shipped ready to run with oiler, wrenches, cross cut saw, rip saw, dado head and emery wheel. Write today for prices and other information.

STANDARD GAS ENGINE COMPANY, Inc.
520 Caswell Bldg. MILWAUKEE, WISCONSIN

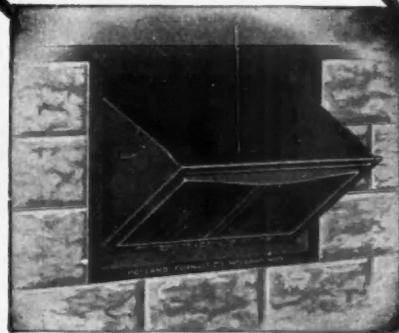


Closed—A Perfect Window

The Window— Chute

is absolutely burglar proof. It can only be opened from the inside. It is a real window, combination hopper, coal chute. Closed — it is

a n ornamental, attractive, basement window. Opened—it is a practical chute. A heavy steel sheet covers and protects the glass. Two sizes—18 and 24 inches wide by 22 1/4 inches deep.

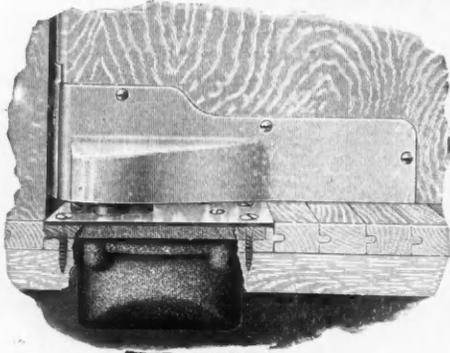


Open—A Practical Chute

Contractors and Builders send for our Window-Chute booklet.

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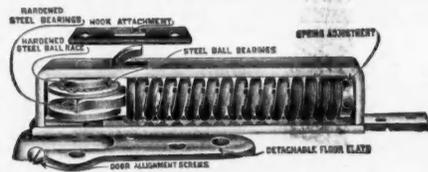
STANDARD DOUBLE ACTING SPRING FLOOR HINGES



CHECKING.

*It is a door check and hinge combined.
It automatically closes the door without a slam.
It prevents children from being knocked down.
It prevents injury to hands if caught when door is closing.
It stops door exactly at center.
It holds door open automatically when desired.
It renders the action of door absolutely noiseless.
It will outwear three of the spring hinges now in common use.*

We also make pivot check for double-acting doors.



UNCONTROLLED KIND

Sold by the Hardware Trade.

THE STANDARD MFG. CO.
SHELBY, OHIO, U. S. A.



Automatic Sash Holders

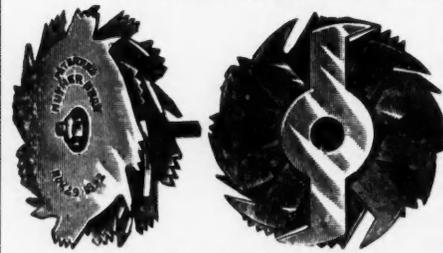
do away with
Sash Weights, Cord, Pulleys, Pocket Frames, etc.

A positive and durable device that holds window in any position desired and that cannot get out of order. For old as well as new windows. No broken cords, no binding pulleys, no rattling windows. And they are economical—Made in three styles, for sash weighing up to 8 lbs., up to 20 lbs. and to 35 lbs. and more. If your hardware dealer does not have them send us \$1.00 for a trial set, charges prepaid, together with your dealer's name. ANYHOW send for literature and prices.

Automatic Sash Holder Mfg. Co.
52 Church St., New York

Huther Bros. Patent Groover or Dado Head

Will save it's cost in three days' time



Showing Arrangement of Cutters

of concave ground smooth cutting circular Mitre Saws, for either rip or cross cut: Grooving Saws for all kinds of special work; Lock, Corner Cutters Concave Saws, etc.

Try our Scraper Blades and you will use no others.

HUTHER BROS. SAW MFG. CO.
1000 University Ave. ROCHESTER, N. Y.



"A Bit of Utility"

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

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

Unequaled for Delicate Work

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

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

The Progressive Mfg. Co.
Torrington, Conn.



MACHINE BIT



BRACE BIT



The Marvel locks shut automatically, is burglar proof, and ornamental. Is made of heavy wrought steel plates.

Circular for the asking.

INTERSTATE MFG. CO.
OSKALOOSA IOWA



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Dept. B7
Morgan Co.
 Oshkosh, Wisconsin

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 12 months. Kindly send me your catalogue,
 "Door Beautiful." I am not obligating myself in
 any way by making this request.

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Fill in, tear off and mail today

Whichever way you look at a Morgan-built home the effect is always the same — Simply Superb.
 YOU'VE often wondered just what it was that made some particular house, that caught your fancy and impressed you with its unusual distinctiveness, so strikingly attractive.
 Perhaps you had an idea that the expense would make it prohibitive for you to build such a home. That's a mistake. The secret is in the woodwork used. In all probability the house you admired was built with

MORGAN
GUARANTEED PERFECT
HARDWOOD DOORS

and trimmings. They cost but a trifle more than the commonplace kind, and are easily within reach of every homebuilder.

We tell all about them in our "Door Beautiful" catalog, an artistic de luxe book with many photographic reproductions of handsome interior and exterior views, showing Morgan Doors and Millwork in actual use. It also contains much valuable general information for home-builders. There's a copy for you—it's free. Fill out the coupon and mail it to us today. Book will go forward immediately upon receipt.

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MORGAN CO., Dept. B7, OSHKOSH, WIS.
Distributed by
Morgan Sash & Door Co., Chicago
Morgan Millwork Co., Baltimore, Maryland
 ARCHITECTS: Descriptive details of Morgan Doors may be found in Sweet's Index, pages 910 and 911.

Look for this mark on the rail.

MORGAN MORGAN

Cutting the Melon—Take Your Slice

BUILDING operations are showing remarkable activity just now—better than at any time for several years. Particular builders insist on Morgan Guaranteed Perfect Doors and Millwork, and architects who take pride in their work always specify them.

Send for "Door Beautiful" today—now.

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Works:
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Eastern Trade Supplied by
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**the easiest boring
auger bit made**

Absolutely guaranteed. Any auger bit made by us not found perfect in every particular will be replaced with a new bit or money refunded. If your dealer does not handle these goods, write us direct for catalogue and prices.

Jackson Manufacturing Co.
Jackson, Ohio

HOISTS & ELEVATORS

Columbia Dumb-Waiters
Pavement or Cellar Hoists
Jumper Disappearing Dumb-Waiters
Chain Blocks, Cranes and Trolleys

Send for Catalog
J. G. SPEIDEL : Reading, Pa.

The American Combined Level and Grade Finder

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TOP VIEW



All progressive and up-to-date Carpenters, Contractors and Mechanics are getting one of our levels and grade finders. 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 one time, and will at once give the exact distance needed to plumb up to a true level. The longitudinal recess shown in cut is well worth the low price of the instrument. Note the additional level glass, now placed in middle of instrument, giving with pointer or hand on dial three guides for leveling. The most practicable, durable and convenient instrument of the day. Write at once for large list of testimonials and special introductory price given only to first applicants with privilege of taking agency.

American Level & Grade Finder Co., Box 255, RAILROAD, PA.

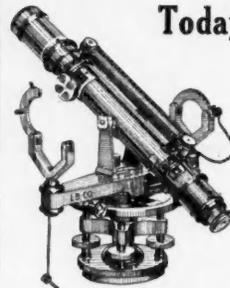
Why Waste Time and Money



when you can save both by using a WHITE'S IMPROVED LEVEL. This Instrument is inexpensive and efficient, and is made to meet all the requirements of the General Contractor. Full particulars and catalogue sent on request.

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Tomorrow's Success Depends Upon Today's Preparation



Prepare yourself and secure a

Beckmann Instrument

The first element of success is accuracy. Our instruments are all guaranteed accurate. Send for CIRCULAR Y.

THE L. BECKMANN CO.

500 Adams St. ESTABLISHED 1874 TOLEDO, OHIO

MORE PROFIT FOR YOU



You can now give your customer the popular mitre-corner effect without the slow careful work of cutting and fitting bevels. USE METAL BUILDING CORNERS.

They take the place of corner boards. Save fully \$2 worth of time in finishing each corner. Make a stronger and neater job

WRITE FOR FREE SAMPLES TODAY

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If you've never used Gossett Hinges for full length window screens, say so and we'll send you a sample pair free.

Why Carry A Heavy Transit?



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

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

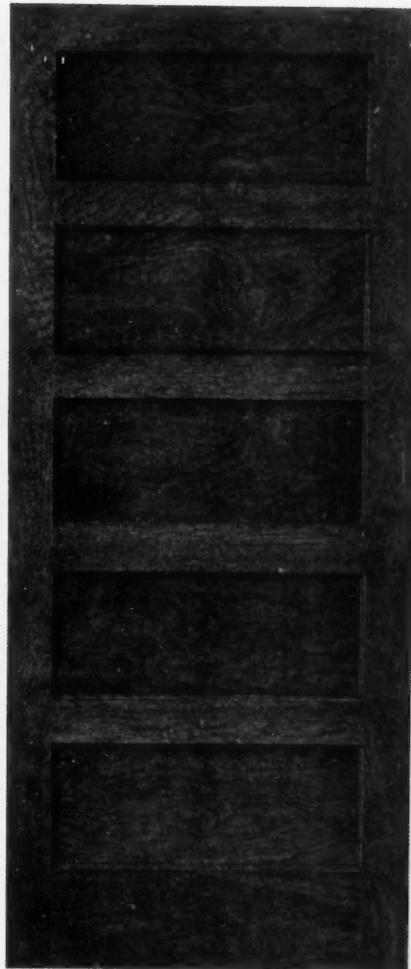
KOLESCH & COMPANY, 138 Fulton Street, NEW YORK
Surveying Instrument Makers. Established 1885.

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HARDWOOD *VENEERED* DOORS



M. & G. 515



M. & G. 519



M. & G. 512

Unselected Birch and Plain Red Oak

C Our plant is well equipped with the latest Machinery. Our goods cannot be excelled in workmanship or quality. We make everything in the Millwork line and will submit estimates at all times.

Write for our New Catalogue.

MOORE & GALLOWAY LUMBER CO. FOND DU LAC, WISC.

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TRADE **SIMPLEX** MARK
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THE LIFE OF A ROOF DEPENDS ON THE NAIL



Roofing nails are for paper, not metal, hence a large head is required. The Simplex has a head surface four times that of a so-called large headed nail. Head surface is what holds down roofing. Insist that the roofing comes to you with Simplex Nails. They are time savers as well as having head surface. Made with 1 inch and 1 3/8 inch lengths of stem, and both plain and galvanized. Shipped in cans in prepared roofing—store stock in 100 lb. kegs. Sold by dealers and jobbers.

Made by H. B. SHERMAN MFG. CO., Battle Creek, Michigan

A Revolution in Screw Drivers

Don't abuse your hands any longer with an old fashioned screw driver

Get a Benjamin Friction Drive Screw Driver with the revolving cap.

Friction cap prevents blisters. Insulated handle prevents shock.

PRICE LIST

Length Blade	3-16 in. Dia.	1/2 in. Dia.
3"	.30	.35
4"	.35	.40
5"	.40	.45
6"	.45	.50
8"	.50	.55

3-16 in. dia. with straight blade for countersunk work if ordered



Always Ready—Better than Ratchet Driver—Nothing to Adjust—Friction Grip Works in Either Direction

Sent postpaid to any address on receipt of price. If your dealer does not carry, write to us.

BENJAMIN-SELLAR MFG. CO. 558 Quincy St. Chicago, Ill.

