

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

OUR NEW YEAR'S WISH

WE WISH YOU ALL—ambitious Carpenters, Contractors and Builders everywhere—a Prosperous and a Happy New Year.

May 1912 be the best year you have ever had—and may you find the American Carpenter and Builder more and more valuable to you as the months go by.

If you are *strong* on New Year's resolutions, here is one we recommend to you; for good results we positively guarantee its effectiveness:

"I, as a wide-awake builder who wants to keep up-to-date and who does not care to be left behind, do now resolve that I will immediately develop a more inquiring turn of mind and become a well posted man on all things pertaining to building;

"I will study the announcements made each month in the advertising pages of the American Carpenter and Builder by the leading manufacturers of tools and machinery, building materials and equipment, and will write to these concerns and investigate their products:

"I will study up and keep informed concerning both building materials and methods, so that I may become known as a builder who knows his business;

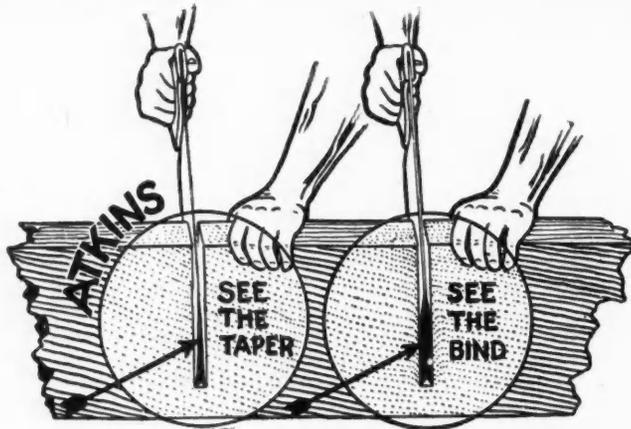
"I will stand for Better Building in my community, so that I may build up for myself a permanent reputation for good, satisfactory work."

During the past two months an astonishing number of new subscribers have enrolled themselves under the banner of the American Carpenter and Builder. We welcome you all into the Big Family. We want you to feel at home. The American Carpenter and Builder is YOUR paper—the Editorial Staff is at YOUR service—the Advertisers are YOUR friends.

Here's for mutual Assistance and Success throughout 1912.

Sincerely,
AMERICAN CARPENTER AND BUILDER

Chas Radford
EDITOR-IN-CHIEF



See the Point?

The Atkins saw cuts no wider path, but the blade has more "elbow-room." Doesn't stick in the wood. Runs easy and cuts fast.

There's a big difference between the Atkins "taper-ground" saw and the ordinary "thin-back" saw.

A little bevel along the back may make it *look* thin, but that doesn't fool the lumber.

Of course, a little bevel is better than nothing.

But look at the picture and see how much better the "taper-ground" Atkins is.

The Atkins blade tapers *all* the way from tooth-edge to back. The tooth edge is the thickest part of the blade, *with almost no set necessary on the teeth.*

So the tooth edge cuts quickly, and the rest of the blade follows through the board without a struggle.

The very first time you try an Atkins, you'll notice how fast and easy it cuts.

Don't think it's because the saw is new, for it will always cut just as rapidly, and yet will require less sharpening than any other make of saw in your kit.

The Best Steel Ever Used in Saws

Silver steel is the finest crucible steel the world has ever known. The formula for it was originated by E. C. Atkins over 50 years ago, for use in Atkins Saws.

Scientific analysis shows that Silver Steel is better steel than is used in most of the high-grade razors.

When gas-tempered by the Atkins secret process, this blade takes on a temper that has never been equaled. It is rigid enough, yet flexible enough. When bent by a crooked thrust, the blade springs right back into perfect shape.

It's a peculiar steel. Seldom rusts. Stands more hard usage and holds its edge longer (some carpenters say four times longer) than any other saw, needs less filing, and yet actually files more easily.

If your dealer doesn't handle Atkins Saws, or hasn't the particular saw you wish, ask him to order it for you from his wholesale house. He should be glad to do this—it's no trouble—and he will do it promptly if you make the request. If he is slow about it, write us direct and give us his name. We'll see that you are easily taken care of.

The Atkins Perfection Handle is another big advantage. One carpenter writes, "It takes the strain off the wrist, and I fully believe gives one-third more cutting power." But we will give you the old-style handle, if you prefer.

Test This Saw at Our Risk

If the Atkins saw is what we claim, it's worth something to you to get acquainted.

It doesn't cost you a cent to find out. Simply stop in at your dealer's, select an Atkins Silver Steel Saw, take it with you to your work and give it a good fair test.

If it doesn't lessen the work and save both time and strength, if it isn't the very best saw you ever put through a board, take it back

to your dealer and get your money back.

No red tape about that guarantee. It's the plainest, strongest guarantee ever put behind a saw.

BE SURE the blade says "Silver Steel"—that's our best saw. Remember, too, that it isn't a genuine guaranteed Atkins Saw unless it bears our name.

FREE to Carpenters

We have sent thousands of our strong Nail Aprons free to carpenters—write today for your package, containing the nail apron, our Carpenter's Time Book, and "Saw Sense," a booklet of handy information for carpenters. Write for these, and let's get acquainted. Enclose 10 cents (stamps) to cover postage, and address our Carpenter's Department.

E. C. Atkins & Co., Inc. Indianapolis, Ind.

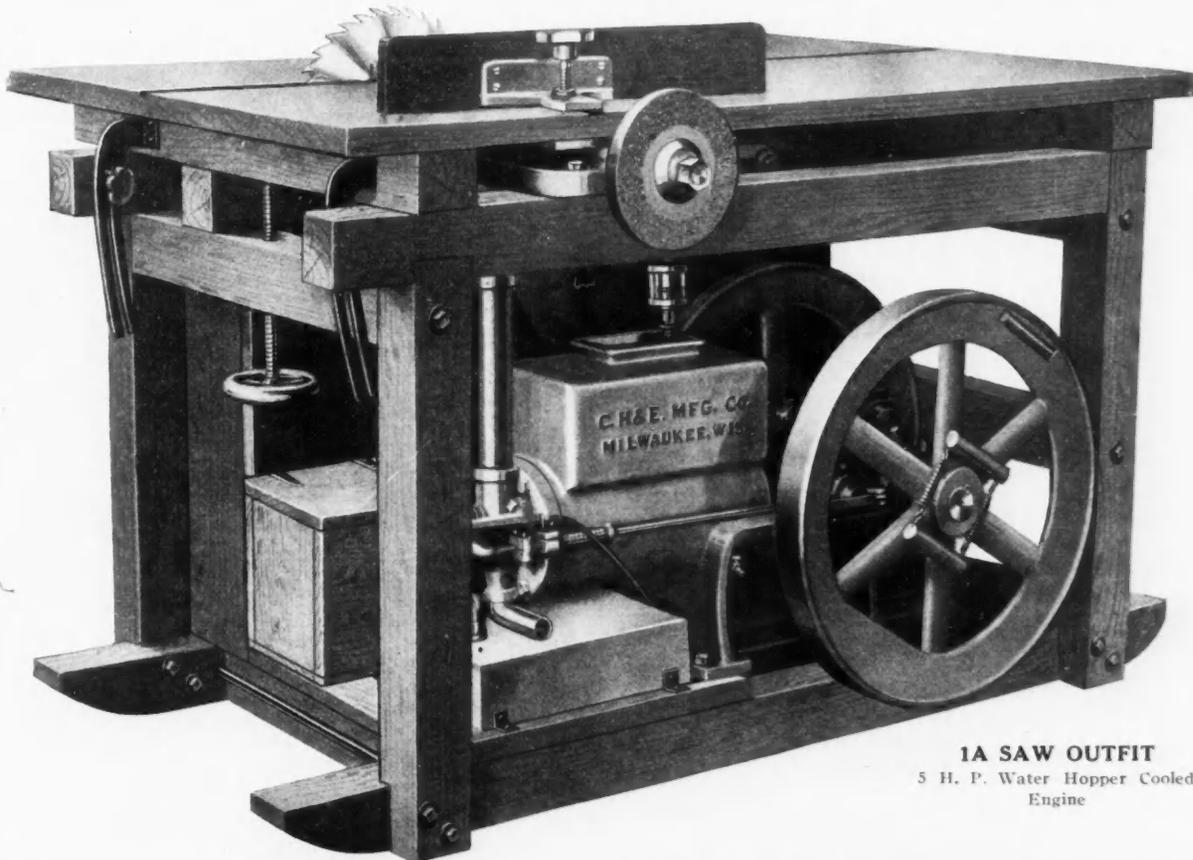
Largest Exclusive Saw Manufacturers in the World.

WE ARE THE

PIONEERS

In the Manufacture of

PORTABLE SAW RIGS



1A SAW OUTFIT
5 H. P. Water Hopper Cooled
Engine

MORE C. H. & E. Portable Saw Rigs now on the market than all our competitors combined. Our descriptive folders will help you solve the problem in comparing the expense of operating our Portable Saw Rigs at twenty cents a day as against the high wages which you pay your men. We are manufacturers of Contractors' Equipment and make Portable Saw Rigs in four different sizes, as well as a Builders' Hoist, Material Elevator, Hand Derrick, Centrifugal Pumping Outfit, Power Driven Trench Pump, Concrete Chute, Column Clamp, Mortar Mixer, Gravel Heater, etc.

WRITE FOR OUR ATTRACTIVE FOLDER
FOR OUR ATTRACTIVE PRICE

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

322 - Mineral Street : : : : : Milwaukee, Wis.

When Writing Advertisers Please Mention the American Carpenter and Builder.

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.

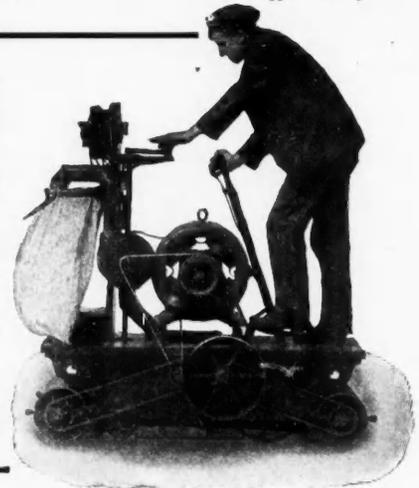
IT IS THE ORIGINAL and only two-roll, self propelled, dust collecting machine, that surfaces close to the wall and can be used in small rooms. Anyone can operate it.

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.

CARPENTERS

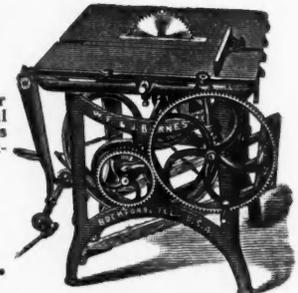
In these days of close competition need the best possible equipment, and this they can have in

Barnes' Hand and Foot Power Machinery

Our new foot and hand power Circular Saw No. 4, the strongest, most powerful and in every way the best machine of its kind ever made. For ripping, cross cutting, boring and grooving.

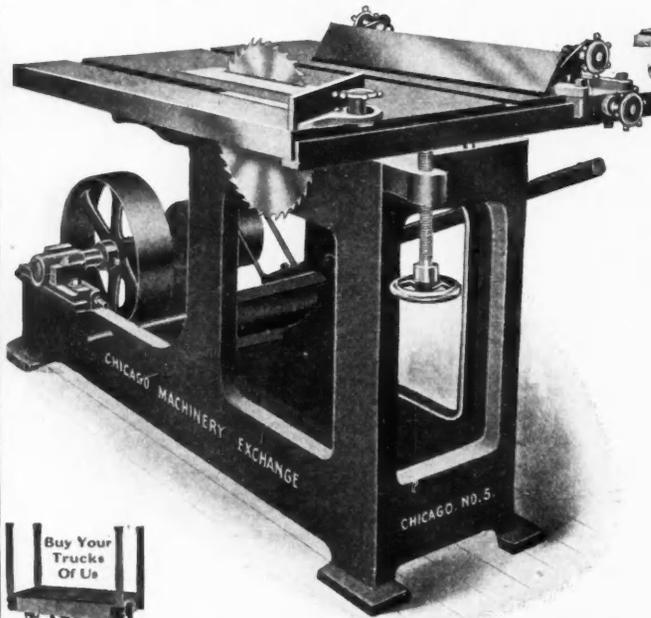
SEND FOR OUR NEW CATALOGUE

W.F. & John Barnes Co.
74 RUBY ST. ROCKFORD, ILL.



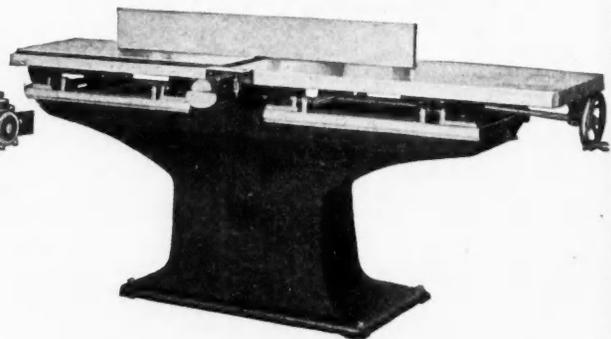
These Two Machines for \$170.00

MACHINE No. 1
Chicago No. 5 Combination Saw Table



including belt for saw arbor, countershafts, 1 12" rip saw, 1 12" cut-off saw, 5 boring bits— $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ " and 1-inch pair of jointer knives.

MACHINE No. 2
Chicago 12-Inch Jointer and Planer



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

Ask for Price on One if You Cannot Use Both

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

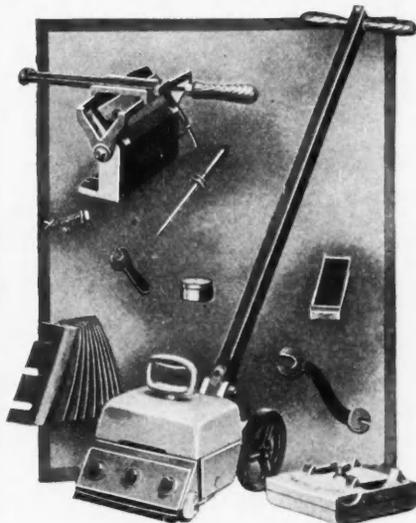
THEY ARE ALWAYS READY FOR WORK

(Not so with the Universal Wood Workers.)

CHICAGO MACHINERY EXCHANGE, 1219-1227 W. Washington Blvd., CHICAGO, ILL.

When Writing Advertisers Please Mention the American Carpenter and Builder.

OVER \$100,000.00



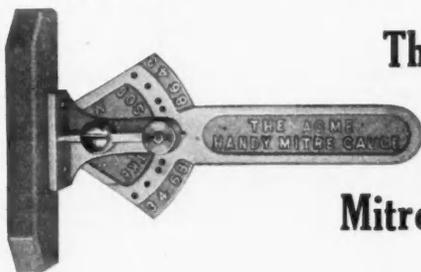
Has
been
SAVED
by
USERS
of the

Acme Floor Scraping Outfit

during the past five years. Thousands of machines are now in daily operation, and every mail brings letters from users commenting upon the satisfactory work their outfits are doing and the vast amount of labor expense they are saving.

Now, Mr. Contractor, you do not have to rely upon what I say regarding the merits of my machines, but I want you to let me send an outfit to you on one week's free trial, and you can then let the machine demonstrate on your own work just what they can do. If, after working with the equipment for one week, you are not convinced that the same will save you many dollars, and do your floor scraping better than it was ever done before, just pack up the machines, return them to me, and you will owe me nothing.

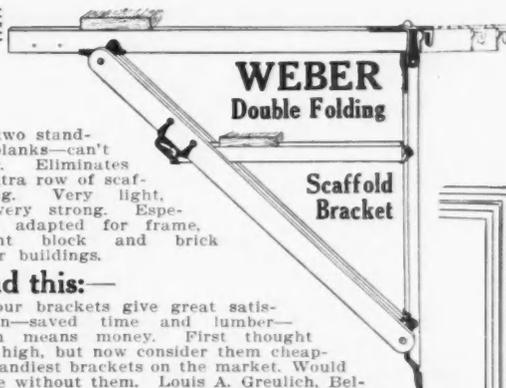
Write to-day for booklet and full details of my proposition.



The Acme Handy Mitre Gauge

is another labor saving tool. It is absolutely accurate, can be set at any angle and fits in the pocket where it is always ready for instant use. If your dealer does not carry them in stock, then write to me for circular describing this wonderful little tool.

JOSEPH MIOTKE
247 Lake Street : : Milwaukee, Wis.



Has two standing planks—can't swing. Eliminates an extra row of scaffolding. Very light, but very strong. Especially adapted for frame, cement block and brick veneer buildings.

Read this:—

"Your brackets give great satisfaction—saved time and lumber—which means money. First thought price high, but now consider them cheapest, handiest brackets on the market. Would not be without them. Louis A. Greulich, Bellevue, O."

The WEBER DOUBLE ACTING Floor Scraper

works forward or backward, saving time and energy. Try it for five days. If its work isn't the best you ever saw, return it at our expense. Postal brings details of offer and descriptions and prices of all Weber inventions.

JOHN F. WEBER

Pres. Weber Mfg. Co.

670 71st Ave.

WEST ALLIS, WIS.

Five Days Free Trial

Do Your Next Job of Floor Scraping at Our Expense with a

Little Giant Floor Scraper

Sold only on its merits. A request brings it to your door, freight prepaid. Try it out, if you are convinced it is the best floor scraper on the market, pay for it. If not, return it at our expense.

The **Little Giant** has scraped millions of square feet of floors. Cuts right up to the baseboard and into every corner. Easy to operate. Will scrape floors quicker, cleaner, and cheaper than any other machine on the market.

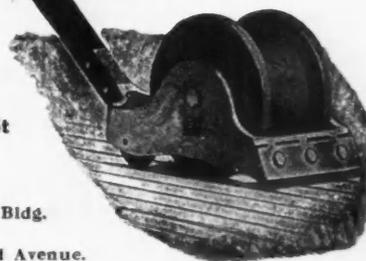
Ask us for our special price on this machine.

Hurley Machine Company

31 S. Clinton St
CHICAGO

NEW YORK:
1011 Flatiron Bldg.

DETROIT:
246 Woodward Avenue.

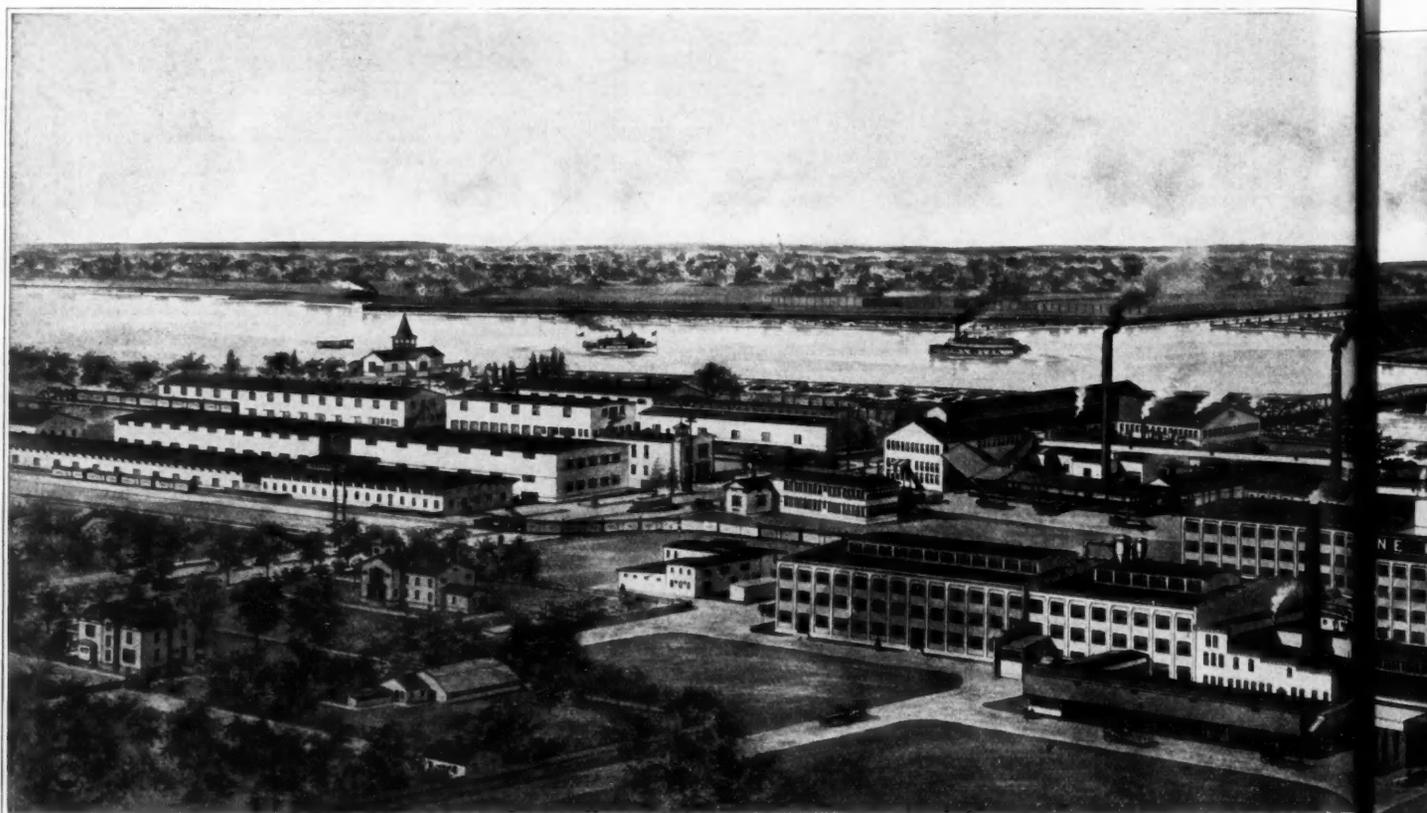


When Writing Advertisers Please Mention the American Carpenter and Builder.

PAINE LUMBER CO., LTD.

OSHKOSH, WISCONSIN, U. S. A.

These Plants Produce TWO THIRDS of All the



We Make Everything in Mill

OUR SPECIALTY

Korelock Veneered Doors

Cost but little more than Pine

WRITE FOR CATALOGUE A

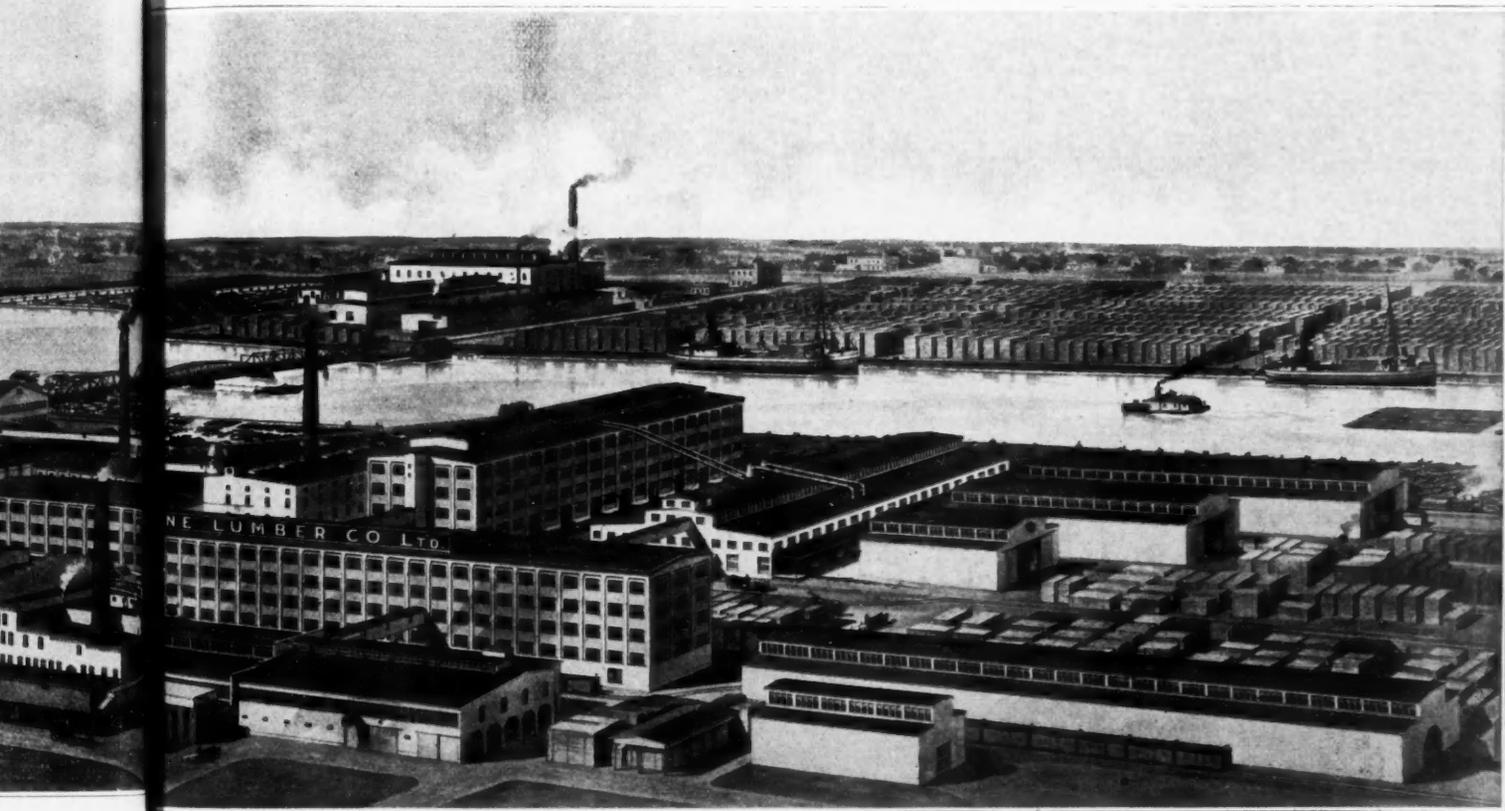
Whenever you See a Korelock Joint Think of

When Writing Advertisers Please Mention the American Carpenter and Builder.

P.A.I.N.E L.U.M.B.E.R C.O., L.T.D.

OSHKOSH, WISCONSIN, U. S. A.

of All the Standard Veneered Doors Used in the World



Mill Work in any Kind of Wood

OUR SPECIALTY

Korelock Veneered Doors

Birch and Oak Doors Ready to Ship

WRITE FOR CATALOGUE A

Think of Paine Lumber Co.—The Originators

When Writing Advertisers Please Mention the American Carpenter and Builder.

Everybody Satisfied!

NOT a saw rig back, nor one unsatisfied user since the first one put out! That's because the Oshkosh is made on the correct principle, and saves the contractor big money on every job—from a five-room dwelling to a public school. If this were not a fact, we could not guarantee it for life.

TRADE MARK
OSHKOSH

Eveready
SAW RIG

Guaranteed for Life

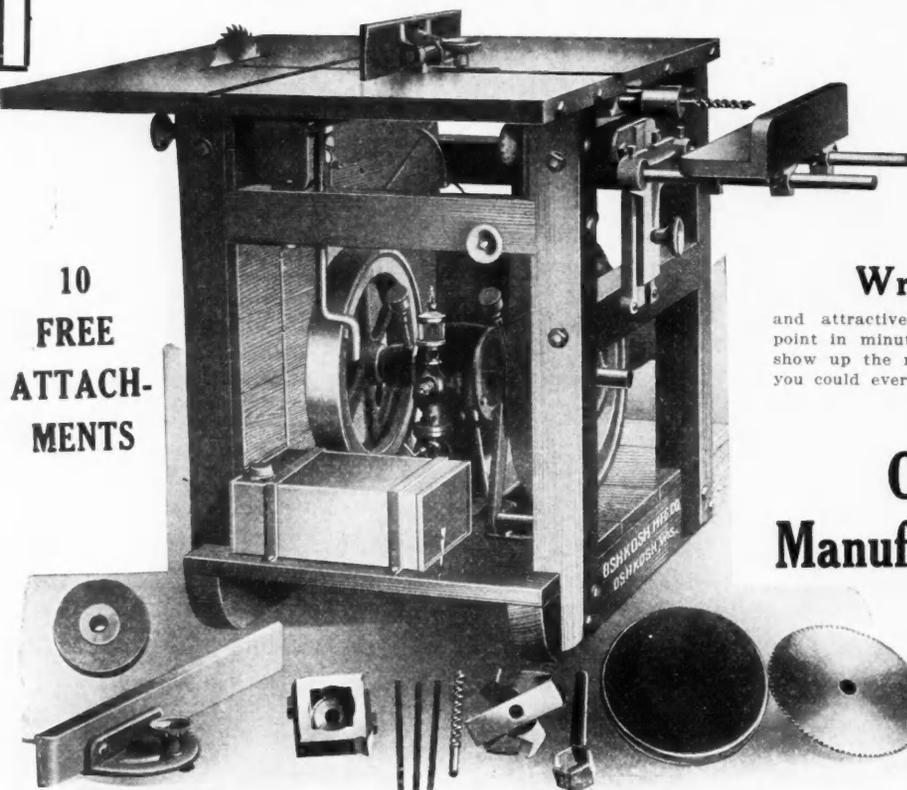
No matter how long you use the Oshkosh, if any part proves defective in material or workmanship, we will replace it free of charge.

Now don't think the Oshkosh is just for the "big contracts." You can use it on **any** job. It's on skids and can be easily pulled anywhere. It saws and rips not only straight lumber, but also does a lot of so-called "hand work," such as cutting stair joists, etc. Besides that you can do innumerable other jobs with these **free attachments**:—12-in. Jig Saw, Boring Device, 10-in. Pat. Sanding Disc, 2½-in. Pat. Jointer, 6½-in. Dado Head, 6-in. Emery Wheel, Miter Device, and Pat. Rip and Bevel Gauge—ten in all with one rip and one cross-cut saw.

The Oshkosh is furnished with the best engine we could buy. It requires no experience to operate it and a gallon of gasoline will last **many** hours. The power is ample for any sawing purpose—in fact, it's a sturdy power plant you can't afford not to own.

If Not Satisfactory, Return it at Our Expense

We mean exactly what we say. Any responsible contractor can send for this saw rig and try it out on his hardest contract. If it is not **just as we represent** it, he can return it at our expense. Can you possibly think of a fairer offer?



**10
FREE
ATTACH-
MENTS**

Write for Price

and attractive folder which takes up every point in minute detail. Give us a chance to show up the merits of the handiest saw mill you could ever wish to see.

**Oshkosh
Manufacturing Co.**

316 S. Main St.

**OSHKOSH,
WIS.**

When Writing Advertisers Please Mention the American Carpenter and Builder.



This illustration shows the Master Slide Rule in use for inside measurements. The Master Slide Rule shows exact dimensions without figuring or calculations as indicated with pencil. No guess work.

Carpenters, Builders, and Every Kind of Mechanic!



Cut shows 5-ft Master Slide Rule with lower slide extended 2 1/2 inches, making distance between two extreme points of rule 10 1/2 inches — shown by arrow.

USE THE MASTER SLIDE RULE

The only practical rule for **inside measuring** of doors, windows, etc. Will become absolutely indispensable after once using it. For speedy operation no other rule can compete with the **MASTER SLIDE RULE**. Can be extended and closed instantly. When opened, is kept in place by strong steel springs and cannot get out of order. One side of rule is marked for **inside measurement**. Reverse side of rule is the same as any ordinary rule, but is particularly valuable for quick measurement of ceilings and walls, etc. Made in lengths from 2 to 6 ft.

Ask your hardware dealer, or write us for particulars and price list. Send name of hardware dealer. Agents wanted.

Send 15c per lineal ft. for 4, 5, or 6 ft. rule, which will be sent you prepaid. Remittance by money order or cash preferred.

Dahl Manufacturing Co., Childs Bldg., 1 E. 42nd St., New York

ARCHITECTS—CONTRACTORS and BUILDERS

Write for our New Catalog No. 6 containing 180 pages, which fully illustrates and describes our Complete Line of **Architectural Sheet Metal Building Material**. Estimates furnished from plans and specifications.

WILLIS MANUFACTURING CO., :: Galesburg, Ill. :: CORNICES, STORE FRONTS, STEEL CEILINGS, CRESTINGS, FINIALS, ETC.

:: *Only Manufacturers of the FAMOUS Willis Skylights, Ventilators, Fire-Proof Windows and Doors* ::



SAMSON SPOT SASH CORD



Trade Mark Reg. U. S. Pat. Off.

The Spots on the Cord are our trade mark, used only with this extra quality sash cord. Tests have shown that it will outwear common cord or any other material many times over.

Send for Samples and full information

Trade Mark Reg. U. S. Pat. Off. **Samson Cordage Works** :: :: **Boston, Mass.**

TAYLOR PORTABLE STEEL DERRICK

2000 Pounds Capacity

Adjustable capacity and speed to three ways. One man operates both cranks and can hoist with ease 700 pounds. Weight 160 lbs. Made in two sections. A man can climb a ladder with either section. Beam section connects to post by tipping in a vertical position. Consider the durability of a derrick constructed of malleable iron and steel, and that of Wood, more compact, more powerful. Roller bearing circle swing. Clears side wall of building three feet. With special platform attachable to side of railroad gondola car for unloading water-pipe, etc. Price of derrick with three way block, brackets, and bolts for attaching to building, **\$40.00** F. O. B. Chicago.

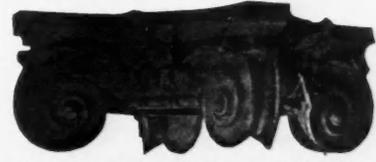
Manufacturer

John L. Taylor
1036 W. Lake St. CHICAGO
Telephone Monroe 3066



Interior and Exterior

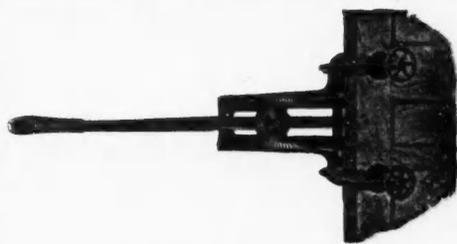
CAPITALS AND ORNAMENTS



DETROIT DECORATIVE SUPPLY CO. Limited

810 14th Avenue, : : DETROIT, MICH.
Most Complete Catalog Ever Issued

The Best That Is Offered



Two Minutes

TWO MINUTE LEVER LOCK MORTISER

The Greatest Time and Labor Saver.

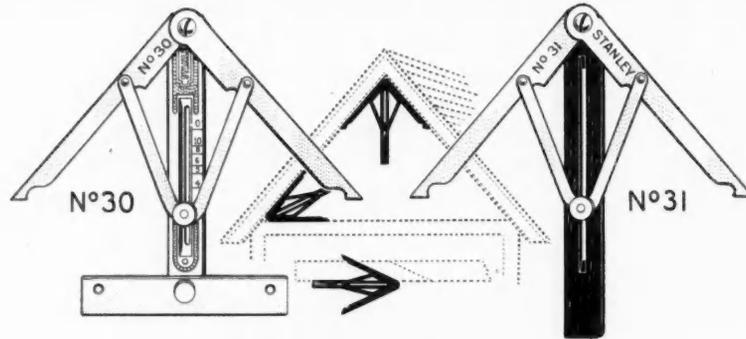
Does the complete job the quickest. The easiest to operate. Cuts in any kind of wood. Any length or depth of mortise. No exaggeration in our statements. Send for descriptive circular.

Our Butt Mortiser and Rule Gauge are handy little devices. Sent for 75c.

A. W. MILLER MFG. CO.

Main Office and Factory Riverside, California Eastern Office and Shop Cincinnati
For special information address, Riverdale, Calif.

When Writing Advertisers Please Mention the American Carpenter and Builder.



Stanley Tools

All Carpenters have occasion to fit mouldings, or other wood work, into odd angles. To lay out the cut with an ordinary bevel necessitates the use of dividers and a second handling of the bevel, making three operations.

The Stanley Angle Divider is designed for performing this work at one setting and is practically a double bevel. The two blades each fit one side of an angle and the handle gives the center line. The cut is marked from the center.

In the No. 30, which is entirely of metal and nickel-plated, the handle is graduated on the under side for laying out 4, 6 or 8-sided work, and, by means of a removable "T" head (see cut), it can also be used as a "T" square. No. 31 has a rosewood handle, is not graduated, and has no "T" head.

No. 30 Angle Divider, 7 $\frac{3}{8}$ in. long. Nickel-plated. List each \$1.50
 No. 31 Angle Divider, 8 in. long. Rosewood Hdle. List each 1.00

For Sale by all Hardware Dealers



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



NOTE—Our Special brand Clamps, have notches on the bottom of the bar, instead of on the top.

Per pair, 1 foot	.....	\$2 70
" 1 $\frac{1}{4}$ foot	.....	2 85
" 2 "	.....	3 00
" 2 $\frac{1}{2}$ "	.....	3 75
" 3 "	.....	4 00
" 4 "	.....	4 50
" 5 "	.....	5 00
" 5 " heavy	.....	7 50
" 6 "	.....	8 50
" 7 "	.....	9 50
" 8 "	.....	11 00
" 9 "	.....	12 50
" 10 "	.....	14 00

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 $\frac{1}{2}$, 3, 4 and 5 feet have . . . 1 $\frac{1}{2}$ x $\frac{1}{2}$ inch bars.
 5, 6, 7, 8, 9 and 10 foot have 1 $\frac{1}{2}$ x $\frac{1}{2}$ "
 Joiners' Clamps—1, 1 $\frac{1}{2}$, and 2 foot have hand-wheels for rapid work, 1 $\frac{1}{2}$ 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 Dept. H.

THE CINCINNATI TOOL CO., CINCINNATI O., U. S. A.



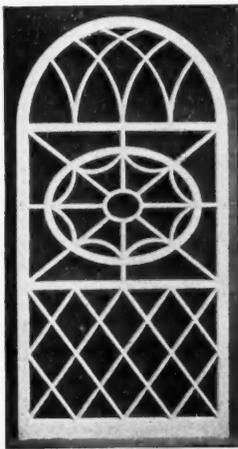
New Starrett Protractor

One of the most useful tools a carpenter ever had. See full description in free Catalogue No. 186. With this tool in your chest you can give away half a dozen or more which it will render back numbers

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

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

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



Does Five Times as Much Work as Could be Done in the Old Way

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.

The letter only tells of entire satisfaction. It would take pages to tell of the many details of satisfaction this machine offers.

Our 30 Days' Free Trial

brings out all of these points. Just send us sample of your sash bar. We'll make up a set of special cutters and bed pieces to match. The machine will will then be shipped you for 30 days' trial—no strings attached. All we ask is an opportunity to show you.

Heald Machine Company, 2 New Bond St., Worcester, Mass.





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.

SYDNEY ELEVATOR MFG. COMPANY, SYDNEY, OHIO

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.

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, oaty, 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.

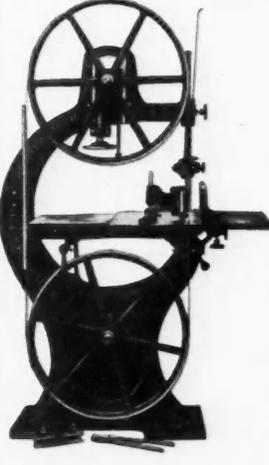
If you send us the addresses of ten carpenters, no matter where they live, we will send you another hard, tough carpenter's pencil.

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.

A Free Copy



**Secrets of Successful
Band Sawing by**

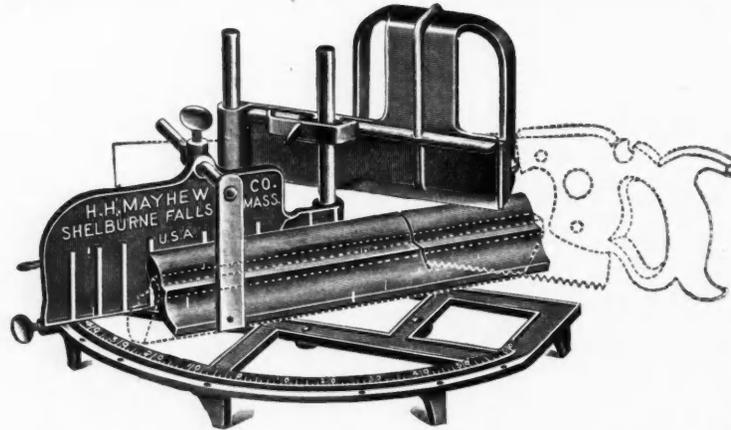
Mr. Charles E. Wright,
The Acknowledged Exponent on
Band Saw Talk.

Would be mailed free. Send for a copy before our supply is exhausted. We illustrate fifteen new model machines. **Here is one, \$95 net,** complete with all improvements as shown in cut. If you want a machine to show economy in the general wear and breakage of saws **here you are.** Our catalog will tell you all about it.

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This box embodies more distinctive features than any other made
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 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.

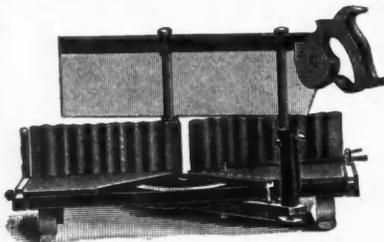
Extreme mitre to 60° without makeshift. May be used as a stationary or pivot box by use of the pin posts.
 In mitering duplicate cuts there is no restriction on length.
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 Parts take down into space 10x10x4 inches.
 Weight 15 lbs. complete.
 Box contains full directions for use.

PRICE EACH, \$10.00

H. H. MAYHEW COMPANY, SHELburne FALLS, MASS.

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Made of STEEL - Cannot Break



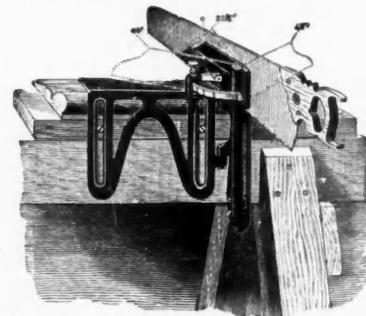
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 Gauge for duplicate cuts and many other features
 Send for Circular "C"

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**WILL SAVE
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With the No. 51 CRESCENT UNIVERSAL wood worker in your shop, you have a complete planing mill instantly available. It is a machine that will save you money and that will give you a complete wood working outfit at a very moderate cost. The number 51 CRESCENT UNIVERSAL wood worker combines a shaper, 26" band saw, 8" jointer, saw table, boring machine. Regular equipment includes, resaw attachment, tenoning attachment, panel raiser, pole rounder, hollow chisel mortising attachment, disk grinder, knife grinder, emery grinder.

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The machine is portable and is instantly adaptable for being moved from one place to another without the aid of crowbars or rollers. The countershaft is self-contained with the machine.

Each machine can be operated independently of the other. It is not necessary to stop all the machines when you want to stop one, and if you want to start one machine you do not have to operate any other.

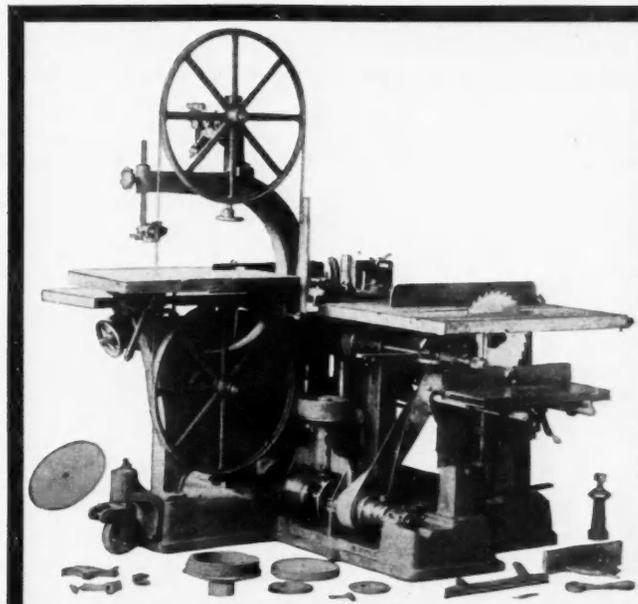
You carpenters and contractors who want the best equipped shops owe it to yourselves to send for our special circular describing this splendid machine as this is the machine you will eventually buy.

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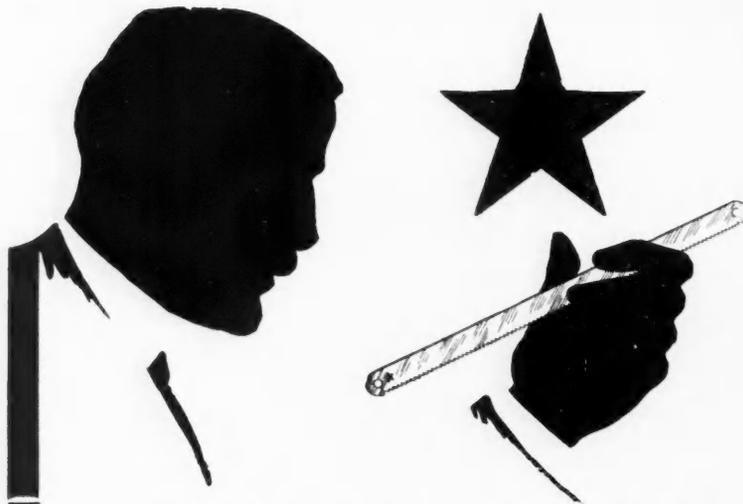
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Star Blades with fourteen teeth to the inch are suitable for all classes of work except tubing with walls less than 1/16 inch thick—for tubing of this thickness, Star Blades with twenty-four teeth to the inch are recommended.

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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.

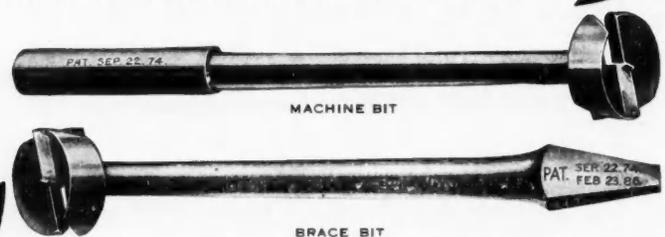
Doesn't matter how hard the wood is, no consequence whether it is full of knots, or the grain awkward to negotiate. The Forstner Bit works with equal smoothness under any condition and leaves a true polished surface on every job.

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.
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The Marvel locks shut automatically, is burglar proof, and ornamental. Is made of heavy wrought steel plates.

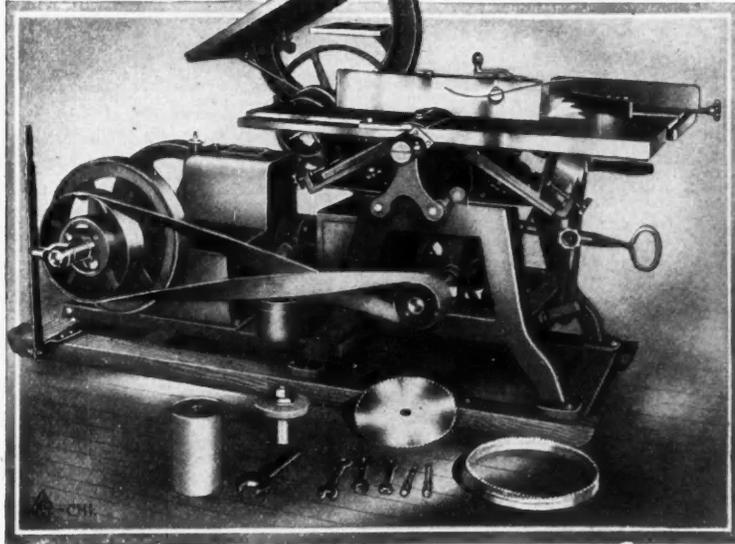
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The FAMOUS Portable Woodworker consists of:

- 8" Jointer.
- 20" Band Saw.
- Saw Table (carrying a 12" Saw Blade) with raising and lowering arbor.
- Mitering attachment.
- Cut-off and Ripping Gauge.
- Emery Grinder.
- Disc Sander.

With the outfit is included: 12" Rip Saw, 12" Cut-off Saw, 3/8" and 3/4" Band Saw Blades, 3/8", 1/2" and 3/4" Boring Bits, set of Planer Knives, Sand Drum, Emery Stub (equipped with 6" emery wheel).

Every Contractor Can Afford One

It's *not* a question of expense, but of *investment*. Don't think you cannot afford it—you cannot afford to do without it! Think of the convenience—think of the time, trouble and dollars you can save!

Illustration shows the woodworker mounted on skids which permit it to be pulled around easily. The machine can also be placed on a specially manufactured wheeled truck, which we furnish at a small additional cost.

Don't Forget to Write for Particulars

The price is so low that it is a good investment for *every* contractor. Write to-day and get full particulars. Remember, we are making a conservative statement when we say the FAMOUS is so far superior to other types of portable woodworkers as to be *beyond comparison*.

Send us a letter or postcard *to-day* for full details—get educated to the real advantages we offer.

A Remarkable New Portable Woodworker

—called the "FAMOUS"

Imagine *one piece of machinery* that does all kinds of ripping and cutting off, dadoing, surfacing and edging, circular band saw work, boring, grinding and sanding

—*a complete machine shop*, in fact!

Then imagine such a machine *equipped with its own power plant*—a compact and sturdy three horse-power gasoline engine, complete with batteries and all belts necessary to operate the machine!

On top of this imagine this machine constructed so that it *can be moved from place to place*—wherever your work is—with practically no trouble and little cost!

Imagine all these and you will understand the advantages offered in the embodiment of the above features—the FAMOUS Portable Universal Woodworker.

900 Famous Universal Woodworkers in Use

We have been perfecting this machine for the past two years—studying contractors' needs and shaping our plans accordingly. Today we offer a portable woodworker that we *know* is the *only one worth while*.

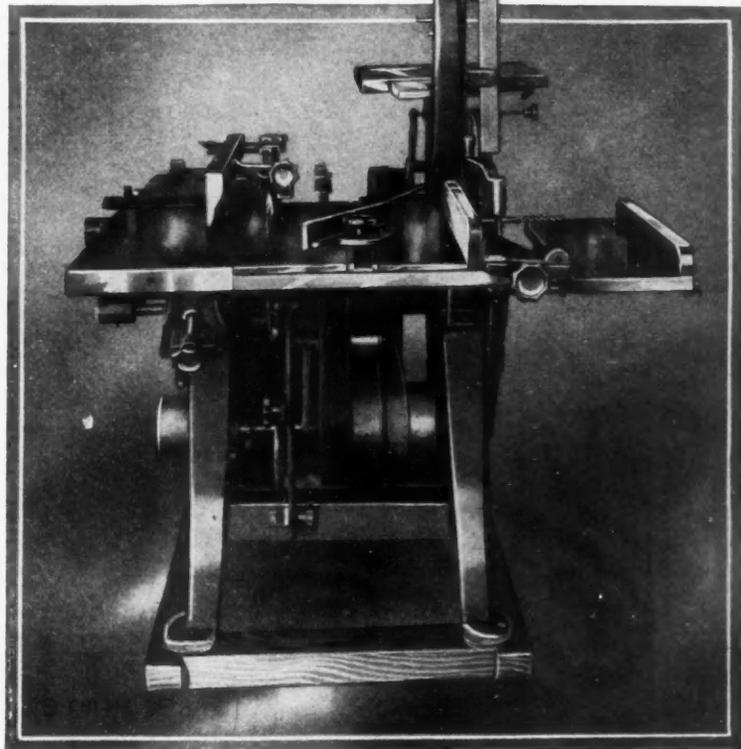
This new machine is backed by the experience and reputation of The Sidney Tool Co. who have built and sold *over nine hundred* Universal Woodworkers. That's why there's *nothing experimental* about it.

Guaranteed
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No Charge for
These
Attachments

This shows an
end view of the
FAMOUS
Portable Woodworker



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“YANKEE” Push Brace No. 75.

Bores $\frac{3}{8}$ " holes in any kind of wood in half the time of a Bit-Brace and does it easier. Drives and draws screws---takes all the small tools and works in close quarters where a Bit-Brace cannot be used. Bearing down on the Handle drives it with that quick and easy motion of the “Yankee” Spiral Driver.

Have You Seen the “YANKEE” Line?

There are 35 Styles and 75 Sizes each a Labor Saver. Our New Yankee Tool Book tells about them. A postal brings it.

Your Hardware Dealer Sells the “Yankee”

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**No Nails No Screws
Just Bore 4 Holes**

The time saved by the “Grand Rapids” will actually pay for the pulleys.

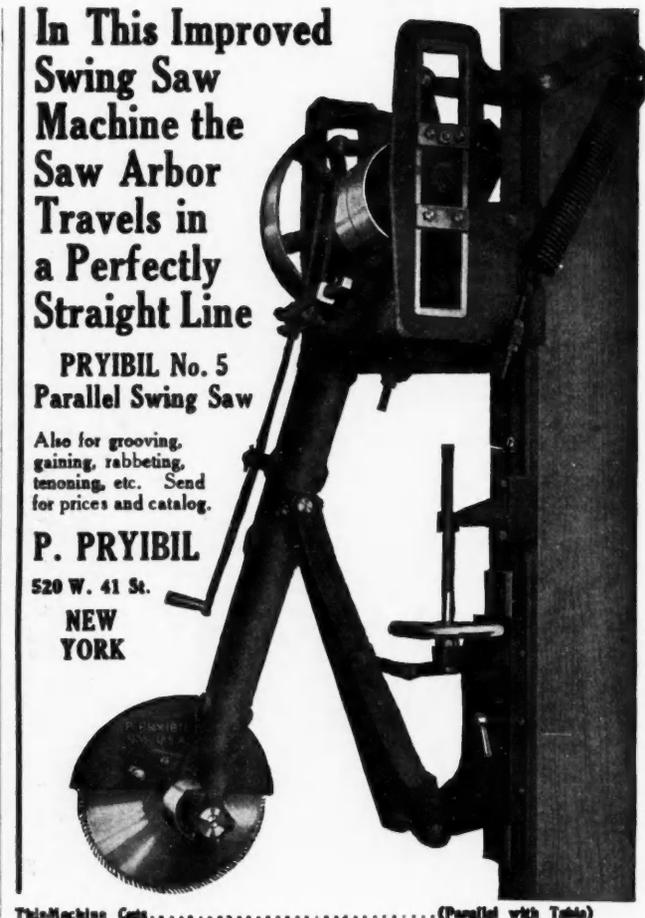
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Manufacturers
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SCREWS COST MONEY

In This Improved Swing Saw Machine the Saw Arbor Travels in a Perfectly Straight Line



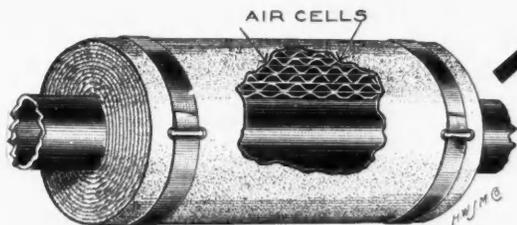
**PRYIBIL No. 5
Parallel Swing Saw**

Also for grooving, gaining, rabbeting, tenoning, etc. Send for prices and catalog.

P. PRYIBIL
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This Machine Cuts.....(Parallel with Table)

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Most people know that insulation is based on the fact that heat cannot pass through dead or *motionless* air; and that the efficiency of a pipe covering is in direct ratio to the volume of dead air it confines. But how many know the difference between *dead* air spaces in a pipe covering and *live* air spaces?

The ordinary air cell coverings used for heating work confine *live* air and *not motionless* air—they have large air spaces running from end to end which allow air to travel back and forth. Therefore, they do not prevent the loss of any great amount of heat any more than you could keep heat from escaping from a pipe or a radiator in a room by closing all the doors, windows and vents.

J-M Asbestocel Pipe Covering

is made on a different principle from all others. The air cells run around the pipe instead of lengthwise. This makes the air spaces so small that there is no place for the air to circulate, and it must be motionless—dead. Consequently J-M ASBESTOCEL confines a much larger volume of dead air than any other low pressure covering.

If you have hot water or low or medium pressure steam pipes to insulate, compare J-M Asbestocel with all others. You can quickly see that it contains the greatest number of dead air spaces.

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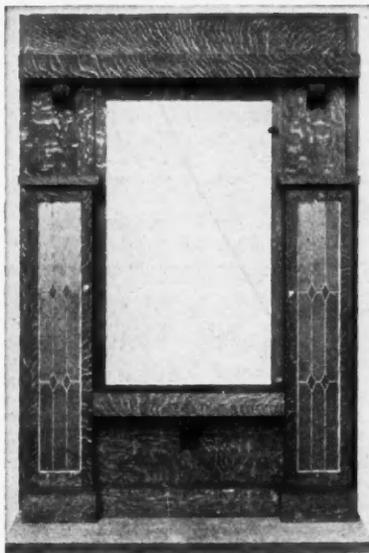
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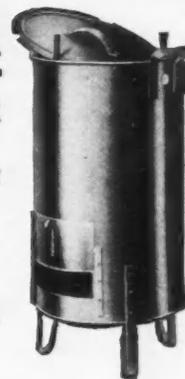


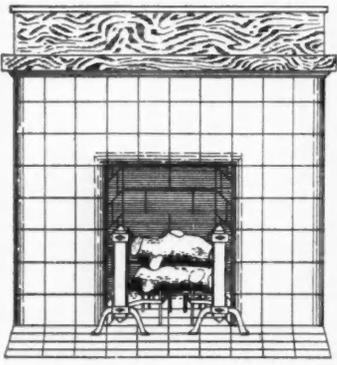
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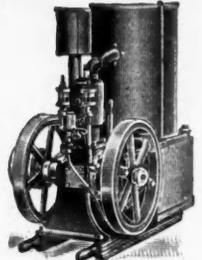
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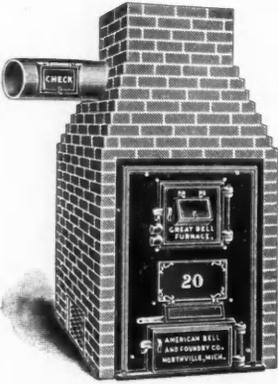
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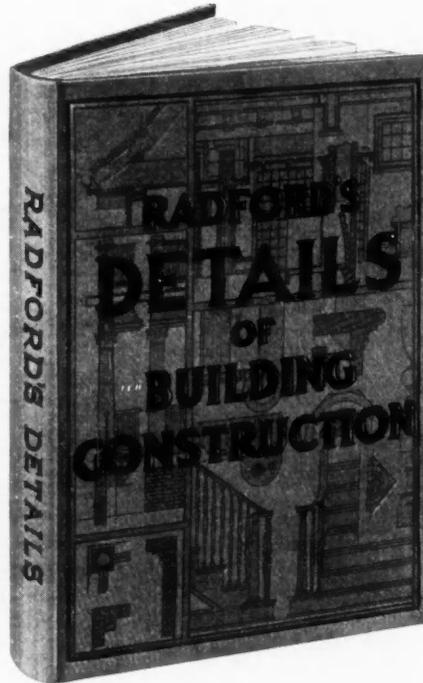
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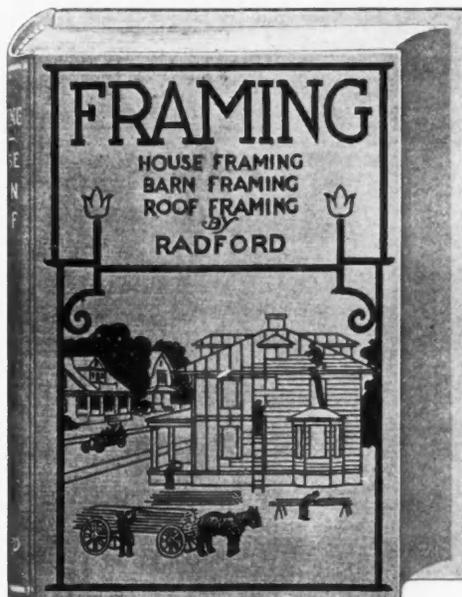
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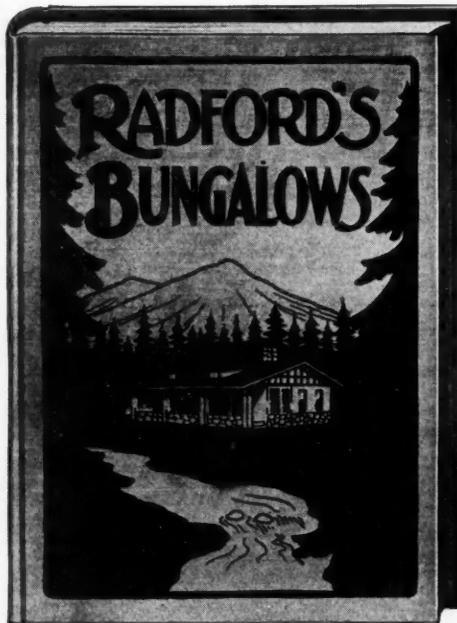
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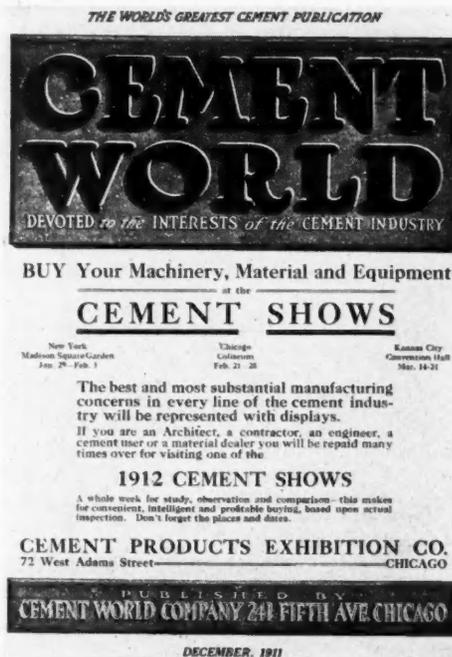
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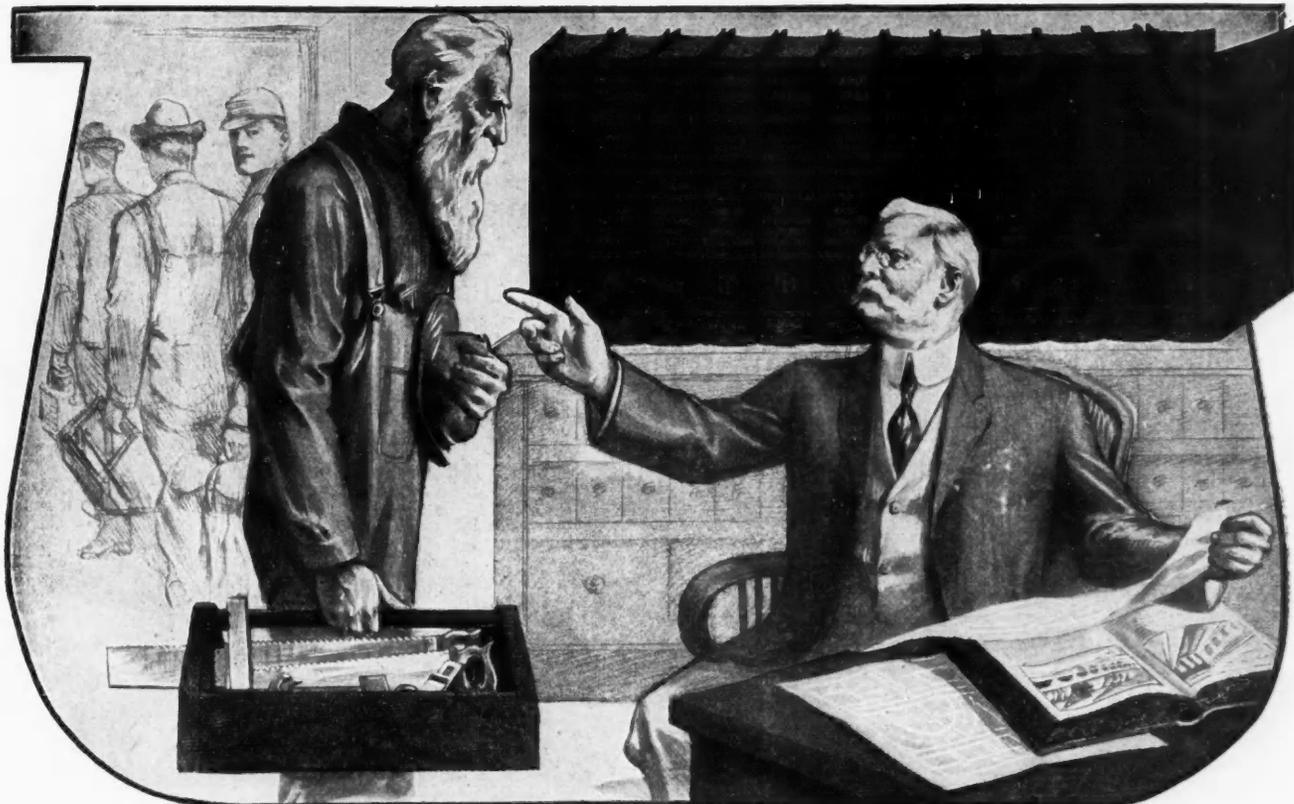
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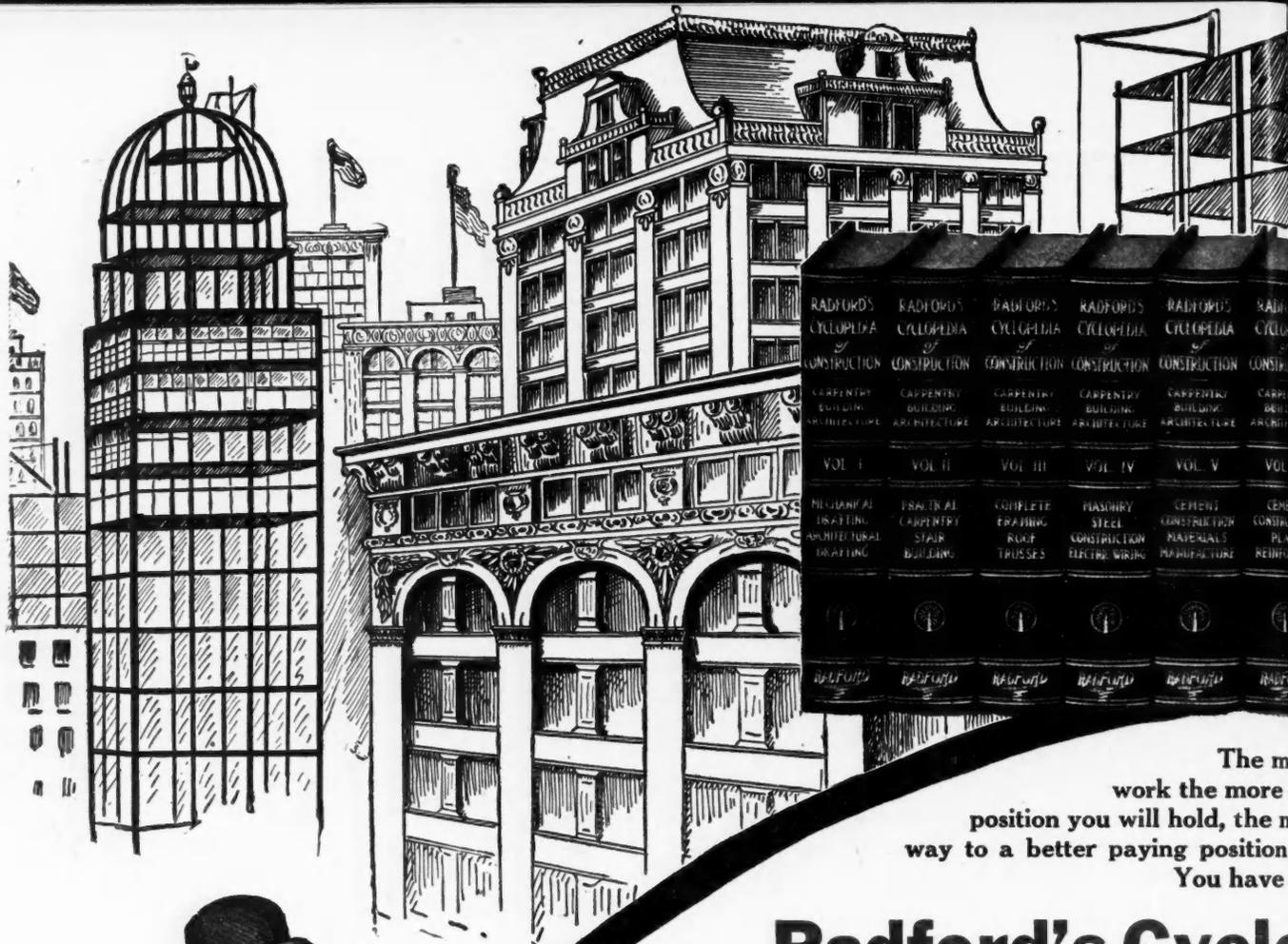
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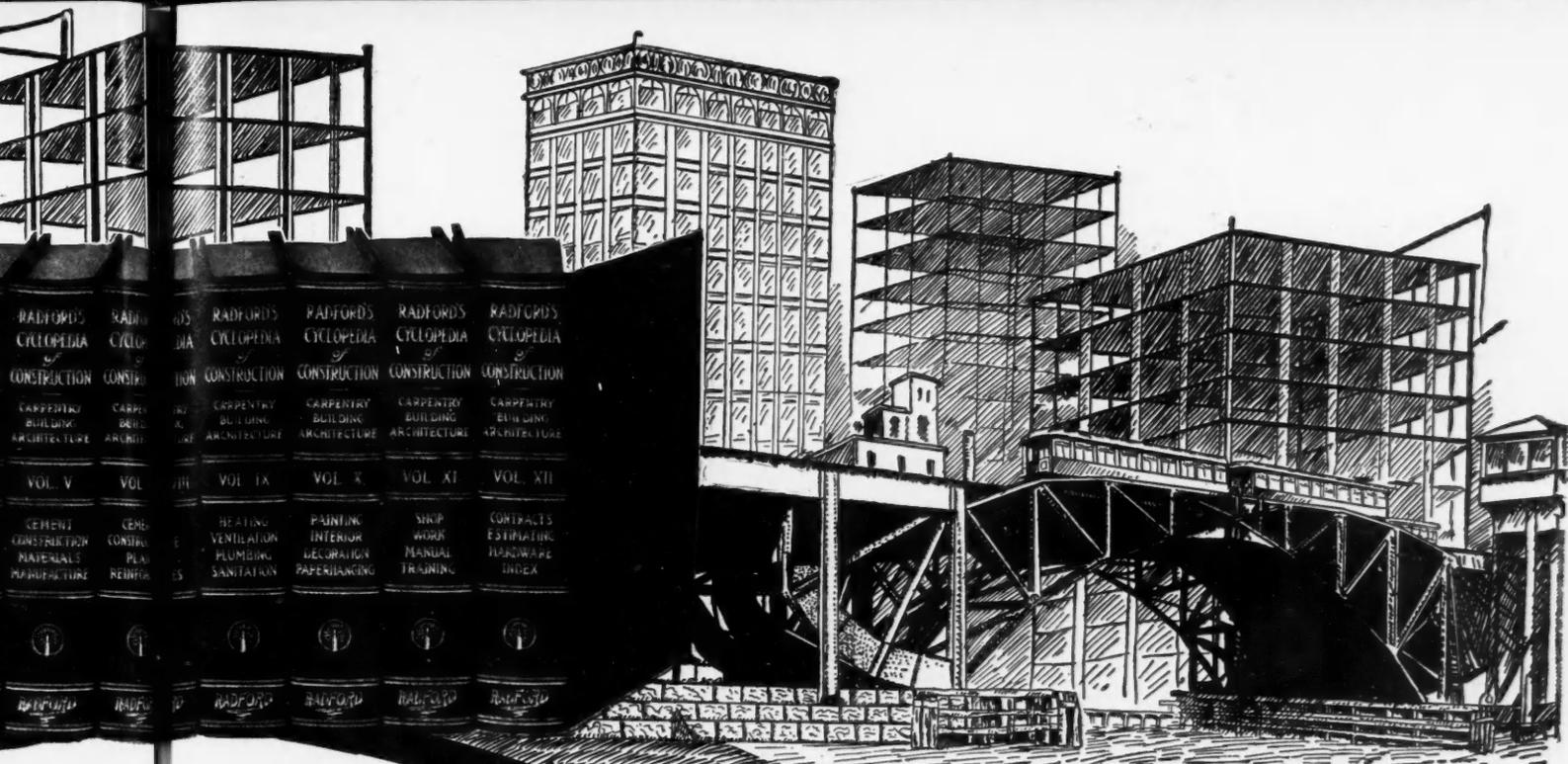
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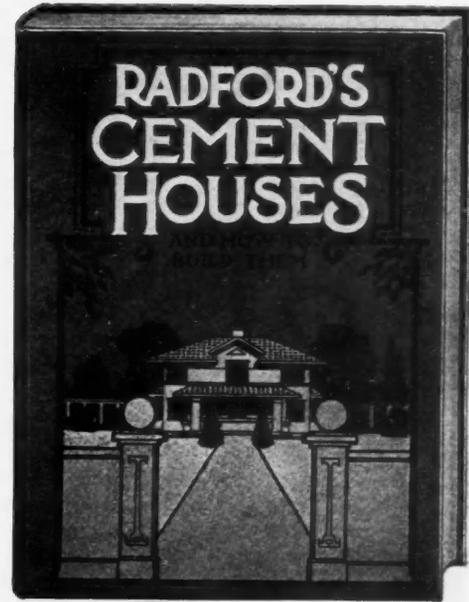
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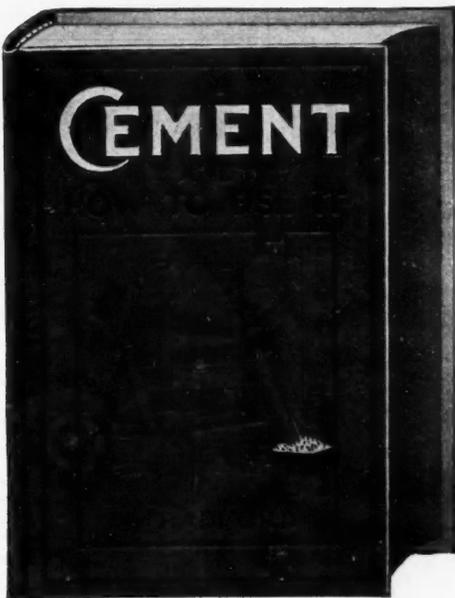
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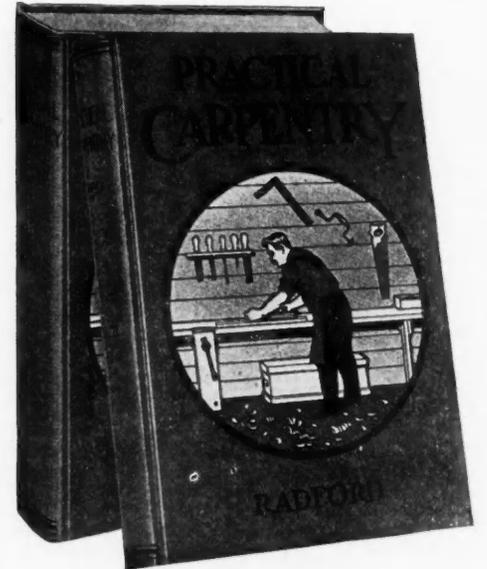
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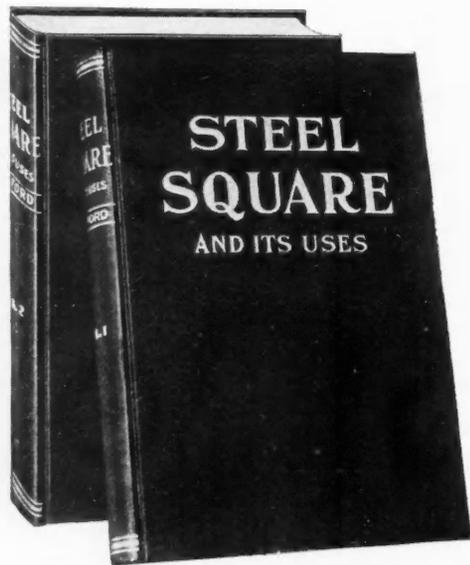
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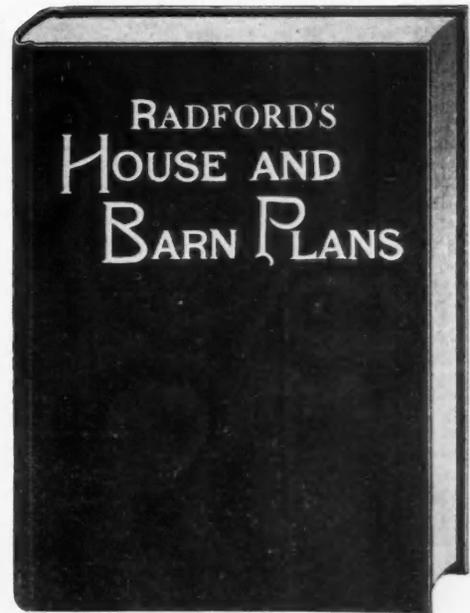
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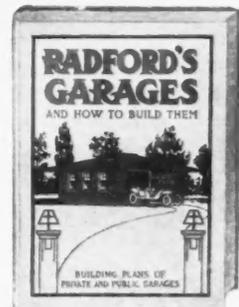
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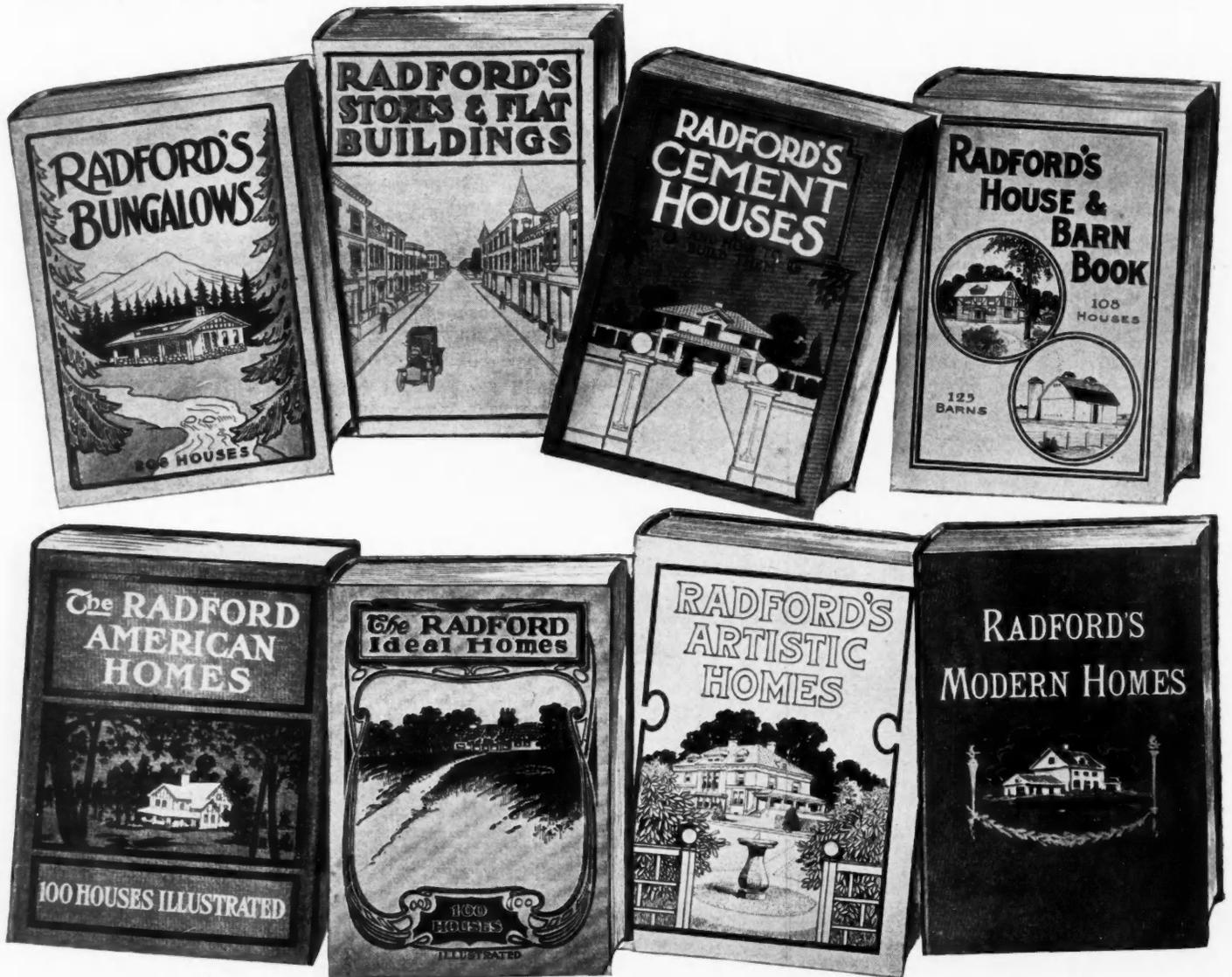
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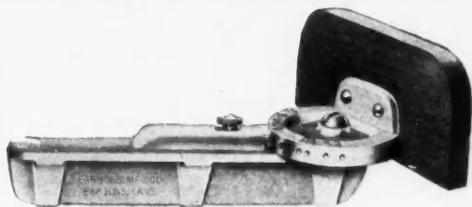
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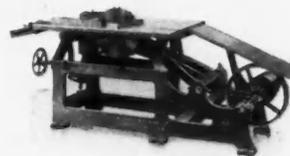
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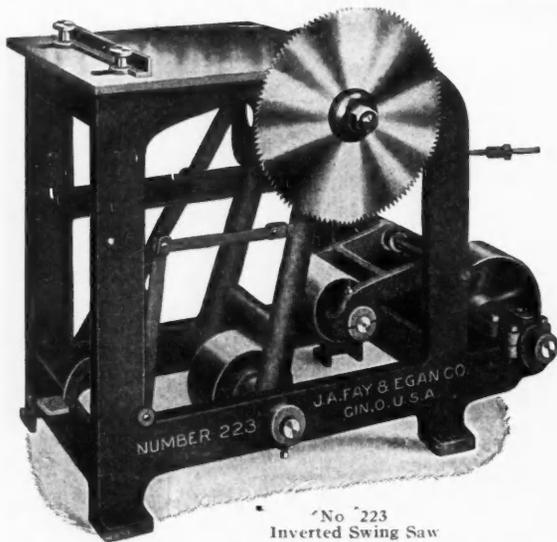
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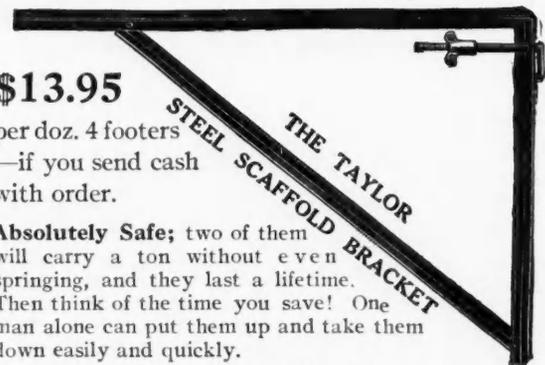
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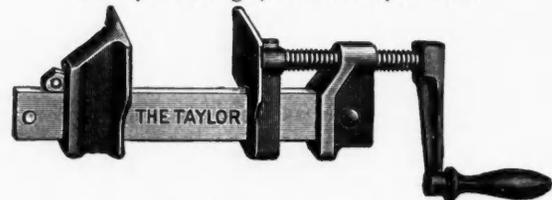


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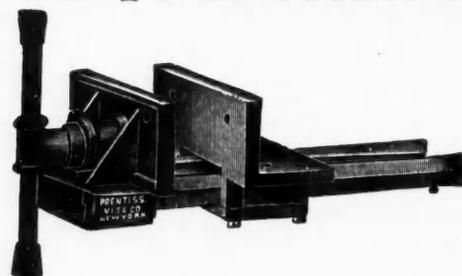
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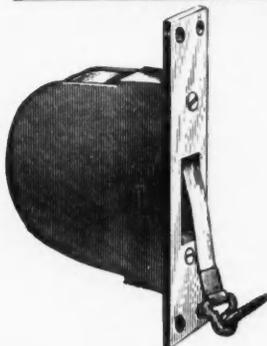


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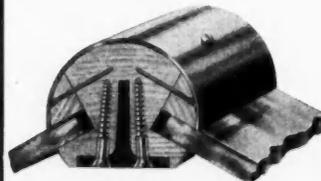
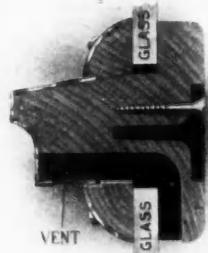
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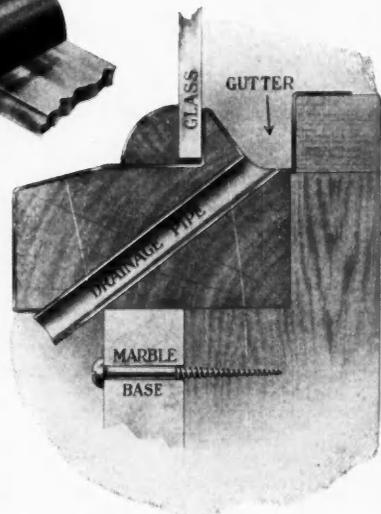


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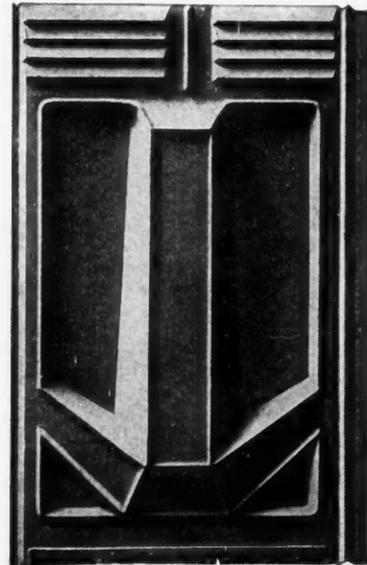
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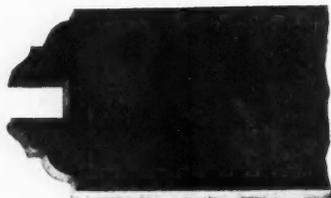
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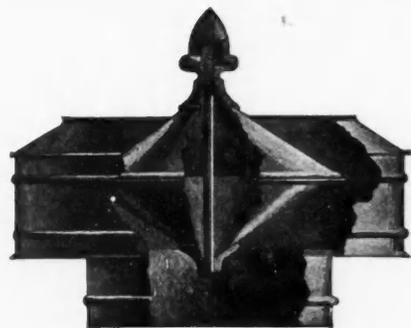
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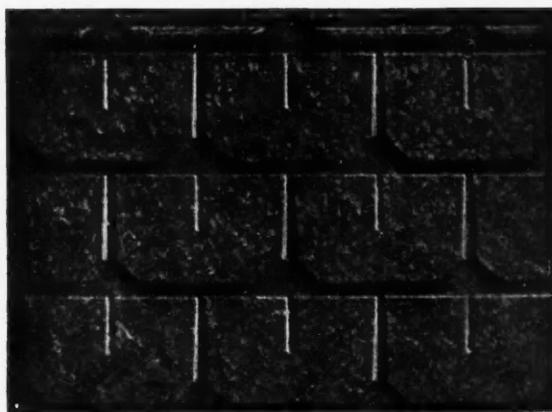
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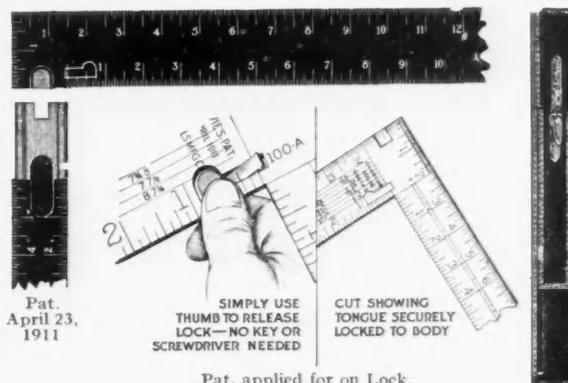
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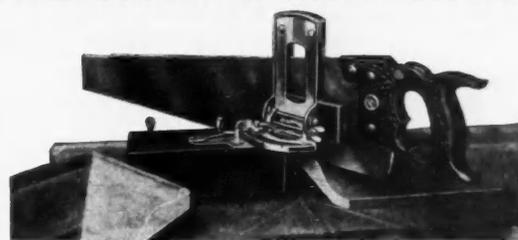
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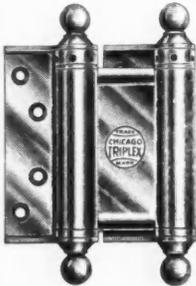
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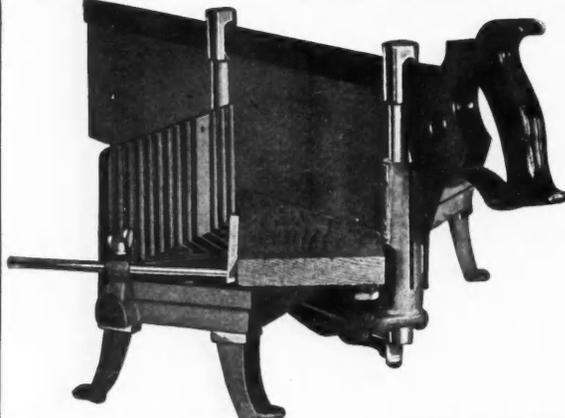
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A "Carpenters' and Builders' Show" Suggested

THE following letters received from one of our subscribers, a contractor and builder of Morris, Ill., furnishes food for thought.

We wonder just how much of a demand there is for such a Building Show. There is no doubt but that if conducted right, good and far-reaching results would be produced:

Editor AMERICAN CARPENTER AND BUILDER:

I read in your December issue an editorial, "To Educate People in Architecture." This describes one of the best moves, to my mind, ever made. I admire our government in this work; as there is nothing more unsightly than a house or public building (costing a sum of money equal to the best) that has had all architectural ideas lost by being designed by some carpenter who does not have the time away

from his ordinary work to study the principles of systematic designing of buildings.

I would advocate and like to see a "Carpenters' and Builders' Show" in Chicago, where all builders and others interested could go and see all the different kinds of materials displayed that are used today in building; also, the new tools and hardware, new designs in wood work, etc.—in fact, everything new and up to date used by the carpenter. It would educate a man in 3 or 4 days more than he could learn otherwise in that many years.

They have the Automobile Show, the Fat Stock Show, the Land Show, etc. Why not a Builders' Show?

I may be a crank on shows; but I want to say this—I am a reader of your paper and would not be without it; as it has something new every month for the man who wants to learn and lead, but not follow. I believe in the best at all times, and know I have it when I received "Details of Construction" with the AMERICAN CARPENTER AND BUILDER. Success to you and a better paper and in time a Carpenters' and Builders' Show.

What do you say?

Respectfully,

H. A. TAYLOR.

We say: Not a bad idea, if (and here we hedge) it could be worked. Abroad they seem to do these things very well; the annual Ideal Homes and Building Show in London, for instance, is world famous. And we may get the combination in time, over here. It is not an untried scheme by any means. In several of our cities such expositions have been promoted—but with indifferent success.



"Going Down"

In the current issue of *Harper's Weekly*, Robert Sloss describes some of the wonders of the engineering that has made possible the tallest buildings in the world. It is the air lock, invented by David A. Moran, that has made the skyscraper possible. It is merely a steel chamber at the top of the shaft leading down to where the digging is done. "When the air-pressure in the lock is the same as in the shaft, you can open a door into the latter and haul up a bucketful of 'spoil' into the lock. Then you can close the door and reduce the pressure in the lock down to atmosphere without reducing it the least bit in the shaft. A door opens at the top of the lock and out goes the bucket to be emptied."

Georgia's Model Country Schools

IMPROVED DESIGNS FOR ONE, TWO AND THREE-ROOM SCHOOLS PREPARED UNDER THE DIRECTION OF AND RECOMMENDED BY THE STATE DEPARTMENT OF EDUCATION

By M. L. Brittain,
State School Superintendent

THE accompanying sketches of one, two and three-room schools are some of the suggestions offered by the Georgia State Board of Education for rural schoolhouses; and are an effort to combine good taste and economy of construction with logical planning.

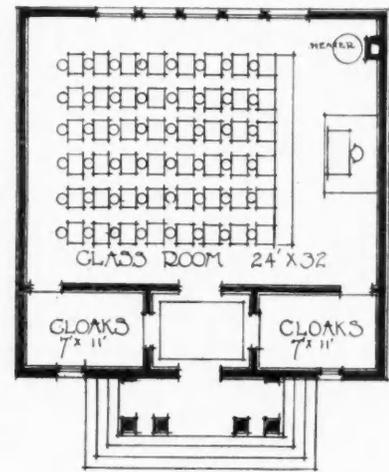
Special attention is called to light, ventilation, and sanitation. Simplicity of construction and of the structure does not necessitate ugliness. Good proportions and pleasing compositions can always be had.

Inexpensive features can be incorporated in the planning of the simple schoolhouse that will not only add to its beauty, but also will serve as a practical means for arousing the interest of the pupil. Experience has taught that one of the strongest appeals to the pupils is to interest them in beautifying the school. Therefore simple and inexpensive means of doing this are provided. The sketches are along practical lines, with suggestions that not only may add charm and quaintness to the effect, but should arouse the interest of the pupil.

The following outline briefly describes the sketches, and approximates the cost.

a shingle roof. It can be erected at a cost ranging from \$275.00 to \$400.00. "C" is rather more elaborate in plan, providing separate cloak rooms for girls and boys. Its exterior is classic in treatment, and suggests more the public building than does "A." It should be built of brick, but can be made of wood frame with weatherboards for exterior. Its cost is estimated at from \$700.00 to \$900.00; in brick it would be from \$1,000.00 to \$1,200.00.

Two-room schools; "A," or "B" is an economical plan and provides separate class rooms for boys and girls, and a common stack for the heater flues. The exteriors of "A" and "B" are sim-



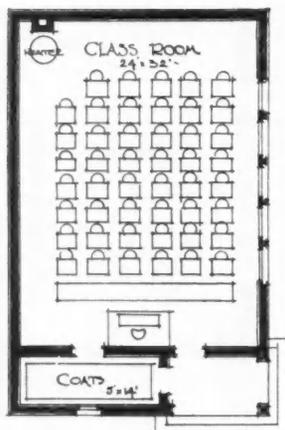
C.



ONE ROOM SCHOOL
A.



ONE ROOM SCHOOL
C.



A.

One-room school "A" is most compact and economical, providing for small entrance porch, coat closet, and large class room. The light is all from one side, pouring over the left shoulder of the pupil. If further light or ventilation is needed it should be on the opposite side, but never in the face of the pupil or teacher. This school should be built with weatherboard or shingle siding and with

ilarly treated along the bungalow style. "A" is less expensive and simpler in treatment than "B." A lattice border around the windows of the cloak room is suggested. Each should be built of shingle or weatherboarding on the exterior, and should cost from \$900.00 to \$1,200.00.

Three-room schools. "A," of the bungalow type, can be made quite charming with its separate entrance-flanking the middle class room. Again the use of lattice work is suggested. In the gables plaster between the open timber affords a unique treatment.

"B," with the same plan as "A," is treated in the Mission or Spanish style. It can be built of either rough brick stuccoed over, or if frame, with metal lath nailed to a storm sheathing, and on this the stucco applied. If the tile roof is too great an expense.

shingles stained red will give a similar effect.

The School Building. The adaption of the school room to its purposes, and not the external appearance, should determine the architecture. The schoolroom is the unit in all schoolhouse construction. The room should embody certain essential principles, and should not vary widely from the standard described below.

The number of these standard schoolrooms in a building will be determined by the size of the school to be accommodated, and the finish and architectural adornment will depend on the taste of the community and the money at the disposal of the trustees. It is possible to embody the essential principles of good

windows should be within six inches of the ceiling. The area of the glass in the class room should be one-fifth to one-fourth the floor space. The room 24 by 32 feet should have at least 150 square feet of window space.

In the construction of the schoolhouse, we must consider the use of the room inside, and not our conceptions of exterior symmetry. The plans herewith will show how this standard schoolroom can be worked into a building which is also presentable on the outside.

In the front of each class room should be a movable platform five by six feet and six inches high for the teacher's desk and chair. This platform gives the

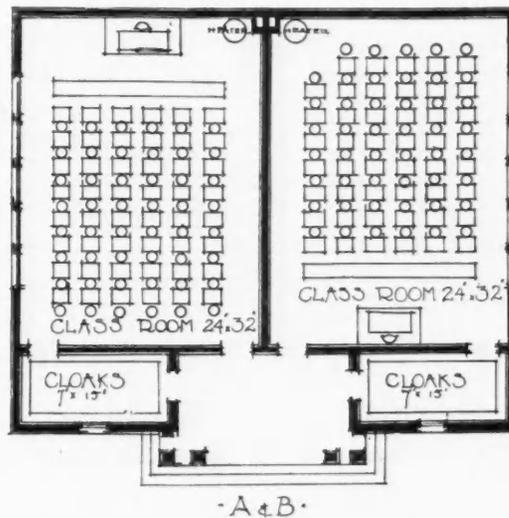


school construction in a very inexpensive building, or in a very elaborate one.

The Standard Class Room. The class room for the average class should be 24 by 32 feet and 12 or 13 feet high.

Whenever possible, the building should be placed so that the principal light will come from the east or north. This avoids the direct glare from the sun.

The windows should be placed on the long side of the room, and on the left side of the pupils. They should be close together, so as to avoid cross lights and shadows. The front window on the side should not be placed beyond the front row of desks, and the rear window should be near the rear wall. No class room should have windows on opposite sides. It is better to have the light come from the left side of the pupils only. There should be no windows to the front or on the right of the pupils. Windows placed in the rear should either be transom windows above the blackboard, or should be provided with shades to protect the eyesight of the teacher. Since the best light comes from above the heads of the pupils, the tops of the



teacher a better command of the class during general exercises and study periods.

Near the teacher's platform, or in some other convenient place in the class room, a book case with glass doors and with locker underneath could be built in the wall. This should be provided with lock and key.

The Floor. The floor of the room should be double and air-tight, the lower floor being laid diagonally, and the top floor tongued and grooved, with building paper between,

and should be stained with a dark oil stain. Much sickness, discomfort, and poor work in school are caused by defective floors. The entire exterior of the building should be covered with storm sheathing, nailed diagonally; on top of which is nailed the weatherboarding, with building paper between. The double floor and sheathing will make the building much more comfortable and will make quite a reduction in the fuel bill.

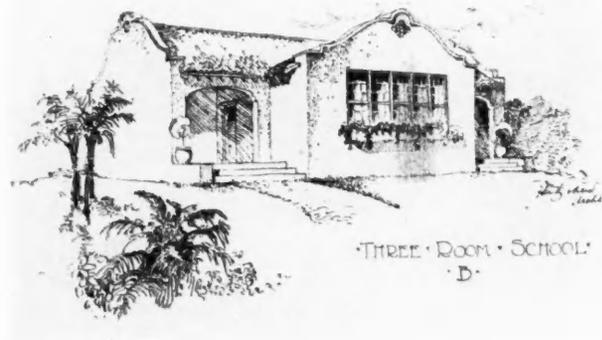
Heat and Ventilation. This subject has never received sufficient attention in the rural school. The ordinary heating apparatus of these schools consists of

a square box stove, placed in the center of the room, from which heat is received by the pupils through direct radiation. This usually means that pupils seated near the stove are too hot, and that those distant from it are too cold. Its position in the center of the room interferes seriously with the seating arrangement.

A slightly greater investment will secure for the school a jacketed stove which heats the room by producing a circulation of warmed air through all parts of it. The principle of this stove is very simple. The cold air is taken through a pipe from outside the building, and is carried through or under the sheet iron into contact with the hot stove on the inside. It is there heated, rises to the ceiling, and

adapted to kindergarten and primary pupils, to No. 1, made for college students.