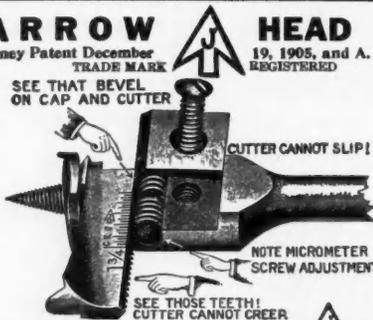
C. E. JENNINGS' ARROW HEAD EXPANSIVE BITS

Steers' Patent April 1, 1884; Jennings-McElroy Patent December

19, 1905, and A. B. Jennings' Patent March 1, 1910

After once setting the cutter for any given sized hole, the mechanic can bore Any Number of Holes and Every hole will be the Same Size.

By means of the micrometer screw the cutter can be instantly adjusted to one thousandth of an inch.



PRICE INCLUDING TWO CUTTERS AS FOLLOWS:

No. 11 1/2 Bit (Large) with Nos. 3 and 4 Cutters, cutting from 1/4 to 1 1/4 and from 1 1/4 to 3 inches \$2.00 each
No. 12 1/2 Bit (Small) with Nos. 1 and 2 Cutters, cutting from 1/8 to 1 1/4 and from 1 1/4 to 1 3/4 inches 1.75 each
Our No. 1 Bit will take the place of 35 Auger Bits Costing \$35.00.

When you cannot procure from your local Hardware Dealer, we will mail, prepaid, on receipt of P. O. order, for above price.

These Bits are put up in a neat waterproof canvas Scabbard with extra pocket for cutters.

Special Information regarding our C. E. Jennings' Arrow Head Expansive Bits. The cutters are graduated in 32nds of an inch. By moving the cutter 1-32 in. the diameter of the hole is increased 1-16 inch; or one-half turn of the micrometer adjusting screw will move the cutter 1-32 in., and increase the size of the hole 1-16 in. To bore a perfectly smooth hole, remove the bit as soon as the screw point pricks through; insert the screw point into this prick-mark from the opposite side from which the hole was started and bore until the hole is finished.

C. E. JENNINGS & CO., Sole Manufacturers 42 MURRAY STREET, NEW YORK

1810 THE JAMES SWAN COMPANY 1912

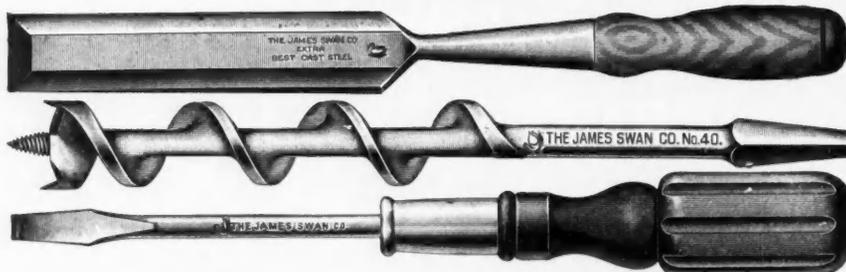
SEYMOUR, CONN.

Manufacturers of Mechanics' Tools, Augers, Auger Bits, Draw Knives, Chisels, Hollow Augers, Gimlets, Boring Machines, Gouges, Screw Drivers, etc.

Send for Catalogue



Inquiries Solicited



When looking for quality buy goods with the "Swan" trade mark.

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Guaranteed as to Work and Efficiency

MILLERS FALLS BORING MACHINE

The boring crank is turned in one direction only, whether boring or drawing auger out of hole. Fully perfected. Bores at any desired angle and is truly

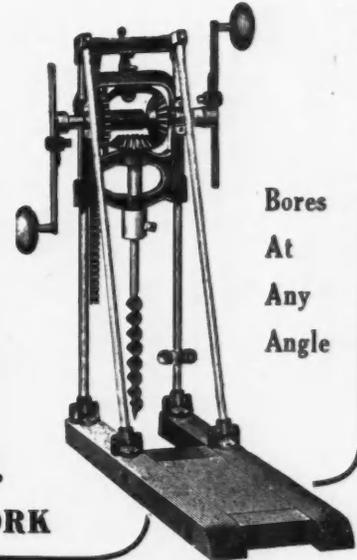
The Workmans Favorite

Adjustable Stop for depth of hole and quick reverse

ADJUSTABLE
CRANKS
REGULATE
SPEED and
POWER

Boring frame hangs itself up and is dropped to work by releasing thumb-latch. Regularly supplied to bore 11½ inches deep, deeper if desired.

Fully described in catalog, as are many other Millers Falls Efficiency Tools. Send for FREE copies of catalog and our book "Tool Practice,"

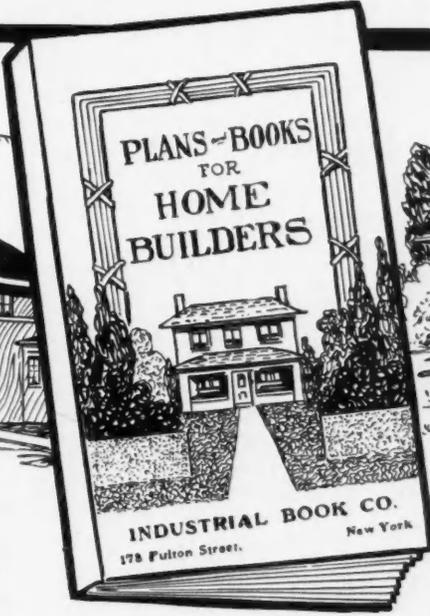


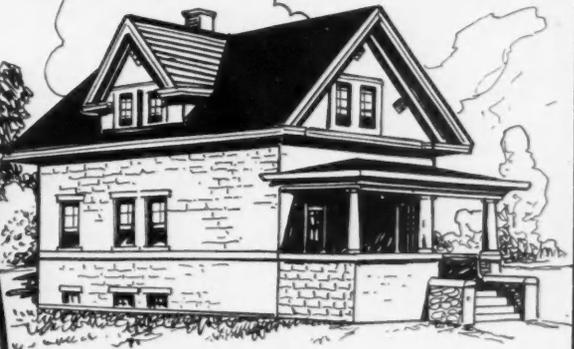
Bores
At
Any
Angle

MILLERS FALLS CO.

28 Warren Street , NEW YORK







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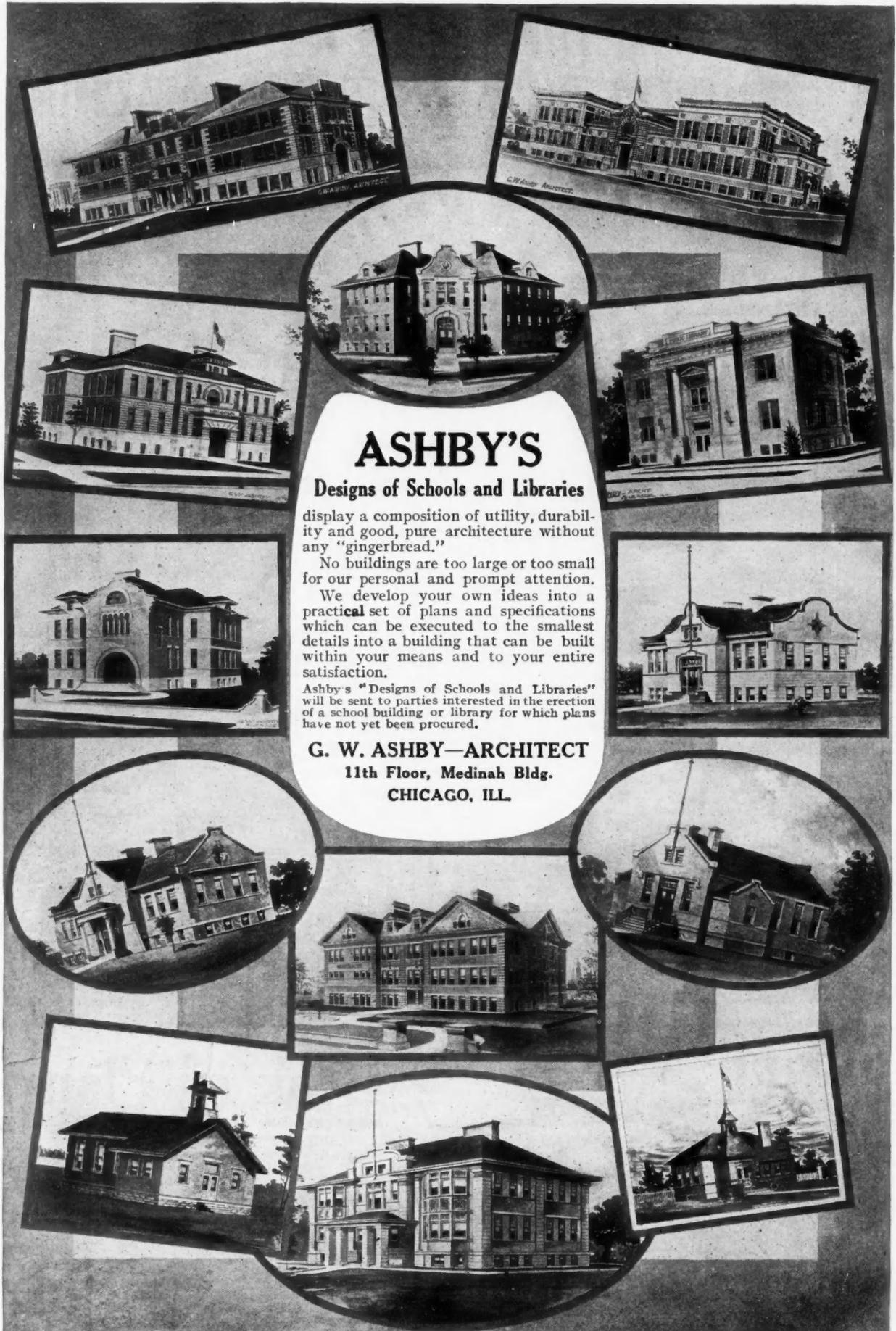
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Carpenters, Contractors and Builders will be especially interested in this free book, as it contains designs and floor plans of Bungalows, Cement Houses and Cottages. Complete description of books on Architecture, Masonry, Concrete, Carpentry, Brick-laying, Plumbing, Heating, Painting, Estimating, etc., are also given.

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display a composition of utility, durability and good, pure architecture without any "gingerbread."

No buildings are too large or too small for our personal and prompt attention.

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.

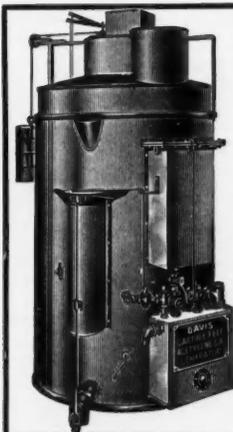
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G. W. ASHBY—ARCHITECT

11th Floor, Medinah Bldg.

CHICAGO, ILL.

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Why not equip the home or other building you are erecting with

Davis Acetylene Lighting?

You can greatly increase your income by selling and installing Davis Acetylene Lighting Systems for new buildings and during dull seasons for buildings already erected. No previous experience required and we help you get started.

Write us for cost of equipping a building and for our terms to salesmen.

Architects desire to recommend the best and we, therefore, invite them to carefully investigate what we have to offer.

Davis Acetylene Company
90 Crawford St., Elkhart, Ind

This Tool Will "Pry" Into Anything

It has the strength and leverage for safely opening packing cases, taking up floors, removing scaffolding and other like jobs that carpenters, plumbers and electricians come up against every day. Sizes 14 and 23 inches. Drop

forged from special formula steel.