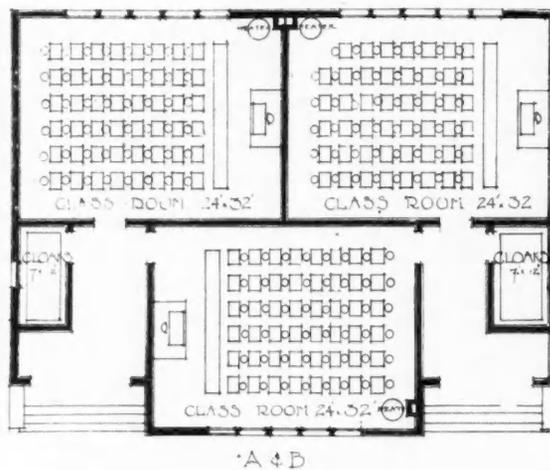
The Tinting of the Walls. The beauty and attractiveness of the school room will depend largely on the painting and the tinting of the walls. This subject is usually very much neglected. The glaring white walls, and deep blues, yellows and red should be avoided. For rooms where the lighting is not the best, a cream is desirable. In general, the best color for the school room is green. The wainscoting and woodwork should be a deep olive, the walls up to the picture moulding a sage green, and the ceiling a lighter stone green or cream color. All inside coloring should be "dull finish." For the woodwork the



settles down over the entire room, producing a uniform temperature. As the impure air in the room settles to the floor, it is forced up through a pipe or wall register into a section of the flue, and carried from the building. The jacket prevents undue heat for the pupils seated near the stove.

The temperature of the schoolroom should be kept between 68 and 70 degrees. The windows should be opened and the room thoroughly aired at recess and at the close of the school session. Thirty cubic feet of air per minute per pupil, or 1,800 per hour, is the accepted standard for school-room ventilation.

Seating. A room 24 by 32 will easily seat 48 pupils in single desks. The initial cost of single desk seating is greater than that of double desks, but this is more than balanced by the better order and discipline made possible by the single desks. The desks in such a school room will be arranged in six rows, each containing one "front," one "rear," and seven "completes." School desks are made in standard sizes, and are numbered from No. 6, the very smallest desk,



green stain and a "wax finish" is the cheapest as well as the best. An inferior grade of lumber can be used on the interior if well painted. All interior woodwork should be flat and plain, and all deep cut moulding avoided as far as practicable. These mouldings catch dust and are difficult to keep clean. A picture moulding should be put on the walls of the room about 18 inches below the ceiling. A good finish can be gotten by wains-

coating the space around the room below the black-board level, although this is not as sanitary or desirable as the plaster and baseboard. A sanitary finish can be obtained by omitting all wood casing around the windows, and plastering the corner round against the window frame, and using a very narrow baseboard and few mouldings. The plastering should have a very fine sand finish.

Cloak Rooms. It is unsanitary to pile hats and wraps promiscuously in the corner of the class room, or to allow wet coats and umbrellas to dry out in the room occupied by the pupils. Every class room in a

(Continued to Page 55)

BETTER BUILDING

WHY AND HOW



Look to the Inside Walls

A FEW RAMBLING BETTER BUILDING REMARKS ON WALL COVERINGS AND FINISHES BOTH SPECIAL AND OTHERWISE

Interior Walls and Ceilings Constitute Two Thirds of Any House, as Viewed from Within. Why do Home Builders Neglect Them? A dwelling is made or marred depending on how the Inside Walls are Finished

THE Observer has been up to his own particular hobby again—observing how the building world wags. His gaze has been focused of late on walls—interior walls and ceilings of our average American dwellings.

And he has been in turn shocked, amused and saddened by what he has observed.

Did it ever strike you how little planning ahead is done, about how the inside walls of "the new house" are to be finished? Neither the owner nor builder, nor even "the architect," for that matter, seems, in the majority of cases, to give any thought at all to the covering and decoration of the interior walls and the ceilings, until the building is fully completed in every other respect; then the luckless decorator is asked to do the best he can.

In approaching this subject the Observer opines it is necessary first to appreciate the importance of the inside walls of a building. Some of course consider them as necessary evils, as being only the things that separate one room from another, and there seems to be a tendency in some modern work to do away with them as much as possible. Nevertheless, fully two-thirds of the total view of a dwelling one has when inside is of walls and ceilings; and the whole interior effect—whether for good or bad—depends on the way the walls are treated. They may be quiet and restful, unassertive, a simple background for pictures and furniture, or they may be so treated, either through the covering itself or by decorations, that they are real works of art in themselves.

Too often they are neither of these, but are either bleak and dreary, monotonous; or are so noisy and boisterous as to be a nuisance.

Is it not strange then that people building give so little thought to this matter of wall covering? Nine

times out of ten the specifications read, "Walls and ceilings to be finished as directed by owner; cost for this item, for materials only, not to exceed _____ dollars." This puts it entirely up to the owner, letting out both architect and builder very handily. But the trouble is the owner is not a decorator, in any sense of the word. He may think he knows "what he likes"; but the chances are very good indeed that he (and his friends) will be disappointed and perhaps shocked afterwards with the results, and the new house is not the satisfactory success it was hoped to be.

It may be all very well if only the ordinary cheap wall paper is to be used anyhow, but if something better is wanted, and it is sheer folly not to want and to have something better—when such satisfactory and striking effects can be had at so slight a cost; then the matter of wall covering and decoration should be planned for in advance. Since the entire atmosphere and appearance of the interior of a dwelling depend on how the walls and ceilings are finished, one treatment producing one effect, another style of treatment an entirely different one, it seems only logical that the man who is building should decide in advance, in consultation with his architect or builder, just what he wants; and then make the other parts of the dwelling be in harmony with it.

In other words, he should study up on wall coverings and wall finishes. Carpenters and building contractors, as well as architects, should likewise pay a little special attention to this important feature so that they can serve and advise their clients intelligently.

The Observer knows that Better Building makes satisfied customers—and pays. He has also observed that Better Building means, in most cases, planning ahead. And this costs not a cent more.

In considering the subject of wall coverings and finishes, two general groups, or classes of material, offer themselves. They are suggested by this common phrase "coverings and finishes."

Wall coverings are, in the main, fabrics especially made for use on interior walls. A number of years

ago burlap wainscotings were all the rage. No dining room or den was considered in any way *sumptuously* finished unless it had a burlap wainscoting.

Burlaps are still popular; and they probably always will be. However, of late years, other fabric wall coverings have been coming in—improvements on the old time burlaps. A great variety of such fabrics have been developed. The sample books show fine and coarse weaves, smooth surfaces, rough surfaces and brocaded tapestry effects. One cannot help feeling in viewing these, that such fabrics are too good to be pasted onto walls; yet their cost is surprisingly low.

Other fabrics are coated and made to look like aluminum, gold, burnished bronze, etc. The grass cloth fabrics are also in prominence. All of these, while costing somewhat more than ordinary wall paper, nevertheless prove exceedingly good investments because of the striking and attractive interiors they produce. The American people to-day seem to be very keen for novel and striking effects in interior decoration, and are willing to pay more than they are worth; that is to say, more than they actually cost, for the privilege of having them.

The other general class, as noted above—the wall finishes—include cold water tints (the various calcimines) and the flat wall paints. The tints are pleasing and restful, an agreeable background for pictures

and furniture, being very attractive, yet low in cost. Walls so finished are commonly redecorated every year. In this way they are conducive to sanitary conditions.

The flat oil paints are used to produce very beautiful interiors. Stenciled decorations are very commonly employed with them. While these oil paints are a little expensive in first cost, they prove economical in the long run, since walls so treated can be washed, and so kept bright from year to year.

In addition to these two general classes, there are also numerous special wall coverings that possess great merit and are well worth examining. During the past year thin veneers of real wood backed up with paper, or fibrous composition, have been offered. With these it is possible to have paneled wainscotings in real wood, finished and polished in the regulation way at about one-quarter the cost for solid wood panels.

Every residence is either made or marred, depending on how the interior walls and ceilings are treated. Since in this campaign for Better Building the keynote is to give the customer work that will be *permanently satisfying* to him, it is evident that builders should get thoroughly posted on this important subject and see to it that "the man who is going to build" gets the benefit of their experience and special knowledge in every case.

"Better Buildings" and Our Readers

"The sweetness of low prices never equals the bitterness of poor quality."

Which Shall it Be—Price or Quality?

A writer on economics recently summed up the difference between price and quality as follows:

"Competition in price makes a direct appeal to the customer's pocket, but diverts attention from the goods. Its tendency is always downward towards the bed-rock of cost, beyond which there is no going.

"Competition in quality, on the contrary, is an appeal to the taste and intelligence of customers based on the goods and their merits. Many merchants and manufacturers hesitate to trust public taste. In the belief that the average consumer does not appreciate fine points of quality. But those who do rely upon it seldom go wrong, and the whole trend of quality competition is upward.

"There is never very much room in which to make or sell things more cheaply, but there is always a world of room in which to make or sell them better."



Hot Shot about "The Big Stick"

To the Editor:

Watertown, N. Y.

In the November number I had a few lines, giving my experience on roof repairing, urging the use of galvanized nails on all wooden roofs, at all of which Mr. Burr Gunsaulus of Baldwin, Kan., takes offense, and gets quite sarcastic in his advice to me.

I am very sorry that he looks at what I said in such a

way. My only purpose was to call to the attention of my brother workers one or more of the evident causes of leaky roofs, and a way to avoid some of it by the use of galvanized nails of at least four-penny size.

Mr. Gunsaulus evidently does not grasp the idea for which this department was started. It's for the mutual interchange of ideas amongst our members as to how to do better building. It's no place to start a controversy. I merely wanted to be of some little help to those who are willing to learn of better ways of doing things. Mr. Gunsaulus does not seem to be of that sort.

He does me the honor to call me proficient in roof repairing, and says I should let all the architects know of it, and urge them to give me the overseeing of their work on the jobs, with a BIG STICK over the heads of the contractors, and compel them to live up to their contracts. Now I don't lay claim to any such ability. I wish I had it. But in all honesty I think it would be a good thing in a great many cases.

Mr. Gunsaulus must have had some experience with the Big Stick, for he says, "I for one will not have any more of it," and shouts for all the other brothers to fall in line. Well, perhaps he can do so, but I very much doubt it.

The contractor who is willing to carry out his agreements does not object to having his work supervised, but rather does he welcome it, for the reason that if it's passed upon and accepted it's one of his advertisements when he again goes out to put in a bid for a job.

J. M. KANE.



Built-in Colonial Book Cases

TWO FULL PAGE PLATES SHOWING SCALE WORKING DRAWINGS OF ATTRACTIVE CASES TO BE BUILT INTO A RECESS OR TO PROJECT

WE have been requested by a subscriber to give complete working details of a built-in Colonial bookcase; and in order to make the same of more general interest we have designed it so that it may be either recessed in the wall or set entirely in the room, and optional elevations and plans are given carrying out this idea. All plans, elevations, and sections are drawn to a scale of three-quarters of an inch equals one foot; and the various parts of the case are detailed to the scale of one-half full size.

It will be noted from the drawings that the case contains two large drawers at the bottom, above which are located two wide cases, each with a glass door and three movable shelves.

There seems to be a general misunderstanding among builders as to just what is meant by the term, "Colonial," as applied to buildings, furniture, etc. Used in its true and literal sense, it should be limited to the structures of the colonists, from the time of the settlement of Jamestown until the War of the Revolution. This restricted definition excludes the work of the late eighteenth century. But the word has been so long used in a wider sense that it is generally applied so as to include the buildings and household effects made as late as 1820; and this broader meaning is undoubtedly the right one.

Colonial structures from the first showed a variety of types, for the early settlers, as nearly as they possibly could in a strange country, reproduced the homes of their native land. The furniture and houses of the Pilgrims were unlike that of the Dutch settlers; and each differed from that of the English colonists in the south. Equally distinct were the works of the French explorers in Louisiana, the Huguenots in Canada and the quaker and Swedish settlers in Pennsylvania.

Gradually the dividing lines between these various styles or types became more marked and remained so until the beginning of the eighteenth century; but

varied as they were, there were certain features common to all.

Whatever extravagances marked English and Continental styles during this period, and they were many, designs in this country leaned toward simplicity. It is this quality that renders Colonial houses and Colonial furniture as satisfactory to-day as at the time of its origin. Grace and strength were two qualities which the Americans so successfully united.

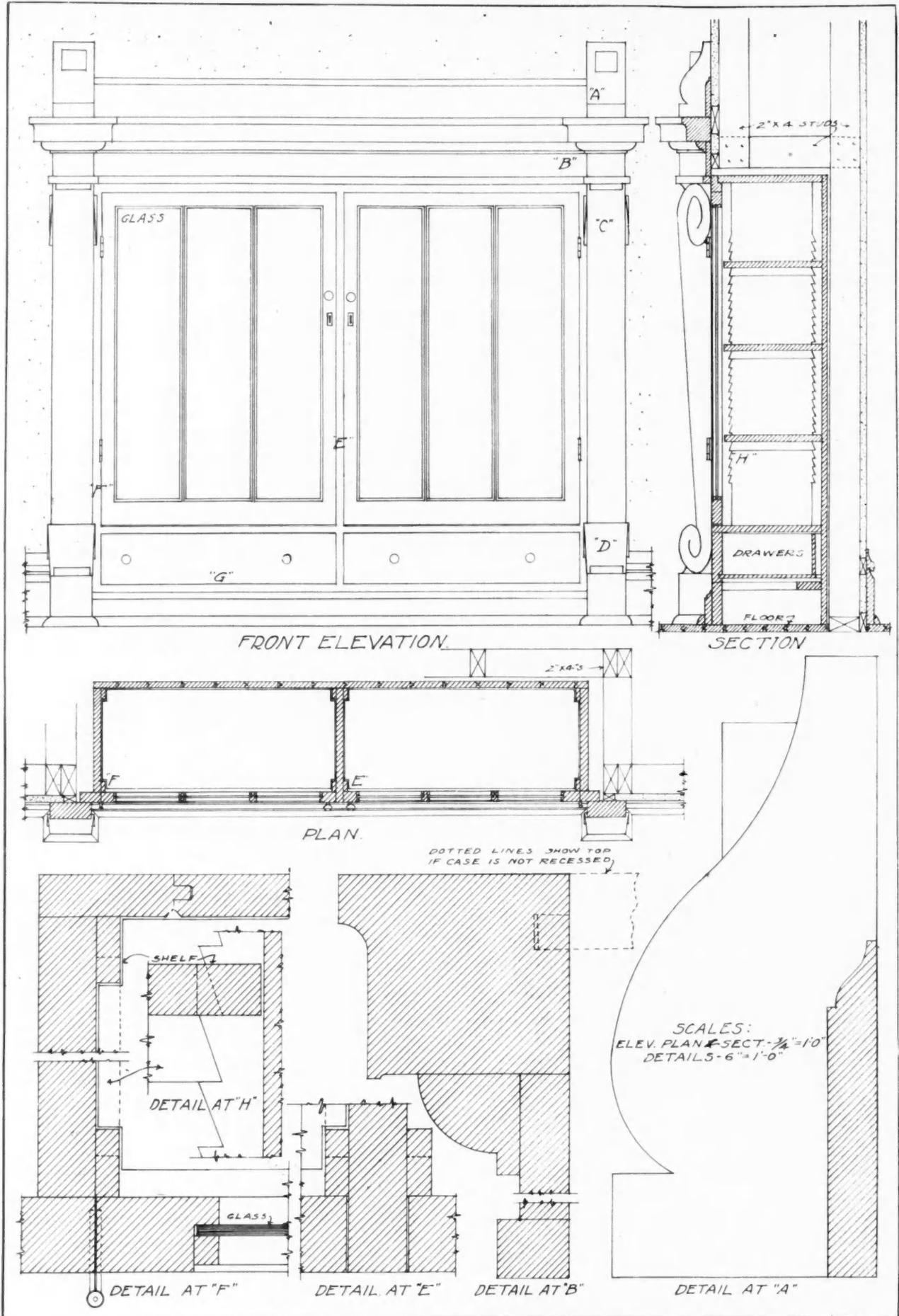
Any room containing the accompanying design should, of course, be carried out in the Colonial style, and the standing woodwork should in all cases be painted white and finished with enamel. The bookcase itself may be finished in mahogany, in case the doors of the room are given this finish as is sometimes done in Colonial work; or both may be finished in white.



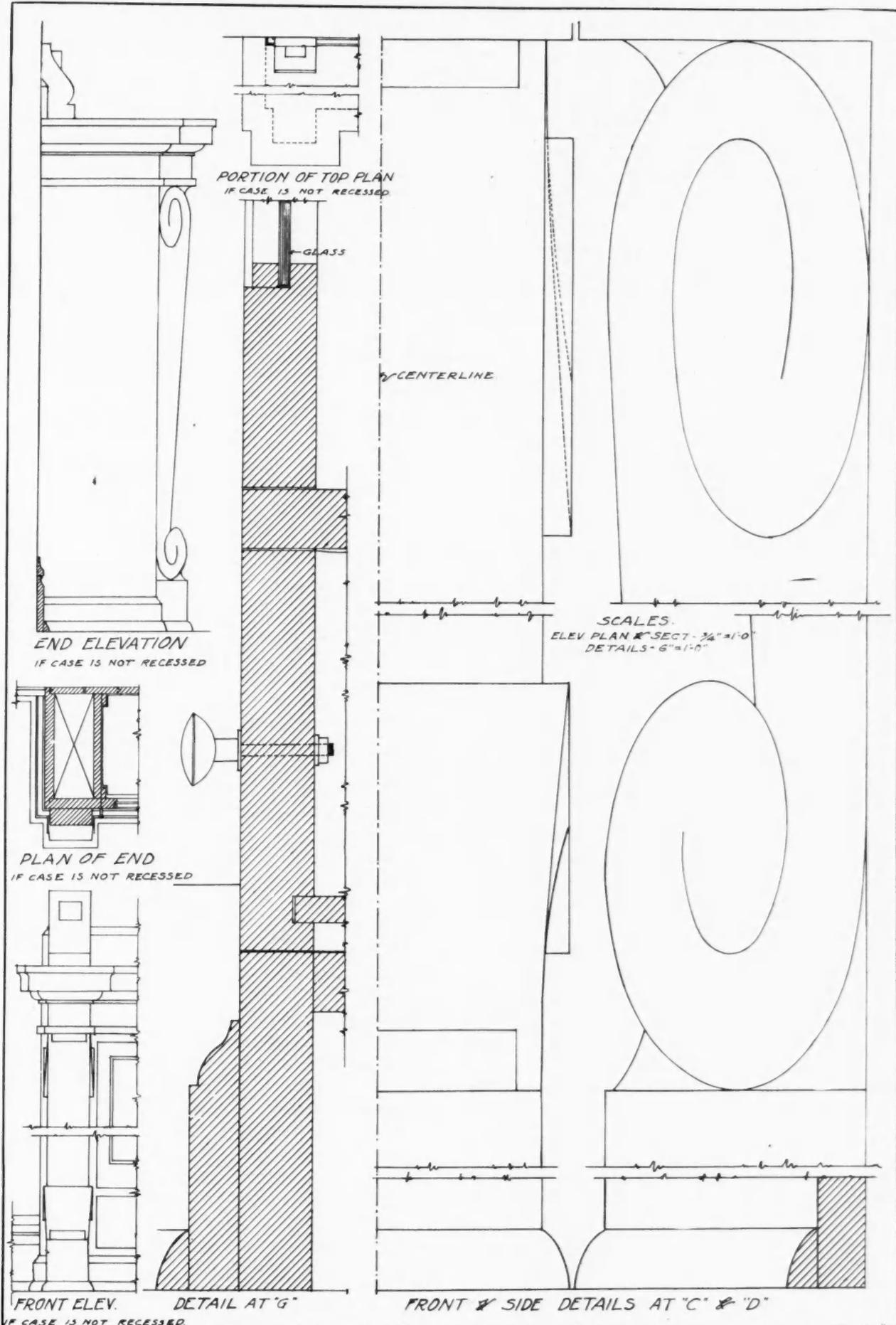
Catalpa Trees in Four Years

ONE of our Philadelphia city merchants recently gave away many thousands of Catalpa seedlings, one to every child in the public schools, it was said. The daily papers, recording the fact, stated that these one-year seedlings came to maturity in four years. The soil of Philadelphia is very good for trees, but good as it is it would take ten times four years to bring a catalpa to maturity. The tree is certainly a fast grower, and the children who planted these trees should get a good strong fishing pole in four years, as in eight years when grown for forestry purposes and well cared for they have been known to have been of a size that the best of them could give a good fence post at least. Those who prepared the notes for the daily papers as well as the editors themselves could know little of tree life to think that the catalpa—or any tree, in fact—could reach maturity in four years. The reports did not say which catalpa was used; it is to be hoped it was speciosa, the only one good for timber purposes.

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



BUILT-IN COLONIAL BOOK CASE—RECESSED



ARRANGEMENT OF BOOK CASE TO PROJECT INTO ROOM



WE have arranged with an expert Builders' Hardware man, of 30 years practical experience, to conduct this Department. He will gladly and free of charge answer all questions from our readers, pertaining to Builders' Hardware. He will also prepare for our readers full size detail drawings showing best arrangement for the proper placing of the hardware on casements and other windows, doors, etc.

These will be standard, universal details, which all architectural draftsmen should use in their plans, and which all millmen should follow in "getting out" their doors, sash and trim.

This service is absolutely without cost to readers of the American Carpenter and Builder. We are glad to be of assistance in instructing the building public along the lines of Better Builders' Hardware.—Editor.

Our Hardware Expert Makes His Bow

THERE are hundreds of articles in the builders' hardware line, which are designed to meet every requirement of the carpenter, builder, and architect, to protect life and property.

Our first parents had no property, hence needed no hinges, locks or fasts.

History of ancient times makes no mention of hinges, locks or fasts.

The metals, which were precious, because of their scarcity, were put to better uses in those good old times.

Lycurgus, the wise Greek, saw much virtue in iron. He put it to its best and most important use—money. He needed no hinges, locks or fasts for its guarding.

Human watch dogs, in the old times, were a substitute for hinges, locks and fasts.

The Hottentot requires no hardware.

The aborigine of America had no use for it.

The people having the most civilization, the most wealth, and the most things of value, are the people who use the highest grade and the most expensive articles of builders' hardware.

Germany must be credited with the invention and manufacture of the first practical articles of builders' hardware. They made them from iron, with the aid of the forge, the hammer and the anvil. They have made little progress in invention and improvement of the articles in use. They have added the artistic touch to these things, so that now you stand and gaze in wonder at the beauty and perfection of their art.

The best specimens of their art of ancient locksmith work were on show at the Philadelphia Centennial Exposition of 1876.

The French have aped the German wrought iron

work, but they spoiled it from an artistic standpoint by smoothing and polishing it to make it *pretty*, whereas the German stuff is left unfinished, showing the hammer and tool marks just as it left the forger's hands.

The French to-day and for the past half century, are and have been producing some of the most artistic and expensive builders' hardware, but they have sacrificed utility to beauty. Much of their stuff is hand chased, burnished, gold lacquered or gold plated. Most of it cannot be applied to American standard details.

Nearly all of the German and French locks are of the rim type of locks.

There are some antique wrought iron locks, taken from old castles of the Flemish people, to be seen in museums. They are of the so-called half mortise type.

The half mortise lock is set in flush on the face of the door.

The Flemish locksmiths knew the use of the night latch, this proves that Flemings of the male persuasion were sad dogs and must have had trouble with their good wives. These same sad dogs must have been husky fellows, as the key they had to carry was about eight inches long and weighed two pounds avoirdupois.

Many men have blessed the locksmith of old because of this key of great size and weight.

Bachelor maids were unknown. The gentle sex clamoured not for their rights.

The key of the Yale type may now be found in the possession of all women the world over.

Woman of advanced thought should bless the Amer-

ican inventor who placed in their hands this key. Credit may rightfully be given this key for the freedom which they now enjoy.

America, one hundred and thirty-six years ago, in lighting the torch of liberty, was of profound influence is gaining freedom for men.

America to-day, in furnishing the world with locks having this small key, is again exercising a profound influence in gaining liberty for women.

In our early days we purchased English hinges, locks and fasts.

The English were more advanced in the art than their neighbors on the continent. King John, early in the thirteenth century, through his ratification of charters to the Jews, guaranteeing them certain rights, brought about an influx of these most desirable people, who were persecuted on the continent.

Many of these Jews were of great wealth. England's rise to great power is credited to the wisdom of the king in this connection. Greater wealth required better hardware—for protective purposes.

America's pioneer in the middle west had no means of transport from the settled portions of the east. He carried in his pack or in his canoe, things of greater value than hinges, locks and fasts,—the rifle, powder and ball for the protection of life and the same necessary items to furnish him with the necessities to sustain life. The axe and the nail were the things needed to furnish him his habitation.



The "Davy Crockett" Lock

In conclusion it may be of interest to the reader to recall an historical incident relative to Davy Crockett.

This daring pioneer, it will be remembered, when chased by wolves upon an occasion, threw himself into a log cabin, hastily closed the door in the faces of his pursuers, and used his arm in lieu of the bar which was in general use as a means of locking the place against intrusion. Thus Davy Crockett may be truthfully credited with having been the inventor of the first strictly American lock.

The writer deems it necessary for the proper understanding of his readers, that he furnish them with a short dictionary of the names by which the different articles are known in the builders' hardware trade.

Hinge, so called because it is applied to the surface of the door and the frame.

Butt is the hinge, so called because one leaf is applied to the edge of the door or sash and the other leaf is applied to the face of the jamb.

Surface Bolt is used on the so called standing or inactive leaf of a double door, French window or casement sash.

Flush Bolt, so called because it is sunk in flush with the surface of the wood. Its entire length is in sight.

Flush Extension Bolt is a substitute for the flush bolt, but it differs from same, the connecting rod is hidden, only about 6 or 7 inches of the face of the bolt is in sight.

Cremorne Bolt is a device designed to hold both leaves of a casement or French window closed, as it is applied to the leaf closing last, it is a surface bolt because it is applied to the surface of the wood and is operated by the twisting of a knob or lever located equal distance from ends, and by the twisting of the knob or lever the ends of the rods are extended and forced into the strikes or keepers.

Chain Bolt is a surface bolt used at the top of high doors; it is most practical in use, because a high door usually warps and the slamming of the door will allow the spring latch to engage with its keeper or strike.

Mortise Bolt, so called because it is mortised into the edge of the door. When door is closed, all that shows is a turn knob on the face of the door.

Mortise Knob Latch, so called because it is mortised into the edge of the door and operated by a knob on either side of the door.

Mortise Knob Lock is the same as above with an additional dead bolt operated from either side by a key.

Mortise Dead Lock is a lock which has no latch or knobs, it has a dead bolt operated by a key.

Rim Knob Latch—Rim Knob Lock—Rim Dead Lock—are the same as the above three kinds of latches and locks, and are so called because they are not mortised into the door, but are applied to the surface.

Many articles are known as locks. This is wrong. An article cannot be a lock unless it is operated by a key. Better names are given these items by the larger manufacturers:

Sash Fast, so called because it is used to make FAST a double hung window.

Casement Fast, so called because it is used to make FAST a casement window.

Door Fast, so called because it is used to make FAST an outside door, and sometimes called *Door Guard*, because it is used to guard its occupant against intrusion when door is ajar 4 or 5 inches.

Bit Key Lock has a key having 1 or more tumblers.

One Tumbler Lock has one cutting in the edge of the bit.

Three Tumbler Lock has more than one cutting in the edge of the bit.

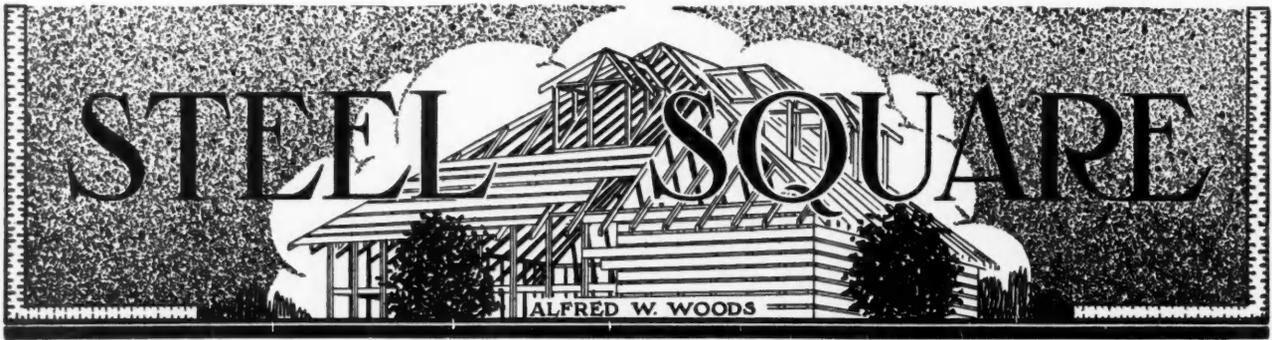
Cylinder Lock has the so called Yale type of key, this type of key and lock is now made by many manufacturers and is so well known that it needs no description.

Front Door Lock has a latch bolt operated by knobs from both sides of the door. Outside knob can be made fixed by stop in face of the lock. It also has a dead bolt, operated by turn knob or key from inside. Key operates dead bolt and latch bolt from the outside.

Vestibule Door Lock has a latch bolt operated by knobs from both sides and outside knob can be made fixed by stop in face of the lock. Key unlocks latch bolt from outside.

Night Latch is a self locking lock operated by key from outside and turn knob on inside. It is generally used on a door already equipped with the regular knob lock.

The above mentioned items are the articles in general use and are in daily requisition by the carpenter, builder and architect.



Practical Uses of the Steel Square

DEFINING A GENERAL RULE FOR ROOF FRAMING BY THE AID OF THE STEEL SQUARE

THERE is an old saying that "A workman is known by his chips," which has more truth in it than poetry, as the scrap pile is a pretty good index as to the quality of his work; and if applied to roof framing, the scrap will not only indicate the quality of workmanship, but will also tell what kind of a roof he has framed and what figures or proportions on the square were used for the cuts. This statement may seem a little strange to some who have not made the subject of roof framing a study, but such is the case.

The most complicated roof may be framed on a new building site; and after the rafters are framed, they may be scattered to the four winds, as it were, leaving only the little blocks, scattered among the blades of grass, that may chance to miss the clean up; and

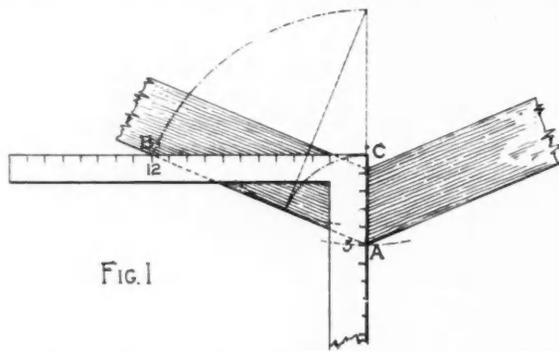


FIG. 1

from these discarded blocks—like Sherlock Holmes gathering bits here and there and comparing this with that, finally weaving a chain of evidence to trap the villain in his den—so it is with the cast off scraps, they tell the story as to what has gone before.

The miter of the plate that forms the corner of the building is the first indicator as to what kind of a corner the building has, whether it is an obtuse, square or acute; the formula we herewith illustrate, applies to all alike. So it does not make any difference what kind of a corner it is, as one is just as easily handled as the other.

First let us define these corners; an obtuse may be any shape when the plates rest at an angle more than 90 degrees apart; a square corner is when the plates are at exactly 90 degrees apart, and the acute is where

the plates rest at less than 90 degrees apart.

In Fig. 1 is shown an obtuse corner, and to find the starting point, take the steel square, place the blade on the line of the miter, shove it along until the figure 12 on the tongue will rest at the edge of the plate and

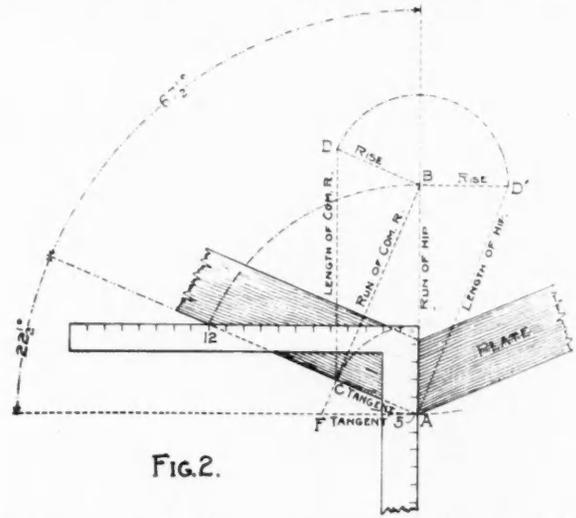


FIG. 2.

the part covered by the square, as bounded by ABC forms a triangle which will represent the plan; and by the addition of the desired rise, the length and cuts of the rafters may be determined, as shown in Fig. 2. Here is the same angle of corner, as shown in Fig. 1, to which is added the developing lines, as follows:

Reverse the plan, so that the side AC will rest along the edge of the plate and AB in line with the miter. Then CB will represent the run for one foot run of the common rafter and AB will represent the

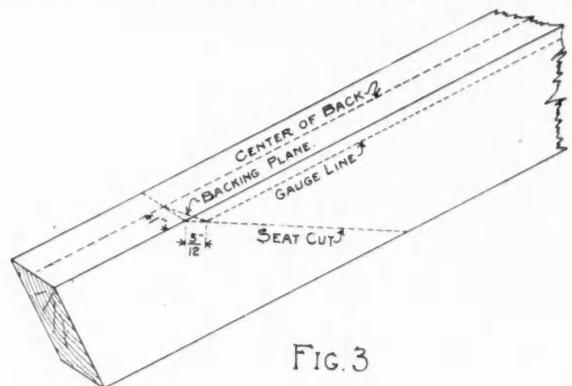


FIG. 3

Hardwood Doors Popular with Builders

MODERN hardwood veneered doors have been tried, and have not been found wanting. They have stood the test. Practical carpenter-contractors and builders have used them in the past, and are using more and more of them every day. Their indorsement means something.

The architects approve of the hardwood veneered doors, as made to-day, because of their beauty of appearance. The carpenters like them because they are conducive to good work, making a nicely finished job that they can take pleasure in. The owners like them for both of these reasons, also because they feel assured that doors so made will not warp nor check, but will be durable, presenting as fine an appearance in ten, twenty or thirty years as on the day they were hung and finished.

We find the subject of doors exceedingly interesting. Surely contractors and builders must share this interest, since the door is one of the most important parts of any building.

It has been pointed out that the door is in a way a badge of civilization and progress. An authority writing on this subject has said, "Primeval man was thoroughly satisfied to close the entrance of his cave with a bear skin, but through the ages there has been a considerable advance in the methods of protection against the weather, wild animals and other enemies.

It would be interesting to trace the door forms through the various phases of development. Many materials have been used for doors. Sometimes of stone, heavy and cumbersome, and again a delicate screen of fret-work. Today metal and asbestos doors offer protection from fire, felt-covered doors deaden sounds, and glass doors are fair substitutes for windows.

"But the main material for doors is wood, and to certain degrees different varieties offer widely varying amounts of protection and efficiency. Heavy oak doors, iron bound, protected the medieval castle; and today oak doors, of lighter construction, protect our homes; other woods—birch, pine, cypress, gum, etc., are used when their particular grain or figure add to the color scheme or design.

"The advance in construction ideas has for some years been along the line of adapting various woods to decorative and constructive purposes. The improvement in the dry-kiln and methods of seasoning have produced lumber far more dependable in quality than formerly; and methods of sawing and cutting veneers give us the most beautiful figures and patterns at a minimum of labor and cost.

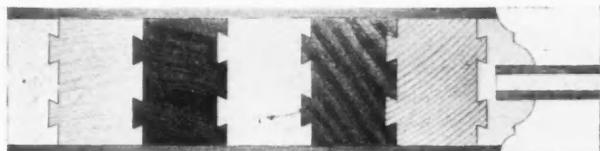
"No item has contributed more to modern construction of doors than the methods of building a door by facing a light pine core with a veneer of harder, heavier and more expensive wood. The use of a light



Unselected Birch Doors of the Very Best Type of Construction—Beautiful in Natural Grain and Will Take any Finish—Their Cost is Very Moderate

center decreases the weight appreciably, meaning less labor to swing them, with a saving in hinges and locking devices. Using only a thin veneer of expensive wood enables us all to enjoy the appearance of the finest woods, formerly seen only in houses of the wealthy, while the method of building up the core and applying the veneer insures the door against warping, twisting, sagging, etc., so common in doors of less careful manufacture.

"Any kind of wood can be used for the veneer, although the tendency at present is to use birch or oak. The former possesses a beautiful grain and figure, as may be seen in the door panels shown here. Birch can be finished in many styles or to match mahogany or other expensive woods. Oak, always the symbol of strength, makes an extremely durable and satisfying door in any of the standard finishes. It is to be hoped that on account of the thinness of the veneer the best cuts can be used and a quarter-sawn veneer costs but



Section Showing Construction of "Nenador" Gum Veneered Doors

little more than the plain. There is, therefore, every reason why a veneered door is preferable to the solid door, and it is only occasionally that we see a solid door of the more expensive woods. Indeed, we have seen a veneered door of clear white pine where it was especially desired to avoid warping, etc."

A very popular combination for doors and trim is the hardwood veneered door with yellow pine trim. With the birch door, in particular, this makes a very effective combination, and it is one that appeals strongly to the average builder, since the cost is very moderate. When the yellow pine is properly finished it compares very favorably in appearance with the hardwoods; and with the birch, or other hardwood door, establishing the note of high quality for the interior finish, the net result is all that could be desired.

Red Gum Veneered Doors

It was only a comparatively short time ago that red gum was heralded as a "new" wood. This, in spite of the fact that the south central portion of the country stands thickly dotted with red gum forests, which have been there for ages, and which were only awaiting the proper development in the art of wood seasoning to supply both the furniture and the building trades with as beautiful and satisfactory hardwood lumber as could be desired.

The old notion was that red gum would warp. It got the reputation for being a *contrary* wood.

Under modern improved methods of seasoning and drying, however, all of this difficulty has been re-



2-Panel Door of Unselected Gum Veneer—Showing Startling and Beautiful Graining of this "New" Wood

moved and gum is finding itself very much in demand for building.

Gum is known to the trade by two names, each designating a wood as different from the other as black is from white—"Red Gum" and "Sap Gum." Yet, strange as it may seem, both of these woods are from the same tree.

The *red* gum is the heart wood. It is distinctly red in color, on the order of mahogany, or satinwood. The grain is pronounced; it is fine in texture, but twisted and curled, beautifully figured.

The outside of every tree is the sap wood—*sap* gum. This is white, smooth—almost without grain.

Intermediate between these two, there is, of course, a neutral ground, part red gum and part sap gum. This is known as *unselected* gum. As can be readily imagined, veneers cut from this section show very startling figures and freaks of graining.

When finished, the beauties of these woods—the red and unselected gums—have to be seen to be appreciated. A recent development in hardwood veneered door making is the employment of red and unselected gum veneers over white pine cores. While these doors are



Door of Red Gum Veneer—Rich and Attractive in Appearance, Modest in Price

moderate in cost, they show a great richness in appearance (note accompanying photographs), and it is expected that they will prove very satisfactory with builders. They are sure to grow in popularity as they become better known.

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New York State's Motor Trucks

Eight thousand commercial automobiles are registered in New York State, according to a statement made by the secretary of state. Yet the production and use of motor trucks and delivery wagons is only fairly under way. It is the consensus of opinion that in a few years this branch of the automobile industry will exceed in importance and volume the passenger car business that has now become the third largest manufacturing industry of the country, with exports amounting to \$20,000,000 annually.

At least 50 per cent of the commercial cars registered in the state are used in Greater New York, where conditions now almost prohibit the economical use of horses. Business men who before were "on the fence" in the matter of adopting mechanical haulage and delivery, were quickly converted during the protracted hot spell last July, when 1,600 horses died of the heat in two weeks.

To Prevent Warping of Hardwood Doors

In the December issue of the AMERICAN CARPENTER AND BUILDER, W. E. Wares' inquiry for information regarding warped or twisted hardwood doors has been noted. The way to *prevent* trouble of this kind is clearly brought out in the following pithy and authoritative article, written especially for the information and interest it will be to our readers:

Oshkosh, Wis., Dec. 5, 1911.

EDITOR AMERICAN CARPENTER AND BUILDER:

Since you started your campaign of "Better Building—And What It Means To You," we have received a large number of inquiries for our literature, and the carpenter and contractor realizing his "strategic position in the building world," seem deeply interested in the hardwood door proposition.

The progressive carpenter and contractor using hardwood doors for the first time, it is only natural that he wants "satisfaction" guaranteed, both to himself and his client.

The *care of hardwood doors* is a subject of deep interest to the manufacturer, and what is of interest to the manufacturer we feel would be of interest to you and your readers.

We enclose herewith an outline of our method for handling hardwood doors after they leave the factory, and trust it will prove a help to you along the line of "Better Building—And What It Means To You."

Very truly yours,

MORGAN COMPANY.

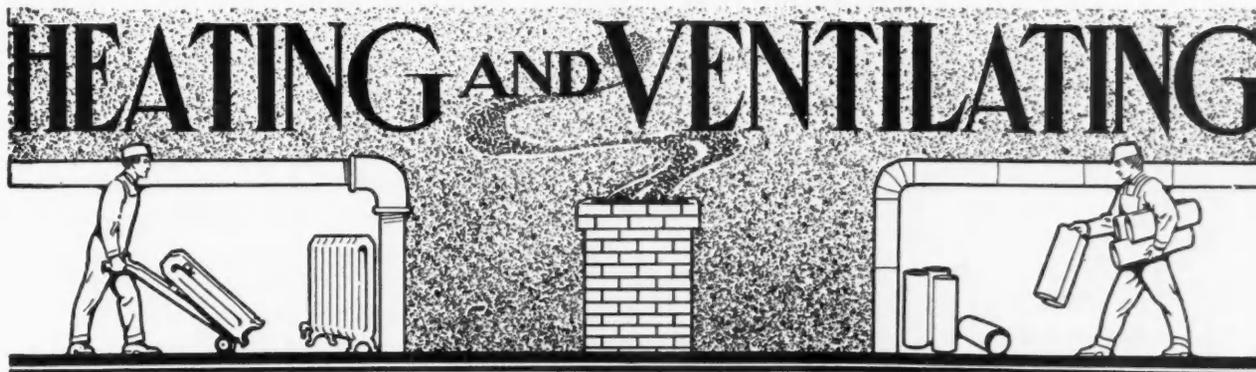
Care of Hardwood Doors

When unfinished hardwood doors are placed in a damp room they quickly absorb any moisture in the air, consequently expand or swell, and when they return to normal conditions (that is, when the moisture dries out) the doors are warped and the joints open. This can easily be prevented by a little precaution and care in handling the doors.

All doors are shipped "in the white" (unfinished), and moisture must not be allowed to penetrate the doors. As quickly as possible after receiving the doors have your finisher give them at least one coat of filler, and immediately after fitting the doors, paint or shellac the top and bottom edges. *Front Doors.* Before the glass is set, fill the doors and varnish with at least two coats of the best exterior varnish. Moulding around glass should be removed and two coats of shellac applied. Glass should be bedded in putty.

Don't hang your doors in a damp, freshly plastered building. This refers not only to doors, but to all kinds of fine interior finish. Mortar contains large quantities of water and until the moisture has dried out of the walls the building is in no condition to receive hardwood doors or fine interior finish. A manufacturer cannot be blamed for defective work if the goods upon which every care is exercised in the making are not properly handled at the building. Artificial heat to help dry out the building before hardwood doors and fine interior finish are put in, is always advisable.

If the above suggestions are carried out, every standard hardwood veneered door can be relied on to stay perfect and prove a lasting thing of beauty.



Why It Pays to Choose a Warm Air Furnace

By C. A. Eddy

THERE are two things—service and satisfaction—that the contractor and builder must give in order to make satisfactory profits and stay in business for any considerable length of time. We assume most contractors realize this as good business and earnestly strive to furnish these two things to customers.

In connection with the warm air furnace proposition the contractor and builder who directs his efforts along these lines can be certain his customers will secure both service and satisfaction from this method of heating.

There are many reasons why warm air heating is desirable for the home. The main reason and one of the most vital points in its favor is its healthfulness. We all realize today the grasp which throat and lung diseases have on people in all parts of the country. This matter of health is one that is having the attention not only of physicians and medical men in general, but of societies devoted to civic improvement and the bettering of health conditions in our towns and cities. The matter of health being an extremely vital one, it can be seen that the heating system which insures healthful conditions in the home is the system that should be looked on with much favor. All doctors tell us us that systematic ventilation is necessary to good health.

Apart from the heating and ventilating of residences interest in the heating and ventilating of public buildings, such as schoolhouses, churches, etc., is being greatly aroused in the last few years. Parents are realizing the fact that the child confined for hours daily in the school room with inadequate ventilation causing bad air, is responsible for many deaths from tuberculosis, the children having been rendered susceptible during their school days and dying between the ages of twenty and twenty-five in the very prime of life.

A high grade warm air furnace supplies just the amount of warm air needed in addition to an abundance of heat. It is a fact, which many people do not realize, that less fuel is required to heat a building which is properly ventilated than to heat one which

is without systematic ventilation. The pure, warm air delivered through the registers is constantly displacing colder and impure air. This cannot be accomplished, so we contend, when rooms are heated by steam or hot water radiators located in them heating the same air over and over.

The Question of Cost

Next to the healthfulness of the warm air furnace is the advantage of cost which is in its favor. Manufacturers of steam and hot water apparatus try to convince the public that it is much more economical to heat a home with their systems than with a warm air furnace. This has yet to be demonstrated, however. Practically all steam apparatus give the same amount and quality of heat in warm weather as in zero weather; yet in our climate, with such tremendous changes in the temperature, both health and comfort can be had only in a heating apparatus that can be regulated according to the weather. When it is considered too that it is far more expensive to install a steam or hot water apparatus than a warm air furnace, people who have an eye to economy as well as health should not hesitate for an instant about installing a warm air furnace.

There is one reason why warm air furnaces have in many instances heretofore been discredited. This is because so many furnace men and contractors take a job at a low price and then furnish any kind of heating apparatus so long as it is cheap. We all know that usually anything cheap can be bought for a low price. Nowadays we pay for what we get. It is no fault of the warm air heating system that many homes have been built in which cheap furnaces have been installed. The contractor who is in business to succeed will be sure of figuring a price for work that will cover the installation of a high-grade heating plant. If he has done this and chooses one of the many warm air furnaces which have reputations for giving satisfaction and the best of service he will make no mistake, but rather will furnish his customer with the kind of apparatus that will last him and heat his home satisfactorily for years to come.

In this connection it will undoubtedly be a good

plan to mention a few points that go to make up a good warm air furnace.

Earmarks of Good Furnace

The most important part of a furnace, its very soul in fact, is the grate. Upon its efficiency depends, to a big extent, the users' comfort and the economical operation of the furnace. The latest type is the ball-bearing grate. This is the easiest operating grate made, works on ball bearings same as a bicycle and gives the highest degree of satisfaction.

Another important feature in any furnace is the firepot. Upon its construction depends to a big extent whether the furnace proves to be a good transmitter of heat. When all essentials to efficiency are complied with fire pots are more valuable as heat transmitting surface than any other portion of the furnace. The most efficient firepot is extra deep—not only for the reason that it is desirable that it hold a liberal supply of fuel, but because of the added effective radiating surface obtained.

Correctly sized and correctly formed combustion domes are essential in the furnace to do its best work. Some domes are so large that the radiating surface is so far from the burning fuel as to make it comparatively ineffective. Others have contracted domes which do not provide sufficient area above the burning fuel to allow for good combustion. There is a happy medium in combustion dome construction which, when attained produces marvelous results. With reference to the above important features in a warm air furnace they are in almost every instance supplied by the high grade furnace manufacturers. Of course, the better types of furnaces differ in many essentials, but in the main features they are practically the same.

Cheap Furnaces and Faulty Installations

It is in the cheap furnaces, those constructed to sell at a low price where trouble will be encountered. The manufacturer of this type cannot afford to choose the best material, he cannot afford to make a design that means higher construction expense, even though the latter is the one that gives the greatest satisfaction. His is a price proposition pure and simple.

Another claim which the radiator people make is that warm air furnaces cover the furniture, carpets and floors with dust. As a matter of fact the warm air furnace that is properly cleaned once every year or two will not produce dust. On the other hand radiators draw all the dust to them and deposit more or less of it on the walls and ceiling over them. A glance at the wall and ceiling near a radiator that has been used one season tells its own story.

Another reason why furnaces have been discredited in many instances has been due to defective installation, and also to the fact that furnace heating can be forced beyond its capacity to a much greater extent than any other system. This is characteristic of furnace heating,

for by forced firing it is possible for the heating contractor to make a showing of heating a given building with a furnace of inadequate capacity for properly and continuously performing the work without regulating the furnace. This has led to the installation in many sections of the country of smaller and cheaper furnaces. The natural result has been a prejudice, by those who occupy buildings heated in this way, against the furnace system as a whole. Thus a feature of furnace heating which should be in its favor, that is, its superior reserve power as compared to other systems, has really operated against it.

Cheap competition work where a furnace of too small capacity is thrown into the cellar of the building and connected up in any old way without due regard to the proper proportioning of the piping system or for any other element necessary to right results cannot be anything else than a failure; and in such cases the furnace gets the blame. With a furnace of proper construction and capacity, with the piping correctly proportioned and with the other demands of installation carried out in accordance with sound furnace practice, there is no other system of heating which is so practical, so successful or so satisfactory as warm air furnace heating.

Importance of Proper Piping

The claim is also made that a house of large size cannot be successfully heated with a warm air furnace. As a matter of fact the writer knows positively of hundreds of instances where some of the largest homes in the country are heated successfully with warm air furnaces. If a large home cannot be heated with a warm air furnace it is not the fault of the method of heating but faulty installation of the furnace. It is just as necessary that care be exercised in the selection of the kind of warm air furnace to be used in the home as that care be used in choosing the method of heating. A poorly made warm air furnace which is installed by a tinner or furnace man not capable of handling this class of work will in a great many instances prove unsatisfactory.

A warm air furnace is simply an apparatus for heating air. No matter how good the furnace, how perfect its construction, it can do nothing more than heat the air. The delivery of the air to the rooms to be supplied depends on the conduits provided. A furnace without proper conduits for delivering the air to a house can no more heat that house than a pumping station without water mains can supply a city with water.