"BONNER" Pry Bars

are about the handiest things a mechanic or electrician can keep in his kit. They are the only tools that will do fast house-wrecking and save lumber. The only Pry Bar that will pull a nail as high as a man can reach. Dealers make money handling Bonner Pry Bars.

C. E. BONNER MFG. CO., Champaign, Ill.



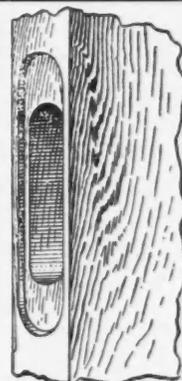
UNIVERSAL LOCK MORTISER

In use in all large cities. No builder should be without one

Will cut lock mortises, including setting in of face plate, in any desired size, in hard, soft or cross-grained wood of every description, in from 3 to 6 minutes. No boring or chiseling required. Every machine guaranteed. Makes a perfect job. Easily operated. Agents wanted where not represented. Testimonials and descriptive booklets furnished on application to

UNIVERSAL LOCK MORTISER CO.

GEO. O. ROGERS, Sales Manager
3400 ALLIQUIPPA STREET PITTSBURGH, PA.



Showing lock mortise cut, including face plate setting

Electric Weld

Combination Boiler and Gas Water Heater

The self-contained storage system.

Illustration shows arrangement of enclosed Heating Chamber, Vent, and parts.

The advantages of this Type are many, in addition to the maximum efficiency thus obtained.

Adapted to Large or Small requirements, without change in design of fixtures or method of installing.

Widest choice as to location of fixture.

Economy of space.

Absence of delicate or intricate parts.

No special Meters or Service pipes required.

Lowest possible maintenance cost.

Moderate initial cost.

Minimum cost of operation (service considered).

Double Circulation.

Primary Circulation equal to other types.

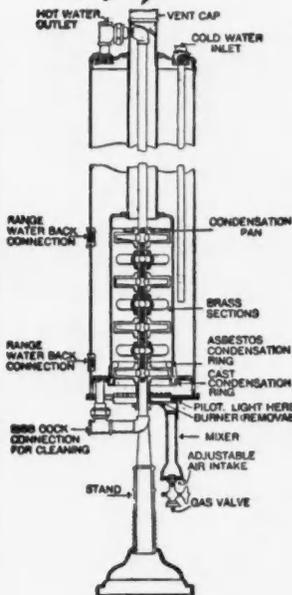
Secondary Circulation equal to thirty-five per cent of total efficiency—altogether absent in other types.

Automatic or Intermittent Service optional, without adjustment of parts or breaking connections.

Range or Furnace Connections provided for.

Auxiliary Steam Coil, for High or Low Steam Pressure, if desired.

This type represents one-twentieth of total number of Gas Water Heaters in service, and is essential if water heaters are to be popularized.



JOHN WOOD MFG. CO., Conshohocken, Pa.
Branches Throughout United States

\$HULTZ WINDOW BARS

WRITE FOR FULLY ILLUSTRATED CATALOGUE FOR STORE FRONTS

SHULTZ'S ALL-STEEL CORNER POST CO. ST. JOSEPH, MO.

Handsomest, Strongest, and most Practical Bar on the Market. Long Life—nothing to rot out. Glass bedded on Spanish Cork preventing cracking or crushing of glass. No putty, yet Absolutely Water and Dustproof. Simply incomparable with old fashioned styles. They add immensely to the Beauty, Utility and Rental Values of Buildings.

ARE LOW IN COST

Architects, Contractors and Owners are invited to write me for descriptive literature, prices or estimates. All Steel Cork Bedded and Ventilated Bottom Bar Also Shultz Patent Burglar Proof Coal Chute.

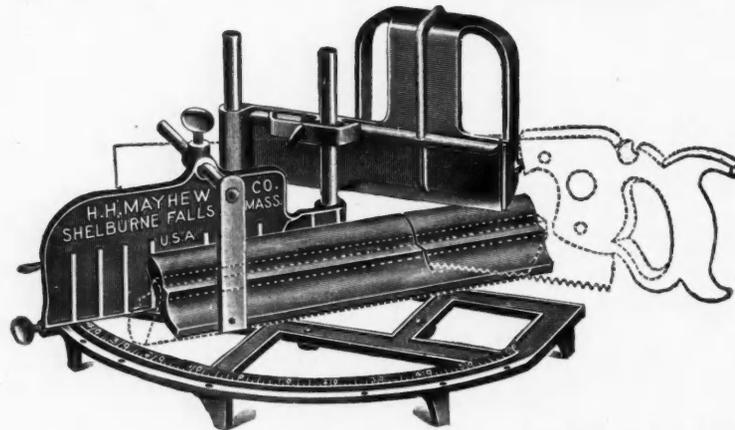
ALL-STEEL BURGLAR-PROOF COAL CHUTE

The Newest, Strongest and most Convenient Coal Chute made. Prices also lowest. No modern residence complete without it. Locks itself when closed up. Can only be opened from inside. Architects, Contractors and Owners are invited to write for descriptive circular.

C. H. SHULTZ, Manufacturer, St. Joseph, Mo., U. S. A.

When Writing Advertisers Please Mention the American Carpenter and Builder.

MAYHEW 60° MITRE BOX



This box embodies more distinctive features than any other made

Designed for Simplicity, Accuracy, and Durability. Strictly a right hand tool for mitering. Box embodies a new feature in reversing the principle commonly used on other boxes.

Any of three saws may be used — Panel — Hand or Back saw.

Saw guide adjustable for any thickness of saw.

Extreme mitre to 60° without makeshift. May be used as a stationary or pivot box by use of the pin posts.

In mitering duplicate cuts there is no restriction on length.

Will cut compound mitre.

Parts take down into space 10x10x4 inches.

Weight 15 lbs. complete.

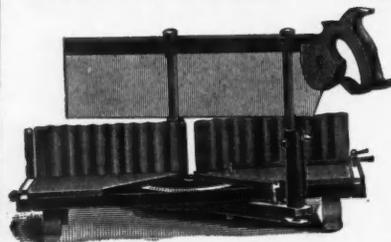
Box contains full directions for use.

PRICE EACH, \$10.00

H. H. MAYHEW COMPANY, SHELburne FALLS, MASS.

GOODELL MITRE BOX

Made of STEEL - Cannot Break



First in Quality and Improvements

Automatic Stops for holding up saw.

Corrugated Backs Graduated.

Gauge for duplicate cuts and many other features

Send for Circular "C"

GOODELL MFG. CO., Greenfield Mass.

BOVEE FURNACES at Manufacturer's Prices

SAVES 50 PER CENT of COST; 40 PER CENT of FUEL
Most Durable, Most Economical Furnace Sold

Has a perfect ventilating system for every part of the building

RESIDENCE HEATING PLANT

Hot air registers in five rooms; cold air return in two rooms; 40-in. Furnace, 20-in. Fire Pot, 28-in. Combustion Chamber, 10,000 cubic feet Heating Capacity.

Special Price, \$65

CHURCH AND SCHOOL HEATING PLANT

One large hot air, two cold air registers, 54-in. Furnace, 32-in. Fire Pot, 40-in. Combustion Chamber, 40,000 cubic ft. Heating Capacity.

Special Price, \$95

Horizontal Furnaces with large doors or larger furnaces and more piping at proportionately low prices.



Bovee Grinder & Furnace Works, 50 8th St., Waterloo, Ia.

LUFKIN
Tapes & Rules

are Standards of Accuracy, Durability and Workmanship.

SEND FOR CATALOG

THE LUFKIN RULE CO.

SAGINAW, MICH.

NEW YORK
LONDON, ENG.
WINDSOR, CAN



Use KEROSENE Engine Free!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing. No waste, no evaporation, no explosion from coal oil.

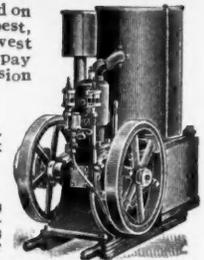
Gasoline Going Up!

Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints of coal oil do work of three pints gasoline.

Amazing "DETROIT"

—only engine running on coal oil successfully: uses alcohol, gasoline and benzine, too. Starts without cranking. Only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h. p., in stock ready to ship. Engine tested before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric light plant. **Cylinders cannot carbonize** (stripped), \$29.50 up. Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate money-saving, power-saving "DETROIT." Thousands in use. Costs only a postal to find out. If you are first in your neighborhood to write, you get Special Extra-Low Introductory price. Write! (138)

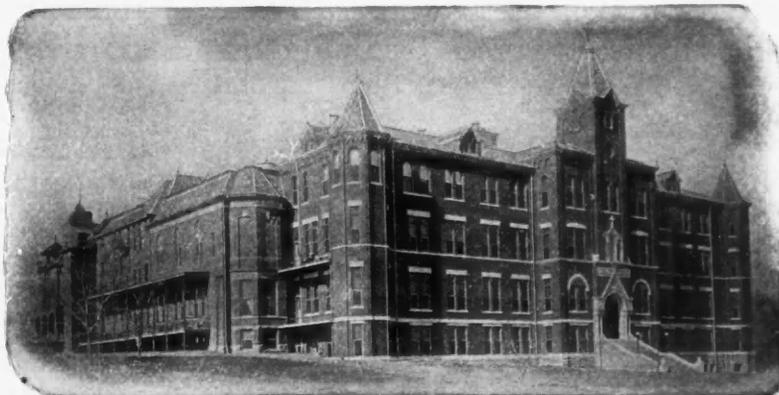
Detroit Engine Works, 495 Bellevue Ave., Detroit, Mich.



When Writing Advertisers Please Mention the American Carpenter and Builder.

ST. FRANCIS HOSPITAL, Colorado Springs, Colorado, is a very fine building, as this photograph shows. No expense or care was spared to make it THE BEST AND MOST SANITARY hospital in the West. After exhaustive competitive tests, the authorities decided to roof it with THE BEST COVERING FOR ROOFS KNOWN—for

Walter's Galvanized Metal Shingles Last



INVENTED AND PLACED ON SALE BY THIS COMPANY IN 1885

Here is a sample of the roofing accepted by this Hospital and by thousands of other public and private builders. IT WAS THE ORIGINAL DESIGN OF THE INVENTOR IN 1885 AND IS THE FIRST SHINGLE COATED WITH PURE ZINC EVER MADE. Hand dipped so that every crevice is FILLED. No chance for rust to creep in EVER. Send for free sample and confidential information. Might as well have THE BEST.

NATIONAL SHEET METAL ROOFING COMPANY

Inventors of the FIRST Metal Shingle
JERSEY CITY, NEW JERSEY



"Everybody's Doin' It Now!"

At least, all of the best builders are.

Doin' What? Why! Specifying

GILT EDGE

Furnaces and Boilers

They have found it is easier to sell houses with a heating plant of established merit.

If you are going to build either a house or a hotel, it is worth \$\$\$ to you to get the Gilt Edge catalogue.

Write the manufacturers

R. J. Schwab & Sons Co.,
295 Clinton Street
MILWAUKEE WIS.



FOR CANVAS ROOFS



Order the Scientifically Prepared—

BAYONNE ROOF AND DECK CLOTH

Easiest to lay—Lasts longest. Requires but ONE COAT OF PAINT. The treatment permeates the fabric and preserves the fibre.