To provide the proper conduits for the delivery to the rooms of the air which has been heated by the furnace requires a knowledge of the amount that will be required for each room, and the size and form of the conduit which will, under the conditions existing, deliver that amount. The shape of the conduit, the form of connections, the point where it will be most

effectively delivered into the room will all make a difference, and require both scientific and practical knowledge to determine.

In many furnace-heated houses no attention whatever has been paid to this matter. It is very common for a man in building a house to specify that the general contractor shall have it "piped for a furnace." The contractor gives the order to the tinner who will do it the cheapest, regardless of his knowledge or lack of knowledge of the principles involved. The pipes are put in wherever they can be put with the least trouble, and often of sizes entirely too small to carry the volume of air required. They frequently contain bends and angles which will practically stop all flow of air through them. This is the reason that in many "furnace heated" houses there are rooms which cannot be heated.

The remedy is to have the plan for the entire system prepared by a competent engineer, and put in under proper supervision. It will be seen, therefore, that as the cause of unheated rooms in "furnace heated" houses is preventable, that this trouble is not a necessary result of the system of heating with warm air.

The trouble in heating rooms on the windward side of the house, where warm air is used, is due usually to neglect to provide an outlet for the air in the room. As already explained, the amount of air that can be sent into the room from the furnace is absolutely limited to the amount that can escape. The usual dependence for the escape of air from a room is on the outward leakage through walls and around windows, and this dependence invites failure. A high wind blowing against the outside of a room prevents this leakage, and so stops the inflow of air from the furnace. It is clear that positive provisions for the escape of the air are necessary to avoid failure to heat a room. This trouble can be remedied by providing an outlet for the air independent of the leakage. As this trouble is preventable, it is not a necessary result of the system of heating with warm air.

And as it has been shown that all the objections commonly urged against the system of heating with warm air, are due to either the faulty construction of the furnace or to faulty installation, it is evident that the system itself is free from these objections and they cannot be urged against it, but only against faults in construction and installation of apparatus for its use.

With these facts in mind, there is no reason why the contractor and builder who is anxious to give his customers the very best he knows should not favor and specify whenever possible warm air furnace heating. There is no question but that this system is meeting with greater favor today than ever before. Manufacturers are devoting the time and attention necessary to manufacture the very highest type of furnaces, and with the advanced knowledge gained by the heating engineer in the past few years the very highest grade of installations are being made.



Fooled It

Mike (in bed, to alarm-clock as it goes off)—"I fooled yez that time. I was not aslape at all.—*Punch*."



There is Something New Under the Sun

Cleopatra wore no rat,
Venus wore no congress gaiters,
Nero never cussed the 'phone,
Noah saw no aviators.

Caesar dodged no motor cars,
Plato saw no melodramas,
Sapho wore no harem skirt,
Adam never wore pajamas

—*Brush and Pail*



Real Modesty

"An actor should be modest, and most actors are." said James K. Hackett, at a luncheon in Pittsburgh. "But I know a young actor who, at the beginning of his career, carried modesty almost too far.

"This young man inserted in all the dramatic papers a want advertisement that read:

"Engagement wanted.—Small part, such as dead body or outside shouts, preferred!"—*Tribune*.



The largest stick of pine timber ever shipped from Southern Mississippi, says the *Meridan, Miss., Star*, has been brought to Meridan, Miss., by a team of 20 oxen. This stick, which was hand-hewn, measured 35 by 35 inches in the center and is 68 feet long. It contains nearly 650 cubic feet, measures over 7,000 board feet and weighs over 30,000 pounds. The price paid was \$185, but it will bring for ship mast about \$300 when delivered.



Sunken White Pine to be Salvaged

In the sunken white pine, with which the beds of the Menominee river and its tributaries are strewn, there exists a veritable mine of wealth, which some day will be salvaged and will yield its operators large returns, says the *Duluth, Minn., News-Tribune*. It is conservatively estimated by lumbermen that the streams contain fully 100,000,000 feet of the timber for which upper Michigan once was famous, but which now is all but exhausted, and it is mostly of the very finest quality, worth some hundreds of thousands of dollars. Sunken pine has been recovered successfully and profitably from various logging streams in southern Michigan, and on the Menominee range there is already talk of undertaking similar work in the north country.

PLANING MILL WORK

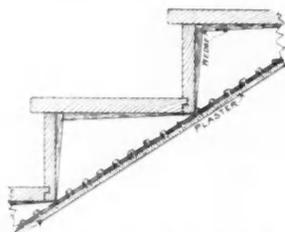
More Shop Kinks

HELPS, HINTS AND INGENUOUS METHODS PICKED UP IN MANY YEARS PRACTICE IN CABINET, CARPENTER AND WOODWORKING SHOPS

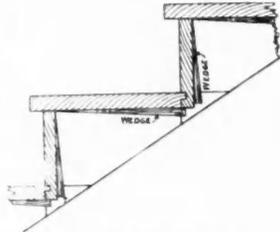
By Wm. C. Jasbury

HERE are some more brain-movements for the students of the millworking and carpentry class:

In Getting Out Stairs, I find the majority of carpenters are not, so to say, the most practical. In the first place, I consider the strings the most important part of a flight of stair. Now, if a flight consists of fourteen risers, for the wall string I take 1 by 10 inch by 16 foot board—or about one foot longer at each end than the flight of stairs. I sometimes use a pitch board to lay out the treads, or sometimes put a fence, or gauge, on my steel square and work from the top of the tread and face of the riser. The allowances for the tread, riser and wedges are all under or beneath the first mark. If the rough horses are up and plastered underneath, I house out the riser so as to drive the wedge from the top, which is just the reverse of the common way, because there is no way to get the



When Plastering is Done Before Finishing Stairs, Arrange the Wedge to Drive from Top



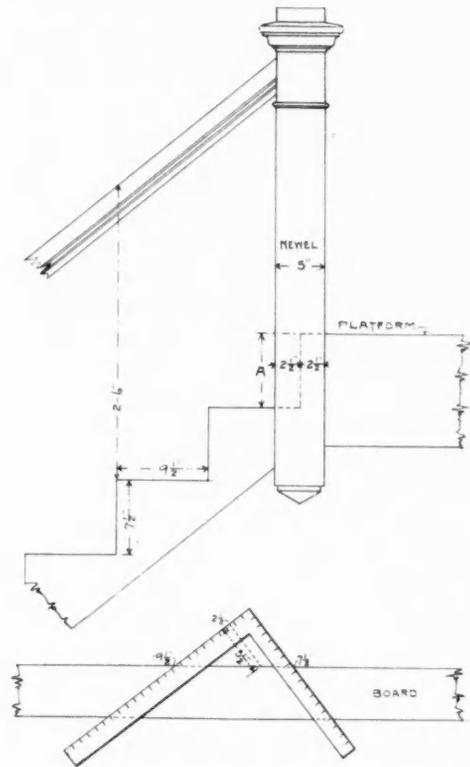
Ordinary Way of Driving Stair Wedges from Bottom

wedge in from the bottom, or I should say, get a crack at it with the hammer. The illustrations show the wedges set both ways.

Height of Hand Rail at Newel. Here is a stunt. I think it is original. Whether or not it is, it is practical. Now, in the first place, the hand rail of an ordinary flight of stairs should be 2 feet 6 inches high, that is measured plumb over the face of the riser to the top of the hand rail (on the rake). The level rail should be 2 feet 8 inches. With these heights, while a person is standing or going up stairs, when in the middle of the tread, the hand rail is about 2 feet 8 inches high in either case, a normal height—unless the

said person (not you) is some freak size.

Now, to find how high the rail is going to strike the newel before it is set, is something that often bothers the carpenter, especially if the man in the shop has not marked the floor, or platform line on it. Now, then, if the rail is 2 feet 6 inches plumb over the riser, which we will say $7\frac{1}{2}$ inches and with $9\frac{1}{2}$ -inch tread, add the distance at A to 2 feet 6 inches; and from this subtract the rise $7\frac{1}{2}$ inches. This will give the height



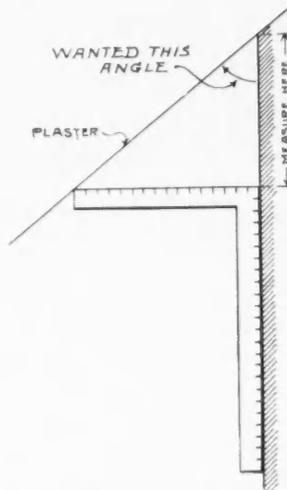
Finding Length of Newel and Height of Rail

at the top of the hand rail where it strikes the newel from the top of floor. Or, on the steel square take it thus:—

Place the $7\frac{1}{2}$ and $9\frac{1}{2}$ -inch marks to the straight edge of a board and measure back half the width of the newel from the heel of square, then parallel with

tongue to edge of board. This gives 5 inches, which, as I said before, added to 2 feet 6 inches and with the rise subtracted, gives 2 feet 4 inches as the answer. I use this rule almost daily.

To Obtain the Stair Angle. While out measuring a building for stairs, some time ago, I happened to be there on a Saturday; the men had knocked off at noon—half holiday. So when I came to the part where I was to get the angle of the wall to which the prospective stairs were to be fastened, I was up against it for the want of bevels, etc., to find the angle; which, by the way, was an acute. So I found a steel square (one of Mr. Woods' "Calculating Machines") with a 16-inch tongue and 24-inch blade. I put the heel as near the corner as possible, with the end of the tongue and blade

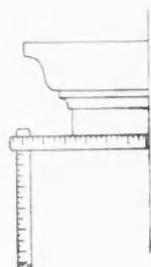


How to Measure an Acute Angle With the Steel Square

fitting snug up against the wall; then I measured how far the heel was from the corner and laid it out on the floor later.

To Find the Bevel for Staves. Here is a trick for laying out staved columns, which is worth any foreman's or turner's notice. For instance, you want to build, or stave up a column with any number of staves, no matter how many or how few, the rule works O. K. with but a small amount of figuring. Say we want a column 9 inches in diameter. I usually put in the same number of staves as the column is inches at its largest diameter. In this case it would be nine. Very well. I want to find the bevel to make the staves for a nonagon, or nine-sided figure. Of course, this could be worked with the steel square, but we are not discussing that handy tool just now. I take the 360 degrees in a circle and divide it by 9, which gives a quotient of 40; and this divided by 2 gives 20; this subtracted from 90 leaves 70 degrees, which is the required bevel on the protractor. This will work any number and is positively accurate. To the best of my knowledge it has never before been in print.

The Jointed Measuring Rule. I find the 4-foot, 6-foot, 8-foot, etc., rules that carpenters use nowadays, come in handy for more than one purpose. For instance, if you have a level measurement, say for 3 or 4 inches wide over your head or out of reach, simply bend the first joint of the rule to a right angle with the remainder and reach up and get it. Did you get it?

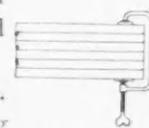


Jointed Rule as a "Reacher"

They also come in handy for measuring around a circle corner, as these rules are usually made of beach or maple, and

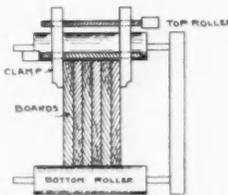
are therefore pliable. Then, again, they can be used in illustrating, explaining or adjusting them to the polygons, striking off circles, etc.; in fact, they can be put to some very odd uses.

Holding On to What You Have. In laying out stiles for doors, or cutting off ends of pieces that are to be of the same length, I find it a good plan to clamp one end with a hand screw, to keep the pieces in question together until ready to go further with the work.



A Precaution

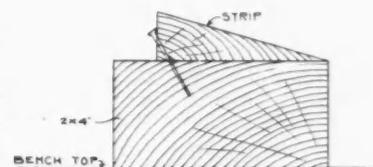
To Size Boards of Equal Width. In dressing boards, say 1 by 10 inches, 2 by 10 inches, or similar dimensions on a two-sided planer, the planer man would run the two flat sides at once; but to dress and size them on edge, he runs his planer-bed down to the required depth, and places the boards, or planks (on edge) side by side, say 6 or 8 of them, and runs them through all together. That is all well enough, but they are liable to



Edge Dressing by the Wholesale

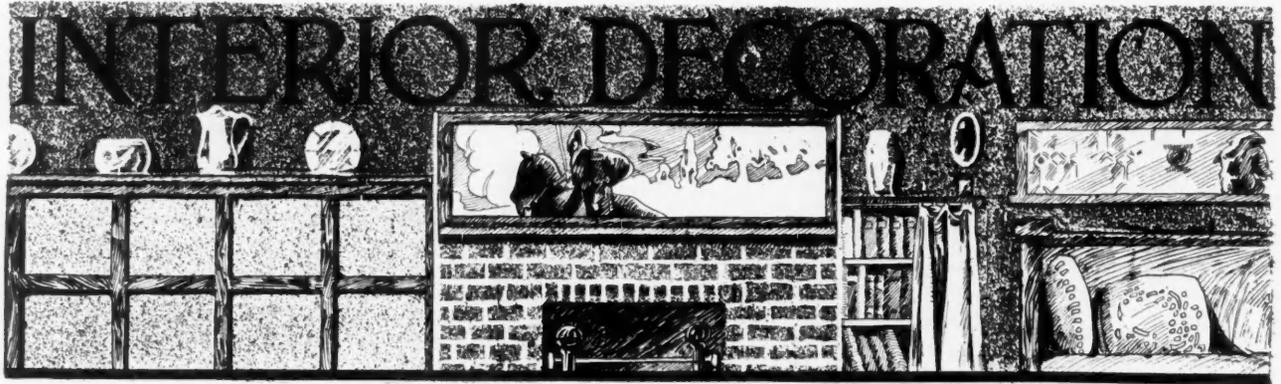
cant over, which will make the edges beveled. I take a pair of 18-inch hand screws and clamp the boards together, so as to make practically a solid timber, and remove the clamps as they approach the planer.

To Bevel a Strip. In beveling pieces to a feather edge, such as hearth strips and sometimes in pattern work, I have seen fellows have trouble of their own, because the stuff was so thin it would hump up in the middle, etc. The way to do it right, is to put it on a 2 by 4 a little longer than the strip. Place strip with the thin edge even with the edge of the 2 by 4 and by back toe nailing the strip, it can be dressed off very nicely.



END VIEW. A Beveling Kink

Lumber Measure. Of course, there are many books on how to reduce square lumber to board feet, and perhaps it has been printed in this magazine, but I would not hesitate to say that there are not more than three out of every ten millmen or woodworkers who know how to figure the number of feet board measure. Allow me to give a formula. Say we have a timber 10 by 10 inches by 30 feet long. I say 10 times 10 = 100 inches, and that is equal to $8\frac{1}{3}$ square feet in each foot of length; therefore, multiply 30 by $8\frac{1}{3}$ = 250 square feet. Answer. Take any square 6 by 8, 8 by 8, 12 by 12 feet, etc. Now, then, if a board is 1 by 8 by 12 feet long, it has 8 square feet, because every 1-inch board 12 feet long has the same number of feet as its width in inches. But it is 1 by 8 by 14 feet, I say 8 times 14 = 112 divided by 12 gives $9\frac{1}{3}$ square feet. If the stuff is $\frac{1}{4}$ inches thick, add a quarter more; if $\frac{1}{2}$, add a half more, etc.



Attractive Effects Using Wall-Boards

THE RANGE OF ADAPTIBILITY OF THIS CLASS OF BUILDING MATERIAL—WALL-BOARDS THE IDEAL SURFACE FOR BOTH TINTING AND PAINTING

ANYONE who is interested in the decorating of interiors is concerned, first and foremost, with one certain aspect of any material offered as a wall lining—Does it present a permanently smooth surface that can be tinted, painted, or decorated in any of the other popular modes, without fear of cracks or discolorations?

If it scores perfect in this test the decorating contractor is fully satisfied, and the owner is pretty apt to be well pleased.

Without question a large measure of the popularity of wall-boards is chargeable to this qualification they possess. When applied they present a smooth, even surface which fairly invites the interior decorator to come and put on his very best work. The surface is of such a nature that the tint or paint goes on easily; and the decorator is haunted with no apprehensive forebodings that within two or three months the surface will have checked, chipped or cracked, or become discolored, thus ruining all his beautiful work.

The manufacturers of the several kinds of wall boards have been quick to appreciate this important phase of the question relative to any material to be

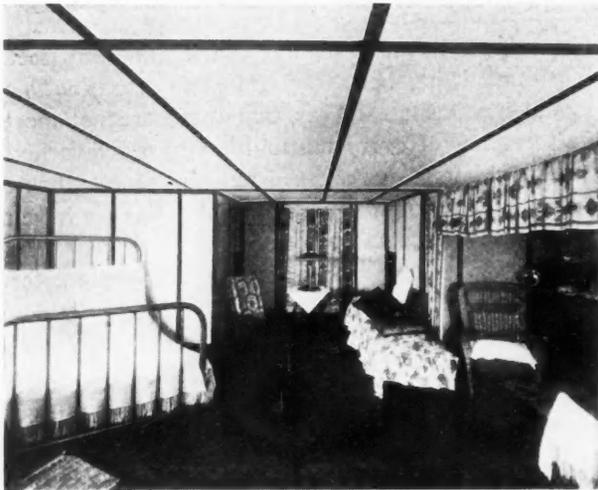
used in place of lath and plaster. Accordingly, in addition to their efforts—and they have been remarkably successful—toward developing a clean and sanitary, warm and durable, inexpensive and easily applied material, they have taken particular pains to keep the surface texture and appearance of their wall linings right.

Some idea of the range of work to which wall boards are adapted, together with some of the styles of decorative treatment, are illustrated in the photographs reproduced herewith.

Since wall-boards come in slabs or panels ready to



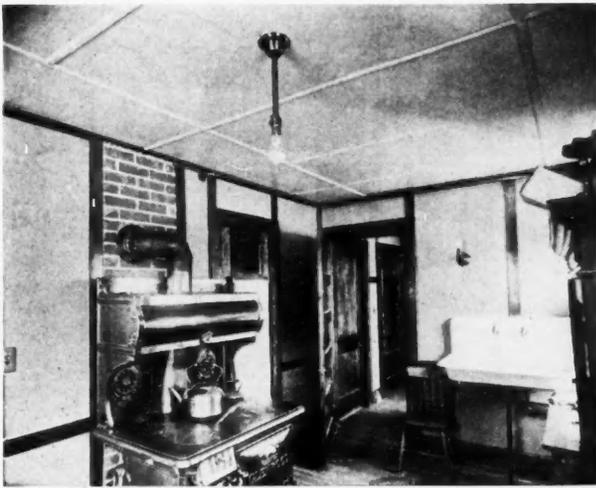
Display Room in Art Section of City "Department" Store Finished with "Compo" Board. Ceiling Panels and Side Walls are Painted and Stenciled



Arctic Room Finished Off with "Utility" Wall Board and made one of the Pleasantest Rooms in the House. Panels are Tinted Yellow and Wood Bands Stained Dark Brown

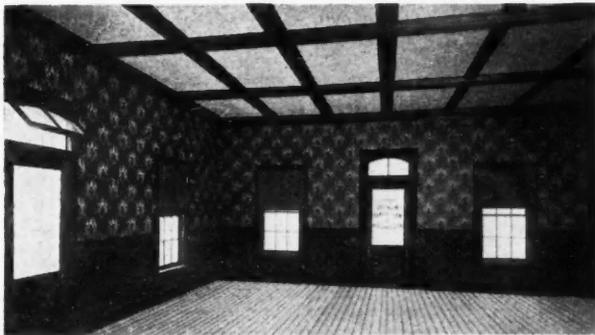
be nailed into place, it is natural that decorative schemes using paneling of various kinds, both for ceilings and side walls, should be common. For paneled work either band moulds or box beams cover the joints between the sections of the wall-board. Thus, no particular care is necessary in fitting the sections together, as the joint is covered anyhow.

Paneling is by no means necessary, however. The wall-board sections can be exactly fitted and the joints filled in with a special "crack filler," the wall or ceiling when finished presenting an absolutely smooth, unbroken surface.



Kitchen in House of E. R. Knott, Boston, Mass. Finished with "Beaver Board"

A room finished off in this way appeals to the decorator's pride in fine workmanship. There are hundreds of combinations that he can use for artistic results, and the choice is offered of any color scheme desired, carried out in any of the decorative materials.



Warehouse Office Finished with "Bishopric" Wall Board. Side Walls, Papered; Ceiling, Mission Panel Effect

He can put on wall paper, or fabric wall covering, pasting them directly to the wall-board. He can apply any of the flat wall paints, then ornamenting the walls with stenciled decorations or even with mural



Living Room Finished with "Beaver Board." Home of Wm. Reynolds, Ft. Erie, Ont.



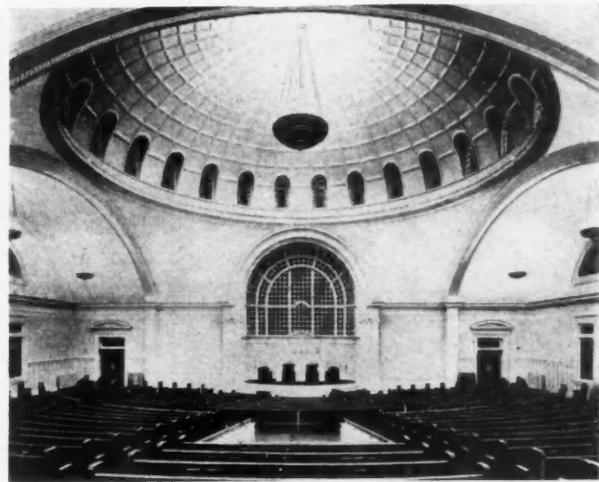
Down Town Display Room of Chas. F. Lorenzen & Co., Chicago. Finished with "Utility" Board

paintings. Or he can put on the cold water tints, that are now so popular.

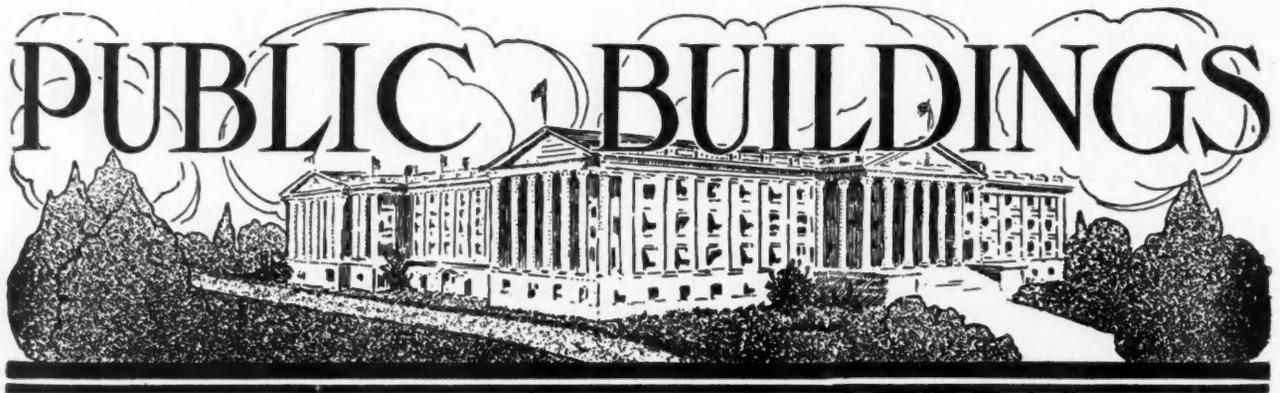
And best of all, no matter which of these methods of interior decorating is chosen, the decorator, as well as the owner of the building, has the assurance that the result will be permanently satisfactory. The work will not be marred, as the building settles, by plaster cracks, nor by discolorations arising from the wall lining.

All such troubles are avoided where a good quality of wall-board is employed. This material comes in panels ranging from 2 to 4 feet wide, and from 4 to 16 feet long, and is thus readily adaptable to all structural situations.

In the builder's effort to use only such materials as will prove permanently satisfactory to his clients, thus building up for himself a reputation for high grade, enduring work, this is a matter deserving special study. In fact, so important has it become that all the leading paint and color people have worked out special directions for the successful use of their interior wall coatings when applied onto the several wall-boards.



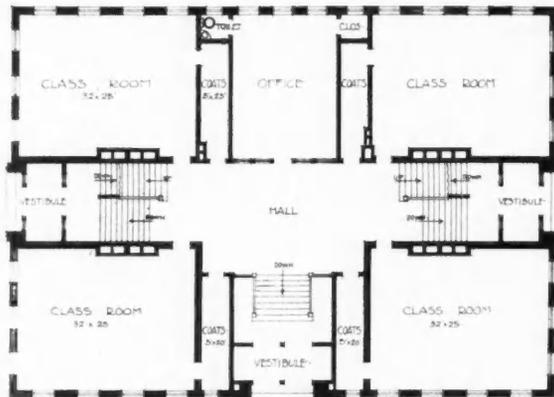
First Church of Christ, Scientist, of Chicago, L. E. Stanhope, Architect. Finished with "Deitzgen" Panel Board



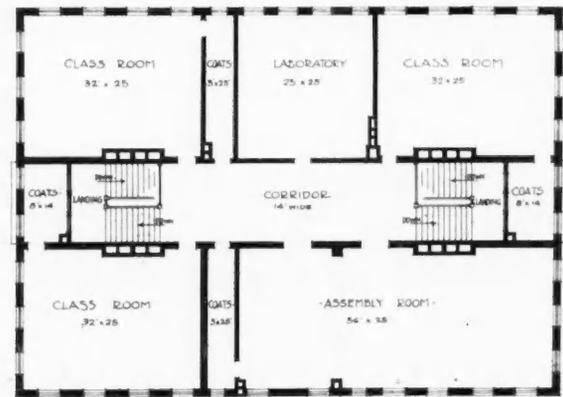
New School Building for Palatine, Ill.

ARCHITECT'S PERSPECTIVE AND FLOOR PLAN DIAGRAMS OF NEW TWO-STORY BRICK SCHOOL HOUSE

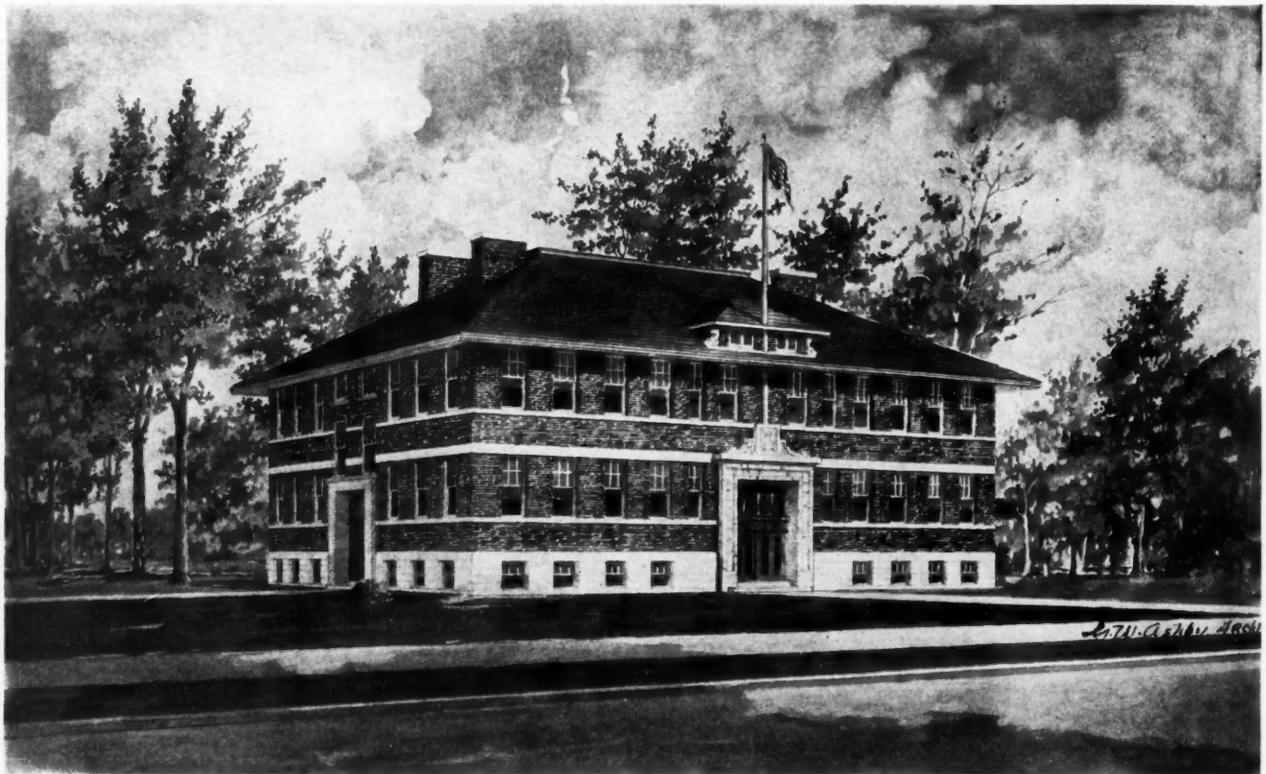
Henry H. Pahlman, Secretary of the Board of Education, School District 15, Palatine, Cook County, Ill., has advertised for sealed proposals for the erection of the school building illustrated herewith. Bids are to be opened at 8:00 P. M. Jan. 5th.



First Floor Plan



Second Floor Plan



Fine Modern Brick School Building, for a Chicago Suburb, Designed by Architect G. W. Ashby, of Chicago

More Timber than Thirty Years Ago

According to Official Figures Growth Exceeds Demand in United States

ROBERT FULLERTON, the well-known lumberman of Des Moines, Iowa, recently delivered an address at Denver, Col., before the public lands convention. His topic was "Our Forest Resources, Consumption and Annual Growth." He reviewed the forest history of the United States; told what had happened to the forests through the successive decades. The figures given out created a sensation. It was shown by these figures that in 30 or 40 years timber suitable for lumber would be exhausted. It is now known that the first census was a poor guess. The following are some of the estimates which purport to be statements of the amount of standing timber in the United States:

U. S. cruise of 1880.....	856,290,000,000
Prof. Hutchkiss, 1898.....	1,400,666,666,600
U. S. census, 1900.....	1,390,000,000,000
Prof. Fernow, 1902.....	2,000,000,000,000
American Lumberman, 1905.....	1,907,000,000,000
Herbert Knox Smith, 1909.....	2,500,000,000,000
Herbert Knox Smith, 1911.....	2,800,000,000,000

Since the census of 1880, 900,000,000,000 feet of lumber have been manufactured, or 50,000,000,000 more than the timber in that year.

Mr. Fullerton said: "According to the discovery of the official figurer, Herbert Knox Smith, we have 2,800,000,000,000 of saw log timber still standing in the forests of the United States. The above statistics disprove the old proverb that figures can not lie, unless we accept the absurd theory that the annual growth of our forest trees is three times greater than our annual consumption of forest products. The increase in our forest resources from annual growth is very trifling, much less than the popular estimate.



How Is this for a Lift?

The accompanying photograph shows a hoisting apparatus in connection with an old automobile for motive power.

The building is located at Lincoln, Nebraska, and is being erected according to plans prepared by Woods & Corder. It is a first class, fireproof building, 50 by 142 feet in size and will cost, when completed, about \$50,000. Mr. William L. Campbell is the contractor, and he deserves great credit for the way in which he has handled the work, which at this writing is nearing completion.

To successfully cope with the keen competition on buildings of this size, it is necessary that the contractor have up-to-date labor saving devices. To do this, Mr. Campbell saw from the first that he must have a hoisting machine. Now, to get the kind in general use for such work, would cost from \$800 to \$1000. As it happened, however, he owned an automobile of 30 horsepower that had served him for six years—the speedometer showed a record of miles that

would circle the world nearly one and one-fourth times; and as a globe spinner he thought it about time to give it a rest. Its value as a second hand machine, would not exceed \$400; so it occurred to him that this machine would furnish motive power for a hoisting apparatus; and he was not long in studying it out just how it could be done.

After removing the body of the car, he placed in its stead a platform, on which he built a light frame work for a shelter house; and covered it with galvanized iron.

He placed sprocket wheels on the rear axle and connected by chains to the sprockets on the axle of a large wooden drum, which he placed near the center of the car and anchored to its frame work. The steel



Builders' Hoist Run with Old Automobile

cable was attached to the drum in the usual way; and by hoisting the rear wheels clear of the ground, the power was transferred to the drum and sent the cages up and down, carrying brick, mortar and concrete and even the wood forms, etc., running well into the hundreds of thousands of tons and at a cost, Mr. Campbell says, not to exceed \$35 for oil and gasoline.

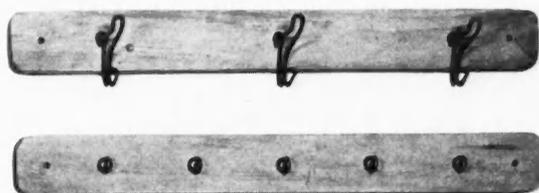
By letting the rear wheels down to the ground and disconnecting the cable, it can be run on the road the same as before being dismantled, as a pleasure car.

Mr. Campbell feels highly pleased with his reconstructed machine and is figuring to perfect it for running farm machinery where power is required.

Lay off and work the stretcher to length. These parts may all be scraped and prepared for assembling. Some workmen prefer to leave all scraping until after the glue has hardened. If one is careful in applying the glue, time may frequently be saved by doing most of the scraping before the parts are put together.

Get the clamps in readiness and, having first assembled the parts try to see if all fit properly, apply the glue and put together the two sides of the stand that have the slats in them. Allow the glue to harden over night, then place the other parts.

The top is to be lifted after the glue on these second parts is dry. Applying clamps so that they bring all the parts properly is a task that requires considerable experiment. This experimenting would better be done



Two Simple Pieces—Hat Rack and Key Rack

before the glue is applied, else trouble may ensue. To tell whether the frame is square or not, measure the two diagonals. It may be necessary to put a clamp on diagonally to bring the diagonals equal one to the other.

For walnut an excellent finish is obtained as follows: Apply a coat of linseed oil, boiled oil. Rub it into the pores, using a flannel cloth, and then wipe the surface clean. Use turpentine in the oil about half and half. Allow this to harden over a night or two, then apply a thin coating of shellac. Allow the shellac to harden over night, then sandpaper it smooth, using fine sandpaper. On this shellac apply a coat of wax. Polish this in the usual manner—the directions will be found upon the can label in case you are inexperienced, then apply a second coat in the same manner.

How to Make a Hat and Coat Rack and a Key Rack

The hat and coat rack and key rack are similar so far as the wood construction is concerned, the difference being in the different kind of hooks and the placing of them.

Secure a piece of some soft wood mill-planed on two surfaces to a thickness of three-fourths or seven-eighths of an inch, having a width of two and one-fourth inches and a length of eighteen and one-half inches.

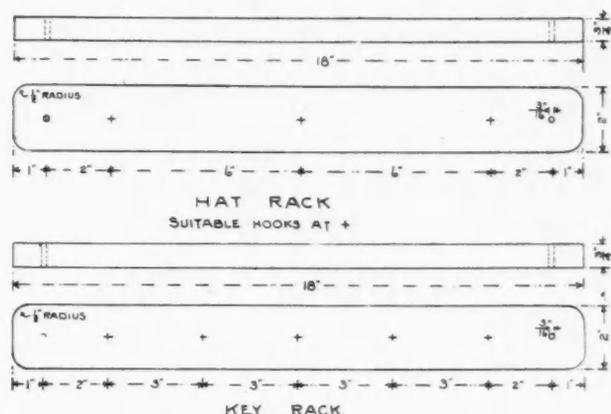
With the smooth plane remove the mill-marks so that the two broad surfaces may be left smooth and clean. Mark one of these surfaces with a pencil for a face-side. Plane one of the edges straight and square to the face-side, testing it by means of a try-square and by sighting along its length with an eye. Mark this edge for a face-edge. This face-side and face-edge are

the two surfaces from which all testing is to be made hereafter.

Set the marking gauge at two inches and, keeping the gauge head against the face-edge, score a line along the grain to indicate the width the piece is to have when finished. Plane to this line, testing frequently as the line is approached, so that the edge may be square when the line is reached.

Place one end so that it shall be square to both face-side and face-edge when tested from these with the try-square. From this squared end measure the desired length, eighteen inches, and with the try-square and knife score a line around the piece, or at least across the face-side and face-edge. Saw a little outside this line, then plane to it carefully.

Lay off the corner curves next. The first thing is to find the location for the divider point when making the arc of the curve. Beginners usually set the dividers to the radius wanted, which so far is all right, then try to locate the center by guess, which is unwise. To locate the centers quickly and accurately, place the piece on edge on the bench, and, with the dividers set to the radius required for the arcs, mark a short line at either end of the piece as near the intended arc's center as can be estimated, keeping one leg on the bench top. Repeat with the second edge down. Set the piece on end, and in a similar manner score divider lines across the lines just made. The dividers may

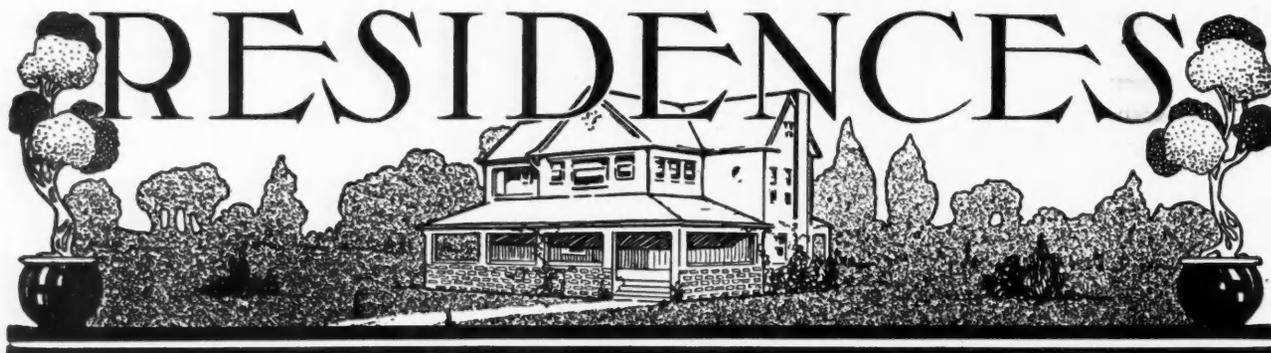


now be set with the fixed point at the crosses formed and the final curve drawn.

Round off these corners, using a wood file. Be careful to keep to the line and to have them square to the face-side when completed.

Gauge a very light line down the center of the piece and on it measure off the locations of the holes. The two end holes are to be made with a three-sixteenths inch bit and through them the screws are placed to hold the rack to the wall. These holes are sixteen inches apart, the distance at which studding in a wall are set. By tapping on the plaster one can tell by the sound where these are. Where no studding are the sound is hollow.

The hooks are to be got at the hardware store, and are known as coat hooks for one and cup hooks for the other.



Complete Plans for Model Dwelling

ARCHITECT'S SCALE DRAWINGS FROM WHICH THE NINE-ROOM, HIP-ROOF HOUSE ILLUSTRATED HERE—
WITH MAY BE BUILT

A HOUSE of modern arrangement, of a style very popular at the present time, and containing a very large amount of useable space, considering its size and cost, is illustrated herewith. This is a full two-story and basement house, 28 feet wide by 38 feet long, not counting the front porch. The building is designed on rectangular lines, which have proved most economical and satisfactory.

On the main floor there are five rooms. These, however, open together with wide colonnades and cased openings so that there is no impression of cramped quarters to anyone seated in either reception room, parlor, living room or dining room. The busi-

ness end of the house—the kitchen and pantry, is conveniently situated. In fact, this is a design that will appeal to the house-wives.

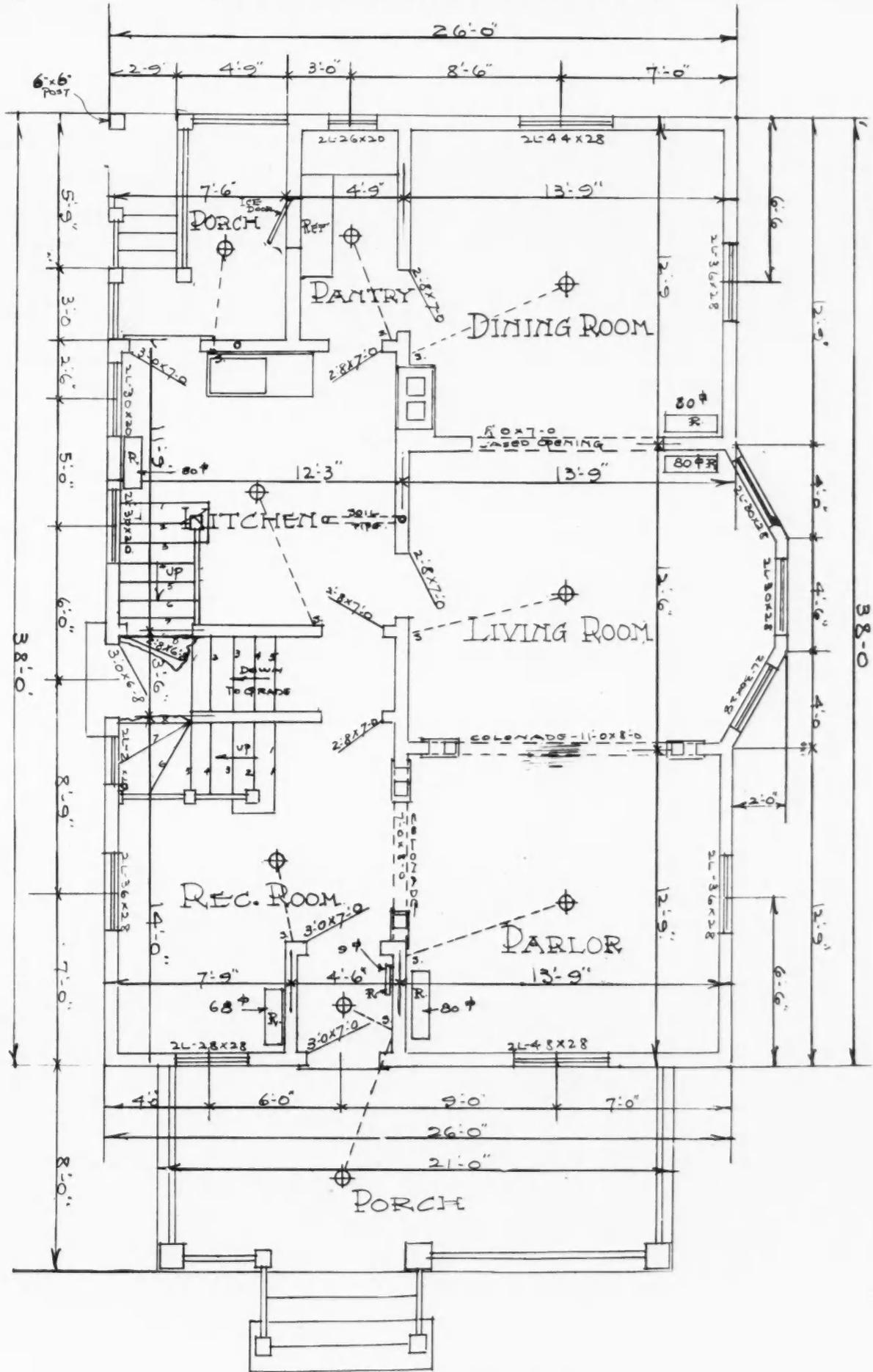
On the second floor are four good sized bedrooms, also a very large sleeping porch. The bathroom is on this floor, opening from the square central hall. A liberal supply of clothes closets is provided.

The basement is cement finished and is nicely arranged for laundry, basement heating plant, etc.

This residence constructed of good grade materials and completely finished and equipped is estimated to cost \$4,000.

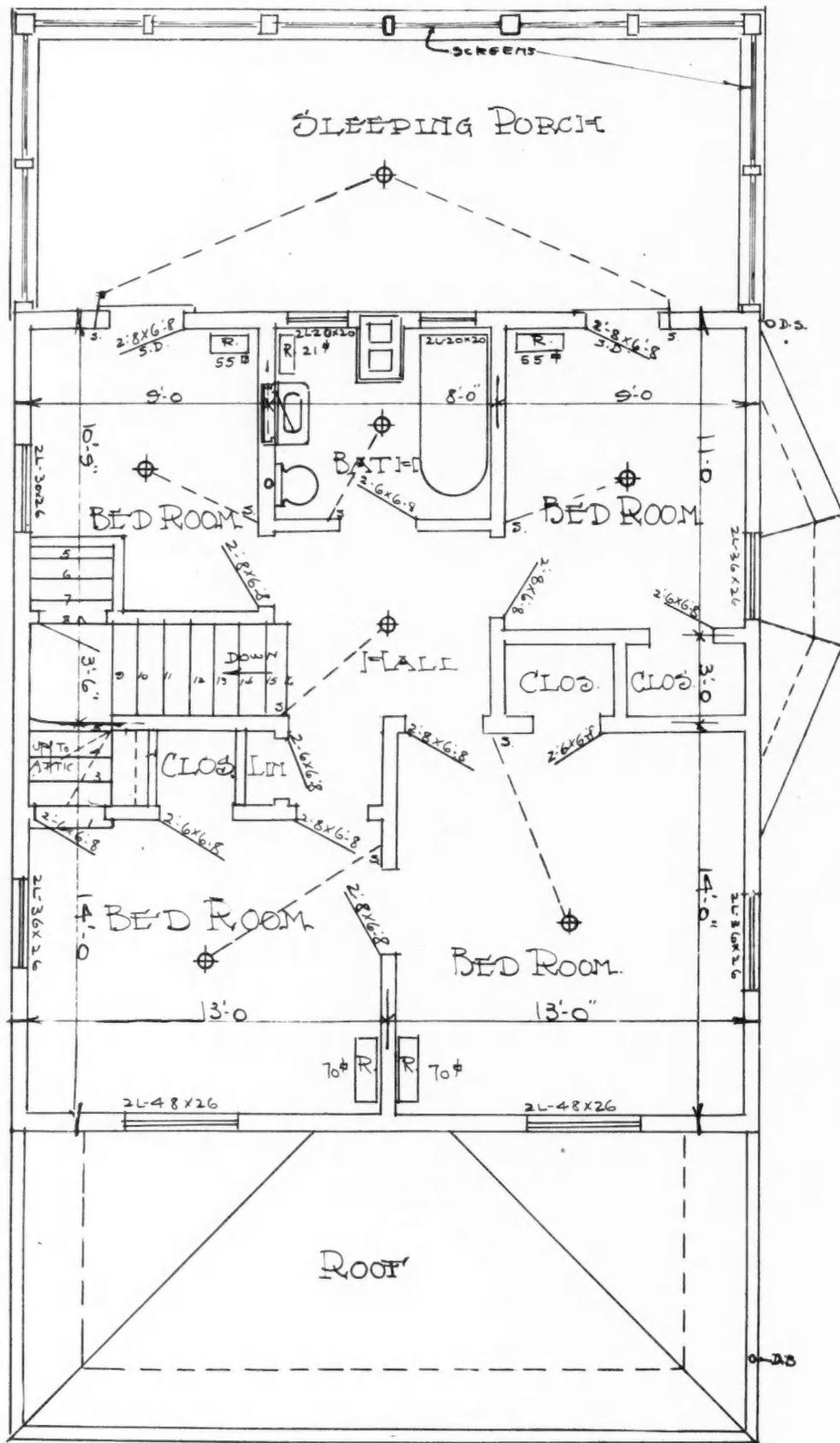


Very Attractive Bungalow Cottage Designed for A. J. Vogelberg, Faribault, Minn.
COMPLETE WORKING DRAWINGS FOR THIS HOUSE ARE PRESENTED ON THE 5 PAGES FOLLOWING.



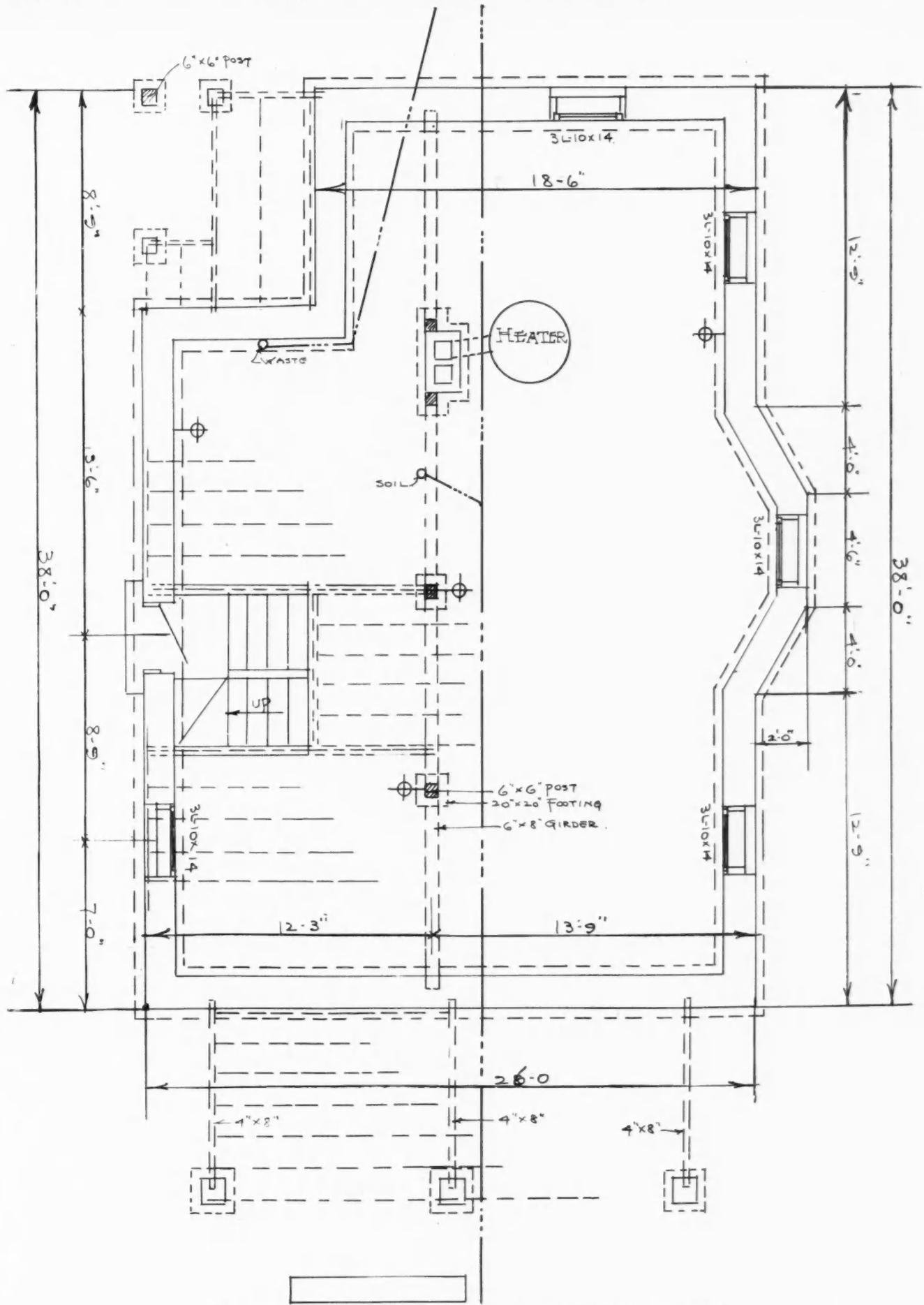
FIRST FLOOR PLAN

(House Shown on Page 70)



SECOND FLOOR PLAN

(House Shown on Page 70)



BASEMENT AND FOUNDATION PLAN
(House Shown on Page 70)



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION
(House Shown on Page 70)



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

What Makes Bay Windows Leak?