BEST FOR PIAZZA ROOFS AND PORCH FLOORS

Ask for Sample Book A-6 and Prices

JOHN BOYLE & CO., 112-114 Duane Street New York
202 and 204 Market Street, ST. LOUIS

The Standard Brand of White Canvas
All Widths—All Weights—Any Quality

Our co-operative department gives complete instruction for laying

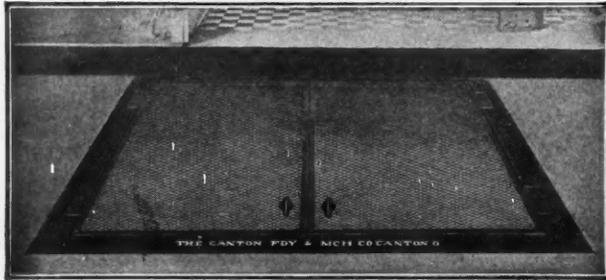
BAYONNE or GULF STREAM

John Boyle & Co.'s Awning Stripes have been the Standard for fifty years



When Writing Advertisers Please Mention the American Carpenter and Builder.

SIDEWALK DOORS THAT ARE FLUSH, FIRM AND NEAT



Made in 45 Sizes

Are a credit to any building and an everlasting advertisement to the Contractor who installs them.

OUR SOLID IRON AND STEEL DOORS

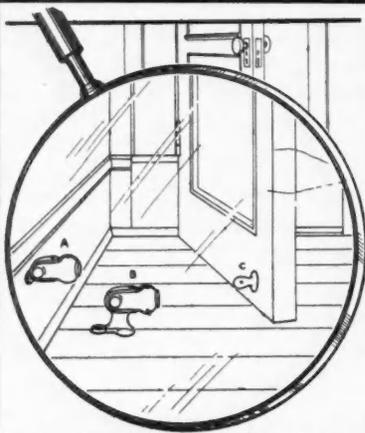
ARE ALWAYS FLUSH, FIRM AND NEAT—No obstructions to stomp your toes. Locked and unlocked from either side. When open, passers-by are protected. Have water-drain to carry water to the curb. Illuminated doors also furnished.

WE ALSO MANUFACTURE

Coal Hole Rings and Covers, Coal Chutes, Cast Iron Conductor Connections, Area Gratings, House Movers Jacks, Cast Iron Columns, Auto Turntable etc.

Write today for Booklet "B-1" illustrating and describing above and many other builders accessories of interest to you.

THE CANTON FOUNDRY & MACHINE CO., Canton, Ohio



Adele Automatic Door Stop and Holder

is a simply constructed device, neat in appearance and absolutely durable, having no part that can wear out. It does the work of the old wooden door stop, and of the various devices for holding the door back, such as hooks, weights, wedges, chairs, etc. What is more it works automatically; when the door is thrown back it catches it and holds it fast without you having to touch it, preventing the door from striking anything that may be behind it or from slamming closed again. When you want to close your door, do so as if the Automatic Door Stop and Holder was not there—all you need do is to shut it; you do not have to release it—why, it works automatically.

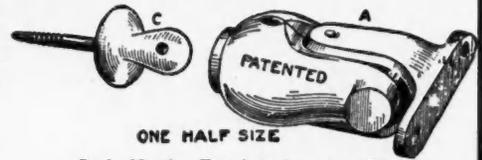
Can be used on any door with or without spring and can be attached to Wood, Marble, Stone or Tiling. Made with either wall or floor attachment.

Stop That Banging Door!

The builder can use this device as a talking point for an up-to-date house. It is an article that's exposed—it "shows up." Finished in any style. Write for circular and prices

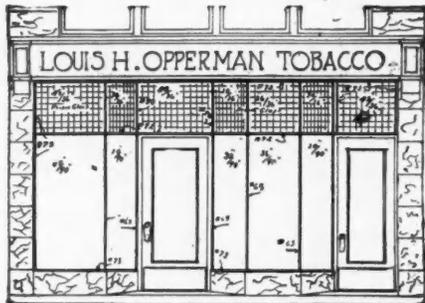
Agents Wanted

ADELE MFG. CO., 313 Grand Av., Brooklyn, N.Y.



ONE HALF SIZE

Style No. 1. For Attachment to Wall.



FRONT ELEVATION.

Why Take Chances with other bars when the Petz Bar for metal store front construction has a record for never breaking glass?

It is safe, strong, simple, handsome in design, and gives perfect ventilation, neat in appearance, and gives the utmost display space.

Easy to Install

The satisfaction expressed by thousands of architects, builders and merchants, will be yours if you specify the Petz Bar. Our booklet: "Metal Store Front Construction" is full of interesting and valuable information.

Detroit Show Case Co.

491 Fort Street West. DETROIT, MICH.

PARKS Woodworking Machines

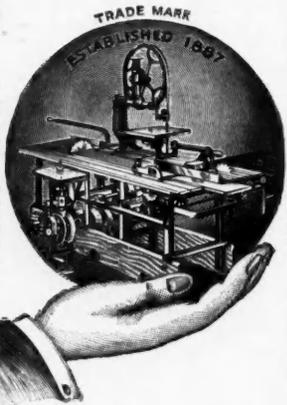
Circular Saw, Jointer, Moulder, Band Saw, Shaper, Swing Cut Off Saw, Groover and Boring Machine—all set ready for Use.

It is PARKS who, for twenty-five years has been putting out the most practical Combinations—convenient in operation and most effective in Use—in large quantities, at a price you can afford to pay.

Ask for Catalogues and see the many designs of Foot, Hand, and Belt Power—also our Portable Outfit.

PARKS' BALL BEARING MACHINE COMPANY

Fergus St. & C. H. & D. Ry. CINCINNATI, OHIO, U. S. A.



SASGEN REINFORCED CIRCLE SWING DERRICK

\$45.00 complete ready for use with geared winch. 150 ft. cable and block. 2500 lbs. Capacity.



LIGHT STRONG STIFF LEG DERRICK

All ferrocilic steel fittings with split mast and boom.

SASGEN BROS.

2053-57 Racine Ave. CHICAGO, ILL. NEW YORK OFFICE, 103 Park Ave. Write for Illustrated Catalog No. 2.

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Metal Ceilings and Sidewall---



Metal Sidewall

The most artistic and best metal ceiling on the market. Beautiful designs,—double beaded, invisible, dust proof joint,—easiest ceiling to apply, and costs no more than the other kind.

Let us convince you. Send us dimensions of surface to be covered and we will submit plans and prices that will interest you. If you are in need of good goods at a moderate price write to us for our catalogue "B" before placing your order.

The Tiffin Art Metal Co.

—MAKERS OF—

Metallic Shingles, Painted and Galvanized Corrugated and V Crimp Roofings, Eaves Trough, Conductor Pipe, Ridge Roll, etc.

Broad and Second Ave.
TIFFIN, OHIO

It Pays to Specify Good Paint



Specify Paint that is Scientifically Prepared

Lowe Brothers High Standard Liquid Paint is scientifically made. All the parts have a strong affinity for each other without a harmful reaction, thus making a paint of greatest cohesive and adhesive power, that will resist the destructive weather elements.

MELLOTONE, the modern High Standard interior coating, is the most beautiful of all flat wall finishes. It is washable, sanitary, durable and fadeless.

When you specify any "High Standard" products you can know that your work will show up to best advantage.

WRITE FOR FREE CATALOGUE, booklets and color samples of High Standard products. There's a Lowe Brothers paint, varnish, enamel or stain for every purpose.



The Lowe Brothers Company

457 E. Third Street DAYTON, OHIO
Boston New York Chicago Kansas City
Lowe Brothers, Limited, Toronto, Canada

WILLIS SELF-INSTALLING SKYLIGHTS



From Our Factory Direct To You,

and you don't need a soldering outfit to erect them. All Willis Skylights are constructed so they can be erected by any handy man with a hammer and screw driver. Guaranteed absolutely watertight without the use of putty. Designed to give the greatest amount of glass area. The ridge and gutter bars cannot sag, buckle or spread.

WILLIS MANUFACTURING CO.
GALESBURG, ILL.

Send us your plans for estimate on sheet metal work. Our catalog No. 6 showing full line of sheet metal building material sent on receipt of request.

Commonwealth Hotel

INC.

Opposite
State
House



BOSTON,
MASS.

Offers rooms with hot and cold water for \$1.00 per day and up, which includes free use of public shower baths.

Nothing to Equal This in New England

Rooms with private baths for \$1.50 per day and up; suites of two rooms and bath for \$4.00 per day and up. Dining Room and Cafe First-Class. European Plan.

ABSOLUTELY FIREPROOF

Stone floors; nothing wood but the doors. Equipped with its own Sanitary Vacuum Cleaning Plant.

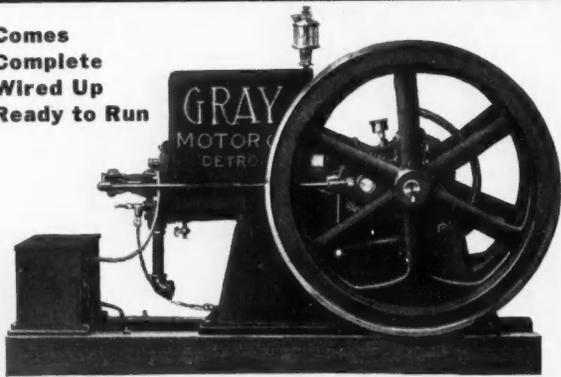
Strictly a Temperance Hotel

Send for Booklet

STORER F. CRAFTS, General Manager

When Writing Advertisers Please Mention the American Carpenter and Builder.

Comes Complete Wired Up Ready to Run



RELIABLE POWER FOR THE CONTRACTOR AND BUILDER

Use this engine in the shop or out of doors—makes an ideal portable outfit to take around to the different jobs.

Let it run your band saw, emery wheel, cutoff saw, jig saw, combination woodworker, hoisting rigs, cement mixers, etc. Especially well adapted to running the various wood-working machines advertised in this publication.

Runs in any kind of weather—requires very little attention—furnishes big power or little power as required and uses fuel in proportion to the power need—the automatic governor works perfectly.

HOISTING RIGS

We can quote you a very attractive price on a complete 4 H. P. hoisting rig—if interested, write for special information.

30 DAY TRIAL

Try this engine out at your own work—give it hard jobs to do every day—test it out thoroughly—if it does not prove to be everything we claim for it, we take the engine back and pay the freight.

Write today for our big engine catalog "S" and ask for information about this special trial offer.

GRAY MOTOR COMPANY, 661 U. S. Motors Bldg. DETROIT, MICH.

THE COAST LINE TO MACKINAC

DETROIT CLEVELAND BUFFALO NIAGARA FALLS **TOLEDO PT. HURON GODERICH ALPENA ST. IGNACE**

THE CHARMS OF SUMMER SEAS

Spend your vacation on the Great Lakes the most economical and enjoyable outing in America.

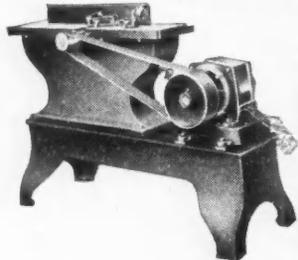
Daily service is operated between Detroit and Cleveland, Detroit and Buffalo; four trips weekly between Toledo, Detroit, Mackinac Island and way ports; daily service between Toledo, Cleveland and Put-in-Bay.

A Cleveland to Mackinac special steamer will be operated two trips weekly from June 15th to September 10th, stopping only at Detroit every trip and Goderich, Ont., every other trip.—Special Day Trips Between Detroit and Cleveland, During July and August.—Railroad Tickets Available on Steamers.

Send 2 cent stamp for Illustrated Pamphlet and Great Lakes Map.

Address: L. G. Lewis, C. P. A., Detroit, Mich. Philip H. McMillan, Pres. A. A. Schantz, Gen'l Mgt. Detroit & Cleveland Navigation Company

The Porter 5" Jointer



Is used for Jointing, Planing, Moulding, Beveling, Rabbeting, Grooving, and any other work that any Jointer can be used for. We furnish it with or without countershaft, bench or motor. Just as you desire. The **Best** machine for the money on the market. We make 6 larger sizes, and Wood Lathes, Shapers, Planers, Cut-off Saws, Band Saws and Saw Tables.

C. O. Porter Machinery Co.

666-668 Front Ave., N. W., Grand Rapids Mich.

Taylor Portable Steel Derrick

Tested at factory, is hoisted and swung a complete circle 1900 lbs. Shipped ready to operate. No wrench or tools required to set derrick on job. Made in two sections. Beam section connects post by tipping in a vertical position and projects at such an angle to clear side wall of building and has sufficient height to hoist wheel-barrows, window frames and timbers. One man can climb a ladder with either section. Consider the durability of a derrick constructed entirely of malleable iron and steel and that of wood, more compact, more powerful.

Derrick complete with three way block channel steel brackets, bolts for attaching to building, price \$40.00, and four and one-half cents per ft. for crucible steel cable attached. Drum capacity 300 ft.

Special platform and chains for attaching derrick to gondola railroad cars, price \$15. Chains for hoisting wheel-barrows, price \$2.

JOHN L. TAYLOR, Manufacturer

Taylor Portable Steel Derricks
Phone Monroe 3066 1034 W. Lake St., Chicago



Dust Proof Eight Different Sizes

Honey-Comb Mitre Box

Combines greatest strength with extreme lightness. Back Detachable—the only way in which boxes can be made mechanically perfect for all time.

Lever can be adjusted off square if necessary for filing or other exceptional requirements.

There is an intermediate gib to take up the wear, thus keeping THE GIB ALWAYS FLUSH WITH THE BED PLATE.

The index is conveniently placed for accurate adjustment. THE LEVER LOCKS AT ANY DEGREE OR FRACTION OF DEGREE. The lock is positive, working on the principle of an eccentric—no springs used. As shown in cut, the length and clamp gauges are subject to thousands of variations, always assuring a perfect clamp on the material.

Easily moved from place to place. Will stand securely without fastening.

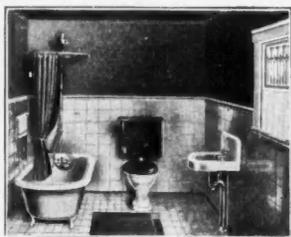
ALL WEARING PARTS MADE OF MALLEABLE STEEL.

Special prices to contractors and carpenters in localities where our tools are not handled.

Rockford Mitre Box Co., Rockford, Ill.

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Running Water

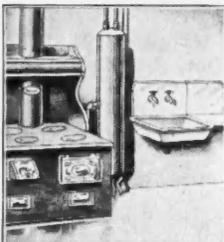


IN YOUR HOME

My big, new book tells you how you can afford running water in your home—install the system yourself under the practical Gibbons' method. Complete plans simplified by my method given to you free. Anybody can install and save cost of skilled labor. Before you build or before you finish your building plans, send your name so that I can give a copy of this wonderful money-saving book free.

Gibbons' New Method

My method for saving the cost of skilled labor is a revelation even to the most experienced contractors and builders. Get this free book and see for yourself. My astonishing low prices will prove to you that my method is a blessing to every builder and home owner.



HEATING PLANTS

Steam or Hot Water. You can easily install one of my heating plants from the complete simplified plans and instructions furnished to you free. The saving is enormous. My rock bottom price is open to everybody on this great offer.

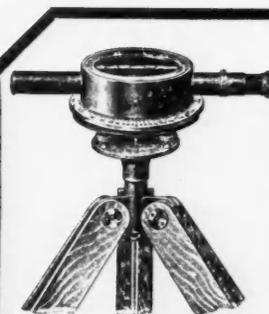
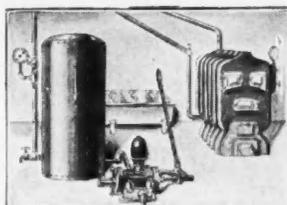
Save Plumbing Bills

Every home, even the smallest cottage can now have running water and a heating plant. My book explains how you can afford these comforts and luxuries. My prices and my practical saving will astound you.

BOOK FREE

My new book gives you greater buying power than your local dealer. Thousands of things illustrated and priced. Gasoline engines, hydraulic rams, pumps, pipes, valves, electric lighting plants, acetylene lighting plants, all accessories, everything guaranteed. You certainly ought to have this book. Send your name and get it, post-paid free.

Send today. **M. J. Gibbons, Dept. 241 R, Dayton, Ohio**



Builder's LEVEL With Tripod and Level Rod Complete \$15.00

This is a level built especially for builders and contractors. It will do your work as quickly and as accurately as the most expensive engineer's level. It can't be beat for all kind of foundation work, getting angles, ditching and laying walks. Has high grade achromatic telescope giving sights up to 1200 feet. Equipped with very sensitive ground level vial—silver circle graduated to degrees. Solidly constructed hard wood tripod with steel points. Hardwood rod, 5 feet closed, extending to 9½ feet, with sliding target. Rod graduated to feet— inches and ¼ inches.

A complete leveling outfit for building use. Level, Tripod, Rod, Carrying Box and accessories. **\$15.00** Outfit complete, only

Send for this level outfit today. We guarantee you will be satisfied. If you are not more than pleased we will return your money.

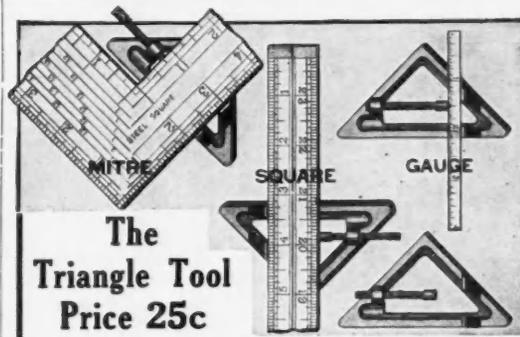
A. S. ALOE CO.
513 Olive St., St. Louis, Mo.

GUARANTEED MIXED PAINT \$1.15 A GALLON

Direct from the Manufacturer
A Wonderful Paint Offer

If any of your buildings need painting, write at once for our free paint sample offer. We sell the best ready mixed paint in the world at lowest prices ever heard of—55c a gallon for the best Barn Paint, \$1.15 a gallon for the finest House Paint in quantities. We pay the freight charges.

Guaranteed for Ten Years
We furnish full directions how to do any job, and just now we are making a surprisingly liberal offer. Write at once and get this great paint offer, free shade samples, strong testimonials and valuable paint information. Just say "Send me your latest paint offer." Address
Crosby-Frank & Co., 298 Peoria Street, Chicago, Ill.



Ask your Dealer about it or send for it today

The Triangle Tool Price 25c

Square and Rule Attachment, forming adjustable try square, mitering tool, depth gauge, marking gauge, etc. Fits any width rule from 1½" to 1½". A pocket tool saving time and trouble. Every carpenter should have one.

CAMPBELL & SON, 119 Marshall St., Elizabeth, N. J.

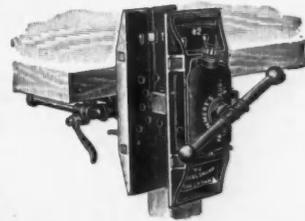


EMMERT UNIVERSAL VISES

are recognized as the greatest Time-Savers and conveniences ever offered the woodworker. Convenient and easy in operation. Will hold work in any desired position. More than 50,000 in use today. Sold on approval and guaranteed satisfactory.

Write for full description and prices.

EMMERT MFG. CO., Dept. C, WAYNESBORO, PA.



GENUINE BANGOR

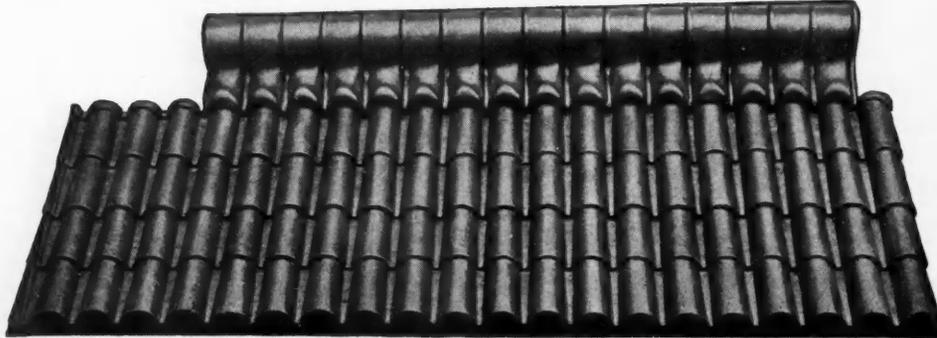
Roofing Slate Structural Slate Blackboards
Large Facilities, Prompt Deliveries
EAST BANGOR CONSOLIDATED SLATE CO. - - - **East Bangor, Pa.**

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Mullins Metal Tile Roofing

has won widespread and lasting favor because of its many superior qualities. Beauty, simplicity, durability—these are its salient characteristics. Absolutely storm-proof and water tight.

When put on according to directions, Mullins Metal Tile Roofing is guaranteed to keep in perfect condition for years. No other roofing can equal it for all-round satisfaction. Many of the finest buildings in this country are equipped with it.



We also make Cornices, Building Fronts, Finials, Tympanum panels, Rosettes, Faces and other architectural ornaments. Many thousands of designs to select from.

Ours is the largest and best equipped factory of its kind in the world. We use

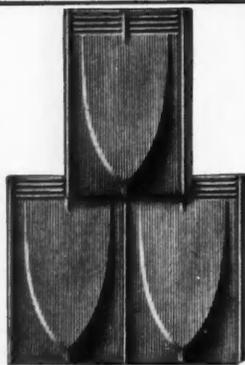
only the finest materials. Every artisan in our employ is a masterhand. Our prices are attractive, our services prompt. Glad to submit quick estimates on special jobs.

Catalogue along any desired line will be sent you by return mail.

The W. H. Mullins Co.

214 Franklin St.

SALEM, O.



Style "B"—Showing Method of Laying

PLACE YOURSELF ABOVE YOUR COMPETITOR

AND SELL **"TITELOCK"** THE BEST

METAL SHINGLES made. They are business-getters and money makers. FIRE, WATER AND LIGHTNING PROOF.

Write for Samples and Prices

MILWAUKEE CORRUGATING COMPANY
MILWAUKEE, WIS. KANSAS CITY, MO.

There is Money for You in Our Iron and Steel Work

Any Architect, Contractor, Builder and Carpenter can represent us locally—and make money.

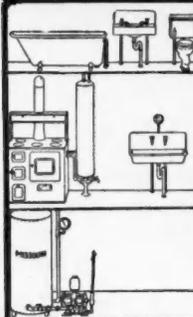
We are specialists in the manufacturing of a varied line of iron and steel ornamental, architectural and structural work, such as iron stairs, fire escapes, window guards, fencing, grates, shutters, lawn seats, etc., etc.

You can find a big demand for our work in your locality—and you'll build up an independent business for yourself. Give just a small portion of your time to this and you'll profit by it.

Let us tell you in detail about our entire proposition. Write for our complete descriptive matter, etc. If you are now figuring on iron or steel work let us quote you before closing with any one.

THE MACK IRON AND WIRE WORKS COMPANY
SANDUSKY OHIO

WATER WORKS \$37.80 FOR COUNTRY HOMES



EVERYTHING KNOWN IN
Plumbing Goods

Pumps, Windmills, Etc.