To the Editor:

St. Paul, Minn.

I would like to hear from some of the members, what is the cause of bay windows leaking when they are built against side of house, roof not reaching over first floor. Is it because flashing is not put on high enough against side of house before shingling bay roof and then putting the siding against the shingles? Or what? How is it to be constructed to be rain-proof? One may be rain-proof for some years, and even after an examination everything be found in good condition—yet all at once develop leaks.

With best wishes to the AMERICAN CARPENTER AND BUILDER.
A charter member, A. J. METZGER.

Stucco Work that Won't Craze

To the Editor:

North Platte, Neb.

I am sending you pictures of two hollow-tile, stucco-covered schoolhouses, which I recently built. They have a single class room and two cloak rooms. Basement has hot-air heating plant. Toilet rooms are in the basement and are equipped with air pressure and double cesspool system. Basements are made of concrete 7 feet high to joist; then 8-inch hollow tile, having a double air space, are laid for the walls. These are plastered direct on inside, and stucco is applied on outside.

In regard to stucco crazes asked about, will say I have never had any trouble of that sort. To prevent this there are, of course, many things to consider. First, if your ground work is tile, brick or cement, allow plenty of time for building to settle and mortar joints to dry. Use plenty of clean water to wash the walls and clean them of all surplus material, which will cause the stucco to crawl.

Mix only such quantity as can be applied in moderate time. For first coat I use 1 part cement, 2 parts clean sharp sand, and a very little lime which has been slacked 30 days. A half inch coat of this is applied and immediately followed with half inch of one part cement, 2 parts sand and fine gravel. Cast with as large a paddle as could be easily handled. Then every



Structural Tile School House before Stucco is Applied

hour, by the use of force pump and hose, this should be wet, care being taken not to use too much water at once until thoroughly set. After the initial setting, pump water on in



Stucco Covered Hollow Tile School Building

enormous quantities every 2 or 3 hours for several days. In other words, keep the wall wet all the time. If this is impossible, keep the work shaded for 6 or 7 days to give uniform color. This must be done, especially in extreme hot weather.
J. E. PILE.

Advocates Porous Concrete Blocks

To the Editor:

Smithtown, Long Island, New York.

In reference to the cement block industry, I would like to give my ideas and also get the ideas of other readers on these points: We are told that the average block is not waterproof and needs a waterproofing composition added. Is this a fact or is it because the blocks being dense and cold condense the moisture that is in the inside of a room?

What I think would make good always would be to make a block of 3 of sand 3 of sifted hard clinker or breeze and 1 of cement. This would make the block porous like a brick, it would be lighter and would take nails well. The inside surface could be made rough so as to receive the plastering direct as in the case of a hollow brick wall.

The outside surface I would prefer also to be left rough to receive a good coating of stucco, preferably in two coats with the waterproofing compound added if necessary. This would then be adapted to all the good points of brick, viz., a nearly hollow wall, porous, as light and as strong as one cared to put cement in, and would be waterproof, whereas bricks are not. Such a wall would have all the strength of a solid brick wall.

Hope to hear other readers' views.

H. OLIVER.

To Plumb a Tapering Tower

To the Editor:

Eaton, Ind.

Will someone please give the best way to plumb a square tower which tapers toward the top? It is too windy for a plumb-bob.
C. W. CRUEA.

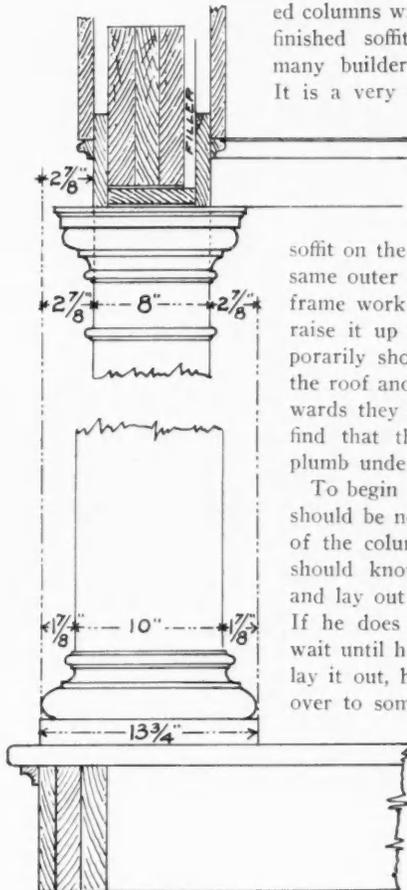
How to Frame the Porch Soffit

To the Editor:

Goshen, Ind.

I have found difficulty in building porches in placing the columns so that they are perfectly perpendicular. In starting the frame work, should the top and bottom be the same distance from the house, so that a round column will stand perpendicular when completed? E. W. HOSTETLER.

Answer: How far out from the building to frame the porch soffit so that colonial, or tapered columns will set plumb under the finished soffit, is a problem that many builders fail to understand. It is a very common error and in fact more common than otherwise. Time and again we have seen carpenters frame the soffit on the porch floor, using the same outer dimensions as for the frame work of the sills, and then raise it up to its place and temporarily shore it; and then finish the roof and cornice work. Afterwards they set up the columns to find that the same will not set plumb under the soffit.



Lining up Porches and Porch Columns

To begin with, the finished soffit should be no wider than the neck of the column, and the carpenter should know just what that is, and lay out his work accordingly. If he does not know, he should wait until he does, or if he cannot lay it out, he should turn the job over to some one who can.

The first step is to settle on the size column that is to be used. Suppose it is 8 inches at the neck, that settles the finished width of the soffit, and the

measures across the base is 13 3/4 inches, which is a difference of 5 3/4 inches between the top and bottom; this divided by 2, gives 2 7/8 inches, which will be the distance back of the outer edge of the porch sills, to build the rough frame work of the soffit. Then when the fascia of the soffit is finished and the porch base is put on, the same difference will remain as shown in the illustration.

A. W. WOODS.

Wants to Know About Howe Truss Bridges

To the Editor:

Mendocino, Calif.

Will some readers of the AMERICAN CARPENTER AND BUILDER who have had experience in building a Howe wagon-road bridge, please send in a detail drawing of same, or inform me of a good text-book on the construction of a wooden Howe bridge? What do they mean by a "modified Howe truss"? P. MAXWELL.

No-Slip Hammer Handle

To the Editor:

Bushnell, Ill.

Some time ago I saw in the correspondence page how to

fix a hammer handle to prevent slipping in the hand. The best thing I have found for this is to get some bicycle tape 1/2 inch wide and commence to wrap handle 5 inches from end, letting the tape lap 1/8 of an inch. This makes small ridges and prevents slipping and does not hurt the hand.

J. B. ROBERTSON.

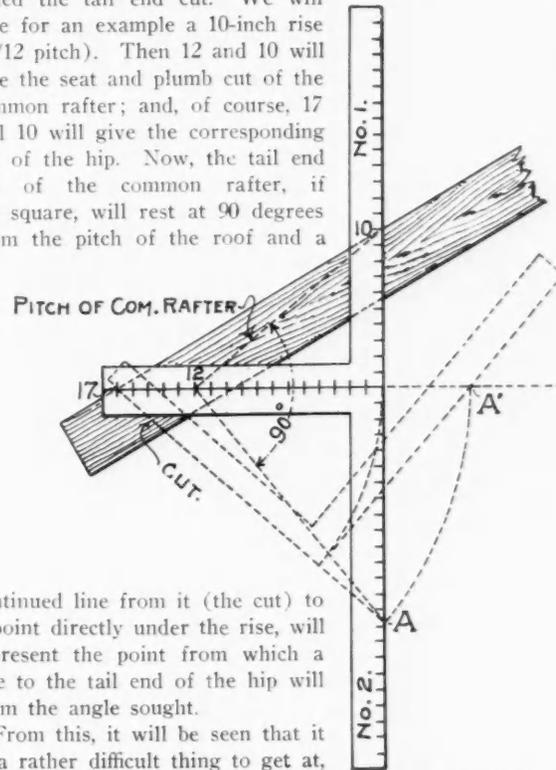
Tail End Cut of Hip

To the Editor:

Center Harbor, N. H.

Kindly ask Mr. Woods to answer the following question: If the foot of the common rafter is cut off square, what figures on the steel square will give the cut on the foot of the hip? H. J. LEIGHTON.

Answer: We presume the cut desired is the end cut of the rafter on which the fascia is nailed and more properly called the tail end cut. We will take for an example a 10-inch rise (5/12 pitch). Then 12 and 10 will give the seat and plumb cut of the common rafter; and, of course, 17 and 10 will give the corresponding cut of the hip. Now, the tail end cut of the common rafter, if cut square, will rest at 90 degrees from the pitch of the roof and a



Getting Tail End Cut of Hip

continued line from it (the cut) to a point directly under the rise, will represent the point from which a line to the tail end of the hip will form the angle sought.

From this, it will be seen that it is a rather difficult thing to get at, since the proportions to take on the steel square are an unseen factor; because they are over the line in another latitude, so to speak; and they must be reckoned from that line which is the same as the seat cut laid off from the tail end of the rafter and all below that line represents what we term the co-pitch, which is at right angles from the roof proper. Thus 17 and 10, as shown on square No. 1, will give the dividing line between the two pitches and 17; and the point intersected by the co-pitch of the common rafter, as at A on square No. 2, will be the proportion to apply to the dividing line, to obtain the desired angle.

For proof, just suppose 17 a pivotal point. Then take hold of the blade and flip it over, and with the tongue resting on the line from 17 to A, it will be seen that the dividing line will intersect the blade at A' and the tongue will give the cut. But it must be remembered that the angle forming the cut is at a point in the middle of the back, or top end of the rafter, and to find the proper place at the sides, it may be obtained from this point with the same proportions that give the side cut of the hip, as the angle is the same.

A. W. WOODS.

Ideas for Light Tool Chest Wanted

To the Editor: Red Wing, Minn.
 As I am a subscriber to the AMERICAN CARPENTER AND BUILDER, and one who thinks it is one of the best building papers published, I take great interest in the correspondence columns. I would like very much to ask what way is the best to make a carpenters' tool chest. I want one that is not too heavy and large, but convenient for the different kinds of tools. I have a chest, but it is pretty heavy to move around and I thought maybe somebody had a better plan than mine. I take this way to find out their way of making one.
C. A. CLARK.

In or Out?

To the Editor: Cove, Oregon.
 I have taken your paper only a short time, but read its pages with interest and find many helpful things. I find that many of the brother carpenters put in subjects for discussion; so I have one. It is which way to hang a sash door—putty side in or out?
 I will give my opinion also to see how many will agree with me.
 I am not an old experienced head; but have always hung them putty side in and never had any complaint until the other day. The complaint was that the rain would run down between the door and the glass, and rot the door. In some of the doors we get, a glass bead is used instead of putty. I don't know what to do with such doors since this has come up.
 My reason for thinking that a sash door should be hung putty side in is that a front door generally carries some kind of a moulding or fancy work. Surely this is not put on the inside, and this puts the putty or glass bead on the inside. So I put the sash doors all the same so they will correspond.

Some sash doors have a frosted glass and if you will notice they are frosted on the reverse side from the putty. Now if they were putty side out, you could see in, but not out.

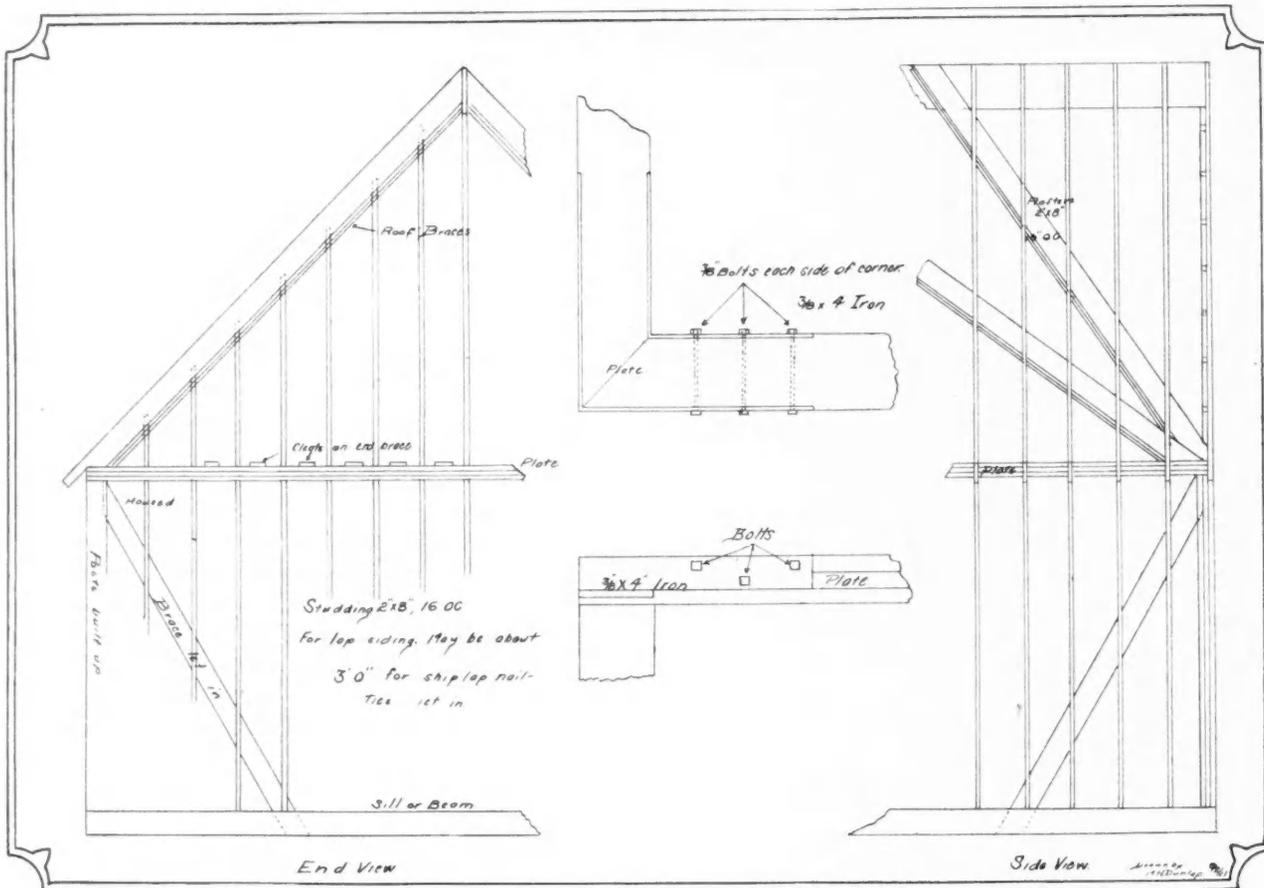
Now I don't think that rain will run down between the glass and the door and rot them any quicker than it will in around the panels and rot them. Then for looks there is generally a curtain on a sash door and they look a little better with the sash mould out instead of putty.
R. N. ALLEN.

Plank-Frame Barn Construction

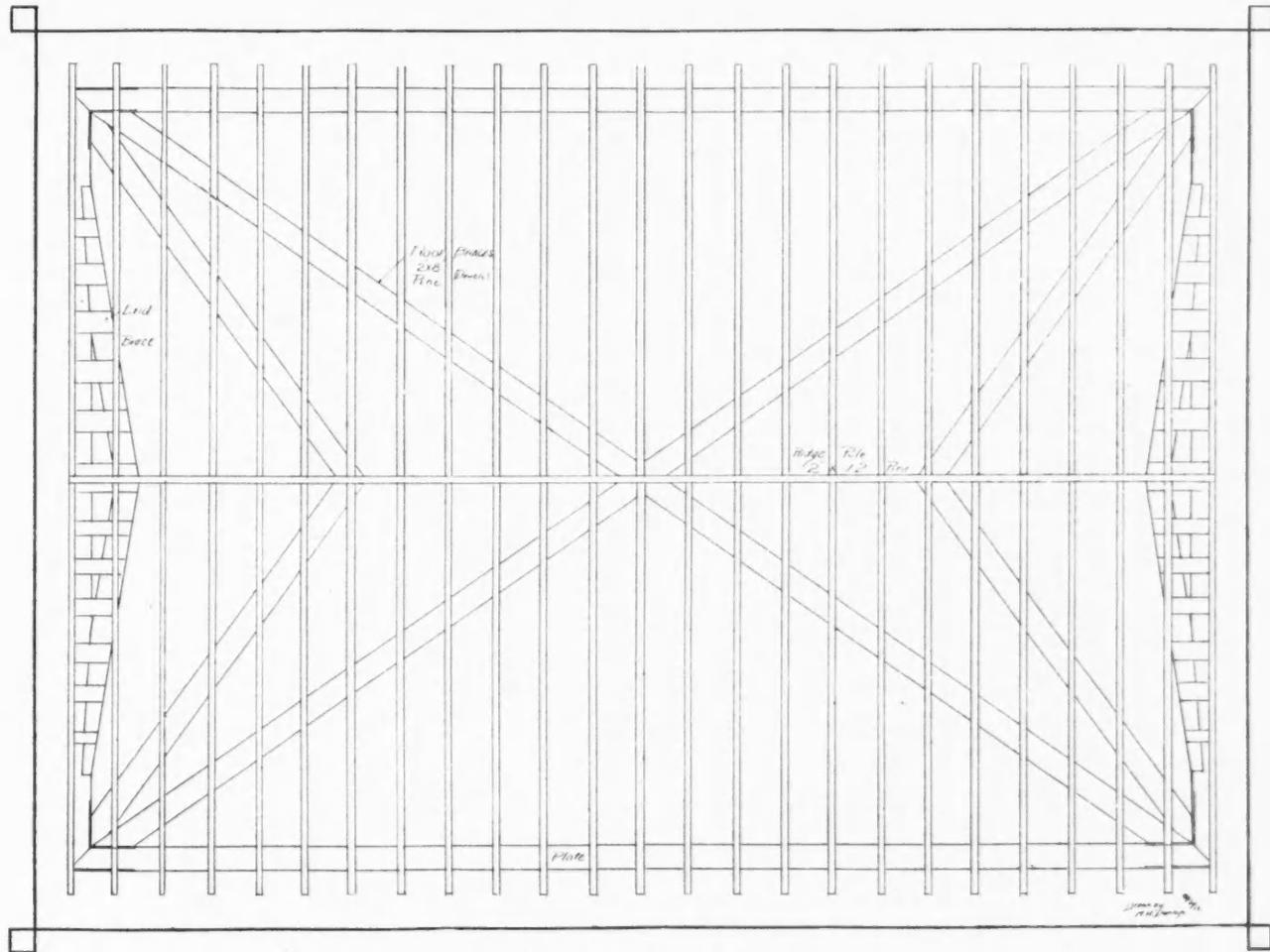
To the Editor: Mentone, Ind.
 I have been a reader of your valuable magazine since its first issue, being one of the charter members. I am sure I have been benefited by its teachings and have read with much interest the different talks on the many topics by the several correspondents—especially the driving of shingles, the hanging of doors, and more perhaps, the subject of barn construction.

In my forty years experience I have made some very good house and barn jobs. Formerly the barns were of square or heavy timbers; but recently I have been building more plank frames (of any size required). They give perfect satisfaction and seem to me the best yet for economy, neatness in appearance and durability, doing away with the old-fashioned barn raising, which required fifty or one hundred men.

I am submitting only the roof plan with half section of end elevation, with corner braces, of such a barn. These frames can be built up to 44 ft. wide by 100 ft. long (which would necessitate an extra brace than is shown in roof plan) with perfect safety, making the barn like an egg shell inside with not a beam or a single thing in the way. I usually double the ridge pole, giving a little more strength. I have built barns of this system of support requiring 65 squares of



Some Details of Plank-Frame Barn Construction



Roof Plan, Showing System of Bracing

slate to cover, and after six or eight years and longer they have been perfectly straight and right.

I do not claim for these roofs that they are the cheapest; for it requires labor and skill to frame them; and much of the work of making the braces is hard to get at. But the support is complete and makes a perfect job.

If the plans interest you and you think they would benefit any of the readers of the AMERICAN CARPENTER AND BUILDER you can give them a place.

L. W. DUNLAP.

Glue from Orange Shellac?

To the Editor: Mountain Home, Ark.

I take this means to express my appreciation of the little "spiel" by Burr Gunsaulus in the December issue.

I want some information about glue—the best glue and the best means of preparing and using it. I am informed by a painter and wood finisher that a superior glue can be made from orange shellac; that it is extensively used by pattern-makers and will resist considerable moisture. If this is true, give me the formula in your next issue. CHAS. CHRISTIAN.

The Bench Question Answered

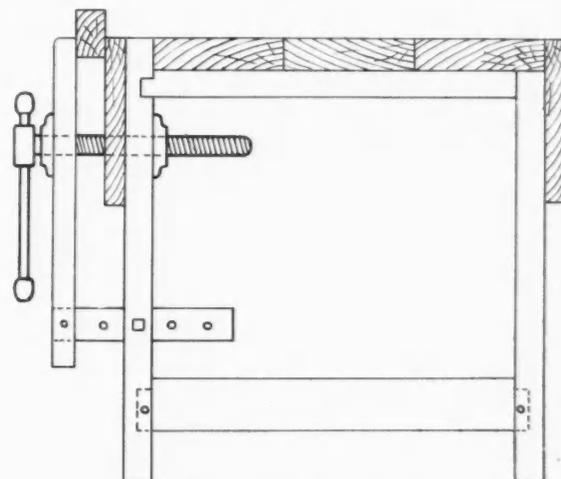
To the Editor: Beaver Crossing, Nebr.

I notice in the June number that Mr. Venning asks for information for building a work bench; and, as I take it, the question has never been answered. It seems that his trouble is in the bench ieg pulling away from the bench top, which is very plausible, for when a narrow piece is put

in the vise for edging up, the strain is directly on the leg of the bench.

Two good suggestions were given in the September and October numbers, by Mr. Jewell, of Wisconsin, and Kellogg of Idaho, but neither gives Mr. Venning a direct answer to his point of trouble. This I have endeavored to do, as shown by the accompanying drawing. In this it will be seen that the strain is on the clamp proper, as the bench leg comes to the top of the bench.

Believing this will be of benefit to Mr. Venning and others, I would thank you to publish same. J. W. LATIMER.



To Keep Bench Leg from Pulling Away

More About Degrees

To the Editor:

Welland, Ontario.

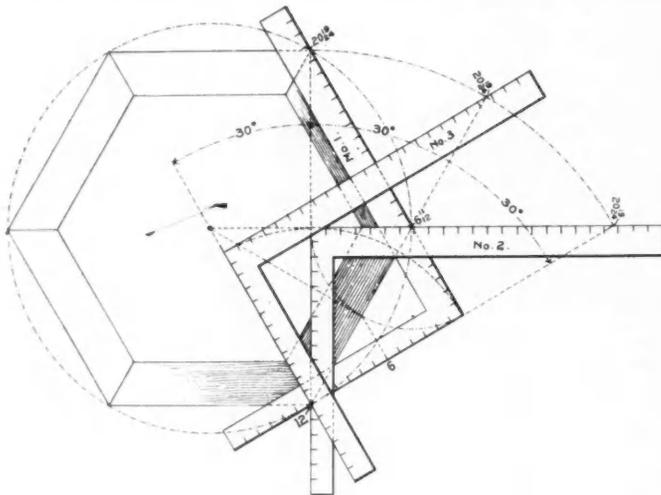
I notice in the November number of the AMERICAN CARPENTER AND BUILDER, on page 42 and 43, there is some information given about framing by degrees, which I think is very useful.

I understand the figure on page 42, where the writer gives the different pitches for roofs, which seems to be alright, but a little further on he says the angle for a hexagon is 30 degrees. I would suppose the side bevel to be 120 degrees and the miter 60 degrees. In figuring out polygons, I always divide 360 (the number of degrees in a circle) by the number of sides in the polygon and subtract the answer from 180 (half the circumference of the circle), and the answer gives the side bevel for the polygon. When we get this angle, the one-half of it gives the miter. Now, if we divide 360 by 6, it gives 60 for an answer, and 60 taken from 180 will leave 120 for the side bevel; so 60 would be the miter.

Since reading what I have referred to, I came to the conclusion that there is something about degrees I do not understand, and I would like an explanation.

JAMES WILSON.

Answer: Mr. Wilson's diagnosis of the case is right; but he makes unnecessary work of it. It depends on how one



Degree Figuring with the Steel Square

looks at it; and while Mr. Wilson's vision is alright, he could see better if he had, so to speak, a change of glasses. Degrees are a changeable thing, depending on from which point the calculation is based; therefore 30 degrees is 60 degrees and vice versa. It must be remembered that our talk is always along the line of what may be accomplished with the steel square.

Now, everybody knows that there are 360 degrees in a circle and in one-half of it there are 180 degrees; in one sense of the word, 180 degrees is not an angle at all—simply a straight line, just the same as the straight edge of a board, and from this we make our calculations with the square as follows:

Divide 180 by the number of desired sides, say it is 6, the quotient will be 30, and that represents the degrees on the square to use; and working from 12 on the tongue, would pass at 6.93 (6 11/12) on the blade; the blade giving the cut. These proportions on the square at once become the foundation for a calculation basis for developing all of the cuts, lengths and bevels contained in the roof for any pitch or size of building desired. But we will not dwell on that part of the subject here for two reasons:

First, it was not called for in the question, and second, it so happens that we have already fully covered the subject

in our regular article for this month. If you want it, go to it.

Now, going back to the 60 degree method of obtaining the miter, using 12 on the tongue as a starting point, the angle intersects the blade at 20.78 (20 19/24), and the tongue will give the miter, but in so doing the calculation basis is practically destroyed, because the standard of measurement is reversed thereby crippled in complications. To make this point more clear, see the accompanying illustration. The 30 degree angle intersects the blade at 6 11/12 and the 60 degree at 20 19/24 on square No. 1.

Now suppose the figures giving the 30 degree were pivotal points, just flip the square over and it will lie in the position of square No. 2; and it shows that the blade coincides with the miter. Again the 6 11/12 is to the side of the hexagon as 12 is to the inscribed diameter; thus the inscribed diameter in the illustration is two feet, then $2 \times 6 \frac{11}{12} = 13 \frac{5}{12}$, which represents the length of the required sides.

Now, taking the 60 degree angle, suppose 12 on the tongue of square No. 2 is a pivotal point and we take hold of the end of the blade, and raise it up until the tongue rests in line with the center, as shown in square No. 3; it will be seen that 20 19/24 will be in line with one side of the polygon and that the tongue coincides with the miter, but in so doing, we have lost our calculating basis as before mentioned.

Suppose the polygon was an octagon, then the miter line would be at 22½ degrees and would fall at 4.97 (5) on the blade. By Mr. Wilson's way of looking at it, the miter line would be 67½ degrees and would fall at 28.97 (practically 29 inches), which is five inches longer than the blade, thereby causing a reduction of the parts to use, which further complicates matters in the way of calculation basis. By the other method, the more sides in the polygon, the lower the degree angle falls on the blade; as for instance, say the polygon has 360 sides, then the degree would be one and the angle would fall at .2095 (practically 5/24 of an inch) and represents the length of the sides per foot of the inscribed diameter, while by the other method the degree line would fall at 687.48 inches or 57 feet 3½ inches, which is 55 feet 3½ inches longer than the blade, which, to say the least, would be a little bit unyielding.

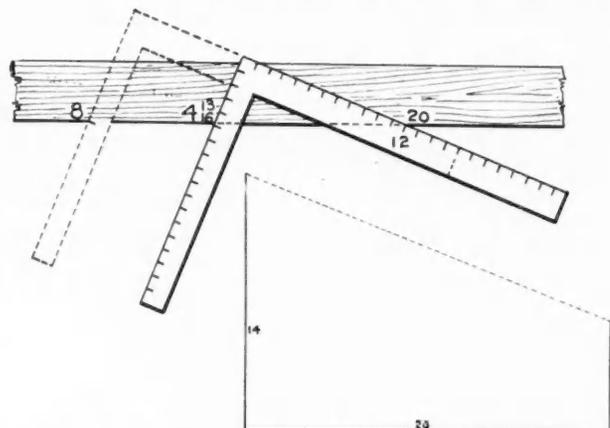
A. W. Woods.

Shed Roof Rafter Again

To the Editor:

Farmer, Wash.

I see in the November number of your valuable paper, that Frank Rubrick of Graff, Neb., is a little puzzled about a shed roof. I am enclosing a sketch of the method I use. Take



the difference between the two sides on the tongue, and the span on the blade; mark both sides. Then slide the square down to the figure 12, keeping the blade to the lines; and the figure on the tongue gives the number of inches rise per foot run. Having found these proportions, then step off in the usual way.

H. B. PARK.

The Union Label

To the Editor: St. Bernard, Ohio.

When you earn a Union Dollar
And spend it, make a "Holler"
For the little Union Label,
That denotes a thing is fair.
If the merchant can't supply it,
Pass the article—don't buy it;
That's the only way a union man
Can prove he's "on the square."

In the crowded city dwelling
There the atmosphere's ill smelling.
And the microbes fairly revel,
Sending death both far and near;
Where the sweatshop slaves are working
And diseases foul are lurking,
You will never, never find,
The precious union label there.

Here is something to remember
If you claim to be a member
Of a union, you can prove it
To the world no better way—
Then to hustle all you're able
For your friend, the union label;
For it means self-preservation.
That's as certain as the day.

LOUISE OSWALD.

Suggestion Wanted

To the Editor: New Baltimore, Mich.

I would like to know through your valuable paper how to make a truss for a 50-ft. square dance hall, open all around. The roof is to have four hips. The orchestra box is 12 ft. square and is to hang from the roof in the center of the hall.

HENRY HABARTH.

Table for Heights of Window Head Segments

To the Editor: Paterson, N. J.

Enclosed you will find a table for height of window head segments (from spring of arch to crown of arch of windows), where the radius is the width of a brick opening plus one foot. The writer has found this of great value, as it saves the time figuring this when making millwork details.

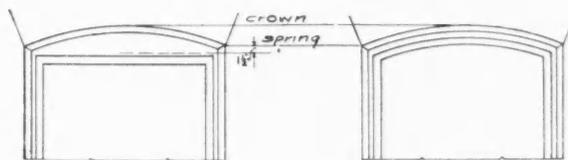
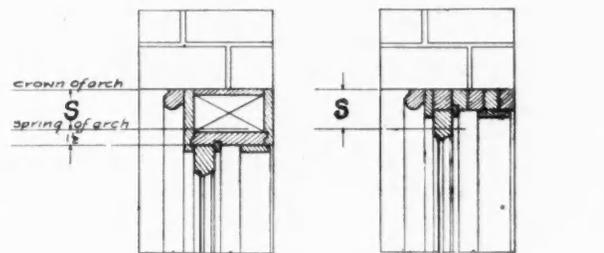


Diagram Showing Parts in Segment Head Windows

and am satisfied that this would prove of value to your magazine.

The sections and elevations shown in the illustration give the reader the relative location between the crown of the arch and the spring of the arch. Section and elevation "A" are for a window with a circular head frame and square head sash, section and elevation "B" are for a window with a circular head frame and sash. "S" in the table is the height of the segment.

Brick Opening	Radius	S	Brick Opening	Radius	S
1' 0"	2' 0"	.77"	7"	7"	9.02"
1	1	.86	8	8	9.15
2	2	.96	9	9	9.29
3	3	1.07	10	10	9.42
4	4	1.17	11	11	9.55
5	5	1.28	7' 0"	8' 0"	9.68
6	6	1.39	1	1	9.81
7	7	1.50	2	2	9.94
8	8	1.61	3	3	10.07
9	9	1.72	4	4	10.20
10	10	1.83	5	5	10.34
11	11	1.95	6	6	10.47
2' 0"	3' 0"	2.06	7	7	10.60
1	1	2.18	8	8	10.73
2	2	2.30	9	9	10.86
3	3	2.42	10	10	10.99
4	4	2.53	11	11	11.13
5	5	2.65	8' 0"	9' 0"	11.26
6	6	2.77	1	1	11.39
7	7	2.90	2	2	11.52
8	8	3.02	3	3	11.65
9	9	3.14	4	4	11.79
10	10	3.26	5	5	11.92
11	11	3.39	6	6	12.05
3' 0"	4' 0"	3.51	7	7	12.18
1	1	3.63	8	8	12.31
2	2	3.76	9	9	12.45
3	3	3.88	10	10	12.58
4	4	4.00	11	11	12.71
5	5	4.13	9' 0"	10' 0"	12.84
6	6	4.26	1	1	12.97
7	7	4.38	2	2	13.11
8	8	4.51	3	3	13.24
9	9	4.64	4	4	13.37
10	10	4.76	5	5	13.50
11	11	4.89	6	6	13.63
4' 0"	5' 0"	5.01	7	7	13.77
1	1	5.14	8	8	13.90
2	2	5.27	9	9	14.03
3	3	5.40	10	10	14.16
4	4	5.52	11	11	14.30
5	5	5.65	10' 0"	11' 0"	14.43
6	6	5.78	1	1	14.56
7	7	5.91	2	2	14.69
8	8	6.04	3	3	14.83
9	9	6.17	4	4	14.96
10	10	6.29	5	5	15.09
11	11	6.42	6	6	15.23
5' 0"	6' 0"	6.55	7	7	15.36
1	1	6.68	8	8	15.49
2	2	6.81	9	9	15.63
3	3	6.94	10	10	15.76
4	4	7.07	11	11	15.89
5	5	7.20	11' 0"	12' 0"	16.02
6	6	7.33	1	1	16.15
7	7	7.46	2	2	16.29
8	8	7.59	3	3	16.42
9	9	7.72	4	4	16.55
10	10	7.85	5	5	16.68
11	11	7.98	6	6	16.82
6' 0"	7' 0"	8.11	7	7	16.95
1	1	8.24	8	8	17.08
2	2	8.37	9	9	17.22
3	3	8.50	10	10	17.35
4	4	8.63	11	11	17.48
5	5	8.76	12' 0"	13' 0"	17.61
6	6	8.89			

JOHN S. EDMUND.

To Scribe Base of Columns

To the Editor: Durand, Mich.

Here is something I would like to have answered through your paper, and that is how to scribe the base of a round porch column to enable one to cut it so as to fit the slant of the porch floor, which has a drop, say, of three inches in eight feet. If the column was square, it would be easy enough; but being round I am unable to mark it and get a good fit.

WM. VRELAND.

Answer: Difficulties of this kind may be overcome by constructing a temporary miter box with the desired angle cut in same, then place the column in it to the proper position and use the saw as you would in any ordinary miter box.

EDITOR.

We Feel That Way About It Too

To the Editor:

Mason, Nevada.

I wish to thank you for the copy of Radford's "Details of Building Construction," which I recently received. This book alone is worth more than the price asked for it and the AMERICAN CARPENTER AND BUILDER together. It is a valuable addition to any one's library and should be in the possession of every man in the business.



New Bank Building and Drug Store, Mason, Nev.

I am enclosing two photographs showing some of my season's work. The one (not shown here, Ed.) is a general store building 38 feet by 80 feet owned by the Mason Mercantile Company. It is modern in every way, with plate glass and Petz store front construction. The other is the First National Bank Building and the Mason Valley Drug Co. store, of which Mr. O. H. Bolt is the proprietor.

Wishing you continued success I am,

A. W. FRAZER,
Architect and Builder.

Board Feet in Logs

To the Editor:

Hat Creek, Wyo.

Will some one give a rule for figuring board feet in logs, tapering from top to larger at bottom.

I am a subscriber and value the paper very highly.

W. E. JEWETT.

Answer: The hand book gotten out by the Forest Service on log rules, shows forty-five different methods for measuring logs, each of which differs in some respect from the others. In the Southern and Central section of the country the rule most generally followed is the Scribner-Doyle, which is based on the number of square-edged inch boards of standard width a log will make, and in scaling by this rule measurement is taken at the small end of the log inside of the bark. Or if it is a longer log to be cut in two before sawing, the measurement of both ends is taken and the average diameter of the two makes the scale measurement for the butt log.

Just what rule is most used in your state we don't know. There is a rule known as the $\frac{3}{4}$ rule, said to be used in Maine, Massachusetts and New Hampshire, and formula on which it is based being as follows: Deduct $\frac{3}{4}$ the diameter at the small end of the log inside of the bark for saw kerf and slabs, square the remainder, multiply by the length of the log and divide this last product by 12 for the contents of the log in board feet. There is another rule, known as the Orange river rule, used in Texas, based on the following: Multiply the square of the diameter of the small end of the log inside of the bark by the length of the log, and divide the product by 30. The result is the contents in board feet.

You will observe that in all of these rules the figures are based on the measurement taken at the small end of the log inside the bark. By keeping this in mind, and getting a copy of the table of rules followed by the purchaser of your timber, you can easily estimate the amount of timber before it is hauled.

Another rule is one known as the New Hampshire rule, which is based on an imaginary cubic foot, equal to about 1.4 of the standard cubic foot. The statutes of New Hampshire, 1910, give the law on this rule as follows:

"All round timber, the quantity of which is estimated by the thousand, shall be measured according to the following rules: A stick of timber sixteen inches in diameter and twelve inches long shall constitute one cubic foot, and the same ratio shall apply to any other size and quantity. Each cubic foot shall constitute ten feet of a thousand board feet."

In the practical use of this rule it is customary to consider 115 cubic feet equivalent to 1,000 feet board measure, instead of 100 cubic feet, according to the wording of the statute. In this case the diameter is taken at the middle of the log inside the bark. If the diameter is measured at the small end of the log, 106 cubic feet are allowed for 1,000 board feet. The New Hampshire rule is also called the Blodgett rule.

An Ohio Barn

To the Editor:

Napoleon, Ohio.

Find enclosed \$200 for a year's subscription. I am also sending you a photo of a barn frame I built last summer. Would like to see it in the AMERICAN CARPENTER AND BUILDER. This barn is 40 by 80 feet, with 12 ft. posts, 4 open



Fine Barn in Course of Construction at Holgate, Ohio

bents, and a 10 ft. brick basement. This barn was built on the farm of Roller and Pickering at Holgate, Ohio. Wishing the AMERICAN CARPENTER AND BUILDER all success,

EDW. M. BURGEL,
Contractor and Builder.

Fitting Sliding Doors

To the Editor:

Binghamton, N. Y.

I would like to ask the following question through your valuable paper: Will some reader or brother carpenter tell me if there is any way to put on stops on sliding doors without cutting out for the escutcheons to pass the stops to allow the door to shove back flush. It makes an unsightly looking job otherwise.

E. S. McKEEL.

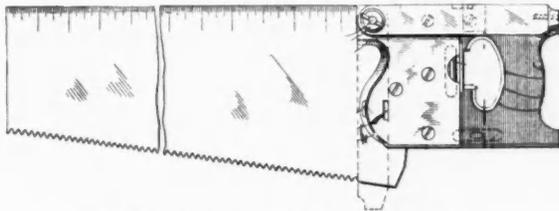


CONDUCTED BY WATSON & BOYDEN, PATENT LAWYERS AND SOLICITORS, WASHINGTON, D. C.

Combination Saw

1,011,042. Patented Dec. 5, 1911, by Henry Eweler, of Brooklyn, New York.

This is a combination tool, consisting of a hand saw in the handle of which is mounted a plumb level and a surface



Combined Saw, Rule, Plumb and Level

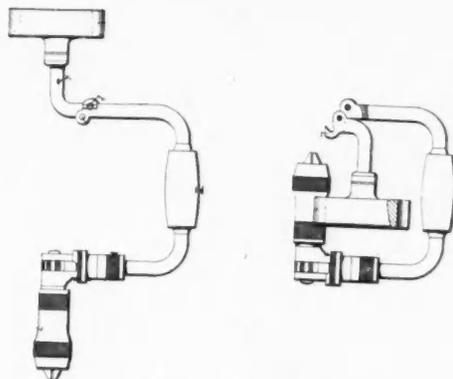
level. The back edge of the saw is provided with a scale of inches and a swinging arm is pivoted to the handle; and may be swung into position to act as one side of a square while the saw blade forms the other side.

Folding Brace

1,006,316. Patented Oct. 17, 1911, by Francis Darwin Turner and Norman De Ford Corser, of Salt Lake City, Utah.

It is a well known fact that one of the most inconvenient tools to pack away is the ordinary carpenter's brace. This is on account of the peculiar shape of the tool, the bend necessitating the provision of more room for the tool than other tools of similar weight would occupy.

An object of this invention is to provide a device which



Brace that Folds up

is capable of being folded up into a compact form so as to occupy little room in a tool chest or carrier, and which at the same time can be easily adjusted to the proper working position.

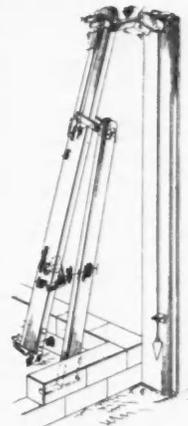
The two illustrations show the brace in its folded and working positions.

Support for Plumb-Rules

1,003,499. Patented Sept. 19, 1911, by Henry Platt, of Suffern, N. Y.

This invention relates to plumb rules and more particularly to means for supporting a rule in vertical position when starting a plumbing.

Heretofore, it has been the practice for brick-layers, masons and other artisans, when starting a plumbing to lay the first few courses of wall or partition without the aid of a plumb rule, relying entirely upon the eye to properly aline the bricks until the wall has reached a sufficient height to permit the plumb rule to be placed against the same, when the bricks in the lower courses of the wall are struck with a hammer or other suitable tool until the wall is plumb. Such a mode of construction is very unsatisfactory, not only on account of the loss of time and labor on the part of the bricklayer in alining the bricks after the lower courses are laid, but also by reason of the fact that the mortar sets quickly, thus rendering it almost impossible to aline the bricks with the result that the base of the finished wall or partition is often out of plumb.



For Plumbing

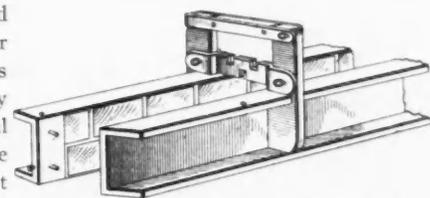
The object of the invention is to obviate these objectionable features and to provide means whereby a plumb level may be supported in vertical position when starting a plumbing so as to provide an accurate gage for the bricklayer to build against when laying the lower courses in a wall, thereby not only insuring a perfectly plumb wall, but materially reducing time and labor on the part of the operator in erecting said wall.

The construction and arrangement of the device will be obvious from the illustration.

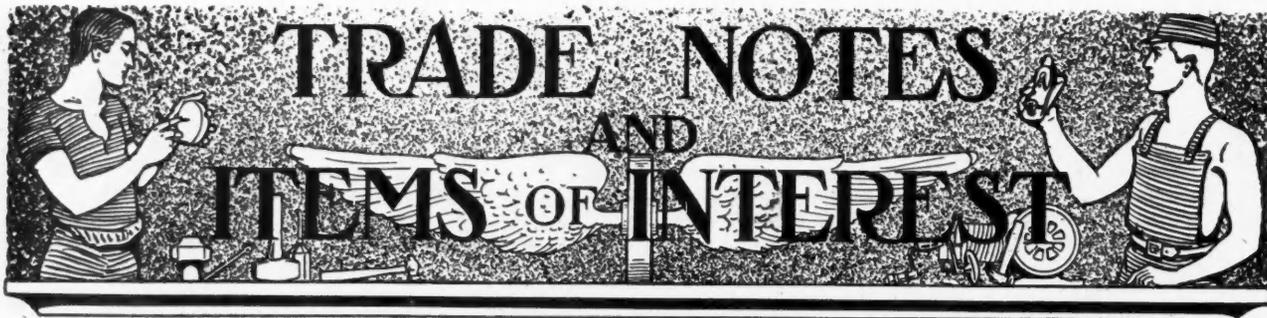
Concrete Wall Molding Device

1,005,016. Patented Oct. 3, 1911, by Richard W. Fuller, of Woodward County, Okla.

This is an improved wall mold consisting of a pair of channel bars held together by means of a special clamp. After the concrete has set the clamp may be moved laterally out of engagement with the wall.



Movable Form for Making Concrete Walls



Home-Made Cutters

To file a home-made knife so it will cut any of the standard mouldings entails experience and tedious work. Much time is expended on cutters for even the simplest mouldings, while the more elaborate ones, with their curves and offsets, consume time enough to more than pay for up-to-date Reversible Cutters. Then again the home-made cutter must be re-filed to shape at each sharpening. Unless great care is observed in doing this, it will be found that after several sharpenings the shape of the mould has become so distorted as not to match with the original.

In making Reversible Cutters the shape of moulding is turned and ground into the cutting wings. Especially is this practice observed by Messrs. Samuel J. Shimer & Sons, Milton, Pa.; the largest cutter manufacturers in the world. The sharpening is done by filing from the inside of the wings, consequently the shape never changes. The Shimer Cutters are also clearance ground, do not friction and burn the lumber, and as a result do not dull easily.

Reversible Cutters for the Single Spindle Shaper or One-Way Cutters for the double spindle machines will stop the detail work in your mill, consequently you will be saved not only time and annoyance but money.

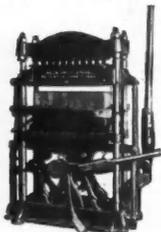
The Shimer Catalogue and Pattern Book is full of standard patterns, carefully numbered and priced, which you are at liberty to use. If your work can not be conformed to any of the standard patterns shown, send a wood sample or blue print of what is desired and cutters will be made to reproduce it.

Valuable Books on Concrete—Free

Our readers will no doubt be much interested in the two books on concrete which are being issued and distributed by the Helm Brick Machine Co., of Traverse City, Mich. One of these books is a Hand Book on Concrete Brick and Block Making. It covers sixteen subjects of very great importance to the concrete worker. They are as follows:

The field for concrete.	Ways of making products.
Selecting materials.	Various building systems.
How to proportion.	Forming the product.
How to cure product.	Steam curing.
Plant arrangement.	A waterproof building system fully illustrated.
How to estimate.	Weights of materials.
Comparative tests.	Hints on selling.
Table of compression working values.	Profits in concrete.

For the next thirty days the above company is sending out this valuable Hand Book absolutely free to all who inquire for it, and in addition they send along a complete catalog illustrating and describing Helm presses and the Helm dry wall building system.



The accompanying illustration shows one of the Helm presses which is built for making pressed cement brick or the dry wall building blocks. These presses are built in different sizes and for hand or

power operation. They exert a pressure of 80,000 pounds, and do away with tamping. The Helm dry wall building system makes it unnecessary to use furring and lathing, and consequently saves money for the builders. This system is being rapidly adopted.

Both of the valuable books mentioned above can be secured absolutely free by our readers by simply writing to the Helm Brick Machine Co., 471 Bank Bldg., Traverse City, Mich.

I. H. C. Almanac and Encyclopedia

We have received from the International Harvester Company of America, Harvester Building, Chicago, their 1912 Almanac and Encyclopedia. This is a very handy little volume, containing a world of practical information.

When the first copy of this I. H. C. Almanac was issued in 1909, the one thought in the minds of its editors was to make it a modern almanac. To that end they have each year secured the services of agricultural experts in preparing special articles of value to farmers. In the 1912 edition will be found the following specially valuable articles:

"Some Economic History of the Original Thirteen States," by Cyril G. Hopkins.

"Seed Testing," by Stephen D. Van Benthuyzen.

"Rotation of Crops," by J. E. Waggoner.

"Alfalfa," by J. E. Wing.

"Up-to-date Dairying," by W. D. Hoard.

"Sanitation in the Country," by Henry Wallace and other excellent articles on Beautifying the Farm, Irrigation and Drainage, Fertility, Crop Production, and so on.

We are informed that this Almanac and Encyclopedia, together with a beautiful 1912 calendar, will be sent free of charge to any reader of the AMERICAN CARPENTER AND BUILDER writing for them.

Buck Brothers Edge Tools

For fifty years the tools made by Buck Brothers, Millbury, Mass., have had the reputation for excellence among the woodworkers in the United States.

In their new Edge Tool Price List and Reference Book, which has just been received, they make it clear that this reputation has been built up by no secret process. They have simply made it a rule ever since the business was established in 1853 to buy the best material to be found in the market, to employ the best skilled workmen and to give constant personal supervision to the business, with the one idea of producing high grade tools.

They state that occasionally workmen express surprise that their tools are somewhat higher in price than those of other manufacturers, but that constant use has proved them to be the cheapest to the man who earns his living by their use, due to the length of time they will hold a fine cutting edge.

This catalogue and reference book lists chisels of all kinds, plane irons, carving tools, etc. Woodworkers will find it a valuable and interesting book to have. It is substantially bound, nicely printed and illustrated. It will be sent free on request to readers of the AMERICAN CARPENTER AND BUILDER.



Where the Big Bargains Come From

Out from these great concrete warehouses come the greatest mill-work and lumber bargains that the American market affords.

Our whole business revolves around the bargain idea. The present building season finds us better equipped than ever before to save money for contractors and builders. You will be amazed to see the big reductions on staple millwork and lumber of highest guaranteed quality.