DIRECT AT

Manufacturer's Prices

Send for Big Low-Price Catalog—FREE

Missouri Water & Steam Supply Company

904 S. 6TH STREET

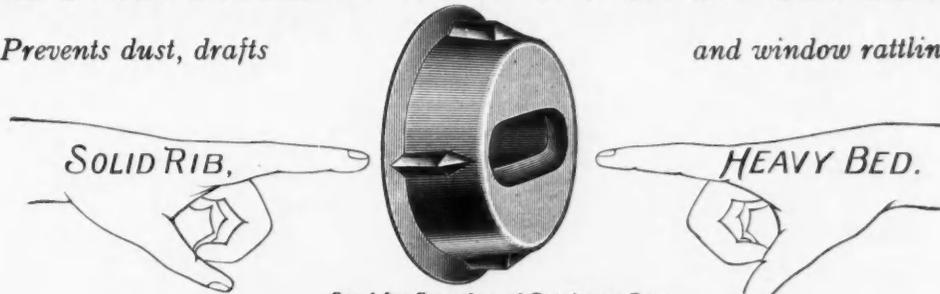
ST. JOSEPH, MO.

When Writing Advertisers Please Mention the American Carpenter and Builder.

THE IVES PATENT WINDOW STOP ADJUSTER

Prevents dust, drafts

and window rattling



Send for Sample and Catalogue Free

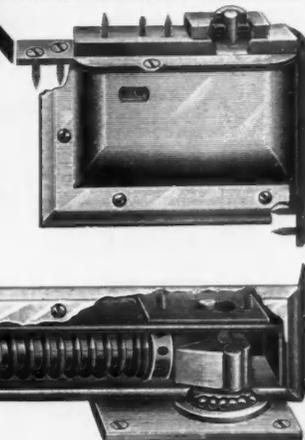
1 piece of metal, will not cup, bend or turn in tightening screw.

THE H. B. IVES CO., Sole Mfrs. New Haven, Conn. U. S. A.

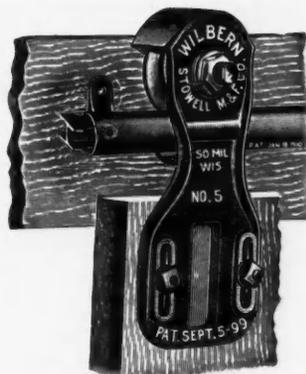
The Shelby "Chief"

Double-Acting Door Check and Floor Hinge

Can't be beat for double-acting doors.
 Costs less but does the same work as the higher priced outfits for double-acting doors.
 Easily installed, no mortising, or cutting in the floor.
 The hinge carries and closes the door, and the Check on top of the door controls the closing speed.
 Fully guaranteed.
 Ask us or your dealer to tell you more about them.



THE SHELBY SPRING HINGE CO. - Shelby, Ohio



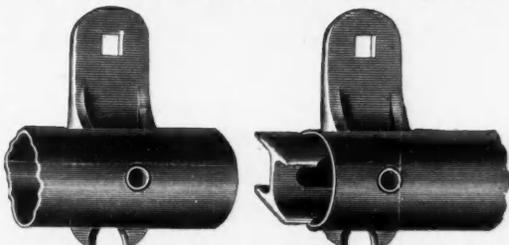
No. 5 Wilbern Adjustable Hanger

FOR
**Barns, Garages,
 Warehouses, etc.**

Made of
**Malleable Iron.
 Roller Bearings.**

Vertical and Lateral Adjustments
 Can't Get Off the Track

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No open seams to let in water. Rigid brackets—can't get lost. Made in 2 ft., 6 ft., 8 ft., 10 ft. lengths.

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1. Hardware; 2. Registers; 3. Hay Tools; 4. Wire Workers Goods; 5. Door Hangers and Rail; 6. Wagon and Carriage Malleable Hardware; A. Fire Door Fixtures.

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\$2500 A YEAR

YOU can do what others do!

You can—if you really want to. You can fit yourself to earn more than the other fellows. For they are not naturally any smarter than you. They haven't any more brains or ambition than you. They don't work any harder than you. They are simply *trained men*—that's the difference. They have *special knowledge* that you don't possess—*special knowledge* and *training* that makes them *worth more* to their employer than you can possibly be until you equip yourself with special knowledge and training.

The American School is training *hundreds* of men to become draftsmen, engineers and architects. It is training hundreds to fill executive positions, to earn good salaries, to play a man's part in the business game. *And what the American School of Correspondence is doing for others it can do for you*

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and send it back to us on the next mail. That's the first step towards getting your name higher up on the payroll—the first step towards getting the kind of position you'd like to have, the kind of a salary you ought to have.

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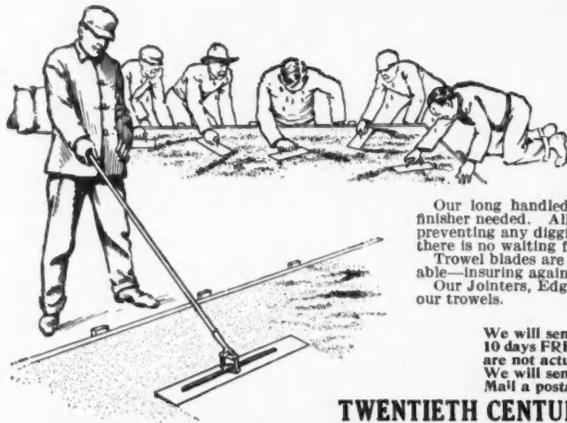
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.... Building Contractor Moving Picture Op'r
.... Structural Engineer Bookkeeper
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One Man Can Do All Of Your Sidewalk and Floor Finishing and Save You Money

With our long handled finishing tools one man can do the work of a whole gang in finishing cement sidewalks and floors. This means a saving of labor—also more profit on every job. Worth looking into isn't it?

Our long handled finishing tools—Trowels—Jointers—Edgers—Floats—effect a big saving in any concrete sidewalk or floor work. Workman operates them standing up—no sore backs and sore knees. He can cover ten times as much space and the work he does is uniformly far better than any of the "old time way" work.

Our long handled trowel operates by a "push and pull" movement. Anyone can operate it. No expert finisher needed. All work can be done from one side of the sidewalk. Blade of trowel tilts automatically—preventing any digging into mortar. It is not necessary to use a float or darby before starting troweling and there is no waiting for top to set.

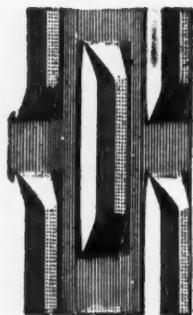
Trowel blades are made of saw blade steel. They give thorough and long wear. All castings are malleable—insuring against any breaking. Entire tool is absolutely rust-proof.

Our Jointers, Edgers, and Floats operate easily, speedily and perfectly. All are as equally well made as our trowels.

You Can Use Our Tools for 10 Days—FREE

We will send any separate tool, or a complete set, to any responsible contractor and builder on a 10 days FREE TRIAL. No money in advance. Use our tools for 10 days and see for yourself if they are not actually a great deal better than we claim. Then send us the money or send them back. We will send you a catalogue, and other descriptive matter about our tools, if you'll but ask us to. Mail a postal today and let us show you the positive value of these tools in your work.

TWENTIETH CENTURY MANUFACTURING CO., 1620 Lowe Street, Chicago Heights, Ill.



Easily Erected
A Great
Plaster Saver

WHEN
YOU
NEED

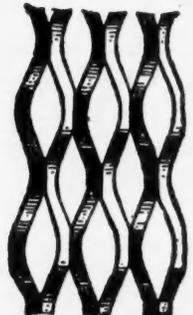
METAL LATH

(“Sykes Trough”) Either Sheet or Expanded and Want the Best (“Expanded Cup”) Manufactured

Made in all gauges from all kinds of sheets,
“Anti-Rust” “Painted” “Galvanized.”

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Sykes Metal Lath and Roofing Company
NILES, OHIO

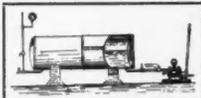


The Best for
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No furring
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SAVE 30 TO 50%

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ON HOT WATER OR STEAM HEATING PLANTS; PLUMBERS' SUPPLIES, WATER SUPPLY SYSTEMS, ELECTRIC AND ACETYLENE LIGHTING SYSTEMS FOR COUNTRY HOMES. WE DESIGN THE WORK AND MAKE INSTALLATION SIMPLE AS A. B. C. WE FURNISH EXPERT UP TO DATE CITY WORKMEN AT NOMINAL CHARGE TO INSTALL WORK ANYWHERE IN U. S. WE ALSO HANDLE RANGES, HEATERS, PUMPS, TANKS, TIN PLATE ROOFING AND METALS, SPECIAL TO CONTRACTORS THIS MONTH 1½ H. POWER GASOLINE ENGINE \$37.50 FREIGHT PAID. WE HANDLE HIGHEST QUALITY GOODS AND WE PAY THE FREIGHT. WRITE US, LETS GET ACQUAINTED.



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365 Days Trial

Our service department will co-operate with any Builder, Contractor or Architect who wishes to specify or install a dependable heating equipment. The

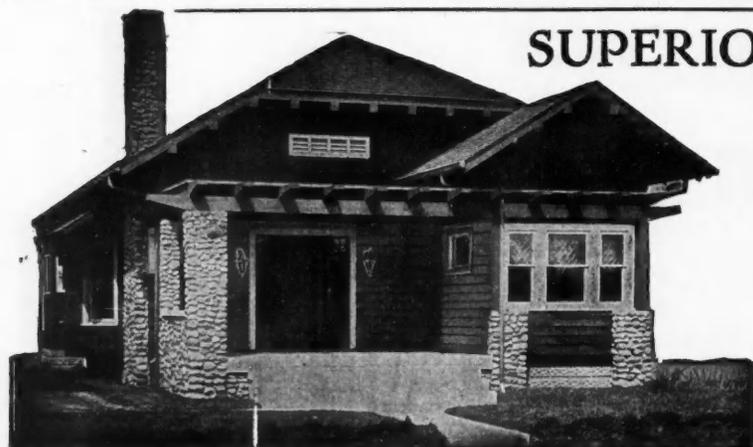


JAHANT DOWN-DRAFT FURNACE solves the heating problem for residences, schools, hotels, churches and similar structures. Our 365 day "Guaranty Bond" insures absolute satisfaction. Don't take the risk of spoiling your plans by specifying the ordinary "stock" furnace. Send us details, sketches or blue prints of the building to be erected, and we will furnish, without cost, special plans, specifications and blue prints of a heating equipment guaranteed to furnish plenty of heat at a minimum cost for fuel. We will tell you the cost of this special Jahant Down-Draft Furnace. If you include the Jahant in your finished plans we will pay freight on the complete shipment, including furnace, pipes, registers, all fittings and the necessary tools. The special plans we send give full directions for installing.

Write for our free Specification Hand Book. It tells all about the Jahant and our co-operative plan. The Jahant Heating Co., 85 Mill St., Akron, O. Furnace Builders for over 30 years

DOWN DRAFT

\$10 DOWN \$10 A MONTH



SUPERIOR SHINGLE STAIN

Represents quality both in color and durability. We use only the very best elastic and preserving oils, thoroughly mixed by the latest improved machinery.

COVERING CAPACITY

One gallon will cover 150 square feet when applied with a brush. Dipping requires 2 gallons for 1000 shingles.

GUARANTEE

Superior shingle stain is sold under our absolute guarantee never to crack, scale, peel or flour off as paint does, and to retain its color as well or better than any stain on the market. 50c per gal. in bbl. and ½ bbl.

Freight Charges Allowed on all Shipments

Write Dept. S. for color card.

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135½ So. Illinois St. INDIANAPOLIS, IND.

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Winthrop Asphalt Shingles are Tapered.

Kindling Wood Never Did Make a Good Roof

The constant fire menace makes an inflammable roof a mighty expensive proposition—

WINTHROP ASPHALT SHINGLES

Are made of solid asphalt—tapered by a patented process, with the thickness and weight on the exposed butt of the shingle, where it is needed—Surface is covered with chipped slate, rolled into the asphalt until it becomes a part of it—Natural colors—Red, Green and Gray—

Winthrop Shingles are uniform size—Easy to lay—Absolutely weather proof and ALMOST everlasting.

SEND FOR FREE SAMPLES

The Winthrop Asphalt Shingle Co.

No. 8 Sixty-First St., ARGO, ILL.

Let Us Solve Your Hanger Troubles

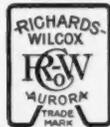
Richards Door Hangers should ever be on your mind when you have sliding doors to hang. Our new catalog on Garage Door Equipment is instructive and interesting. Shall we send it? Our catalogs may illustrate just the proposition you have been looking for.

Ask your dealers for Richards' Hanger

Memorize This:

A Hanger for Any Door that Slides.

Richards-Wilcox Mfg. Company

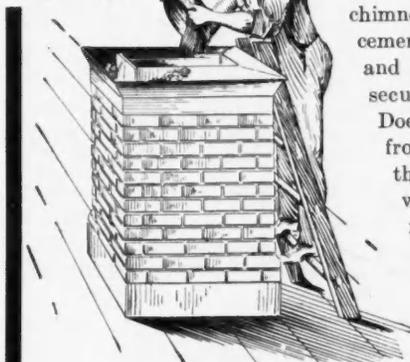


Aurora, Illinois



Cast Iron Chimney Top Protectors

For New and Old Chimneys



Simple device for prolonging lives of chimneys.

Made from cast iron.

When placed on the chimney and filled with cement, a permanent and lasting top is secured.

Does not deteriorate from the effects of the weather, and will last practically forever.

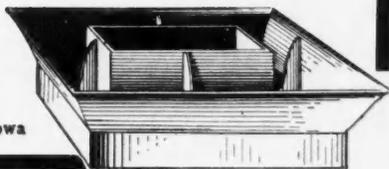
Easy to put on—artistic in appearance—and low in cost.

Made for all sizes of chimneys.

We can send you some interesting information concerning our Chimney Top Protectors. Get it—and our prices. A line today will bring this to you by return mail.

The Waterloo Register Co.

Waterloo :: Iowa

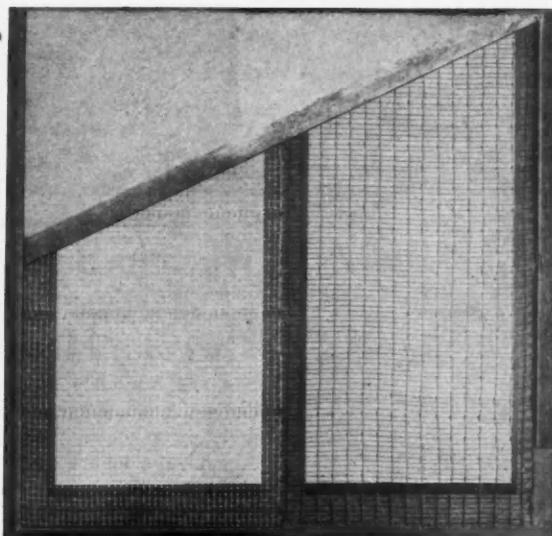


WIRE LATHING

The Secret of the durability of the woven wire lathing is owing to the fabric being completely embedded in the mortar, and thus secured from the corrosive action of the atmosphere; and also to the fact that rust will not attack the smooth round wire as it does the thin cut edges of a metal fabric.

"Why not use the proper kind of lath that lasts?"

Before building, write for our Booklet No. 6 A and Prices



Grimm's Galvanized Corrugated Wire Lathing
"Patent applied for"

Greening's Patent Trussed Steel Wire Lathing

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Carpenters' Plow, Dado, Filletster, Matching, Sash Hollows, Rounds, Beads, Side Rabbets, Snipe-Bill, Case Moulding, Chamfer, Quarter Rounds, Nosing and V Planes.

Standard Set (includes plane most used) ..\$7.90

Order of your dealer or write for full description and prices to

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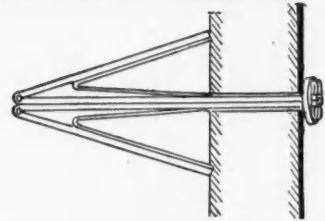
This Tool combines over *Eighty Different Wood-Working Planes*



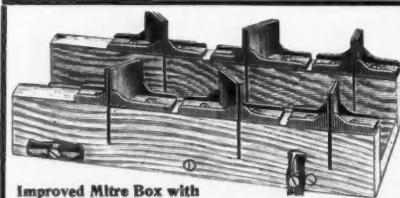
Patented July 12, 1910

FARRAND'S SELF-CLINCHING NAILS

These Nails fasten direct to Hollow Tile and save the time, expense and anxiety of preparing Fireproof Walls to receive Nailing Grounds. They do away with the necessity of burying combustible wooden nailing blocks in the heart of the wall and afford full freedom for changing plans or correcting errors in the location of interior woodwork. Also used for attaching fixtures to all types of finished hollow walls.



SELF-CLINCHING NAIL COMPANY, 44 N. FOURTH ST., PHILADELPHIA, PA.



Improved Mitre Box with Square Cut Guides

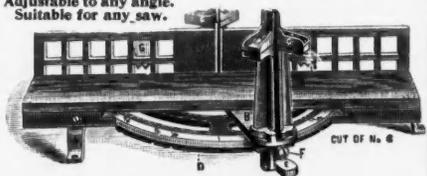
OLMSTED'S Mitre Boxes

The irons in these mitre boxes are made sufficiently high and broad to make a good bearing upon the saw blade. Perfect work assured. Suitable for any ordinary cross-cut saw or back saw. Made in seven styles and sizes.

Our Adjustable Mitre Box is the Lowest Priced and Best on the market.

Send for catalog and price list.
L. H. OLMSTED'S SON, Terrace Ave., Hasbrouck Heights, N. J.

Adjustable to any angle. Suitable for any saw.



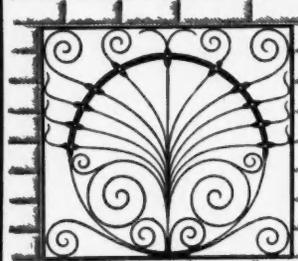
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ART GLASS

In business 25 years in which time we have furnished thousands of homes and churches with our beautiful and artistic windows.

Catalogue and designs furnished free. **Write us now.**

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we will send you catalog that is attractive enough

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Incorporated
Louisville, Kentucky



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—STOP AT—

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New and Absolutely Fireproof
Corner Adams and Park Streets

In [the center of [the Theatre, Shopping and Business Districts.

Has large Convention Hall.
"Grand Roof Garden Cafe."

Music from 6 p. m. to 12 p. m.

Every room has private bath. European plan.

Rates, \$1.50 per day and up.

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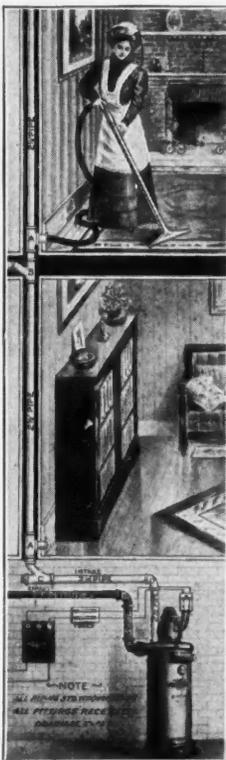
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requires that you make provision for stationary vacuum cleaning precisely as you make provision for stationary heating, lighting and plumbing.

Really efficient air cleaning depends upon the volume of air moved in a given time, and this requires piping of ample capacity. Therefore you should always use 2½-inch pipe if you want to be able to install the most efficient and economical system of cleaning.

THE TUEC STATIONARY Air Cleaning System

operating in connection with piping of this size does the most effective work at the lowest cost. Competitive tests prove conclusively that the TUEC is superior to all other vacuum cleaning systems in the following particulars:

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- 8—Labor-saving tools.
- 9—Minimum floor space required.

More than two thousand buildings were equipped with TUEC systems during the past year and a thousand more, now in course of construction, are being piped for TUEC installation.

We make a special truck machine for buildings which cannot be piped.

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You are Safe in Using
MONTROSS METAL SHINGLES

They are 22 years proven. Best for every purpose—and the cheapest roofing you can buy. Won't leak, crack, rattle or blow off. Easily laid, no soldering. Patent sidelock allows for contraction and expansion.

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MONTROSS METAL SHINGLE COMPANY
Second and Erie Sts., Camden, N. J.

MONTROSS METAL SHINGLES



Fire-Lightning-and Storm Proof



SAMSON SPOT SASH CORD

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Our trade mark on the label is Samson and the Lion in any color. The Spots in any color are our trade mark on the cord, used by us for eighteen years to show, after the label is removed, who guarantees the quality of the cord. You recognize either of these marks by the design, not the color. Don't be misled by imitations.

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is the best that we can make after forty years' effort. It is guaranteed by the Samson Cordage Works to be free from imperfections of braid or finish, and it will last longer than any other device for hanging windows.



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Learn all about the only system of water supply that eliminates the storage of water. That delivers water fresh from the well. The

Perry Water System

provides all the conveniences of a city water works system. It is designed for large or small capacity: is easy to install in any old or new building—operated by any kind of power—economical and practically indestructible. Has more advantages than any other system of water supply. Every reader of this publication should write for copy of our illustrated catalogue. Address

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One of Our Specials

27" Complete $\frac{3}{4}$ " Band Saw
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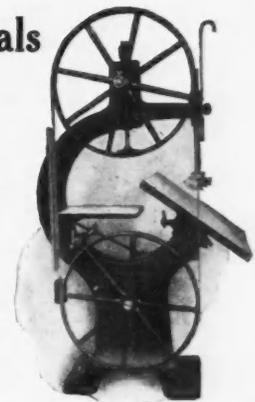
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32" Complete $\frac{3}{4}$ " Band Saw
Wright Roller Guide. Weight, 1100
lbs.

\$75.00

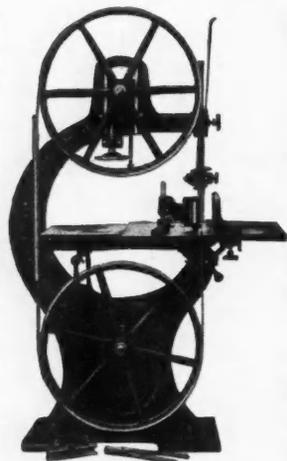
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Here is one, \$95 net,
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cut. If you want a

machine to show economy in the general wear
and breakage of saws **here you are.** Our
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The next time you want as much as a car of lumber
come to Dubuque at our expense. Your hotel bill and
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20 to 50 per cent** and give you a higher grading than you get
from local dealers; because we make our own lumber and grad-
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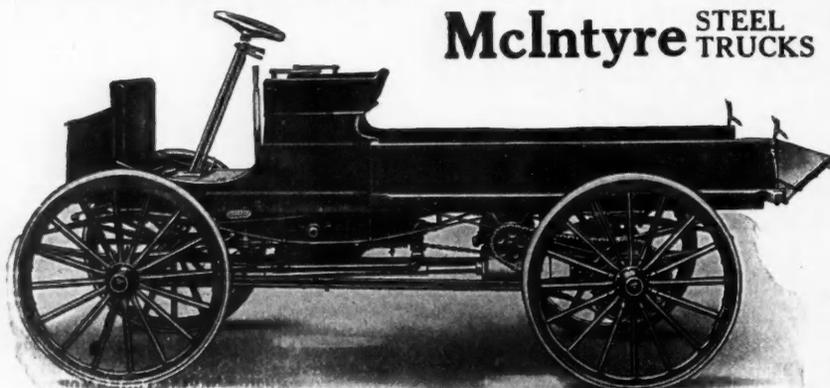
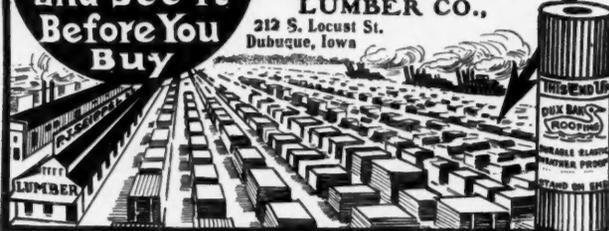
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from— everything you need. We guarantee every shipment.**

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equalled, even by some that sell at from 30 to 70
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WILL SAVE YOU MONEY

By Keeping Material on the Job.
By Reducing Running Time to the Work.
By Enabling You to Oversee More Work.
By Giving You a Reputation for Prompt Service.
ALL THIS AT LESS EXPENSE.