New Bargain Catalog Ready

This catalog is in itself an immense exhibit of the finest building material on the market. It offers an almost unlimited variety of the latest styles in millwork of every description. Doors in all regular sizes and in scores of new and beautiful patterns and in various woods—veneered doors in Colonial, Mission, Craftsman and other popular styles—art glass doors in exquisite designs and colors—doors for every purpose. Windows to correspond with every style of door. Mouldings, inside finish, flooring, mantels, stair and porch material—everything that goes into any home, down to the very last detail. A bargain price and a guarantee of quality, safe delivery and satisfaction on every item. Send for the catalog and see for yourself.

New Plan Books—Sent Free

The new Gordon-Van Tine Book of Plans, prepared at a cost of over \$5,000, is now ready for free distribution to carpenters and contractors. A complete and practical work that gives 32 designs for city, suburban and country residences, cottages and bungalows costing from \$600 to \$6,000. Also 12 plans for barn, dairy and cattle barns and other outbuildings. This book keeps cost within original estimates, for every plan has been proved again and again by actual construction.

The Plan Book will be mailed free on receipt of 10 cents in stamps or a dime to cover cost of packing and mailing.

You Are Invited to Visit Our Vast New Millwork and Lumber Plant

Although we conduct our business entirely by mail, we like to have carpenters and contractors visit our plant. Hundreds of them do this every year. Our warehouse is the busiest place in Iowa. Come and see us loading 22 cars at a time from our loading platforms, extending the entire length of the plant. Meet personally the men who stand behind this gigantic enterprise. The latch string is always out.

We Can Save You Hundreds of Dollars This Season

Why pay middlemen's double prices for millwork, lumber and other building material? Save several hundred dollars this season by buying at net wholesale prices direct from (167)

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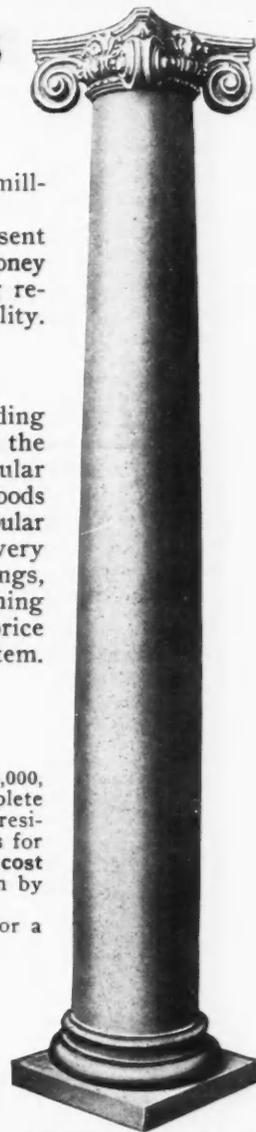
When Writing Advertisers Please Mention the American Carpenter and Builder.



No. E 322—Colonial Built-up Column; Cypress, Plain Cap.

\$163

Dealer's Price, \$3.25



No. E 323—Colonial Built-up Column; Cypress, Fancy Cap.

\$222

Dealer's Price, \$4.75

Bungalow Plans Free

If you are interested in obtaining absolutely free of cost a complete set of architect's plans and working drawings for an attractive bungalow costing about \$5,000 to build, write at once to the Southern Cypress Manufacturers' Association, 1216 Hibernia Bank Building, New Orleans, La., and ask for Vol. 8 of the "Cypress Pocket Library," which has just been published. It will be mailed you free on request. In addition to the plans for a fine example of this type of residence known as Bungalow "C," from the design of Wm. G. Massdrene, a New York architect widely known for his original and successful bungalows, the volume contains complete specifications covering all materials and details of construction, and incidentally tells you a very interesting story of the advantages of cypress wood as a building material from the point of view of durability, economy and artistic quality.

And by the way, this little volume is only one of a series of several volumes comprising the "Cypress Pocket Library," any one of which can be had on the same liberal terms—simply for the asking. Vol. 1 will give you the full text of the U. S. Government report on cypress, together with a list of the titles of the several volumes of this useful little library, which is published to aid in carrying out the object of the "All-Round Helps Department" maintained by the Southern Cypress Manufacturers' Association. The maintenance of this Department is a splendid work, as it enables anyone to get on request authoritative and detailed practical advice on problems of wood construction.

Tools for Special Purposes

This is an age of specialization. Tools and machinery are demanded for a specific purpose—to do one thing well—to do it better and faster than with present practices and tools.

Recognizing this fact the manufacturers of the Shimer Cutter Heads began several years ago to prepare for each branch of work a special tool—a Cutter Head which should be the best of its kind, embracing all the labor and time-saving features possible and made to work interchangeably with other tools.

These Cutter Heads while built on one general plan, differ in their special application, and embrace Heads for making Flooring, Ceiling, Siding, Wainscoting, Ship Lap, O. G. Batten, Jointing, Door and Sash Mouldings besides being adapted to the making of many specialties.

This interchangeable system of Shimer & Sons has met with universal favor among mill men especially as these special Cutter Heads are so low in price that a variety of them can be purchased for a comparatively small sum of money.

There is not a tool shown in the Shimer Catalogue which is not rendering good service somewhere. The large line of Matcher Heads are built to suit any pocket book and to meet conditions arising from day to day. They are made for the fast feed matcher taking stock at 200 feet per minute as well as for all the machines between the fastest and the slowest. A study of this book will put you in position to buy intelligently. If you do not have a copy send for one at once to Samuel J. Shimer & Sons, Milton, Pa.

How I was Able to Own a Fine Cruising Yacht

By A. U. Hoyt

After consulting several catalogs I had received from manufacturers of boat frames and boat material in the "knock-down," I finally decided on a raised deck cruiser of the Norman Stern type, 32 ft. over all and 8 ft. beam shown in one of the catalogs.

Quality Is
Economy

*How do you finish floors—
with Wax or with Varnish?
With cheap or good Varnish?*

Between good wax and poor varnish there's not much to choose—the polishing and re-varnishing are expensive luxuries.

Between the best wax and such a varnish as Murphy Transparent Floor Varnish there is the choice between an hour's hard work of polishing each day and an occasional few moments of light dusting.

The Varnish
That Lasts
Longest

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FRANKLIN MURPHY, President
Associated with Dougall Varnish Company, Limited, Montreal, Canada

NEWARK,
N. J.
CHICAGO,
ILL.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Put It At Work In Your Shop



*"Handy as a Pocket
in a Shirt"*

The "Multimotor" Shop Engine increases your profits and keeps down the size of your pay-roll. Does the work of three men at an expense of *less than a cent an hour.*

Stop pedal-pushing and crank-turning! Let the

Fuller & Johnson "Multimotor" Shop Engine

turn the wheels in *your* shop. This wonderful engine is small in size but a giant in power. Runs all hand-power or foot-power machines—jig saws, lathes, emery wheel, grindstone, drills, etc. Just the thing for carpenters, contractors and owners of small workshops.

Perfectly Simple Absolutely Safe

Simplest, neatest, strongest, most reliable little engine ever built. Comes to you *complete*—nothing to add but gasoline.

Easily moved anywhere. For *indoor* use has *out-door* fuel tank, insuring perfect safety.

Important working parts protected by dust-proof case. Needs no attention while running. Works steadily all day on a few cents' worth of grocery-store gasoline. It is air-cooled, fool-proof, cannot freeze or overheat.

The "Multimotor" in design, material and construction equals the best automobile engines. Every engine is thoroughly tested before leaving the factory, and is *guaranteed!*

Fuller & Johnson Farm Pump Engine

Practically the same as "Multimotor," with pumping gears added. Can be hooked up to any pump in 15 minutes. Needs no belts, arms, jacks or special platform. Pumps 270 to 2,450 gallons every hour. Perfectly adapted to farm and suburban use

Engine Book Sent Free!

Book, giving full information about "Multimotor" and Farm Pump Engine, sent FREE on request. Let us tell you more about these amazing little power-producers. Let us send you the name of the nearest dealer, who will show you the engine and *explain* what it can do. (264)

If interested in larger engines, ask for Catalog of Fuller & Johnson's Famous Double-Efficiency Engines.



Fuller & Johnson
"MULTIMOTOR"
Works Like Ten Men

FULLER & JOHNSON MFG. CO. 1 Ames Street (Established 1840) **Madison, Wis., U. S. A.**

When Writing Advertisers Please Mention the American Carpenter and Builder.



The
MARK of the **MAKER**
on this chisel guar-
tees good service

THAT means more than
quality alone—though
the quality is there, just as in
every P.S. & W. Hand-Tool.

Not only a special high-
carbon tool-steel in the
blades; but a temper that
gives the sharpest and long-
est-wearing edge.

Not only straight-grained,
seasoned hard-wood in the
handle, but handles that are
turned to fit smoothly and
snugly in the socket.

These are but two of many
service qualities that have
given P.S. & W. Chisels and
Gouges the leading position
with expert mechanics.

Guaranteed P. S. & W. Braces

Next time you go to a hardware store—ask to see a P. S. & W. "Samson" Brace. It has the vise-like grip, and instant release of the ball-bearing chuck, as well as a steel-clad head with dust-proof ball bearings. It's one of the top notchers in our very complete and extensive line of hand tools for Carpenters.

Write today for our free 170-page "Mechanics Handy List". It contains 35 pages of useful information, and a catalog of over 200 tools for Carpenters, Machinists, Electricians and Tinsmiths.

The Peck, Stow & Wilcox Co.

MFRS. of the Largest Line of Mechanics' Hand-Tools Offered by Any Maker

Address Correspondence:

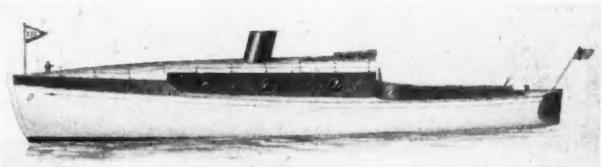
22 Murray Street - New York City

Established 1819 Five Large Factories

I came to this decision for several reasons. The model boat was a very handsome looking craft, the company one of the oldest in their line and with the reputation of sending out only first class material. I wrote to them for full particulars regarding the model I had selected and received without delay a set of blue prints drawn to scale, showing the sheer plan, cabin plans, construction plan and cross sections, which looked very good to me. I, therefore, sent in my order for a set of perfect frames, planking cut to exact shape, cabin frames, fittings, engine bed, and hardware to complete the boat. The material for cabin and interior finish I decided to buy locally and save the freight, as this is only ordinary lumber and can be purchased in any town.

The goods arrived promptly, and I had them delivered to a vacant building close to my home which I had secured to build the boat in. The next morning I started to unpack the material. I found in the box of hardware and fittings full instructions and illustrations for finishing the boat complete, together with an itemized list checking every article.

I set up the keel on blocking, as per instructions, and bolted the stem to keel, plumbed it up and braced it solidly by nailing a staylathe from stem to side of shop. I next set up and fastened the transom to place, which was very quickly done,



"I Finally Decided on a Raised Deck Cruiser 32 ft. Over All and 8 ft. Beam."

as there was no fitting of any kind to do, and was then ready for the ribs, which I found had all been beveled, fitted, fastened together and numbered with a corresponding number on the keel, so that I could almost set them up with my eyes closed, which shows that it was a short job. In fact, at quitting time the first day the boat was completely in frame. The work was so fascinating and I had gotten so interested in it, you may be sure I was on the job bright and early the next morning and began bolting the keelson to place. This was done by putting a drift bolt down through the keelson and each floor timber into the keel, riveting a washer over each bolt as it was being driven to place. I could plainly see that it would take some heavy weather to ever tear this to pieces.

According to the instructions, the next thing was to put in the bilge stringers. (These I might say incidentally are straight pieces of oak that run from the stem to the stern of the boat and follow the hollow of the bilge.) They are fastened to place by putting a bolt through each rib and stringer with a nut and washer on the inside of the stringers. Having bolted these to place the boat was ready to begin planking. In looking over the instruction sheet I found that the top plank or sheer strake as it is called was to be put on first. This was a clear white oak and sawed to exact shape.

The next job was to put in the clamps. These are straight pieces of oak and run from the stem to the transom on each side of the boat, with the top edges of them 1½ inches below the top edge of the sheer strake. They are fastened to place by putting a bolt through the bottom edge of the sheer strake and each rib with a nut and washer on the inside of the clamp. I next started to put on number one plank, which fits along the keel and is called the garboard strake. This I had been told was the most difficult plank of the whole lot to put on, as there is considerable of a twist to the forward end of it where it fits in the rabbet of the stem, and as I

When Writing Advertisers Please Mention the American Carpenter and Builder.

TRIUMPH OF THE UNDERFEED



Cheapest Heat

*in China
as well as
in America*

Write for FREE Catalog and Learn How to SAVE One-half to Two-thirds on Coal Bills

CLEAN, EVEN heat at LEAST cost is insured *everywhere* by the Underfeed System. This is the reason why so many architects and builders have endorsed the fed-from-below and all-fire-on-top Underfeed. This system has won international renown for *adding* to the *renting* or *selling* value of any building.

With all heating systems of the world in competition, the Underfeed was selected by President Seymour to heat four buildings of the Presbyterian Mission College at Teng Chou Fu, North China. Knowing the matchless economy of Underfeed maintenance, after a trial of two years in a Mission School in Korea, Dr. Seymour delegated L. H. Severance, of Cleveland, O., to place the big order for North China. Here, cost of high grade coal

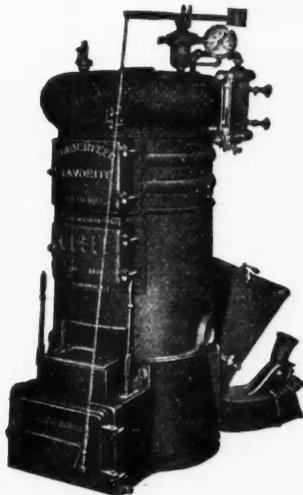
is almost prohibitive, while poor grades, which burn just as perfectly in the Underfeed and yield as much heat as high grade coal, are cheaply obtained. Because of its ability to perfectly consume cheapest grades of coal, the Underfeed soon pays for itself. No matter where you live, you can cut your coal bills one-half to two-thirds by installing.

The Peck-Williamson Underfeed HEATING SYSTEMS WARM AIR STEAM-HOT WATER FURNACES-BOILERS

Adapted for all buildings--large or small, residences, stores, apartments, churches, schools or halls.

H. T. Hammond, Mingo Junction, O., writes:—"The wind hits my house all around. My slack bill to heat six rooms, two good sized halls and bath last winter was \$14.60. Had no black smoke or dirt. Anyone can save fuel, time, labor and money by buying the Underfeed."

This illustration shows the Underfeed Boiler



In the Underfeed, smoke and gases, wasted in other heaters, must, in the Underfeed, pass through the fire, are consumed and make more heat. Cheapest slack, pea and buckwheat sizes of hard and soft coal, which would smother fire in other heaters, yield in the Underfeed as much clean, even heat as highest priced coal. The few ashes are removed by shaking the grate bar as in ordinary furnaces and boilers.

If you are going to build either for yourself or for investment, it will PAY you to install an Underfeed. When you specify a Peck-Williamson Underfeed, you are insuring all-time heating satisfaction at least cost, thus adding to your own reputation as a successful architect or builder.

Our Underfeed Booklet and Furnace Catalog and Heating Plans of our Engineering Corps are FREE. Write TODAY for fac-simile testimonials.

THE PECK-WILLIAMSON CO., 436 W. Fifth St.
CINCINNATI, O.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Illustration shows furnace without casing, cut away to show how coal is forced up under fire, which burns on top.



had no steam box I began to think that it was a tough proposition, but by heating a kettle of water boiling hot and pouring it on the ends I brought them to place. The balance of the planking was dead easy by following the instructions and being a little careful in beveling the edges so as to form a calking seam, I succeeded in doing what I considered a good job. At any rate the boat was always water tight as long as I owned her, which I considered good enough proof, especially as I had done the calking myself. The calking I found was not a difficult job. I had first class calking cotton which was included in the hardware furnished by the company that I bought from, and their instructions made the work very simple.

After the boat was planked up I found there was one job that I could not do without help, and that was setting the nails in the planking, but I got out of this cheaply by hiring a boy, paying him 75c for a half day to hold a clinch iron on the inside of the ribs while I set the nails in. After this was done, I went all over the planking with a smoothing plane, planing it smoothly, and afterwards using sandpaper to make a perfect job.

I was now ready for the cabin work and got out the cabin instructions and blue prints. The plans looked good to me and seemed to be worked out to use all available space. I decided to follow them entirely and make no changes. The toilet room was forward, just aft of the gasoline tank, and was 4 ft. long. Next came the main cabin with four berths and 2 hanging clothes lockers. This room was 7 ft. 9 inches long. Aft of this came the engine room and galley which were 4 ft. The cockpit was 7 ft. 9 inches and the after deck 3 ft. long.

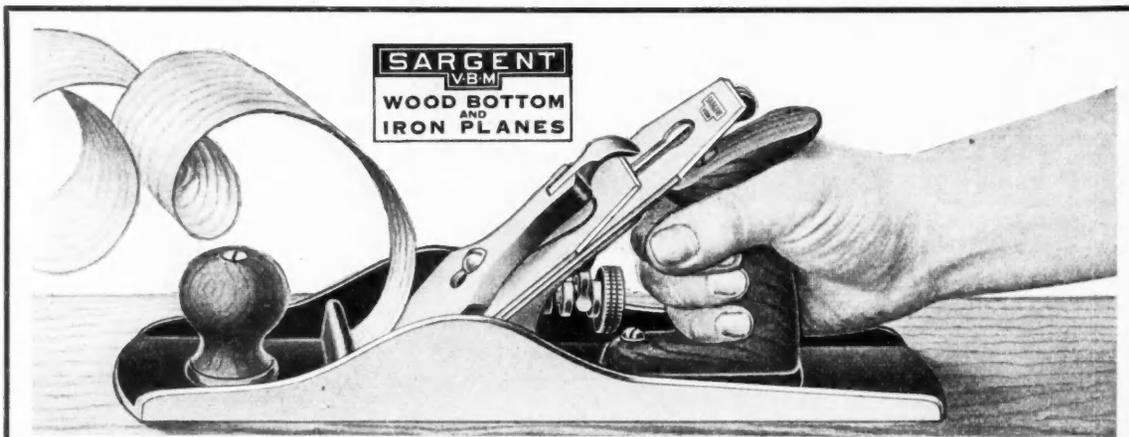
I first put in the three cross engine beds which were sawed to shape and all the fitting I had to do was to notch them over the keelson. These were fastened to place by putting drift

bolts through the beds into the keelson and keel; also a row of nails through the planking into the beds. I next put in the cabin floor beams and laid the cabin floor; also the cockpit stringers and cockpit floor beams, and fitted the cockpit floor to place, but did not fasten it permanently, as the propeller shaft runs underneath this floor and I wished to have it loose when I installed the engine.

The next on the docket was to lay the after deck and planksheer. This was very easily and quickly done, as the deck beams were sawed to exact shape. Now came the cabin proper, and I decided to use red cypress for the sides and roof, as I could get it clear and in the proper widths. It also takes a good finish and is lighter in weight than oak. I continued to work at the boat at odd times, when I did not have to work at my trade, in fact, I did not loose any time from my regular work by building this boat, as I did the whole work evenings and at times that I was laid off for an odd day. The boat was completed, ready for the engine, before navigation opened and I had not missed the time I put on her.

I had written for and received many engine catalogs and had carefully read them over and found out that each and everyone of the had the "best engine made," and was, therefore, in somewhat of a quandary. Decided to write the company that I had bought the frame of, for advice, as I had seen some motors that would not always move when you wanted them to. After hearing from the company I took their advice and ordered an 11 H. P. engine which they said would give the boat a speed of about 10 miles per hour, which was fast enough to suit me. I installed and piped up the engine, doing all the work myself, as I was a little shy on money and could not afford to pay out any more money than was absolutely necessary. As per instructions I also

(Continued to page 94)



VERY

BEST

MADE

We Warrant All Planes Upon Which the Name Sargent Appears

The Cutters are made from the best double refined English cast steel, tempered by the very best improved process, then highly polished and sharpened ready for use, and are WARRANTED. The Cutters are made from heavy steel, which insures no chattering, even when the plane is used on cross-grained hard wood.

The Sargent Tool Book—Free On Request

gives a description of the full line of Sargent Planes and other tools for mechanics. This 250-page text-book on tools is worth sending for.

SARGENT & COMPANY : 1149 Leonard St. : NEW YORK

When Writing Advertisers Please Mention the American Carpenter and Builder.

Mr. Builder:

It Pays to Deal with Practical Lumbermen



Nearly 10,000,000 feet in sight. This cut shows our big Southern Illinois Plant, situated where 27 Trunk Lines and 3 Interurban and Traction Systems have their terminals. Our customers get as prompt service as they could from their home lumber yard, and many other advantages which the local yard cannot offer them.

We do not claim to know anything but lumber—lumber and mill work. We handle nothing else—but in **lumber** and **mill-work** we are **experts**, and we can give you material of selected quality at rock-bottom prices, that even to the closest buyers are **simply amazing**. Send the free coupon today and investigate.

It took us 11 years to work up from lumber jacks to mill owners—then followed 20 years of actual experience in the lumber business, in which we are today. During all this time not a foot of our selected stock has been shipped out without our personal inspection—and every shipment has been made at the very lowest rock-bottom figure. This is the way we have built up our tremendous business.

Increase Your Profits

Send free coupon below for our big history-making lumber and mill work book listing hundreds of astounding bargains—bargains that will mean a **tremendous increase in your profits**. Remember, these prices are quoted on material that is selected by expert lumbermen, and **absolutely guaranteed in every respect**. These prices are **rock-bottom** and are absolutely the lowest **figures** ever offered to bona fide builders. Remember, our material is absolutely guaranteed to be strictly of the **highest grade**. We ship to your customers without any money down, thus assuring them of the best quality, since they may unload the car and examine before paying.

Our Big Helps to Builders—Carpenters—Contractors

We offer all of the facilities (and more) of the local lumber yard. We offer the highest grades of lumber—a great stock to select from—the lowest prices, because of our enormous capacity and the man who engages you to build has the opportunity never before offered.

Our whole plan is to help you—the builder—the carpenter—the contractor. We want you to bear in mind that we are doing something more than just **selling** lumber. We are **lumbermen**—we are in the lumber business and the lumber business **alone**. We don't deal in anything **but** lumber, and, as we told you once before, we don't know anything **but** lumber, but we know **THAT**. We want you to write us.—if you want to deal with out and out lumbermen whose enormous stumpage and far-reaching facilities enables you to buy just as if you stood right in our lumber yards.

BIG BOOK of Bargains FREE

Send for it today. There is everything in this catalog—bargains in doors—gable ornaments—windows—transoms—cellar sash—attic sash—barn sash—stall sash—wall board—porch columns—newels—spindles—brackets—rails—balusters—mouldings—battens—lattice—nosing—wainscoting—window stools—casings—base blocks—head blocks—stair rails—grilles—everything—positively **everything** and at right down rock-bottom prices. You can find anything in lumber and mill-work in this book—anything to build a house from cellar to garret.

Send **COUPON** Now

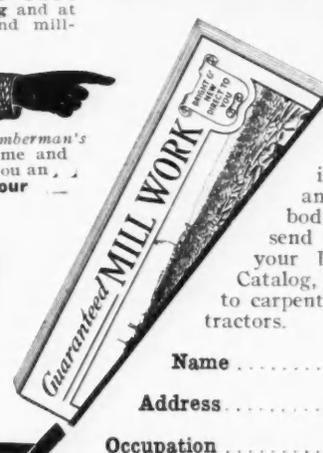
No matter what you are going to **build**—write to us and let us give a *Lumberman's Delivered Estimate*—positively free and postage prepaid. Write your name and address on the free coupon and mail it to us **today—now**. We want to give you an estimate on any bill of lumber you want—a positively free estimate. **Get our Free Catalog at once.**

Barrows & Donnellan Lumber Co.

TRUDE BUILDING, Dept. 1691

CHICAGO

ILLINOIS



Barrows & Donnellan Lumber Co., Trade Building, Dept. 1691, Chicago, Ill.

With the understanding that I am not buying anything or paying anybody for anything you may send me free and prepaid your Lumber and Millwork Catalog, and explain your helps to carpenters, builders and contractors.

Name

Address

Occupation

When Writing Advertisers Please Mention the American Carpenter and Builder.

Glidden

Green Label Varnishes are the highest grade varnishes made. They are made in the largest, most complete and best equipped varnish plant in the world, and are the result of nearly half a century's experience in manufacturing varnishes for all purposes.

Wherefore, it redounds to any builder's credit to use Glidden's Green Label Brand.

To any builder who is interested in the subject of wood finishing, we will gladly send demonstrating panels of Glidden's Endurance Wood Stains and Glidden's Green Label Varnishes. They give to interior trim a richness and beauty that cannot be imitated.



The five brands we recommend your specifying:

M. P. Durable Exterior	\$4.00
M. P. Durable Interior	3.00
M. P. Durable Floor	3.00
Glidden's Velvet White Enamel (Egg Shell Finish)	5.00
Glidden's Superior White Enamel (Gloss Finish) .	5.00

These varnishes are high in price but as the finish is the final touch that completes the job, the finishing material should be of the best. Price ought not to be considered.

The Glidden Varnish Company

Factories: Cleveland, Ohio—Toronto, Canada
Branches: New York — Chicago — London

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Glidden

M. P. Durable Interior, because of its light color, its wonderful flowing and brushing properties and its extreme elasticity and durability, is the highest grade varnish made for interior use.

Glidden's M. P. Durable Floor stands unscathed, even when subjected to usage that would destroy any other floor varnish made. *We can prove this statement.* It combines hard and quick drying properties with great elasticity. It is impervious to water and will not mar nor scratch white.

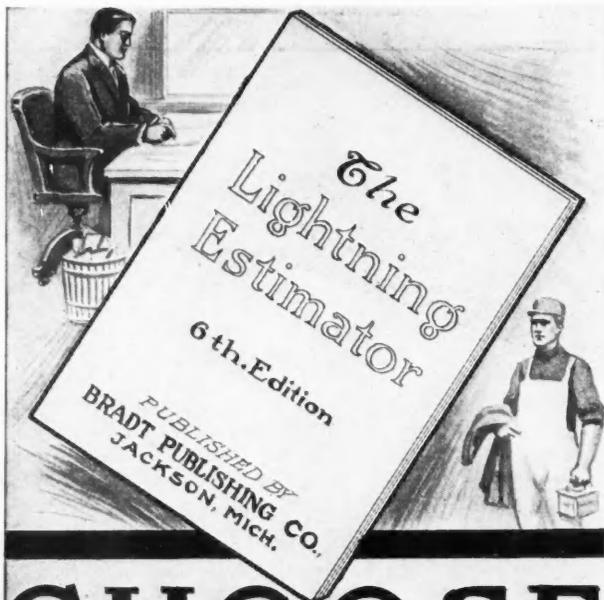
Glidden's Velvet White Enamel (Egg-shell Finish) dries with the appearance of a dull, velvet finish and thus saves the expense of rubbing, though it can be rubbed and polished beautifully, if desired. It produces a more artistic finish than any other white enamel on the market, and the surface produced is waterproof and non-porous, thus resisting the action of repeated washing, alkalies and the fumes of the atmosphere.

Let us send you demonstrating panels

The Glidden Varnish Company

Factories: Cleveland, Ohio—Toronto, Canada

Branches: New York — Chicago — London



CHOOSE

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 **Succe\$\$** 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.

put a lead pipe in each forward corner of the cockpit to form scuppers that would carry off all water that might get in the cockpit from rain or other causes and make it self bailing.

All that remained to be done now was to put on the last coat of paint and varnish, which I finished within the next week and she was ready for launching. I got a truckman to move the boat and put it in the water for \$10.00.

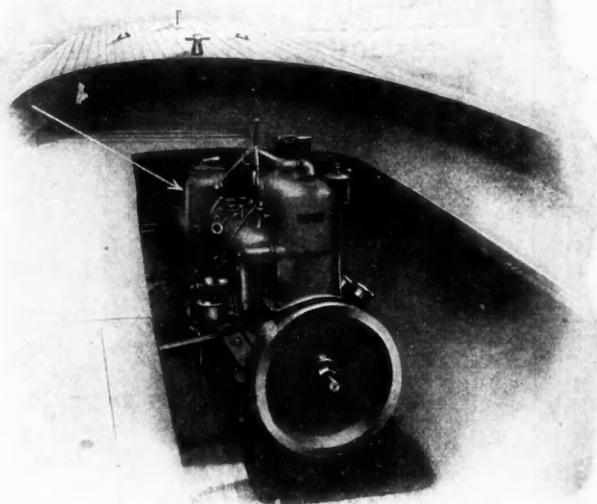
The complete outfit as it now stood in the water had cost me \$600.00. Within two weeks after she was launched I was offered \$900.00 for her, which I refused, as I made up my mind that I was going to enjoy myself sailing that season, as I thought I had earned it; but just before laying up time I did sell the boat to this same party for the \$900.00 after having a whole season's fun out of her, and I intended to build another one this coming winter, but have not just decided whether to build a duplicate of this one or to tackle even a larger one. I had enjoyed the work of building, and had a delightful summer sailing her and had made \$300 in the bargain.

Lackawanna Marine Motors

Quite a bit of favorable comment has been heard in motor boat circles since the new Lackawanna reversible valveless motors have appeared. "Simple and Self-contained" describes these motors.

Through years of experience in hardest usage the number of parts in these motors has been reduced to a minimum, thereby practically eliminating all screws and fastenings so only a few strong hex head bolts and hex lock nuts are required,—interchangeable parts throughout.

All internal working parts are at once accessible. All exterior operative parts being supported on cylinder, the whole interior is instantly seen by simply removing the six hex bolts securing the cylinder to base without disturbing



Showing Proper Installation of Motor in Boat

engine shaft, bearings, timer, pump, flywheel or foundation and yet giving complete access to pistons, inside of cylinders, crank pin and wrist pin bearings. It is claimed *Lackawanna motors have been run five seasons without so much as removing the six bolts to look inside*; as they are looked into and adjusted after complete testing and before shipment.

New illustrated descriptive pamphlet is now ready and can be had by addressing Lackawanna Mfg. Co., 126-A Liberty St., New York City.

All those interested in motor boat building should investigate this well known and reliable engine.

When Writing Advertisers Please Mention the American Carpenter and Builder.

The "ABC" of BEAVER BOARD Construction

A series of 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 I

What Beaver Board Is, and How it is Put Up and Decorated

This brief, concise description is merely to start you right, and will be followed by other advertisements dealing each month with concrete examples of its use for different purposes.

BEAVER BOARD is a pure-wood product, and can be handled as easily, quickly and satisfactorily as any wood-product. It is made in panels of various sizes to meet all requirements. These panels can be cut with a fine cross-cut saw to fit about door-jambes, window-casings, etc., but the sizes are such that there is practically no waste. The panels can also be easily moulded to an arch, as they have sufficient elasticity.

Exact Instructions with Each Shipment

Although it is easy to get good results in putting up *Beaver Board*, you want the very best. So does your client; so do we. Therefore, with every shipment we send printed directions which cover all the little points that long experience has shown help to make a thoroughly satisfactory job. Always look these over carefully before beginning actual construction.

Beaver Board Decoration

Beaver Board is painted after the panels are nailed up and before the panel strips are put on. It is never papered over. Wall-paper is not only less durable and artistic than painting, but much less sanitary, and nowadays folks demand clean, sound, healthful construction in everything.

Beaver Board Sizes

Stock sizes carried by dealers are in 32 in. and 48 in. wide by 4, 5, 5½, 6, 7, 8 and 9 feet long. Sizes in stock at factory for immediate shipment are 24 in., 32 in., 36 in. and 48 in. wide in any length from 4 to 16 feet. Lengths above 10 feet require crating, for which an additional charge is made to cover actual cost. *Beaver Board* is 3-16 inch thick. Decorative strips, moulding, plate rails, etc., can be purchased from planing mills and lumber dealers, but where unobtainable can be furnished by us.

Beaver Board Advantages

Beaver Board is economical, easy to handle, suits any kind or sort of building, retards heat, cold and sound, doesn't crack, check or deteriorate with age. Its endless possibilities for all kinds of uses are fully described in our free booklet "Beaver Board and its Uses" with many pictures of different interiors. Write for it today.

Look for Chapter II in the next issue of *American Carpenter and Builder*.

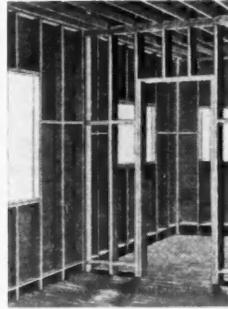
The BEAVER COMPANY of BUFFALO

331 Beaver Road, Buffalo, N. Y., U. S. A.

THE BEAVER COMPANY, LIMITED

371 Beaver Avenue, Ottawa, Canada

When Writing Advertisers Please Mention the American Carpenter and Builder.



Room ready for *Beaver Board* construction, studs evenly spaced and headers in correct position to suit panel designs adopted.



Nailing up panels, using flat-head nails $\frac{3}{4}$ " from edges, 3" apart and bungs-head nails 6" apart for centers.



Before putting on decorative strips center nails are counter-sunk, sizing or first coat of plaster depressions filled and panels painted.



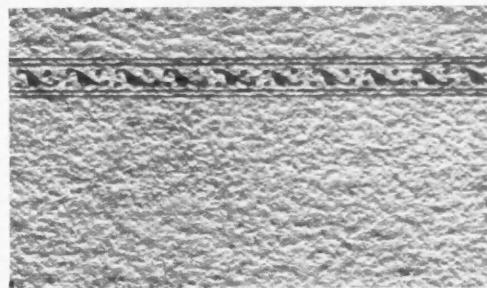
The finished walls and ceilings are more attractive and sanitary than lath and plaster, don't crack, save frequent repairing, etc.

BEAVER BOARD

PURE-WOOD-FIBRE
WALLS & CEILINGS



Look for this mark on the back of every panel



One of the greatest attractions of *BEAVER BOARD* is its beautifully pebbled surface. The photograph reproduced above gives an idea of it, but no illustration can show the soft, rich color of that surface when painted. *BEAVER BOARD* is 3-16 of an inch thick.

The Built-in Refrigerator

By T. T. Redington

Advertising Manager McCray Refrigerator Co.

There has arisen in the last few years a marked tendency for architects and building contractors to include in their plans and specifications for residences, one of the features of the house which is commonly left for consideration until after the house is constructed. This feature is the refrigerator. Formerly, almost anything in the way of an ice box, which would hold a certain amount of ice and have sufficient storage capacity, would pass muster as a refrigerator.

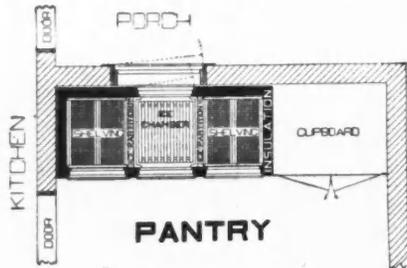


Fig. 1

ed and sanitary refrigerator, has come a rapid improvement in the methods of constructing this part of the household economy. Instead of paying \$10.00 or \$15.00 for an ice box, people are now spending anywhere from \$50.00 up for a refrigerator which meets their requirements.

There are several advantages to be gained by including a refrigerator in the plans and specifications. In the first place, economy in space is obtained. By deciding in advance what size refrigerator is wanted, the proper space can be left in the pantry or kitchen so that the refrigerator can be built into the wall and not stick out into the kitchen.

With the growing of the idea that in order to preserve the health of the family, it is necessary to have a scientifically constructed

In the second place, harmony between the finish of the refrigerator and the finish of the kitchen or pantry may be secured. The refrigerator can be finished any color to match the woodwork in the room.

In the third place, it is much more convenient to have a refrigerator built into its

place, by leaving the required space in the wall, arrangements can be made to have the refrigerator iced from the outside. This saves the dirt and confusion which are caused by the entrance of the ice man into the kitchen and also provides for cooling the refrigerator in the winter without the use of ice.

Bear in mind that the refrigerator does not have to be built-to-order in order to be included into the specifications. By taking the refrigerator manufacturer into your confidence and asking his co-operation, you can find out what amount of space you should leave for one of his stock size refrigerators. In this way, money can be saved and the refrigerator can be as truly built-in as though it were built-to-order.

The accompanying cuts show two very convenient arrangements for locating the refrigerator. In Figure 1 the refrig-

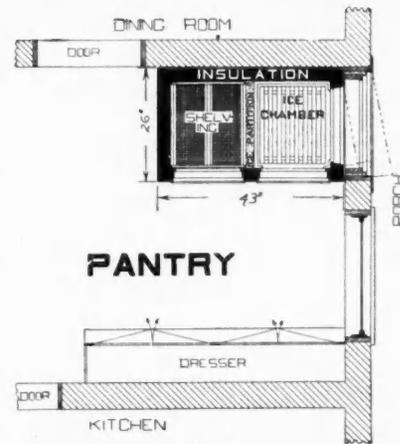
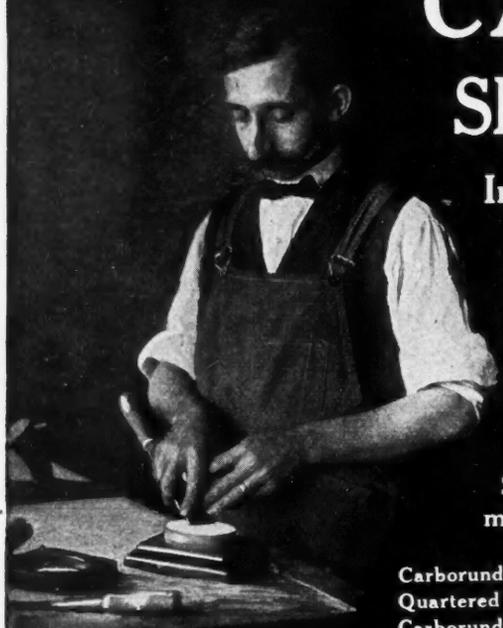


Fig. 2

CARBORUNDUM SHARPENING STONES



In a carpenter's tool kit stamp him as a capable workman. It means that he always works with perfectly conditioned tools.

CARBORUNDUM Sharpening Stones are not like any other stones—they are distinctively different—they cut the edge on—cut it clean and keen—others rub the edge on—Carborundum stones last longer—do not fill or glaze and are positively uniform—a Carborundum Sharpening Stone and a bottle of Carborundum Temperoil make a great tool-sharpening outfit.

Carborundum Round Combination Bench Stone, No. 107,	\$1 00
Quartered Oak Box Holder, . . . . .	.50
Carborundum Oblong Combination Stone, No. 108,	1.25
Carborundum Pocket Stone, Leather Case, . . . . .	.35
Carborundum Temperoil—for all Sharpening Stones—1 1/2 ounce bottle, . . . . .	.10

From your dealer, or direct

THE CARBORUNDUM COMPANY, Niagara Falls, N. Y.

When Writing Advertisers Please Mention the American Carpenter and Builder.

GOOD NEWS for Carpenters and Builders

Don't Miss a Word of This

ED. NOTE:—The article below is one of unusual interest to every one concerned in building, either as architect, contractor or owner, and also of the highest educational value in these days of thoughtless and ill-advised use of inferior substitutes for wood. Wood has been well called "Mankind's instinctive reliance" as a structural material. LUMBER still is the greatest building material in existence—the safest, the most adaptable and most economical. And WHITE PINE and its "half-brother," NORWAY PINE, are by many regarded as the best wood known for most of the uses with which they are historically associated. White and Norway Pine are so essentially "the peoples' lumber" in the diversity of their everyday uses that it is good to learn that the supply is ample and easy to get if demanded.



"The Leader in the Markets for 250 Years" (U. S. Government Report Bulletin 99, October 1911)

When the folks landed from the Mayflower in 1620 they found themselves on the edge of a dense forest of superb WHITE PINE, covering practically the whole countryside, "and then some." Fine, great trees they were—diameters as big as 7 feet, and towering up to 240 feet. (One WHITE PINE monarch that stood on the present site of Dartmouth College was 270 feet high.)

The cutting of WHITE PINE began at once. Within 15 years they were shipping cargoes of White Pine masts to England. Within 30 years they were sending it to Madagascar and trading it for slaves for the Virginia market. White Pine proved so superior a wood that *THE REST OF THE WORLD WANTED IT, JUST AS IT DOES TO THIS DAY*, and the thrifty colonists' foreign trade in it grew so that

IN 1650 FEARS WERE EXPRESSED THAT THE DRAIN WOULD SOON EXHAUST THE SUPPLY.

(See Page 37 Govt. Rep't)

Many years later the alarm was raised again, but far-sighted **JOSHUA McGEE REASSURED THEM**

and told the anxious ones that "cutting a few hundred masts a year would make little inroad on America's forests" which he stated to be "14 or 15 miles long and 300 to 400 miles broad." (He was a true conservative!) And the cutting went right along, yet *HERE WE ARE IN THE YEAR*

1912 AND STILL PLENTY OF WHITE PINE

AS GOOD AS EVER and plenty of NORWAY PINE TOO

(Which for most uses is just as good as WHITE PINE)

And the best of it is that *there is going to keep on being plenty.* After 288 years of White Pine cutting in Massachusetts alone (which by many is supposed to be denuded of timber) there were 238,000,000 feet of White Pine alone cut in 1908 (Government figures). The Forest Service further reported that "it is not improbable that a similar cut can be made every year in the future from the natural growth of White Pine *in that state.*" And Massachusetts is "not much" these days on White Pine production. Minnesota and Wisconsin now produce *THE BEST* as well as the most White Pine. This Government Report also says, "*The supply of White Pine lumber need never fail in this country, provided a moderate area is kept producing.*" You may rely on us to see that through *WIDE AWAKE RETAILERS EVERYWHERE, YOU* may secure this "staple American lumber" with the same *certainty* and the *SAME QUALITY ADVANTAGES ENJOYED BY YOUR ANCESTORS.*

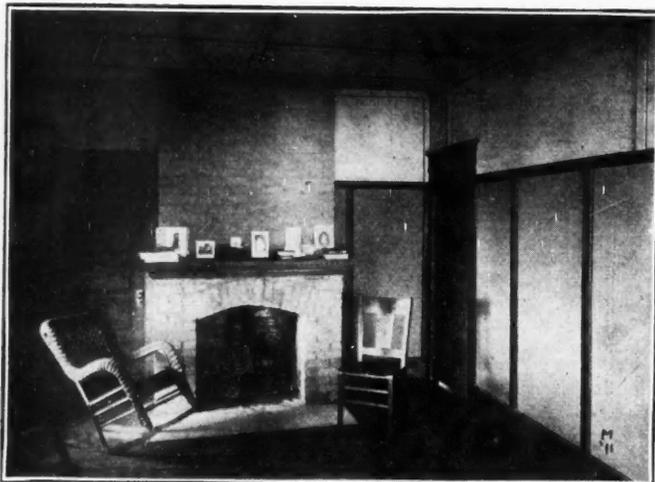
If you ever buy lumber, from a chicken coop to the "trim" of a palace, WRITE US before you do it. Inform yourself—this question of "what wood to use" is deeper than many realize. We will reply PROMPTLY AND CANDIDLY. SPECIAL NOTE:—Anyhow, drop a card for our little book (you need it for your own sake, not ours.) FREE on your simple request. Don't wait—there's no profit in waiting. Write TODAY.

NORTHERN PINE MANUFACTURERS' ASSOCIATION

1119 LUMBER EXCHANGE

MINNEAPOLIS, MINNESOTA

When Writing Advertisers Please Mention the American Carpenter and Builder.



More Durable, More Beautiful than Plastered Walls

IDEAL WALL BOARD is not a substitute for plaster.

It is vastly better than plaster. It is more permanent, more beautiful, more sanitary, more convenient to apply.

Its decorative possibilities are almost unlimited—and, with all its advantages, it costs less than lath and plaster,

Ideal Wall Board

is helping to bring the day when plastered walls will be used no more.

It is far more sensible because it is nailed to the studs—either in a new building or in the old one, right over the plaster.

It can be used—and is being used—in all sorts of buildings—residences, garages, churches, office buildings, etc., etc.

You, as a progressive dealer, ought to know about Ideal Wall Board.

You should be able to suggest and recommend it to your clients.

We shall be glad to send you a sample and our booklet if you will write us.

THE ROBERDS MFG. CO.
MARION, IND.

erator is located in the pantry from which a door leads into the kitchen. To the right of the refrigerator is the cupboard and the ice compartment of the refrigerator has a door opening on to the rear porch. In Figure 2 the refrigerator is also located in the pantry from which doors lead both into the dining room and into the kitchen. The refrigerator in this case is iced from the end, having the door opening onto the porch.

The McCray Refrigerator Company, Kendallville, Indiana, specializes in building the kind of refrigerators which can be readily incorporated in your plant. It also builds refrigerators to order and will gladly furnish plans and estimates free of charge.

Thin Steel Knives

To use thin steel knives or not to—is a proposition that comes to the mind of every progressive lumberman at this time. The facilities offered by their use are no longer an experiment and those who are willing to retreat from the march of progression will show their adherence to old fogy ideas with all the defective methods accompanying.

To tear loose sometimes requires real courage, but usually such show their progressive spirit and compensate by the early advantages to their complete satisfaction.

Naturally, the reader may hesitate owing to the varied methods of using the thin knife.

Some advocate the use of a square head with thin knife and spring steel back, whereas others purchase complete heads of which there are a variety to select from, especially suited to the use of the thin steel knife.

It matters little which of the methods now in vogue may be adopted, because they all show especially advanced ideas for the planing and surfacing of lumber. There is one point, however, of particular interest, and that is relative to the kind of thin steel knives one adopts.

Many makes of these knives may be found with varying degrees of merit, but those which are especially useful and making particular claim to superiority are the Beedee Knives manufactured by Samuel J. Shimer & Sons, Milton, Pennsylvania, to whose product this journal has frequently referred in the past twenty years.

Do You Enjoy Funny Pictures?

If so, don't hesitate to ask the Murphy Varnish Company for their little booklet "Things that Never Would Have Happened."

It is a colored comic supplement, outdone.

We do not know who the cartoonist was who drew the pictures, but whoever it was, he is a "bird,"—Ideas in them, too.

Every picture in the booklet has a moral, which is that the particular tragedy illustrated would not have happened if Murphy Varnish Company products had been used.

Although this is not an entirely logical conclusion in all of the cases illustrated, we can overlook a minor point of that kind as we chuckle over the deliciously absurd pictures.

The answer is said to be given in the "Q and E Book." Readers of the AMERICAN CARPENTER AND BUILDER should write for the picture book for their children and the "Q and E Book" for themselves. They will be sent free.

Shelby Combined Check and Floor Hinge

The Shelby Spring Hinge Company, of Shelby, Ohio, has recently brought out a Combined Check and Floor Hinge for double acting doors, as illustrated.

Their claims are many for this combined fixture and we believe will at once appeal to the architect and builder on account of its simple, easy and practical way of ap-

(Continued on Page 102)

When Writing Advertisers Please Mention the American Carpenter and Builder.

**Boost Your Own Reputation, Mr. Contractor, By Telling Your Customers
—“Put a Stop to Depreciation—Build with Cypress at First”**



is the “LIFE-SAVER” of an HONEST CONTRACTOR’S REPUTATION

Here is a letter just received from a builder who **knows** by experience.
Probably you feel the same way. Why not **CUT OUT TROUBLE?**

_____ Contractor and Builder, _____ Street

PITTSBURGH, PA., Mar. 22, 1911.

Southern Cypress Manufacturers’ Association,
New Orleans, La.

Gentlemen:—Please send me information about Cypress lumber. Have about a dozen frame houses, from two to 16 years old, which I never get through repairing. Window frames, sash, siding, sills, etc., become rotten in a few years, and *the contractor gets a bad name* (as if it was his fault!) Yours respectfully,

This is a bona fide letter—“hot off the bat.” The facts are all too true.
HE WILL BE A CYPRESS MAN FOREVER. HOW ABOUT YOU?

We say it again—that by honest and intelligent advice on **woods** we are not only saving losses to people who are going to **build anyhow**—but we are also **CAUSING MORE PEOPLE TO BUILD.**

This is going to be of more and more benefit to you month by month. It is up to you to intelligently take advantage of this by learning for yourself that **CYPRESS** is not only the **ONE BEST CUT-DOOR WOOD** for the owner—but also the **ONE BEST WOOD FOR YOU** Cypress “**makes good.**” That helps your reputation. Cypress is easy to work—that’s **good for your tools.**

We are giving away complete working plans and specifications for **THIS SHINGLE HOUSE.** Many thousands of people **ALL OVER THE U. S.** are writing for them. **THEY WILL HAVE TO GET YOU TO DO THE WORK. THEY WILL INSIST ON CYPRESS.**

It will be **MONEY IN YOUR POCKET** TO HELP THEM GET JUST WHAT THEY WANT.

CYPRESS is the “**comer**” in YOUR territory.

LISTEN FOR IT.

Why not FIND OUT what CYPRESS can do for YOU, NOW? WRITE US—ASK YOUR OWN QUESTIONS—about your own needs, big or little. You can rely on detailed and reliable **CYPRESS** information if you address our “**BUILDERS’ HELPS DEPT.**” We will recommend **CYPRESS ONLY FOR USES WHERE IT IS THE BEST WOOD TO USE.**

Southern Cypress Manufacturers’ Association
1216 HIBERNIA BANK BUILDING, NEW ORLEANS, LA.

We are producing **CYPRESS**—and talking it—but not retailing it. **BUY IT NEAR HOME.** ASK your lumber man if he sells **CYPRESS**; if he does not, ask him **WHY.** Then **WRITE US.** We will tell you where you **CAN** get **CYPRESS.**

When Writing Advertisers Please Mention the American Carpenter and Builder.



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 painter 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 painters and decorators 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

When Writing Advertisers Please Mention the American Carpenter and Builder.

Generous Samples FREE

To Painters, 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 painter. 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. 1 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.

Please send me free samples of Johnson's Flat Wood Finish and Wood Dye Shade No. Also Instruction Book A.C.B.1

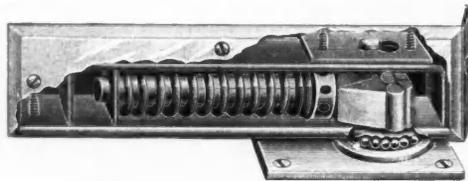
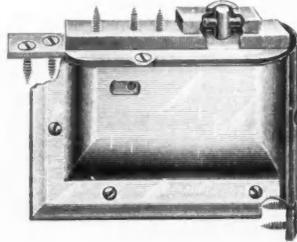
S. C. Johnson & Son, Racine, Wis.

"The Wood Finishing Authorities"

My Dealer's Name is.....
His Address.....
My Name.....
Address

When Writing Advertisers Please Mention the American Carpenter and Builder.

plying. There is no mortising whatever to be done in the floor, thus entirely avoiding the placing of any of the parts of the hinge or check below the surface of the floor where dampness and rust will soon disturb and destroy the mechanism, as well also as the inconvenience of getting to the parts to do any adjusting, oiling, etc.



Shelby Combined Check and Floor Hinge

In this invention the hinge is placed on the lower corner of the door with the bottom plate of the hinge resting on the surface of the floor. The checking device is placed on the upper corner of the door, pivoting to the upper jamb, the check and hinge being carefully designed and constructed to work conjunctively with each other. When the door is

opened and pushed back slightly past right angles it remains open, but when released from this it immediately begins to slowly close, doing away entirely with the danger and accidents which so often happen on account of the door coming back with great force. The whole action is noiseless.

This hinge and check is made in two sizes, one for doors $1\frac{1}{8}$ to $1\frac{1}{2}$ inches thick; the other for doors $1\frac{3}{4}$ to 2 inches. The covering plates are of deep bevel edge design which adds richness to the whole appearance. It is finished to match all regular builders' hardware.

The Hinge Company have been, for a long time, experimenting with and testing out this hinge and check, putting it to some of the most severe tests and have patents applied for and pending covering some very strong claims.

Substantial Equipment for the Small Wood Working Shop

Recognizing the urgent need of substantially built machines for use in the smaller shops, The Crescent Machine Co., 224 Main St., Leetonia, Ohio, have brought out their No. 51 Crescent Universal Wood Worker. In building this machine it has been the aim of the manufacturer to give the small shops the same substantial equipment as is used by the larger planing mills and factories. That their efforts have been successful is proven by the fact that the new machine has the enthusiastic approval of experienced wood workers.

With this machine the small shop is practically converted to an up-to-date planing mill. The machine is portable, being fitted with special devices for making it instantly available for transporting from one place to another. This feature appeals to the small contractor, who can take the machine out on a special job and thus save many dollars on the cost of mill work.

THE NATIONAL Automobile Shows



Under Auspices of National Association of Automobile Manufacturers, Inc.

Complete Displays of Trucks and Delivery Wagons—
Gasoline and Electric—All sizes for all uses

NEW YORK | **CHICAGO**
Grand Central Palace | Coliseum & 1st Reg. Armory
January 10-17 | February 5-10

The following manufacturers will exhibit at Chicago

Adams Bros. Co.	Dorris Motor Car Co.	Knox Automobile Co.	Packers Motor Truck Co.	Speedwell Motor Car Co.
American Locomotive Co.	Dow, Joseph	Lauth-Juergens Motor Car Co.	Peerless Motor Car Co.	Staver Carriage Co.
Anderson Electric Car Co.	Durant-Dort Carriage Co.	Lee Power Co., Henry	Pierce-Arrow Motor Car Co.	Stearns Co., F. B.
Atterbury Motor Car Co.	Eclipse Truck Co.	Lozier Motor Co.	Pope Mfg. Co.	Stegeman Motor Car Co.
Avery Co.	Federal Motor Truck Co.	McIntyre Co., W. H.	Rapid Motor Vehicle Co.	Sternberg Mfg. Co.
Baker Motor Vehicle Co.	Garford Co.	Mack Bros. Motor Car Co.	Reliance Motor Truck Co.	U. S. Motor Truck Co.
Bessemer Motor Truck Co.	General Motors Co.	Mercury Mfg. Co.	Reo Motor Car Co.	Velle Motor Vehicle Co.
Bowling Green Motor Co.	General Vehicle Co.	Metzger Motor Car Co.	Sampson Mfg. Co., Alden	Walker Vehicle Co.
Brush Runabout Co.	Grabowsky Power Wagon Co.	Monitor Auto Works	Sandusky Auto Parts & Motor Truck Co.	Waverley Co.
Buick Motor Co.	Gramm Motor Car Co.	Morgan Motor Truck Co.	Sanford-Herbert Co.	White Co.
Cartercar Co.	Harder Auto Truck Co.	Motor Wagon Co., of Detroit	Schacht Motor Car Co.	Wilcox Motor Car Co., H. E.
Chase Motor Truck Co.	Harwood-Barley Mfg. Co.	National Motor Truck Co.	Schmidt Bros. Co.	Whitesides Commerce Car Co.
Clark Delivery Car Co.	Jeffrey Co., Thomas B.	Packard Motor Car Co.	Service Motor Car Co.	Wyckoff, Church & Part-ridge
Commerce Motor Car Co.	Kissel Motor Car Co.		Smith Co., A. O.	

S. A. MILES, Manager

7 East 42nd Street, New York

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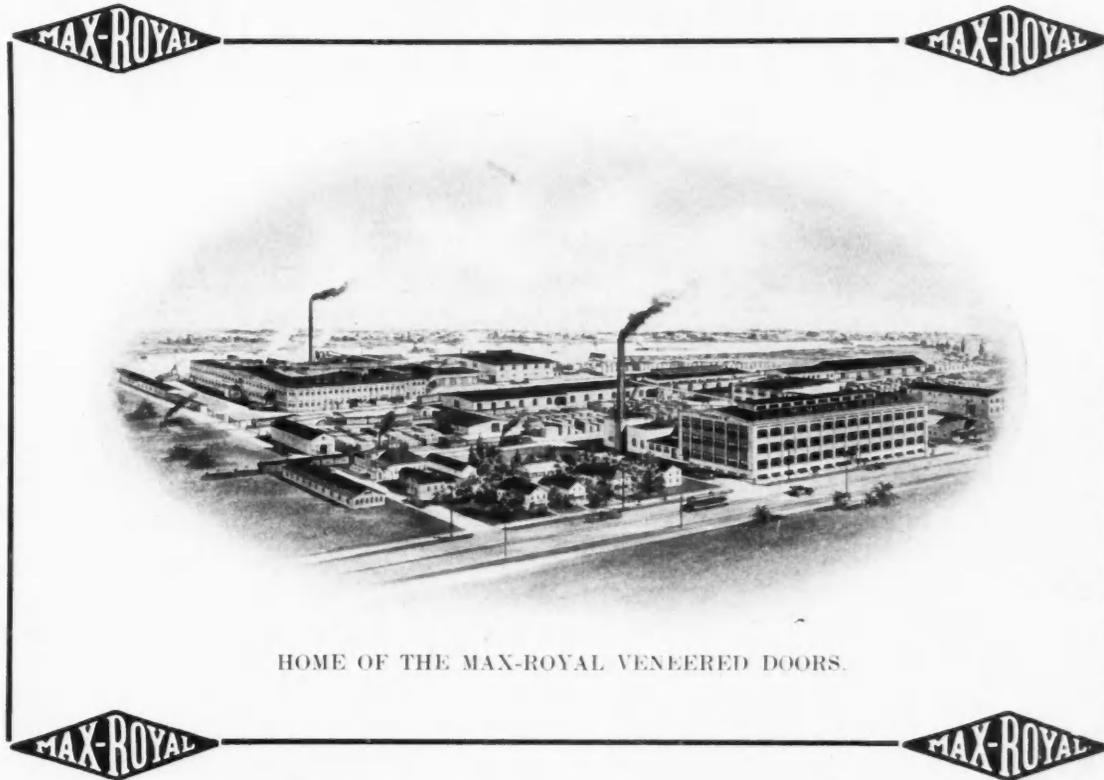
A NEW YEAR'S QUERY

WHOSE DOORS **1911** — WHOSE DOORS **1912**
 did you handle in will you handle in

The Reliable Max Royal

Veneered Doors

ARE THE BEST



HOME OF THE MAX-ROYAL VENEERED DOORS.

Superior in Workmanship and Design.
 The Result of long experience in Woodcraft.
 The Product of the most Approved Machinery.

THE R. McMILLEN CO., Oshkosh, Wis.

*Established Thirty-five years—Pioneers in the making of
 Oak and Birch Veneered Doors—Front Doors a Specialty*

CHICAGO, ILL.
 Room 909 Stock Exchange Bldg.

BRANCH OFFICES
WASHINGTON, D. C.
 No. 1703 Kilbourne Place

NEW YORK CITY
 No. 1123 Broadway

When Writing Advertisers Please Mention the American Carpenter and Builder.

30 Days Free Trial

Sharpen your knives, twist drills, gum your saws—put all your tools in perfect shape—use this complete outfit 30 days free—then, if you feel it doesn't save you lots of time, work and money, send it back at my expense.

Dimo-Grit—"the wheel for steel." 25 times faster than the grindstone. 10 times more efficient than emery wheels. Will not draw temper.

Dimo-Grit is the new artificial diamond sharpening substance. It is a product of the same electrical processes by which carborundum is made, but Dimo-Grit is especially adapted for use on steel, leaving the smoothest, keenest edge. No need of water cooling, no danger of drawing temper. Dimo-Grit never glazes—cuts hardest steel as emery does soft copper—just a light touch needed.

Luther Hummer Tool Grinder

Engine and foot power—4,000 revolutions per minute by foot power. Shaft drive like an automobile—built completely of steel—dust-proof ball bearings—gravity lubrication and runs easy as sewing machine. Tool rests and attachments enable anyone to do difficult grinding as well as an expert mechanic.



JIG SAW



LATHE AND SAW



SAW OUTFIT



BORING ATTACHMENT

A Workshop 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.—16 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.

40 Page Book Free

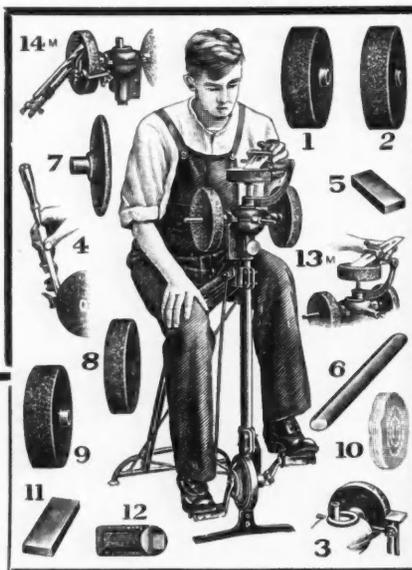
Reprints the story of artificial diamond sharpening substances as it appeared in McClure's magazine—fully describes the Luther sharpening outfits—contains valuable pointers on tool sharpening—sent free.

Write Today for 30 Days Free Trial Offer

You do not put yourself under any obligation by getting our 30 days' Free Trial Offer and Free Book. Write today for full description of our outfits, and decide which you want for 30 days' Free Trial.

Luther Grinder Mfg. Co.

405 Michigan Street
MILWAUKEE, WIS.



The machine combines a band saw, shaper, jointer, saw table, and borer.

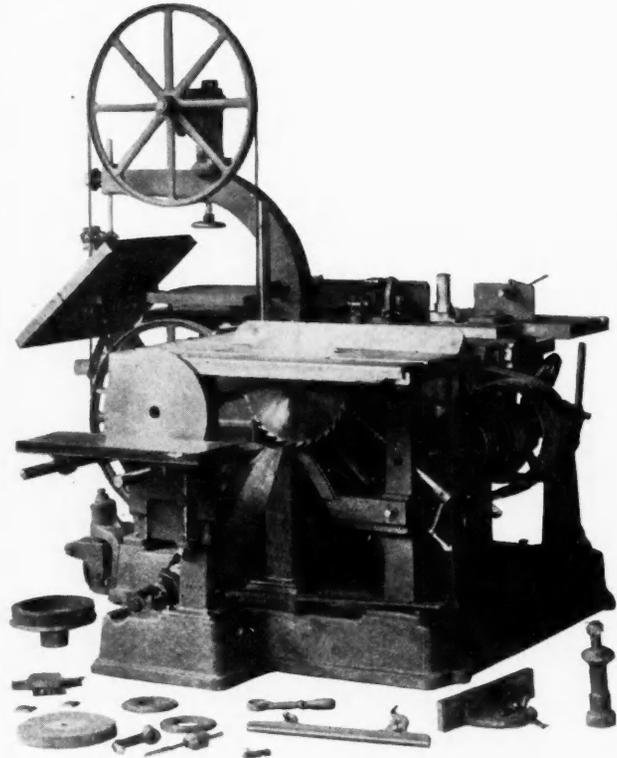
The band saw is equipped with resaw attachment. It has tilting table, and is in every way a substantial machine.

The jointer is the regular pattern 8" jointer, made by The Crescent Machine Co., and when desired can be equipped with round safety head. It is in every way a substantial machine, and is provided with tilting gauge, that is adjustable over the full width of the table. Of course, the jointer is equipped with the CRESCENT jointer guard which is a part of the regular equipment on all CRESCENT jointers.

The shaper spindle is conveniently placed and revolving in a vertical position the machine is admirably adapted for surfacing one side and straightening one edge of a piece at the same time. The shaper spindle is reversible and has a vertical adjustment so it can be lowered below the surface of the table when desired.

The saw table is equipped with a ripping fence that is adjustable to an angle of 45 degrees, and adjustable cut off fence is graduated for setting to any angle up to 45 degrees. The saw can be adjusted for cutting through any thickness up to 4".

The borer can be stopped and started at will. It is conveniently placed at the side of the saw table, and operates



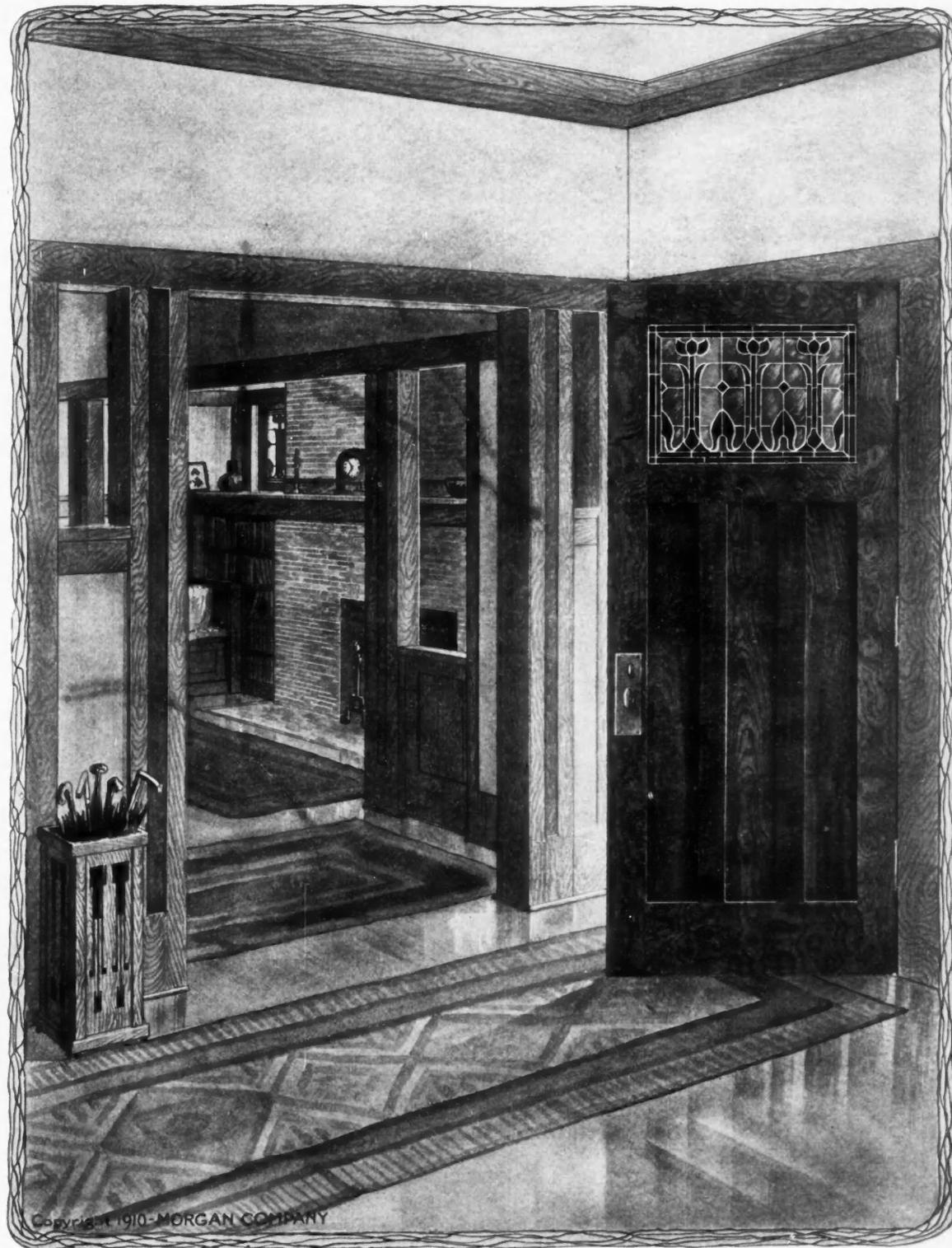
No. 51. Crescent Universal Woodworker.

entirely independent of the saw table. It is provided with adjustable table and has self centering chuck. It can be quickly converted into a hollow chisel mortiser.

An attachment for grinding planer knives is furnished, as are also the disk grinder attachment, and emery wheel for making the machine available for any kind of work coming within the range of the average shop where wood working is done.

With this machine in his shop the small contractor could save himself many dollars in convenience and actual time saved in getting work from the mills. He can also have his work just when wanted and thus be enabled to finish up many more jobs in a season. The manufacturers will be glad to give you further information upon request.

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Copyright 1910-MORGAN COMPANY

Get the Best

The standard doors of America, made in the special Morgan way from special woods by special machinery. Morgan doors are specified and recommended by all leading architects. Built of separate layers of kiln dried wood with the grain running in opposite directions. Shrinking, warping or swelling is impossible.

Each door is stamped "MORGAN" which guarantees quality, style, durability and satisfaction. Be sure your doors bear the "MORGAN" stamp.

Send for a copy of our elegant new catalog "The Door Beautiful"—just out—full of page illustrations of interiors and attractive exteriors in all styles, showing Morgan Doors and their surroundings—tells why it is the best kind of economy to use Morgan Doors throughout your building.

Write for Your Copy Today

Morgan Company

Dept. E.
Morgan Doors are handled by Dealers who do not substitute



Oshkosh, Wisconsin

Distributed by
MORGAN SASH & DOOR CO., Chicago
MORGAN MILLWORK CO., Baltimore, Md.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Convention of "Speedwell" Dealers

On December 11th and 12th the Speedwell Motor Car Co., Dayton, Ohio, brought their truck dealers from all parts of the country to the factory for a convention. They paid their transportation and expenses while there, because they feel that thus they can give an intelligent understanding of truck conditions and ideal truck selling methods.

It is the opinion of the "Speedwell" people that trucks should be sold only to concerns who will unquestionably profit by their use and that trucks should be so represented before the sale is made that the purchaser will be acquainted with every probable item of expense connected with their operation and maintenance.

Variety of Motor Trucks at Garden Show

Several makes of motor trucks that are entirely new to the market will be exhibited for the first time at Madison Square Garden, New York, during Part II of the automobile show, Jan. 15-20. These are the Locomobile, Lozier, Pope-Hartford, G-M-C Electric, Speedwell and Bronx Electric. The four new gasoline machines are of the heavy truck type, designed along standard lines, with four-cylinder motors located in front under a hood or beneath the driver's seat.

These supplement the commercial cars that were introduced by well-known passenger car builders at the Garden show last winter, as the Peerless, Pierce-Arrow and Stearns; and also those exhibited by old-time companies long identified with the commercial vehicle branch of the industry. In all, there will be two dozen makes of gasoline vehicles and eight makes of electrics on exhibition.

While this show includes the products of long-established companies that are qualified by experience, manufacturing facilities and ample capital to build first-class machines, there will nevertheless be the greatest diversity in design. Whether a man conducts a florist shop in a village or sells coal to fac-

tories, hotels and office buildings in the Metropolis, he will be sure to find at the show a type of vehicle suited to his needs.

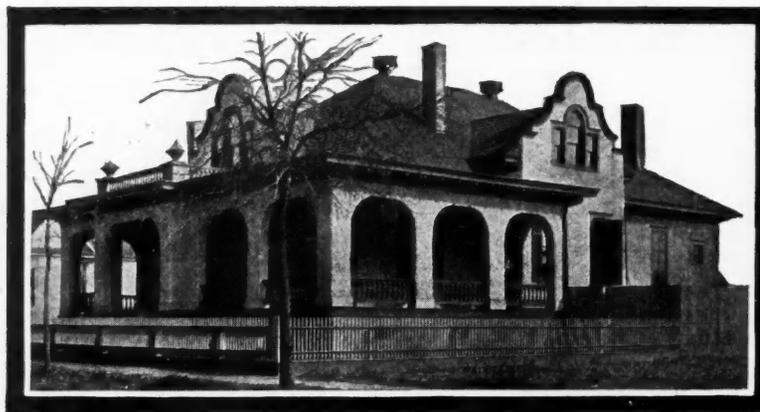
There will be about one-hundred models on display, ranging from a 600-pound package cart selling for about \$650 to seven-ton and ten-ton trucks worth more than \$5,000. The engines that drive them include one-cylinder vertical, two-cylinder horizontal opposed, and four-cylinder vertical types. Some have the cylinders cast separately, others in pairs, and still others have four cylinders cast en bloc—that is, in one piece. In power they range from ten to sixty horsepower. Disc clutches, both dry and running in oil, divide favor with the cone type. Transmissions include the two-speed planetary gear, progressive and selective sliding gear in three and four forward speed types, and friction wheel and disc.

The electric vehicle also range from small 600-pound closed delivery wagons to massive five-ton open body trucks. They are driven by single motors and equipped with light or heavy duty batteries which give them mileage capacities of from forty to seventy-five miles on a single charge.

Bodies will be seen in endless variety, because both gasoline and electric machines are made as independent classes on which any desired style of body may be mounted. Of special interest, however, will be the dump trucks for contractors' use, fitted with bodies that can be tipped by power from the motors; trucks equipped with power winches for hoisting purposes; motor fire engines, hose and chemical trucks, patrol wagons and other municipal vehicles.

Copper Clad Steel Nails

For over a hundred years various attempts were made, but unsuccessfully, to develop a commercially practicable process of welding copper and steel, and the general conclusion was reached that this was a physical impossibility. The molecular structures of the two metals are so different that a direct welding of one to the other is a hopeless task.



CORTRIGHT METAL SHINGLES

Three Reasons Why Cortright Metal Shingles Appeal to Contractors and Builders

First—They're inexpensive—cost less than slate, and no more than wood in many localities. Besides they make a permanent roof.

Second—

Cortright Metal Shingles

are easy to lay—your ordinary workmen can put them on more rapidly, and make a better job than with either wood or slate.

Third—They satisfy the house owner, because they're fireproof, stormproof and durable, therefore you establish good will and future business.

A special proposition to Contractors and Builders is ready. Write for it today.

CORTRIGHT METAL ROOFING COMPANY
PHILADELPHIA and CHICAGO

COUPON

Gentlemen:—Please send me special proposition and catalog "Concerning That Roof" as advertised in American Carpenter and Builder.

Name

Street Address

City

Business

When Writing Advertisers Please Mention the American Carpenter and Builder.

FOR THAT NEW HOUSE GET A HOLLAND FURNACE



“Holland Furnaces Make Warm Friends”

In the Holland Air Admitting Fire-pot the fuel burns from the sides and over the top—Natural Way.

This feature sets the “Holland” Furnace in a class by itself.

For fuel economy by burning everything combustible, in any kind of fuel, soft coal slack, hard coal screenings, wood or coke. This cuts coal bills in half.

For cleanliness, there are no internal explosions and puffing, no opening of joints causing leakage of coal gas. For durability, the castings are evenly heated, which makes the “Holland” almost repair proof and the fire-pot will outlast any other kind made.

“Holland Service”

To You

Mr. Architect, Mr. Contractor
and Builder

means correct installation and saving in first cost.

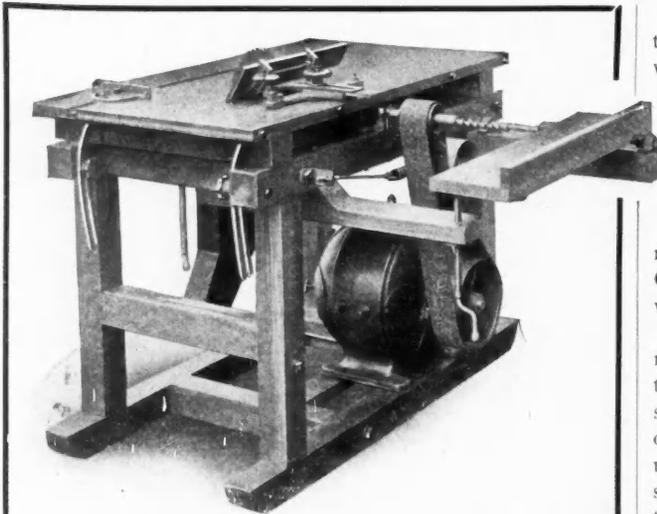
Send us your floor plans for quotation and correct heating plan.

Trying us is buying of us and
“Holland Furnaces Make
Warm Friends”



M'F'D. BY
HOLLAND FURNACE Co.
HOLLAND MICH.

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"AMERICAN" CONTRACTORS' PORTABLE SAW BENCH

The purchase of some machines is a mere extravagance, because they earn nothing.

The purchase of an "American" saw bench is a true economy, because its use means a saving of time and labor, an improved quality of work, and better business all around. Moreover, the "American" Bench is built to be permanently profitable. It has the qualities which give it lasting power even under hardest service.

SEE IT AT THE CEMENT SHOWS

AMERICAN SAWMILL MACHINERY CO.

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Hackettstown, N. J.

1655 Hudson Terminal,
New York City

READY-TO-LAY *Burmite*

Reg. U. S. Pat. Off.

The Material of
Strength, Beauty and Service

FOR ROOFING AND SIDING

Residences, Factory and Business Buildings, Summer Homes, Cottages, Garages, Barns, etc., of Frame, Brick, Stone, Concrete, or other construction. It's different.

Guaranteed for 10 years without coating or painting.

Practical—Durable—Artistic—Inexpensive.

It has perfect water-proofing qualities, and great resistance to all destructive agencies, INCLUDING FIRE.

To become acquainted with this up-to-date material, send for Samples and Booklet (A C and B).



Bungalow of Mr. W. W. Kercher, Orchid Place,
So. 7th St., Goshen, Ind.

Burmite Material (Slate-Red) for Roof and strip at bottom,
"Stoddard" Slate-Green for balance of Siding.
Ivory White Wood (4 in.) Panels.

BERMINGHAM & SEAMAN CO. ROOFING MFRS.

GENERAL OFFICES, 1208-1226 Tribune Building,
PLANT, 56th, 57th and Armitage and Grand Avenues.

CHICAGO

Distributors of BEAVER BOARD

The result, however, can be accomplished indirectly, through the medium of an intervening layer of iron-copper alloy, with which both metals can be made to unite by welding.

This basic principle was discovered, after long experimentation, by a French metallurgist and chemist, M. John Ferreol Monnot, between 1900 and 1905; and on this foundation the Duplex Metals Company of Chester, Pennsylvania, was organized.

"Copper Clad" is the general trade name for the product marketed by this well-established firm, among which are Copper Clad Steel Nails, in which carpenters and builders will be especially interested.

Among the well-known properties of copper are its toughness and its power of resisting corrosion. Steel has great tensile strength and elasticity. Evidently, in Copper Clad steel nails we have a product that combines the advantages of both metals, and is preferable in certain situations and under certain conditions to all-steel or all-copper. They are sold under a guarantee of tensile strength, perfect weld between copper and steel, and rust-proof quality. These nails are not dipped in copper or plated; but by the special process above referred to, the molten copper is permanently welded to the steel, the result being a heavy surface of copper over the steel core. The nails will stand hard driving without bending, are rust-proof, and have long life under the most exacting conditions. For roofing, cornice work, and building purposes generally, their special advantages commend them to the attention of carpenters and contractors.

The "Copper Clad Handbook" tells the whole story of this well-founded enterprise. It cost a lot of money to get out, but will cost you nothing. Write for it.

Double Your Capacity

How to increase the output of his mill without a large expenditure of money is a problem which often perplexes the average mill man. He realizes that under existing conditions he should have an added output to enable him to successfully meet competition. He, however, feels that he can not at this time invest in new machines, much as he needs them.

It is to such a man that the Shimer Double Ceiling and Double Flooring Heads should appeal very forcibly. By their use the capacity of a matcher or moulder may be doubled. The stock is run with double tongue and groove and then re-sawed into two marketable strips. The Bits on the Shimer Double Heads mark the saw cut line of division on the stock; so that the sawyer can at once detect any variation of the saw and correct it as the board is passing through.

These Heads are no experiment, but have been on the market long enough to be in use in a large number of the best mills in this and other countries. They will be found to be very complete and practical tools, carrying the Shimer guarantee to do as represented or no sale.

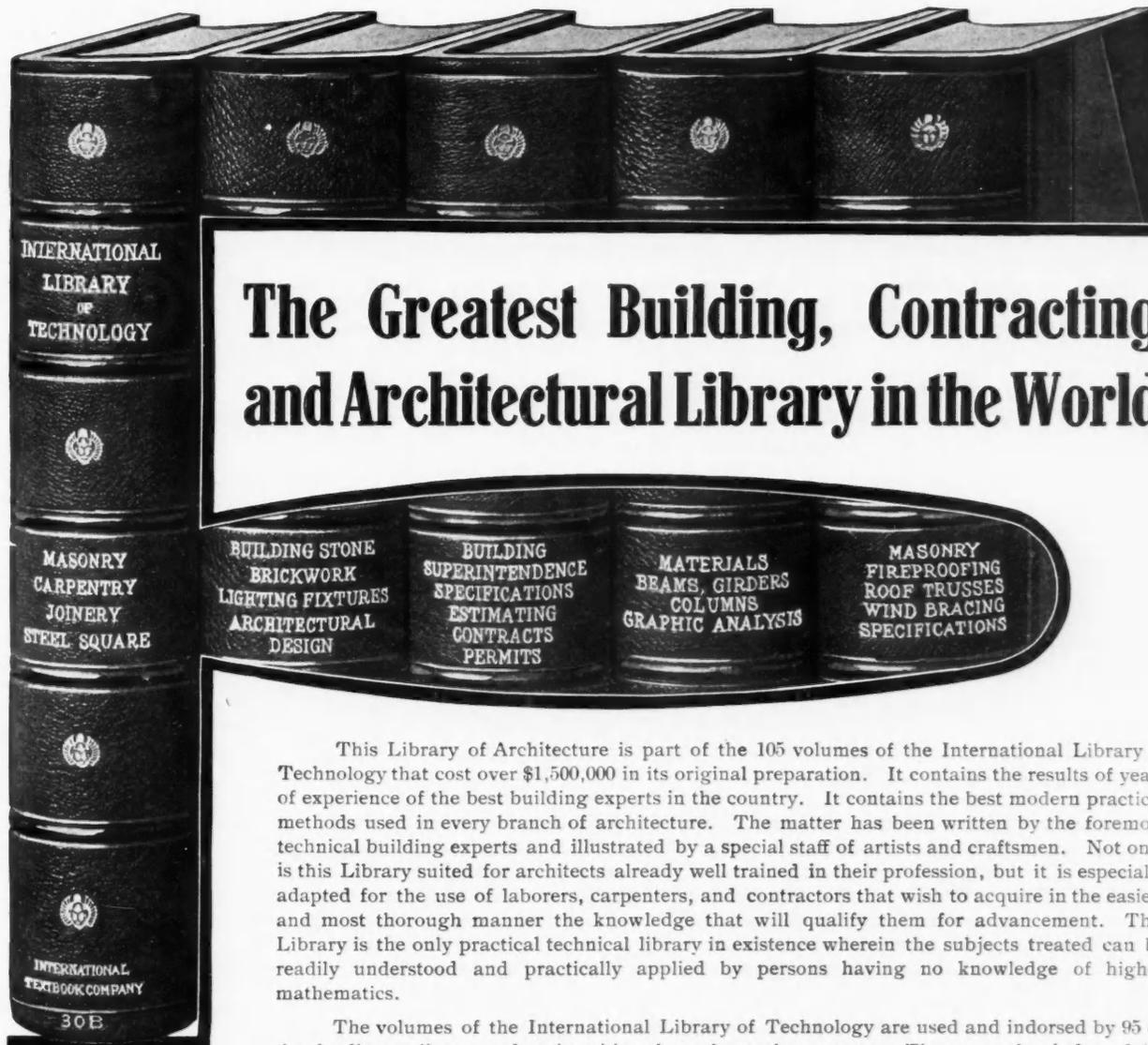
As an investment of \$33.08 and upwards will give you about 100 per cent gain in output, why not send today for full particulars in reference to these tools. Address Samuel J. Shimer & Sons, Milton, Pa.

To the Man with the Abused Knee-Cap

Something that fills a long felt want has come to our notice. It will appeal to those of our readers who have suffered knee aches and even incapacity for work through the necessity of having to kneel much in the course of their daily work. It is nothing more or less than a recently patented pneumatic knee-pad weighing some five ounces each.

They are made of tough leather, water proof, between which are "inner-tubes" with regulation valves. The pads are attached just below the knee joint in a moment and do not hamper the user's walking or climbing in the least; in fact their presence is not manifest until they are needed.

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The Greatest Building, Contracting and Architectural Library in the World

This Library of Architecture is part of the 105 volumes of the International Library of Technology that cost over \$1,500,000 in its original preparation. It contains the results of years of experience of the best building experts in the country. It contains the best modern practical methods used in every branch of architecture. The matter has been written by the foremost technical building experts and illustrated by a special staff of artists and craftsmen. Not only is this Library suited for architects already well trained in their profession, but it is especially adapted for the use of laborers, carpenters, and contractors that wish to acquire in the easiest and most thorough manner the knowledge that will qualify them for advancement. This Library is the only practical technical library in existence wherein the subjects treated can be readily understood and practically applied by persons having no knowledge of higher mathematics.

The volumes of the International Library of Technology are used and indorsed by 95 of the leading colleges and universities throughout the country. They are also indorsed by leading engineers. An example of these indorsements is to be found in the statement of

Frank L. Mueller, Assistant Secretary of the O'Rourke Engineering Construction Company, of New York, who states: "Some time ago I received several volumes of your Library of Technology, and it will certainly give you pleasure to know what I think of these books. I have at my disposal a reference library containing more than one thousand engineering books, but I must say that none of these works contain the information generally desired in such concise and simple form as the volumes of your Library of Technology."

A partial list of the subjects contained in the Architectural Library is as follows: Excavating, Shoring, and Piling; Footings and Foundations; Areas, Vaults, and Retaining Walls; Cements; Concrete Construction; Stone Masonry; Stone Arches; Carpentry; Mechanics of Carpentry; Joinery; The Steel Square; Building Stone; Lathing, Plastering, and Tiling; Common Brickwork; Ornamental Brickwork and Terra Cotta; Lighting Fixtures; Use and Design of Lighting Fixtures; Architectural Design; Building Superintendence; Specification Writing; Specification-Writing Memoranda; Estimating and Calculating Quantities; Contracts; Permits; Fireproofing of Buildings; Stair Building; Ornamental Metal Work; Builders' Hardware; Roofing; Sheet-Metal Work; Mill Design; Loads in Structures; Properties of Sections; Materials of Structural Engineering; Beams and Girders; Columns and Struts; Details of Construction; Graphical Analysis of Stresses; Roof Trusses; Statics of Masonry; Heavy Foundations; Retaining Walls; Fireproofing; Roof-Truss Design; Wind Bracing; Specifications; Geometrical Drawing; Projection Drawing; Free-hand and Ornamental Drawing; Wash Work and Brush Drawing; Elementary Perspective Drawing; Architectural Drawing; Painting and Interior Decoration; History of Architecture and Ornament.

There are 10 volumes in this Architectural Library, beautifully bound in three-fourths red morocco, stamped and numbered in gold, printed on a very high-grade book paper, and fully and practically illustrated. They may be purchased in sets of five or more volumes. Each volume is 6 x 9 inches in size. For full information,

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Please send, without further obligation to me, full particulars in regard to your Library of Technology, with special reference to the Architectural Library.

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Thin Steel Knives

for planing and surfacing lumber are being adopted by many of the largest and best mills in the country, as well as the smaller progressive mills. These knives are made from a special brand of steel, which in the old, heavy slotted fashion would be too costly to use. A thin blade, however, can be made of this special steel at a cost very little in excess of the ordinary machine knife.

One of the best grades of this kind of knives and the one which is perhaps in most general use is the Bedee Brand manufactured by Samuel J. Shimer & Sons, Milton, Pa. This special self-hardening steel knife under the Shimer treatment, is very dense in grain, strong and tenacious, well calculated to withstand the knots as well as the fibrous cross-grain which is characteristic of the lumber of some localities.

The time lost in stoppages to sharpen up the old-fashioned soft slotted steel knives, will soon pay for the Bedee Knives because they hold an edge from one to five days at a single sharpening, according to the class of lumber they are used upon.

Bedee Knives are recommended by users as the best that can be procured. They are furnished by Samuel S. Shimer & Sons in any length or thickness, and it will be to your interest to write them for particulars and prices, stating your requirements

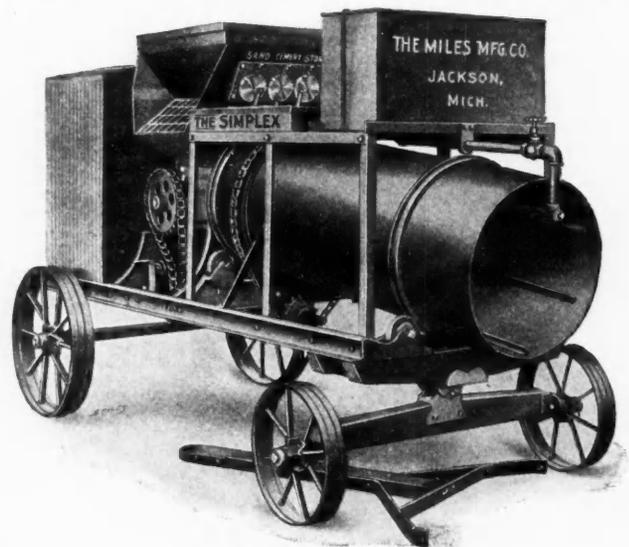
1912 Model Simplex Mixer

The Miles Manufacturing Company of Jackson, Mich., announce the completion of their new Improved 1912 Simplex Mixer which embodies several very strong features. It should be considered carefully by the contracting trade.

The machine is built very strong and heavy, the frame being constructed entirely of steel with the exception of the engine housing and two small platforms. They have com-

bined in this one machine the good features of the continuous feed and the rolling mix.

The machine is equipped as illustrated, with three hoppers

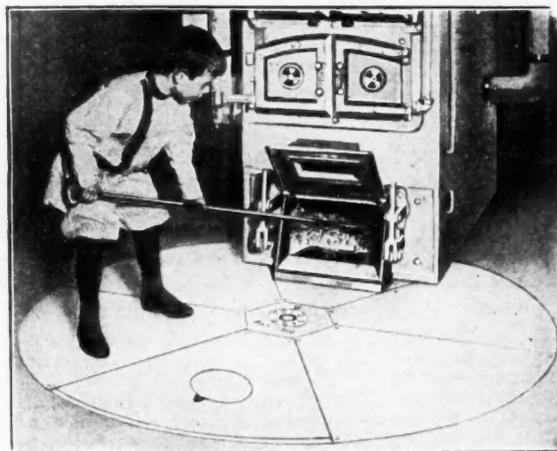
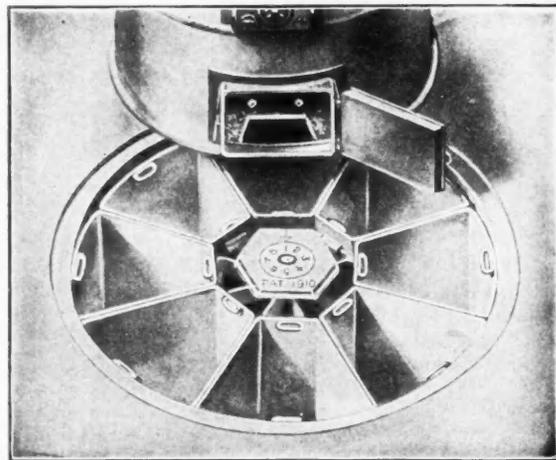


1912 Model Simplex Mixer

for handling sand, gravel or stone. These different materials are all conveyed into the mixing drum absolutely continuously, which makes a fairly thorough mix before the materials ever start on their rolling course through the mixing drum.

They have also added to this machine a positive and accurate proportioning device which is firmly locked into position so there is no possibility of an inaccurate proportion.

The cut illustrates the mixer with the sand shields re-



AT LAST, A Solution of the Ash and Garbage Nuisance. These Pictures Tell the Story

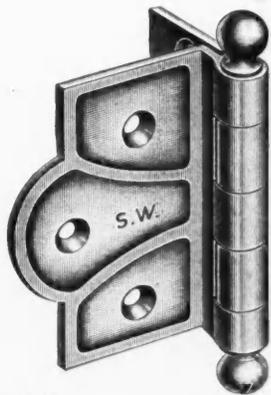
**THE SHARP
Rotary Ash and Garbage Receiver**

is the only efficient system for eliminating the dust and drudgery of ash removal and properly caring for garbage, waste and refuse matter. So simple a child can operate it. Efficiency and satisfaction guaranteed. Easily installed in any building, old or new, in connection with Hot Air, Hot Water or Steam Heaters, before or after placing same. Does not require salesmanship. Idea easily grasped. Value must appeal to every intelligent person. The most valuable acquisition to house construction in recent years.

Write for Exclusive Agency.

THE W. M. SHARP CO. 500 PARK AV. BINGHAMTON, N. Y.

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STANLEY'S
No. 160
Ornamental
Surface
Butt

UNEQUALED IN
QUALITY

Time and Labor Saved and the Owner Satisfied

With these butts it is not necessary to mortise the door, as the ornamental leaf screws on the surface.

The Butts can be changed to either right or left hand by simply unscrewing the slotted tip and reversing the pin. A screw driver is enclosed with each box that fits the slot in the tip, and can afterwards be fastened on your key ring.

Write us for a Handsome Booklet of Wrought Steel Hardware

THE STANLEY WORKS
NEW YORK NEW BRITAIN CONN. CHICAGO



The CORBIN DOOR CHECK
— 1911 MODEL —

For either right or left hand without change. Automatic hold-back. Easily adjusted. Sizes for all requirements. Circular BK89 with full particulars on request.

P. & F. CORBIN
The American Hardware Corporation, Successor
NEW BRITAIN CONN.

SEND FOR THIS BIG FREE BOOK TODAY Merely Sign the Coupon

IT WILL TELL YOU HOW TO MAKE \$20 TO \$50 A DAY IN CONCRETE

Many report daily profit of \$20 and upwards. Some as high as \$50. One reports \$2,430 made in 90 days. Another secured \$90,000 U. S. government contract after product was placed in severe tests. Learn all about it in this **BIG FREE BOOK**. Tells how you can do it, how simple it is, the equipment needed, explains it completely. The most thorough book on concrete ever printed.

Also Get the Latest Hand Book on Concrete Free

Recommended by concrete men as the best thing published. You would pay a dollar for it before you would return it, but we give it to you without a penny's cost. Can you afford not to know about these subjects?

—The field for concrete	—Various building systems	—Ways of making product
—Selecting materials	—Plant arrangement	—Weights of materials
—How to proportion them	—Waterproof building system illustrated	—Table of compression working values
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—How to cure product	—Comparative tests	—Profits in concrete
—Steam curing		

You would not be without this data. You would carry this book right with you. You would keep it for years. You cannot buy a copy, but we will send it right now **ABSOLUTELY FREE**. Remember **THE EDITION IS LIMITED**. If you delay you will not get a copy.

We Want You to Have Both These Books Free

- if you want to know how to make sand worth \$6.00 a yard
- if you want about \$2.00 of that to be **YOUR** profit
- if you want to make from \$10. to \$50. daily
- if you are thinking of going into the concrete business
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- if you want to know how to make **DRY WALL** concrete blocks or brick—

But if not, then we would not even sell you these books or desire to tell you about **HELM PRESSES**—how they are built in different sizes—for hand or power—combined for brick and blocks—about their wonderful capacity and pressure, or their labor saving and profit making features.

As a reader of this paper you are entitled to a copy of each of these valuable books, so just sign and send the coupon **RIGHT NOW** while you think of it. **NO EXPENSE** and **NO OBLIGATION**. Just let us send them—will you? You need them every day. This offer may not appear again, so send the coupon now.

Helm Brick Machine Co. :: 471 Bank Building
Traverse City, Mich.

You need this book. You cannot afford to be without it. It contains the secrets of successful concrete making and selling. Let this coupon bring you this book and the Handbook too.

Helm Brick Machine Co.
471 Bank Bldg.
Traverse City, Mich.

Send the 2 books **FREE** prepaid without obligation.

Send **NOW** for your Copy

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Business

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ORR & LOCKETT

Established 1872

HARDWARE CO.

The Next Time You Buy Tools and Supplies

don't scatter the order to all parts of the country. You can save time, trouble and money by purchasing the entire lot from ORR & LOCKETT'S. And when you send that order in to us you can dismiss it from your mind, as filled—we will see that the goods reach you quickly and as ordered.

In the first place we carry at all times the largest and most complete line of tools and builders' hardware in the West, 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.

Then everything coming in one lot means a saving in shipping charges and bookkeeper's time, and insures quicker delivery.

Altogether, you will find it more convenient, more satisfactory and cheaper to place your entire order with ORR & LOCKETT—"for over forty years the leading hardware dealers of the West."

Let us hear from you

ORR & LOCKETT

Established 1872

HARDWARE CO.

14-16 W. Randolph St. - CHICAGO

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moved showing the simplicity of the gearing. All three feeds are controlled by a clutch which may be stopped or started at will without interference with the mixing drum.

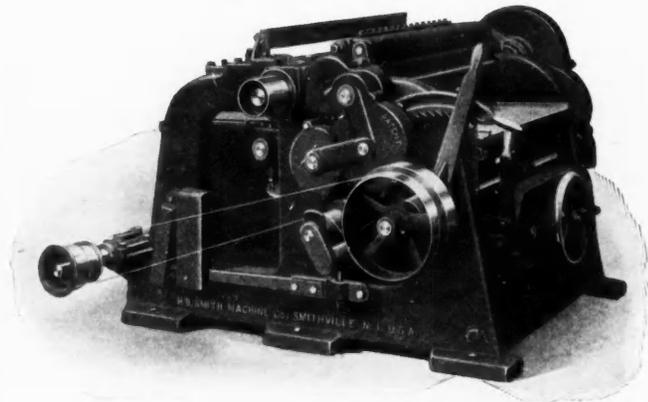
Contractors desiring to purchase an up-to-date equipment will do well to write to the Miles Mfg. Co., Jackson, Mich., for their new 1912 catalog.

New Cabinet or Smoothing Planer

The half-tone cut and diagram represent the latest Improved Cabinet Surface Planer of the H. B. Smith Machine Co., Smithville, N. J., as they now prefer to build it. This machine as regularly made is fitted with their Patent Sectional Feed Rolls, Patent Sectional Chip-Breakers and New Round Head with Self-hardening Cutters. The sizes or widths machines will plane will be indicated in the condensed information, page 116.

It will be noticed that these machines are extra heavy as compared with other cabinet planers on the market. The machines are very finely constructed, are very strongly driven, will do the finest kind of smooth planing, and will handle perfectly all work within the dimensions named for each machine.

The frame is cast hollow including the front and rear cross-girts, which is a stiff form of construction, hence the working parts are supported in a most substantial manner.



Left-Hand Front View of H. B. Smith Mach. Co.'s No. 32-C 30-Inch Heavy Cabinet Planer. With Round-Head, Having Four Self-Hardening Cutters, Patent Sectional Feed Rolls, Patent Sectional Chip-Breakers, Power Hoist and Provision for Jointing and Grinding the Cutters on the Machine

The bed is heavy and deeply ribbed, and has a vertical movement of full 7 inches on long inclines which extend from the front to the rear end of the framing, hence it is very rigid and solid. The vertical adjustments are accomplished by both hand and power, and a lever on the front left side operates a friction clutch for raising the bed by power; and all sizes of these new machines have two screws for operating the incline-planes.

The feed is started and stopped by a belt-binder which is hinged on a trunnion independent of the shaft, a gravity locking bar serving to keep the feed belt taut. Provision is made for two rates of feed, viz: 20 and 30 feet a minute, but additional rates of feed may be had by additional pulleys.

The patent feed works consist of four 5" feed rolls, two above and two below in the table, and all strongly driven. The first upper feed roll is made in sections. The front and rear rolls are now 13½" apart from center to center. The chip-breaker as a whole has a parallel lift for full depth of cut, a deeper cut than 5/8 of an inch being prevented by a limiting bar in front of the feed rolls.

The sectional feed rolls are a modification of their former plans, and are covered by the same patents. The sections are now made 2" wide and each section is given pressure by

Have You Had Your Sample?

THERE is a free sample of Utility Wall Board and a handsomely illustrated book of interior designs waiting for every reader of the American Carpenter and Builder.

If you havent had yours

Write for It Today!

Ten thousand carpenters and builders all over the country are using **Utility Wall Board** regularly—They are making more money—Their work is easier and their customers are better pleased as a result.

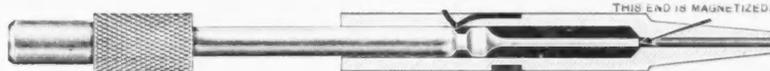
Utility Wall Board is extremely tough and durable—Takes the place of lath and plaster—Is easy to put up and makes a wonderfully attractive wall or ceiling when it is up. Positively moisture-proof—Will not shrink or warp—Lasts as long as the house does.

Every carpenter and builder needs it every day of his life.

Write today for your sample.