*It's cheaper to feed gasoline to a
McIntyre than oats to a horse.*

TRUCK CAPACITIES 600 LBS. TO 3 TONS.
CHASSIS' PRICES \$600 TO \$3,000.

Learn how to add to your profits and conven-
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W. H. McIntyre Co.

Vehicle building since 1869.
We also build pleasure cars.

NOTE—Our Special brand Clamps, have notch-
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Per pair,	1 foot.....	\$2 70
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"	2 "	3 00
"	2 1/2 "	3 75
"	3 "	4 00
"	4 "	4 50
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"	5 " heavy.....	7 50
"	6 "	8 50
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"	9 "	12 50
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These clamps have steel bars and screws and
malleable iron parts.

The New Adjustable and Perfection Clamps are
made in the following lengths and sizes:

2 1/2, 3, 4 and 5 foot have... 1 1/2 x 1/2 inch bars.
5, 6, 7, 8, 9 and 10 foot have 1 1/2 x 1/2
Joiners' Clamps—1, 1 1/2, and 2 foot have hand-
wheels for rapid work, 1 1/2 x 3-16 inch bars.

In ordering parts always make sketch, to
avoid delay.

Hargrave's New Adjustable SPECIAL Clamp.



Hargrave's Perfection SPECIAL Clamp.



Hargrave's Joiners' SPECIAL Clamp.



Write for circular
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Twelve great, big, massive volumes. More thorough, more complete, more exhaustive than anything before even attempted. Over four thousand pages, thousands of illustrations, diagrams, charts, plans and working drawings, made especially for this set of books, including three complete volumes on cement and concrete construction, the only thing of the kind in existence. Practical carpentry, steel square, framing, roof construction, and even manual training, painting, glazing and decorating are thoroughly treated in addition to the bigger work, such as masonry and steel construction, heating, ventilation and plumbing, reinforced concrete, contracts and specifications. And all this explained thoroughly without the use of a single square root sign or algebraic equation, or the use of anything but simple arithmetic. **Practical information from start to finish.**

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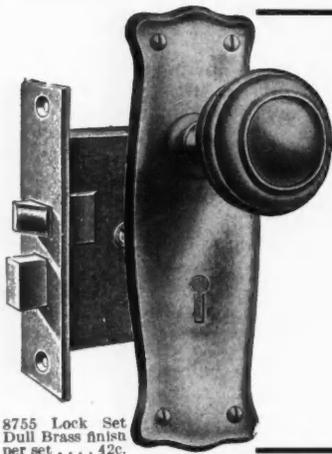
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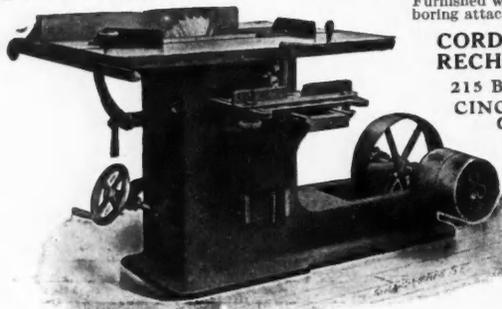
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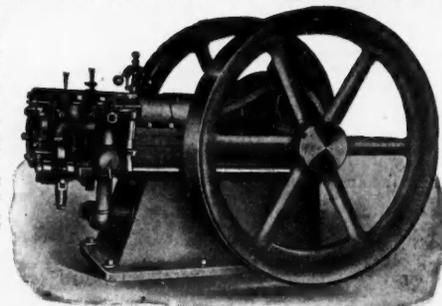
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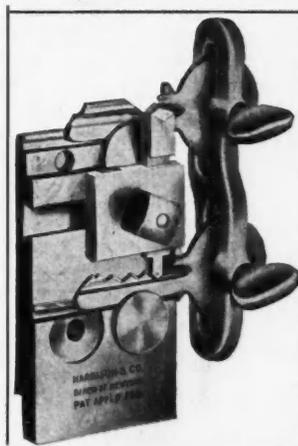
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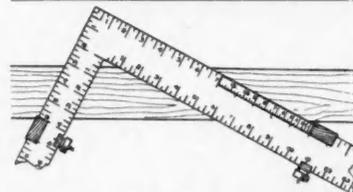
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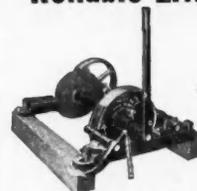
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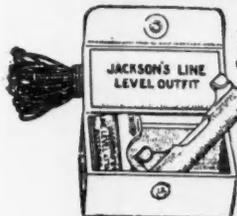
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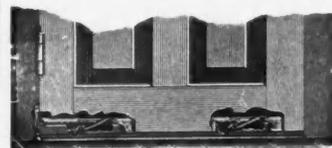
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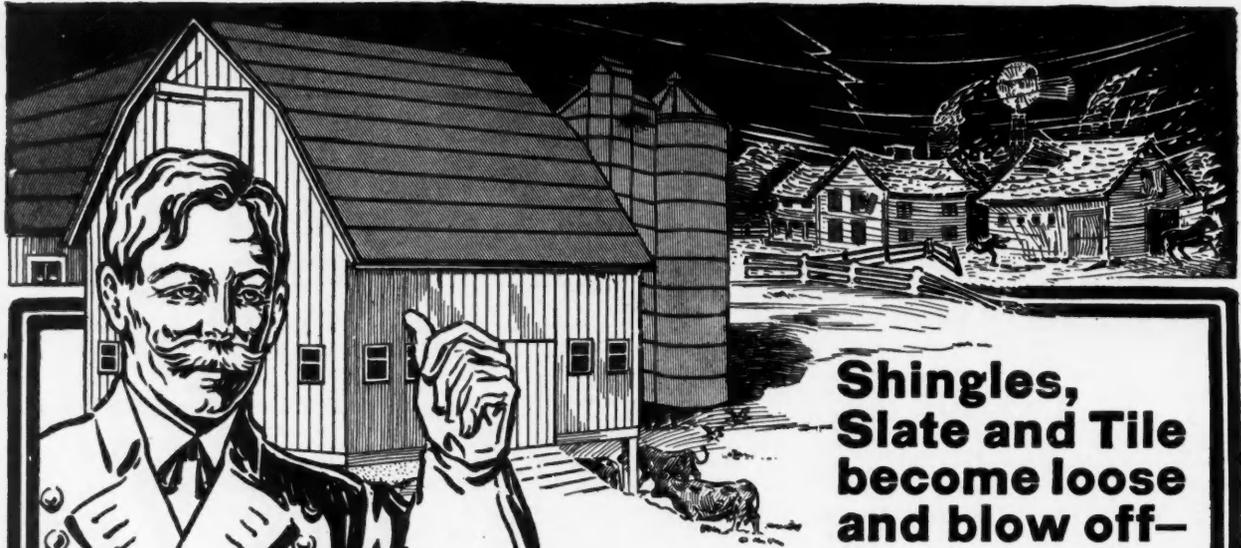
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—costs *less* money—put up in rolls or shingles**

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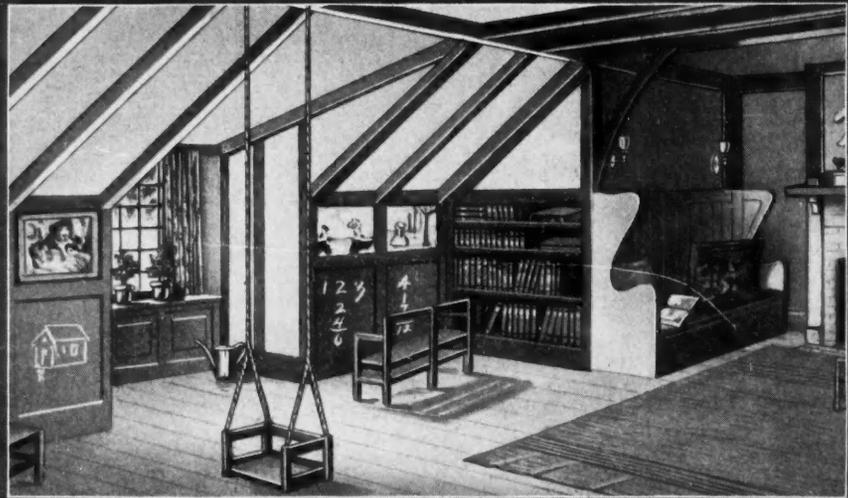
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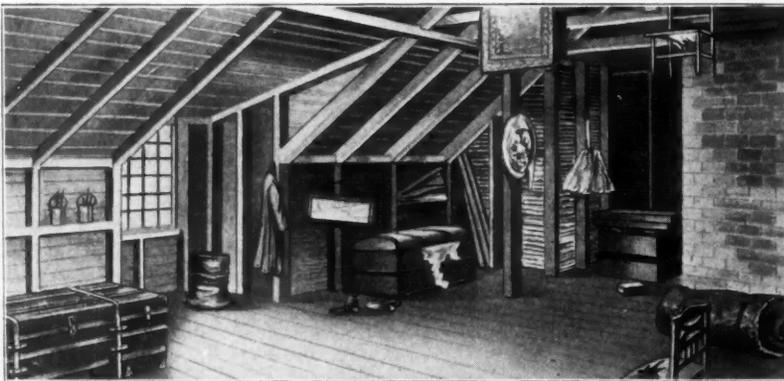
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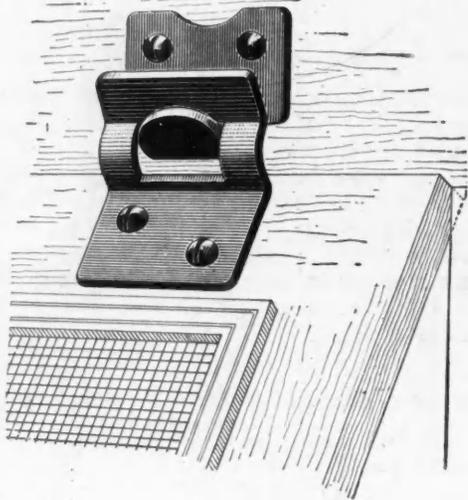
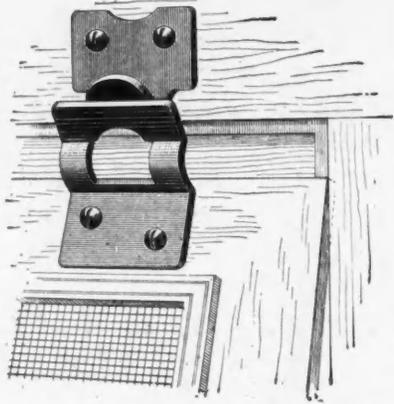
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