THE HEPPE'S COMPANY

4503 Fillmore Street Chicago, Illinois

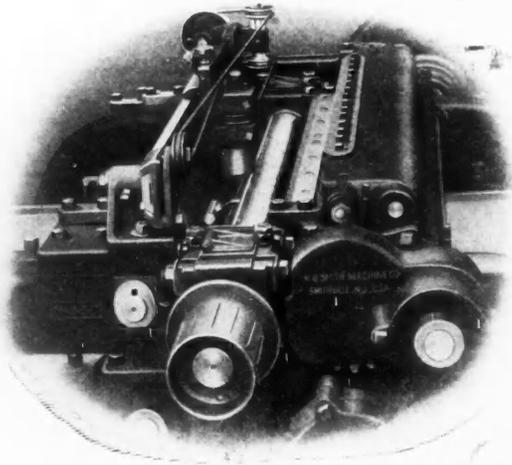


This is the "Excelsior" Brad Set

A tool that will *drive* and *set* brads and finishing nails in places inaccessible without it, and indispensable to the Carpenter, Pattern Maker, Picture Framer, Electrotyper; in fact, all who use small brads, finishing nails or tacks. The tool is made in four sizes. No. 1 takes No. 20 and No. 18 brads up to $\frac{3}{4}$ -inch long; No. 2, No. 16 brads $\frac{3}{4}$ -inch long; No. 3, No. 14 brads, $\frac{3}{4}$ -inch long, and No. 4, No. 14 brads and finishing nails up to 2-inch long. Nos. 1, 2 and 3 retail for 25c each, and No. 4 for 50c. If your retail hardware dealer does not carry these tools in stock, they can be procured at the prices above given from

The Standard Tool Supply Co., 42 West 15th St., NEW YORK CITY

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Top View of Cabinet Planer. Showing Grinding Attachment and Implement for Holding Head while Grinding the Knives to the Proper Cutting Angle After Being Jointed

a spring of limited movement which causes a double roller over each section to give the necessary pressure to each section so as to insure a positive feed, and this without the usual internal springs. Any section of the feed-roll can be raised $\frac{1}{4}$ of an inch before it will commence to lift the whole roll, hence pieces varying in thickness to that extent can be planed perfectly side by side of any width.

The front feed-roll in the bed is connected by expansion gearing to the same shaft above which drives both ends of the upper feed-roll. This expansion gearing is covered by their patent gear-casing, and motion is communicated to the lower discharging roll by an automobile chain from a sprocket on

the opposite end of the lower front feed-roll. The upper discharging feed roll is driven by an automobile chain from the upper driving shaft which takes its motion from a lower shaft to which it is geared, and this latter shaft gets its motion from a belt and binder from the countershaft on rear end of machine, which in turn communicates direct with the cutter head by a belt. Hence the feeds always maintain a relative speed with the cutter-head, which insures perfect equality of surface.

The gears are now cut carefully to pitch so as to run smoothly and to be durable. The pinion-gears are of machinery steel forgings, and none of them run on studs.

The sectional chip-breakers which are made to correspond of the sectional feed rolls, are of the same width (2") and each section will also lift $\frac{1}{4}$ of an inch against a limited spring before the whole bar raises.

The rear pressure-bar is of forged machinery steel and has the necessary adjustment to compensate for the frequent jointing of the knives.

To meet a popular idea and also on account of some advantage in construction, the cutter head is made round, as this form facilitates the application and care of thin air-hardening cutters with which this machine is preferably fitted. The new head is grooved to carry four thin self-hardening cutters. A head and cutters of this character require special facilities for jointing and grinding the cutters so that all the knives will cut.

The jointing bar is placed directly over the head and arranged so that the jointing tool can come in contact with the running head and thus joint all of the cutters level to the planer-bed.

The bearings of the cutter-head are an improved modification of the White Patent Clamp Box, and are $2\frac{3}{8}$ " diameter x $11\frac{1}{2}$ " long. The countershaft bearings on the machine

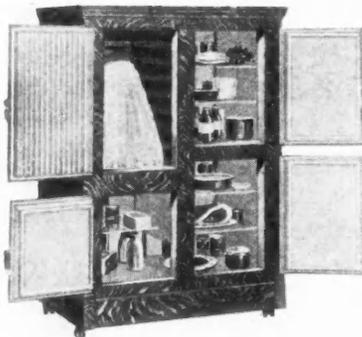
SPECIFY McCRAY REFRIGERATOR

The kind of refrigerator for you to recommend to the home builder is one which will always give perfect satisfaction. McCray Refrigerators are known for quality the world over because they are made by experts of long experience in the business and because they are advertised constantly the year round.

Dozens of Superior Features

The positive cold, dry air circulation, the outside icing arrangement, the absence of all odors, the sanitary cleanliness and convenience of the linings, the ice-saving insulation, the beauty of the wood work, all make an irresistible appeal to your clients, who will thank you for calling their attention to the McCray.

Our refrigerator draftsmen are employed to co-operate with you in drawing up specifications of refrigerators of the proper capacity to meet the requirements of the home on which you are working. Simply send us a rough sketch of the floor plan with proper dimensions, and we will gladly submit designs and blue prints so you may take the matter up with the owner.



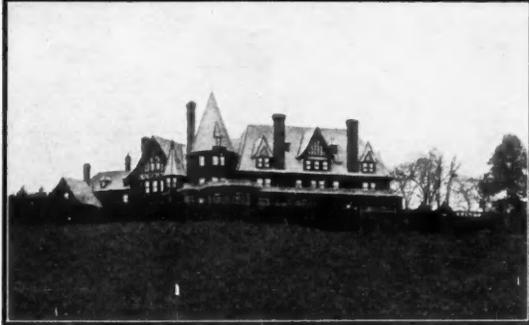
McCray Quality

McCray Refrigerators are made for all purposes. Send for free books: No. A. H. Built to order for Residences, No. 88 stock sizes for Residences, No. 67 for Grocers, No. 59 for Markets, No. 48 for Hotels, Clubs and Institutions, No. 72 for Florists.

McCray Refrigerator Company

306 Lake Street : : : Kendallville, Ind.

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Asbestos "Century" Shingle Roof—Quintard Estate, Portchester, New York. Reroofing contractor, John Gery, Paterson, N. J.

Asbestos "Century" Shingles "The Roof that Outlives the Building"

Your clients will pay just about the same for an Asbestos "Century" Shingle roof as for any other roofing that is ordinarily put on first-class buildings.

But consider their durability—their immunity from fire risk—their freedom from repairs and painting—

You find that Asbestos "Century" Shingles are the cheapest roofing known to the building trade.

Two hundred million Asbestos "Century" Shingles were sold last year at a price that enables the architect and builder to specify them in competition with other roofings—and brings us a conservative profit on the cost of making.

You can get Asbestos "Century" Shingles in shapes to suit any architectural scheme—in several sizes—and in three colors: Newport Gray (silver gray), Slate (blue black) and Indian Red.

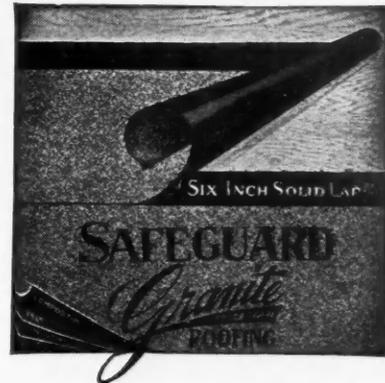
Send for quotations, and booklet "Everlasting 1911".

Keasbey & Mattison Company, Factors
Ambler, Pennsylvania
Branch Offices in Principal Cities of the United States

Granite

TRADE MARK

ROOFING



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 25 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.
Chicago 19 Battery Place, New York Pittsburgh

THE BESSLER MOVABLE STAIRWAY



THE BESSLER STAIRWAY IN POSITION

Can be easily installed in any house already built at a very small expense. Send for folder giving prices and details.

aside from the excellent materials used, the high standard of workmanship, and their neat artistic appearance, afford the owner a splendid means of ventilation, increases value of house, give quick access to attic in case of fire and at the same time saves space which would otherwise be unavailable with the common stationary staircase.

Architects and Builders recommend it on account of its low cost and desirability.



Panel in Ceiling—Looking Up

The Bessler Movable Stairway Co.

AKRON, OHIO

When Writing Advertisers Please Mention the American Carpenter and Builder.



Lemoyne, Pa., Nov. 25, 1911.

Mr. F. B. Brunner,
Lemoyne, Pa.

Dear Sir:

Three years ago I purchased a No. 10 Coltrin Concrete Mixer which did me great service, but desiring a machine of greater capacity, I sold the No. 10 in September, 1909, and purchased a No. 9, and in March, 1911, bought a No. 12 Coltrin. These two machines I have been using almost constantly and have only paid about \$13.00 for repairs. They do perfect mixing and are a great labor saver for the contractor.

Yours Resp.,
S. B. LEACH

Here is the Reason Why

The COLTRIN excels all others in thoroughness of mixing.

The cylinder that turns in the mixing shell has 7 blades $1\frac{1}{4}$ " wide.

This cylinder revolves 35 times per minute, and that means the material being mixed is cut through, lifted and turned over at the rate of 245 times per minute.

Now Think This Over

On the mixing board you aim to have the material cut over with shovels three or four times and then consider it ready to place.

The COLTRIN cuts it through and turns it over

4 TIMES EVERY SECOND

(First Dry—Then Wet)

THE WHOLE LENGTH OF THE MIXING SHELL.

This is why the COLTRIN gives a perfect distribution of the cement throughout the mass.

The Coltrin Continuous - Batch Mixer

Shipped Anywhere on Five Day's Trial

SEE THEM AT THE
NEW YORK - CHICAGO - KANSAS CITY
CEMENT SHOWS

Write for Catalog "W"

THE KNICKERBOCKER COMPANY
JACKSON, MICHIGAN

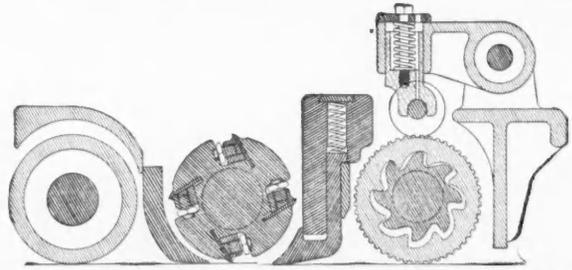


Diagram Showing Relative Position of the Feed Rolls, Cutter Head, Chip Breaker and Pressure Bar, and Incidentally Showing Construction of New Round Head, Patent Sectional Chip Breakers and Method of Giving Pressure to Patent Sectional Feed Rolls

are now compensating and self-lubricating.

Equipment. In addition to the jointing and grinding tools there are small instruments for setting the cutters and for holding the head in position while grinding the knives; and for withdrawing the cutters to the normal cutting circle.

Model	Sizes Will Plane	Weight in lbs.	Floor Space Required	Size of T. & L. Pulleys	Speed of C. S.	Average H. P.
No. 32-C	30 x 7 in.	5840	78 x 71 in.	14 x 8 in.	1000 Revs.	10 to 12
No. 34-C	36 x 7 in.	6240	84 x 71 in.	14 x 8 in.	1000 Revs.	12 to 15
No. 35-C	42 x 7 in.	7000	90 x 71 in.	14 x 10 in.	1000 Revs.	15 to 18

All machines are fully tested before leaving the works, and warranted to be as represented. They may be returned free of expense within thirty days after date of arrival at destination if not satisfactory, and the money shall be refunded.

Address H. B. Smith Machine Co., Smithville, N. J., U. S. A.

New Hupmobile Presents Many Unique Features

The latest offering of the Hupp Motor Car Company—a thirty-two horse power, long-stroke, five-passenger touring car—embodies many features new to this country, and is also stamped unmistakably with the same individuality that has always characterized the Hupmobiles.

The new model is by E. A. Nelson, the creator of the original Hupmobile runabout, who has been responsible for the unique style and character of the Hupmobile line from the outset.

Body, cowl, and hood have the appearance of an integral piece, and show the pronounced sweeping effects of straight line construction.

The wheel base is 106 inches and the center of gravity is exceptionally low, thus making for steady balance and tire economy.

Great pulling power at all speeds, absence of noise and vibration, economy of fuel and oil are some of the advantages claimed for the small-bore, long-stroke motor. This unique design is in high favor among the foremost European engineers, but has never before been applied to an American car.

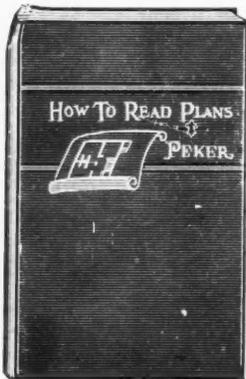
The motor is four cylinder, water cooled, $3\frac{1}{4}$ inch bore by $5\frac{1}{2}$ inch stroke. The cylinders are cast en bloc. Valves are all on one side. Their operating mechanism is of the latest type; quiet, accessible for adjustment, yet completely enclosed by a pressed steel cover, which keeps oil in and dirt out. Inlet and exhaust manifolds are cast with the cylinder block. Connecting rods are high grade forgings secured by four bolts.

The crank shaft has three liberal bearings. They are bushed with antifricition metal cast in bronze shells. These bushings are split and are readily adjustable. The hardened and ground cam shaft is carried in three large bearings of phosphor bronze.

Ignition is by high tension magneto, located under the dash, with all working parts accessible from the seat.

When Writing Advertisers Please Mention the American Carpenter and Builder.

HOW TO READ PLANS



A Valuable New Book
By
Charles G. Pekar

60 Pages (5 x 7 Inches)
43 Drawings in Text
8 Large Folding Plates
Handsomely Bound in Cloth

PRICE, 50 CENTS

Sent post-paid on receipt
of price.

Your money back if you are not
pleased.

MANY building mechanics are handicapped from getting more pay because they are unable to read plans and work from a drawing.

It is for these men that this book was prepared, as it simply explains the meaning of the various lines; plans, views, elevations, sections, scales, blue prints, devices, symbols, etc., to be found on a set of plans.

The book is finely illustrated by 43 illustrations in the text, and 8 large folding plates giving the full plan of a 6-room frame house. This set of plans alone is worth many times the cost of the book; an architect would charge at least \$25 for their equal.

It is one of the most valuable books ever got out for building mechanics, as its information means increasing a man's salary. It is pretty safe to say that to the man who cannot read a drawing now this book will mean at least \$50 more pay during the first year he has it.

INDUSTRIAL BOOK COMPANY

178 Fulton Street,

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ALFRED W. WOODS' KEY TO THE STEEL SQUARE.



This is it.

The Key,
Book of
Instruction
and
Morocco
Case.

Full Size
4x5 inches.

It tells the whole story of how to use the common steel square for all kinds of framing.

Price \$1.50, Postpaid

American Carpenter and Builder

185 Jackson Boulevard, CHICAGO

—ANY MAN CAN— GET \$1,000.00 Who Joins Fritter's \$1,000 Class

For goodness sake
listen to me.



Reader,
I Fritter, am
talking to
YOU!

—Am saying that you; yes, you, can get \$1,000; but be warned—only 5,000 can be accepted. So get mighty busy—write Fritter today. It costs nothing to investigate this remarkable \$1,000 class.

5,000 Men Will Get \$1,000 Each

You, by acting now—today—can get the thousand allowed to your section. This money—\$1,000 or more, per man—goes to mechanics, clerks, farmers, preachers, doctors, lawyers, teachers—people from all walks of life—any man, anywhere—up to 5,000, who is willing to join Fritter's \$1,000 class. Nobody barred. Not a fairy tale, fake or humbug; for listen—it's going on daily—hundreds have received their thousand—some many thousands. If you can use \$1,000—real money—payable \$35 to \$75 weekly—say so—don't hesitate—don't delay a minute; but get the thousand-dollar hustle—get your first \$1,000—first start, first taste of real independence—power, influence, luxuries—get these through Fritter, just as hundreds have done. Poor men joining his wonderful \$1,000 class

Without Capital—Without Experience

—starting with only their nerve—finishing with thousands; yes, thousands of dollars. You, if willing to join hands with Fritter, can easily enjoy same abundant prosperity. Knowing the reason dispels all doubt—creates confidence—enthusiasm.

Class Getting Over \$2,000.00 Per Man

Korstad (Minn. farmer) received \$2,212.13 in 2 weeks; Zimmerman (Ind. farmer) \$3,856 in 30 days; Stoneman (Nebr. photographer) \$3,841.68 in 60 days; Rasp (Kansas agent) \$1,685 in 73 days; Juell (Canada clerk) \$6,800; Oviatt (Iowa minister) \$4,000; Hart (Va. farmer) \$2,000; Wilson (Ky. cashier) \$3,000 in 30 days; Beem (Kans.) averaged \$164.25 weekly for 3 months; Langley (Dak.) liveryman) \$115 first day. No wonder these men bless the day they joined Fritter's \$1,000 class. Reads like fiction, yet it's the gospel truth. Proven by sworn statements—investigate—personal interviews.

**10 MINUTES' WORK
\$6.50 CASH, PRESTO!**



IT'S SOLVED. The long-desired, much wanted, universal bathroom has come. Requires no plumbing, no water-works—no water systems. 10 minutes to install—\$6.50 to buy. The equivalent of any \$200 bathroom. Self-heating—hot or cold running water facilities. Cleansing, friction, massage and shower baths in any room. No tubs to clean, bowls or buckets to fill. Simple, durable, handsome, sanitary. The dream of millions come true. Modern homes, modern bathing facilities within the easy reach of every man, woman and child in the land. No experiment. Used by U. S. Government. Over 200,000 delighted customers. With such an article, with exclusive selling rights, with Fritter's help and your nerve you're bound to make from \$1,000 to \$5,000 this year. It's not a question of ability, location or capital (for we give credit to active workers) but whether you act quick enough to get into Fritter's \$1,000 class. Once in you're good for \$1,000 anyhow. Reese solicited 60 people—sold 55; MacDaniels 20—sold 19; Lodewick 41—sold 39—17 orders in one day; Hart "16 in 3 hours;" Wilson, "102 in 14 days."

Sectional View of "Energizer."

Address Fritter personally today—make him prove his claims and above all that you too can get \$1,000. Don't accept anything without proof. First get Fritter's entire proposition—it's free. Then decide. Just a postal will do.

M. FRITTER, Secretary and Treasurer

ALLEN MFG. CO.,

3442 Allen Bldg., Toledo, O.

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Thermo-syphon cooling is employed. The radiator is a genuine square tube of ample capacity, and is assisted by a large belt driven fan. Water pipes are unusually large. Only one short piece of hose is used, all other connections being metal.

The carburetor is automatic under all conditions and without adjustment, and is positively fed from a tank under the

The clutch is of the multiple disc type, with tempered and ground saw steel discs running in an oil bath. In design and in size it resembles clutches used on fifty and sixty horse power cars. Spring tension is readily adjustable. A clutch brake is provided to make gear shifting easy.

Three speeds forward and a reverse are obtained by the sliding, selective system, operated by a single hand lever with heavy interlock.

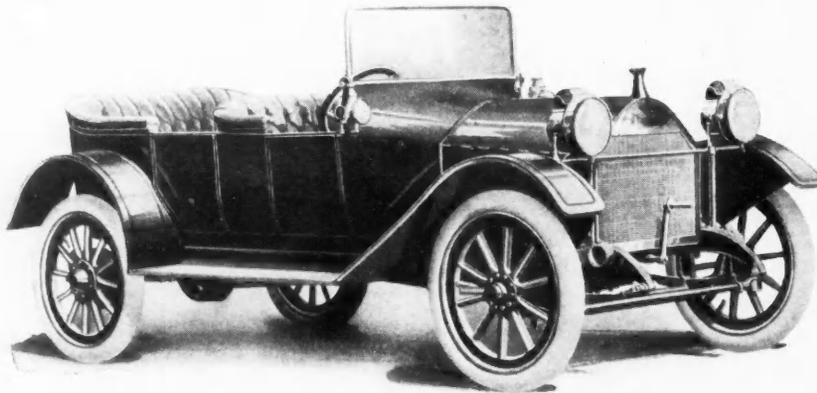
The gear shift lever and the emergency brake lever are in the center of the car, at the left of the driver. They are placed far enough forward to allow of passing readily from one side of the car to the other.

Connection to the rear axle is by a shaft with a single universal joint, enclosed in a tapered tubular housing which is globe jointed to the transmission case. The rear axle is of the full floating type.

The gears are of coarse pitch, wide face and have an unusually large number of teeth. They are high grade steel carefully hardened and mounted on high duty roller bearings of more than ample

size. Annular roller bearings and ball thrusts are used throughout. The axle casing is built up from a central casting and tapered flanged steel tubes. This makes the strongest and stiffest axle possible, without need of truss rods.

The pressed steel frame is unusually sturdy for a car of this size. It is so designed as to harmonize with the body lines. The frame is of pressed steel, the body of sheet metal. Has very deep upholstery and provides ample room for five passengers. Mud guards, running boards, and all

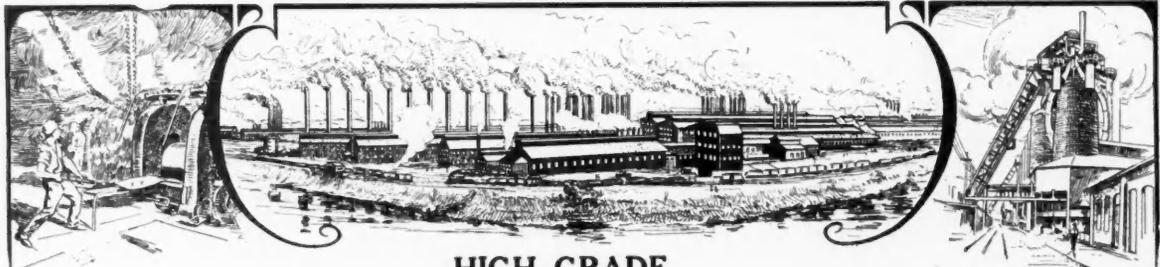


New Model 32 H. P. 4-Passenger Hupmobile

dash cowl.

Engine and transmission are a unit, their working parts being enclosed in a one-piece case of the highest grade aluminum alloy. This unit is supported in a unique manner on a pressed steel pan.

The fly wheel is flanged to the crank shaft at the rear of the motor. It runs in a bath of oil and by means of its centrifugal force feeds filtered oil to all parts of the engine, clutch and transmission.



HIGH GRADE

SHEET AND TIN MILL PRODUCTS

Apollo Best Bloom Galvanized Sheets
Black Sheets of all Descriptions
Tin and Terne Plates

FORMED ROOFING AND SIDING MATERIALS

Write for full information on MF, the most popular terne plate manufactured, also American, American Old Style, American Numethod, and Continuous Roofing Tin. Apollo Galvanized Sheets are popular with particular builders everywhere.

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

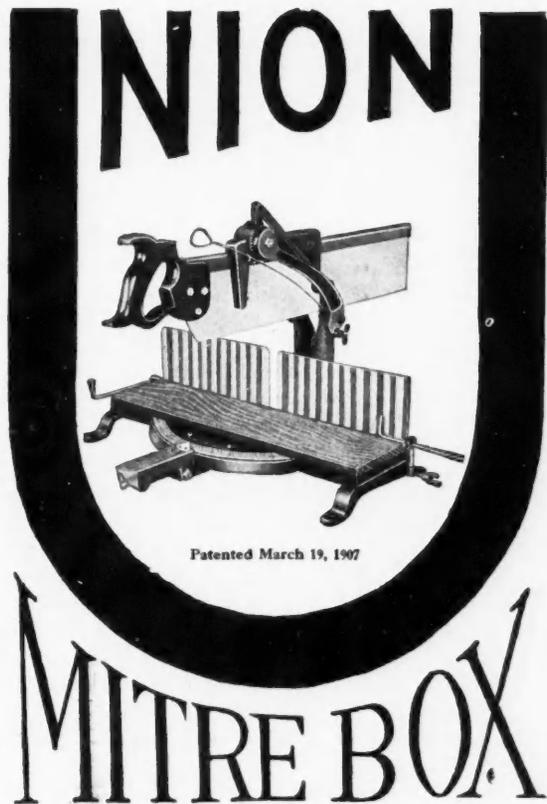
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Patented March 19, 1907

Accuracy and strength together with simplicity, combining to make the best Mitre Box you can buy. The open front is only one of many strong features found only in the Union. To those who wish the most for the money, send for our Circular A. We also make a very simple and handy Floorscraper. Watch next issue for something new in your line.

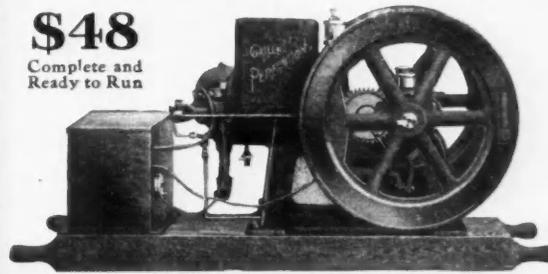
DOSCH MFG. CO. -- Bridgeport, Conn.

**1½ Horse Power
For 1½ Hours
For 1½ Cents**

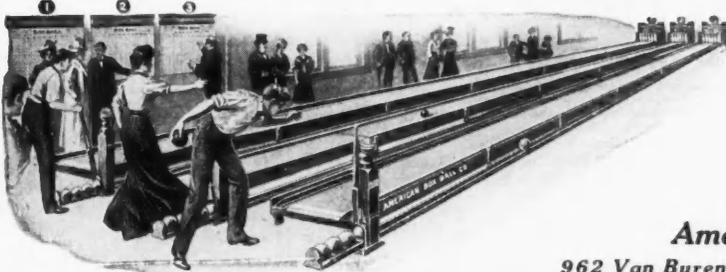
We know this Caille Perfection Special to be absolutely the greatest engine value on the market. Built by automobile men with automobile machinery—runs economically on kerosene or gasoline—your two hands the only tools you'll need. The simplest construction of any power plant—your 14-year-old boy can take care of it. Made of the finest material, every moving part works as smooth and sweet as a watch. Our free book tells how we make a better engine at a lower price than our competitors. Write for free book and 15-day free trial offer.

Caille Perfection Motor Co.
317 Second Street Detroit, Mich.

\$48
Complete and Ready to Run



"I took in \$8,540 in 16 months from three Box Ball Alleys"—Says one operator.



Another \$1,840 first 59 days on 4 Alleys

Start this wonderful business in your town now. These alleys usually run \$35.00 to \$75.00 per week. Many take in all they cost first month. Will pay big anywhere.

A clean, moral business, attracting patronage from good people. Nearly 8,000 sold.

The New Model Alley has full size ten pins—automatic, noiseless—set them on any floor. No trouble to install. Nearly all profit. No expense but room rent.

You can start with from \$120.00 to \$400.00. If not satisfied after month trial, return alleys, and we refund your money less your receipts during month.

We sell only one customer in each locality. Write today for special proposition.

American Box Ball Company

962 Van Buren Street

INDIANAPOLIS, IND.

CARPENTERS

In the booklet "Simonds Guide for Carpenters" you are told some of the true facts about the very high quality of Simonds Hand Saws. Made of Simonds Steel. You are also given a mass of useful Carpenter's information. A copy mailed FREE if you mention this paper and write today.

Simonds Mfg. Co. FITCHBURG, MASS.



Mr. Contractor and Builder

Why not equip the home or other building you are erecting with

Acetylene Lighting?

You can greatly increase your income by selling Davis Acetylene Lighting Plants, for new buildings, and during dull seasons for buildings already erected.

Write us for cost of equipping a building and for our terms as salesmen.

Davis Acetylene Company
90 Crawford St., Elkhart, Ind.

When Writing Advertisers Please Mention the American Carpenter and Builder.

equipment are especially made for the car and harmonize with the rest of the design. Every part is specially built for this car alone, and the assembly forms a compact, efficient machine that is as near perfect as the makers are able to produce.

Booklet on Cross-Cut Saws

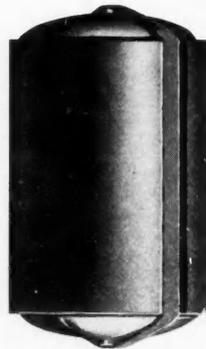
It will be worth the while of the readers of the AMERICAN CARPENTER AND BUILDER who value good tools to write Henry Disston & Sons, Philadelphia, and ask for their new booklet on Cross-Cut Saws.

It is probably well known to our readers that Disston saws have been made and used for over 72 years in ever increasing quantities. It is plainly evident that there must be more than ordinary merit in a brand of goods which creates and satisfies the demand over such a period of time.

Ever since this business was founded in 1840 the demand for Disston tools has steadily increased, necessitating from time to time the erection of new buildings and the installation of extra mechanical facilities, until now the Disston Works has become the largest of its kind in the world.

Henry Disston & Sons are proud of the fact that this achievement is simply the result of making service-giving saws: that is the whole story in a few words.

This booklet is full of exceedingly valuable information for the woodworking trades. Write for a copy.



Pocket Sample Spool for the Use of Salesmen in Carrying Simplex Nails

Pocket Sample Case for Simplex Nails

The H. B. Sherman Mfg. Company, Battle Creek, Mich., has devised a novel method by means of which its Simplex Roofing Nails may be conveniently shown by jobbers' salesmen. This holder or spool opens for the reception of the Simplex Nail, features of which are the large head and great holding power for prepared roofing. The device occupies but little space, and it will be furnished in sufficient quantities to wholesale houses to equip all of their traveling salesmen.

An Improved Cutter Head

The race for supremacy among the makers of fast feeding flooring machines in bringing out some speedy matchers. To keep a little ahead of the procession where the Shimer Cutter Heads have always lead, and to put in the hands of the mill man a safe and efficient tool for this fast work, the makers have put on the market their new "Shimer Limited" Cutter Head.

In appearance the new Head resembles their older patterns, but differs therefrom in the method of attaching to the



ONE = FOUR

TRADE **SIMPLEX** MARK

Reg. U. S. Pat. Office



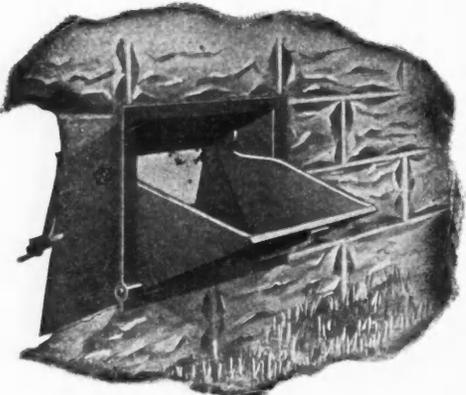
Order your prepared roofing to contain
SIMPLEX NAILS.

One **SIMPLEX NAIL** has as much head surface as four so-called large headed nails

Sold by Jobbers

Head Surface Tells

Manufactured by H. B. SHERMAN MFG. CO., Battle Creek, Michigan



Roenius Wood and Coal Chutes

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

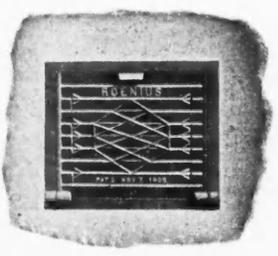
Roenius Chutes are equally desirable for houses of low or high cost.

Nearly 20,000 in Use

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

Write for Catalog and Our
Special 1912 Offer

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



DOW

Wire & Iron Works
(Incorporated)
LOUISVILLE, KY.

IRON LINTELS

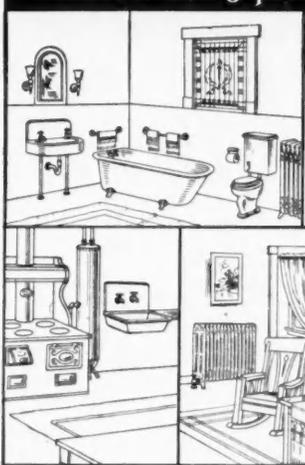
Beams, Angles, Anchors, Hangers.
Ornamental Cast Iron Fronts and Stairways.

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RUNNING WATER in your home

\$42

Complete Hot-Water and Steam-Heating plants \$120 UP



Fresh running water for your bathroom, kitchen, laundry, stables, gardens. Plants all sizes, \$42 and up. Operated by hand power, electric motors or gasoline engines.

This Complete Bath-room Outfit for \$38.95

All kinds of plumbing supplies at factory-to-you-direct prices.

Heating Plants Save \$100 to \$250

on a modern Heating System Steam Heating plants \$120 up. Hot water plants \$140 up.

LIGHTING PLANTS.—Complete Electric Plant including gasoline engine, dynamo, switch board and storage battery, \$256.

IMPORTANT—We will furnish FREE with every water, heating or lighting plant special plans for your individual home. Anyone can install with these complete drawings.

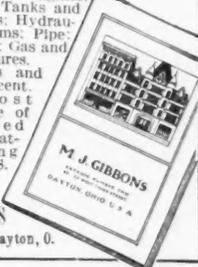
This Big Free Catalog shows thousands of bargains.

Gasoline Engines;
Farm Tanks and Pumps; Hydraulic Rams; Pipe valves; Gas and Electric Fixtures.

Buy from us and save 50 per cent. We have most complete line of guaranteed Plumbing, Heating, Lighting goods in U. S.

Write now.

M. J. GIBBONS
Dept. B. Arcade Dayton, O.




I Want You to Know about My Guaranteed Winter Chaser Furnace that Actually Cuts Down Your Coal Bill 33 1-3 Per Cent!

I Want every reader of this paper—especially those who have so long experienced cold houses—to write me a personal letter or postal card at once for my free book "Twice a Day" which tells you just exactly how to save money each winter on your coal bill. Let me explain to you how this

CAMPBELL'S GUARANTEED WINTER CHASER FURNACE

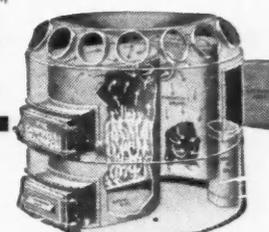
of mine accomplishes these things—how it is constructed of heavy three-sixteenth inch steel plate, which makes it the most durable and lasting furnace in the world—how it has a patent heat retainer that materially cuts down coal cost—how its big air chamber cuts down coal bills, and how it actually produces the cleanest, most healthful and most perfectly moist heat that can be maintained in a dwelling.

This book will give you every point in detail, and will let you prove to your own satisfaction just how and why these money-saving and health-sustaining features are brought about.

Write Me At Once for FREE BOOK—And Stop Wasting Your Coal—Have a Comfortable, Cheerful, Healthful Home!

By all means let me hear from you at once on this all-important matter. It not only means a lot of money in your pocket, but it means better air, purer air, and the healthiest kind of air for every member of your family—and this in itself is worth more to you than all the dollars and cents it will save.

Address me personally, and receive this free book by return mail. A. K. CAMPBELL, Pres.,



CAMPBELL HEATING COMPANY,

1101 Walnut Street
Des Moines, Iowa



Build Yourself a Perfect Boat at One-Half Cost

It is as easy as A. B. C. for the man skilled in using tools to build any one of these handsome motor boats. Pioneer Knock-Down Frames are so true, so accurate and simple to assemble that thousands of novices have followed our simple plans put the frames together and launched beautiful boats at one-half the usual cost.

Pioneer Frames

are made of A No. 1 seasoned white oak. Every rib is accurately bent and fitted in its exact position. Every frame is tested in our factory, taken down and shipped. You just put the pieces back where marked. Here's a real lark for every carpenter and builder. Here's where you eliminate the ready-made boat builders' profits. Here's where you join the great company of Pioneer enthusiasts on every lake and stream.

Let us send you at once the attractive Pioneer Boat Book which gives the details, shows you we supply everything, frame, planking, fittings, engine, etc., and that we save you money at every turn. Remember we guarantee satisfaction. Write today.

Pioneer Boat and Pattern Company
Box 612, Bay City, Michigan



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spindle; in the construction of the bit seats; of the bit designed for faster cutting; in the greater strength of the holding bolts, and in the self-centering device which clings to the spindle when drawn up, securing it firmly thereto.

To match Flooring at the rate of 150 to 200 lineal feet per minute requires side heads of undoubted strength to withstand the enormous centrifugal strains. They must be designed right, materials must be the best obtainable and they must be manufactured with care.

The "Shimer Limited" Cutter Heads are made from Solid Steel Forgings. They are carefully balanced and the Bits are jointed to insure all of them doing their share of the cutting. The bit seats carry a larger areal surface and the bit chambers are of greater depth to compensate for the new acute angle given to the Bits for greater relief to the parts coming into contact with the lumber.

These new tools have eight Bits to each Head fastened with the strongest designed and toughest holding bolts that can be constructed. The spindle gripping device is positive and effective in its purpose of holding fast to the spindle, as also in centralizing the Head.

These tools must be seen at work to be appreciated. Like all Shimer products they are sent on trial, returnable if not satisfactory. Send for a set and give them a try out on your fastest machine. Address Samuel J. Shimer & Sons, Milton, Pa.

Portable Fire-Proof Buildings

A recent development that is meeting with favor is buildings of pressed metal, and portable or semi-portable in their construction. The Metal Shelter Company, 2-23 W. Water St., St. Paul, Minn., have been the pioneers in developing structures of this kind. One of their garages is illustrated herewith.

Other buildings for which this system, known as the "Pruden System," is well adapted are summer cottages, contractors' works-offices, implement shelters, ware houses, stores, etc.

It is pointed out by the manufacturers that these buildings are essentially fireproof, substantial in construction and decorative in appearance; at the same time, their cost is not great.

With "Pruden System" buildings no foundation nor framing is necessary. All parts are accurately formed at the factory and are shipped in completely finished unit sections, already to be set up. The sections interlock into a self-supporting building. The cost is claimed to average fully one-third less than any other type of structure, giving similar protection.

To the wide-awake contractor it is evident that these buildings as supplied by the Metal Shelter Company offer a new and attractive field for business. Take automobile garages alone; the wide-spread demand for fireproof garages,

Montross Metal Shingles

We Want You to Become Our Agent—It Will Pay You

Montross Metal Shingles are not only the best and most permanent roofing you can advise your customer to have, but they allow you a greater margin of profit for your work.

*That Means—
A Better Roof for Him—
More Money for You.*

Tell your prospective customer how they will reduce his fire insurance rates, give him greater storm protection and last longer than any wood or composition roofing made. Fire, Lightning and Storm proof. Won't rattle, crack or blow off. Easily laid—no soldering.

Exclusive Territory Given
This is a chance for live representatives to make big money. Our proposition is the best ever.

*Write for Illustrated Catalogue
Testimonials, Price List, etc.*

"Twenty years ago I built my house in Albany, N. Y., and covered the roof with Montross Metal Shingles and the shingles are in excellent condition at the present time.

"Chas. A. Heidrich,
"Architect,
"Schenectady, N. Y."

Montross Metal Shingle Co.
102 Erie St. CAMDEN



GENUINE BANGOR

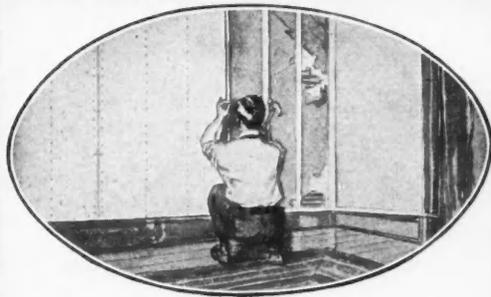
**Roofing Slate
Structural Slate
Blackboards**

Large Facilities, Prompt Deliveries

EAST BANGOR CONSOLIDATED SLATE CO.

East Bangor, Pa.

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**SEE THAT
COMPO-BOARD**

Is In Your Specifications

It is the most satisfactory wall lining yet devised. It will last longer than lath and plaster.

Compo-Board is easily and cheaply put on, and the walls will look well as long as the building lasts. They will never be disfigured with ugly cracks or blemishes from moisture accumulating on the walls. Will not crumble, crack or fall off. Cannot be marred by jamming furniture into them.

Compo-Board makes dry, warm, moisture proof, fire resisting walls, ceilings and partitions. The rooms will be free from draughts, warm in winter and cool in summer.

Not only is Compo-Board a superior wall lining, but it has many uses around the house, in offices and factories.

It is made of thoroughly seasoned, kiln dried strips of lumber well glued together. They are covered with a thick coat of cement on either side and an outside covering of thick paper. You can buy it in strips four feet wide and 1 to 18 feet long, any length you want in even feet.

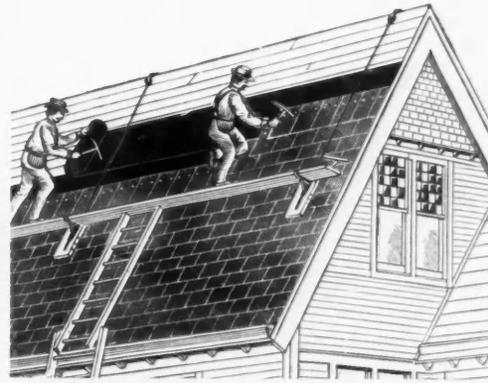
Send for Booklet and Sample

It explains the many uses and advantages of Compo-Board and you can get an idea of what it is from the sample.

NORTHWESTERN COMPO-BOARD CO.

5777 Lyndale Ave. No. Minneapolis, Minn.

The border of this advertisement is a cross section view of Compo-Board.



TAKE UP SLATE ROOFING

Carpenters and Builders: Take up slate roofing in unoccupied territory everywhere. It's a money maker. Only a few simple, inexpensive tools and small capital necessary. Slating is easy to learn. Very much like laying shingles. Can be carried on in connection with your present line with no extra trouble or expense and will give good returns. A profitable, growing slate roofing business can be established anywhere. Besides the new work that comes up every year there are simply hundreds of worn-out shingle, metal, tin and composition roofs in every locality that must soon be replaced.

Sea Green or Purple Slate Roofs

OUTLAST ANY BUILDING

They can't wear out, rust, warp or decay. Are fire and spark proof. Reduce insurance rates. Afford clean cistern water. Don't require constant repairs and attention. Your neighbors are tired of paying good money for short-lived roofing—high-priced shingles that soon decay—tin and metal roofs that cause frequent and costly paint bills—composition and the "olds" roofing that disintegrate. Furnish them with handsome, sanitary, fire-proof Never-Wear-Out Sea Green or Purple Slate Roofs that last forever.

Carpenters and Builders: Take up slate roofing this Spring. You will make good money and please your customers. Write to us at once for delivered prices on slate, tools and supplies and Free book of instructions. Don't Delay. Write To-day.

NOTE—This special proposition does not apply to any territory now covered by a Slate Roofer.

American Sea Green Slate Co.

Box 125
GRANVILLE, N. Y.

TILE IN CONCRETE

Concrete is the great building material of the present and the future. Tile of all kinds is homogeneous with concrete construction. In addition to its uses in the house—the floors, walls and the like—it forms a strong decorative motive for walls on the outside of the house in bands or spots of color.

An unlimited field is offered to the invention of the architect in the different combinations; and samples of tile will be gladly furnished to architects interested in this problem.

THE ASSOCIATED TILE MANUFACTURERS
Room 19, Reeves Bldg., Beaver Falls, Pa.

**DECO-VENEER
Wainscots**

Are Ideal in Every Feature

BEAUTY—PERMANENCY—MERIT

We manufacture a full line of stock sizes in all foreign and domestic woods from selected stock only. Strips, cap and base complete; ready for immediate installation at a total cost far below ply panels. No mill or cabinet work required.

You simply send us the total lineal feet to cover space. State height from floor to top of cap, wood desired and whether finished or unfinished. Stock widths, 12-16-18-20-24 inches.

Endorsed and used by architects and builders everywhere.

Descriptive and illustrated booklet on request.

Local Agencies Desired in Unoccupied Territory

DECO-VENEER CO.
442 W. 10th St. : Indianapolis, Ind.

When Writing Advertisers Please Mention the American Carpenter and Builder.



"I'm Going to Make You Building Foreman"

"You have proved by your work that your training fits you for the job"

This illustration tells the story of the promotion of an I. C. S. student—just another of the thousands of instances of I. C. S. success.

Everywhere—in all lines of work—are seen such students, who are forging ahead of their fellows and are attaining positions of responsibility often far beyond their years. The rapid advance of these young men is not due to luck or chance, for an investigation will show that almost without exception they owe their promotion to spare-time study. While their less ambitious companions were spending their spare time in idleness these young men were preparing themselves for promotion and increased salary.

Through I. C. S. help *your* salary can be raised—*your* job advanced—*your* success in life assured; and all this regardless of your age, occupation, address, how much or how little you earn, or how much or how little spare time you have at your disposal.

Just mark and mail the coupon, for this is the first step toward promotion. This step will bring to you, without any obligation on your part, full information as to how the I. C. S. trains you for promotion and how to become building foreman, superintendent, or manager.

Now is the time to start.

Mark and Mail the Coupon TODAY

International Correspondence Schools

Box 910, SCRANTON, PA.

Please explain, without further obligation on my part, how I can qualify for a larger salary and advancement to the position, trade, or profession before which I have marked X.

Architect	Estimating Clerk	Automobile Running
Arch'l Draftsman	Civil Engineer	Foreman Machinist
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
Plumbing Inspector	Electric Railways	Civil Service Exams.
Heat. & Vent. Eng.	Concrete Construct'n	Chemist

Name _____

Street and No. _____

City _____ State _____

Present Occupation _____

When Writing Advertisers Please Mention the American Carpenter and Builder.



"Pruden System" Fire-Proof, Portable Garage

both in and outside of the fire limits, makes these portable fire-proof buildings easily saleable. It is stated that the profits are large compared with other contracting work.

Write to-day for catalogues, pictures and full details, together with special proposition to readers of the AMERICAN CARPENTER AND BUILDER. Address the Metal Shelter Company, 2-23 W. Water St., St. Paul, Minn.

Get Cost of Operation Before Installing Trucks

Speedwell Company and Cincinnati Service Company Introduce Innovation in Heavy Hauling Field

Cincinnati just now is the scene of a radical innovation in the use of motor trucks, this being no less than a drayage service of nine hours daily. The service is used by merchants and manufacturers and is supplied on the basis of four or six tons, the capacity of the truck being determined before hand.

Every morning at 7 o'clock the truck is on hand, ready for the day's hauling. Mileage does not figure in the cost of the service to the buyer; but if the truck is kept in use beyond nine hours a day, a charge is rendered one and one-half times the day rate. The service company is protected



"Speedwell" 4-Ton Truck Climbing Twin Peaks, San Francisco—Endurance Run Oct. 4, 1911, in which It Secured Perfect Score

against delays resulting from causes beyond its control. This time must be absorbed by the merchant or operating company that has bought the service; and as a further protection



Mullins Sheet Metal Statuary

fulfills every requirement of ideal architectural adornment. Its effect is nothing short of imposing. It is light—withstands the ravages of time. Made from artists' own models, or can be selected from our great variety of exclusive stock designs. Has the hearty endorsement of numerous sculptors of note. The cost is far below that of cast or sculptured work.

We also manufacture Fireproof Metal Windows, Skylights, Cornices, Finials, Metal Tile Roofing, and Sheet Metal Ornamental Work of every description.

Buildings that are equipped with Mullins Fireproof Windows have lower insurance rates because Mullins Fireproof Windows are manufactured under the supervision of the Underwriters' Laboratories, Inc., according to the latest specifications of the National Board of Underwriters. Every one of these windows is inspected, approved and labeled with the official approval of that board.

Your written request will bring, by return mail, catalogues covering the line or lines that interest you. Glad to submit quick estimates on architects' drawings. Attractive prices. Prompt service. Special discounts to the trade. Write today.

THE W. H. MULLINS CO.

214 FRANKLIN ST., : : : SALEM, OHIO

SOMETHING ENTIRELY NEW IN IRON PLANES



Buckeye Smooth Plane

These planes are made on an entirely new plan, and are the simplest planes to adjust that have ever been placed on the market.

They are made in two sizes, 9 1/4" Smooth Plane, 2" iron, and 18" Fore Plane 2 1/4" iron, the Fore Plane can be adjusted to do the work of Jack Plane and Jointer without removing plane from the work, or the iron from the plane, thus doing the work of four planes of other makes, which makes two less planes to buy, two less to carry, and two less to keep in order.

Every plane guaranteed. Your money cheerfully refunded, if after giving them a trial, you are not convinced that they are the best planes you ever used. Ask your dealer to get them for you, or write us. We also manufacture a full line of Saw Vises, Foot-power Saw Set, Chain Drills, Hollow Augers, etc.

BUCKEYE SAW VISE CO. 2044-50 West 55th Street CLEVELAND, OHIO.

1853

1912

BUCK BROS.

Fine Beveled Edge Shank and Socket

Chisels

Butt Chisels

Plain and Beveled Edges

Send for illustrated Catalog



Buck Brothers, Millbury, Mass.

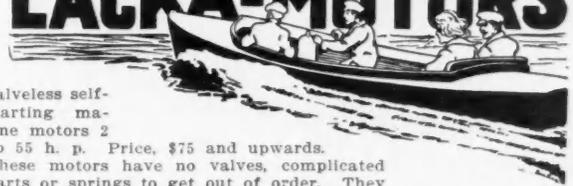
Wrought Iron Grilles, Railings, Stairs, Guards, Gratings, Etc.



Manufactured by
McLaren Brothers,
337 THE ARCADE,
CLEVELAND, O.

Architectural and Ornamental Iron and Wire Work

LACKA-MOTORS



Valveless self-starting marine motors 2 to 55 h. p. Price, \$75 and upwards. These motors have no valves, complicated parts or springs to get out of order. They are very economical in gasoline consumption. Anyone can install and operate a Lackawanna motor. Stopped, started, reversed and speed controlled by one time control lever—twelve years' experience building this one type of motor. It is the best and it sells everywhere.

Write for Limited Offer Proposition. Ask for agents' proposition if interested.

\$128.17

9 H.P.—Double Cyl.
SPECIAL LIMITED OFFER
WRITE

LACKAWANNA MFG. CO., 126-A LIBERTY ST. NEW YORK

When Writing Advertisers Please Mention the American Carpenter and Builder.

to the equipment of the service company, only the rated ton capacity of the truck is carried. Contracts for tonnage were made prior to the time that the service company ordered any Speedwell trucks, indicating that their receipts justified them in putting in this equipment. The first order was for eight 4-ton trucks and two 6-ton trucks to be delivered in six days and twelve 4-ton and three 6-ton to be delivered in six months.

Before entering into this arrangement, the service company made exhaustive tests of the cost per day of Speedwell trucks, basing this cost upon every element of expense from every angle. They allowed 20 per cent depreciation, \$3 a day for driver, \$522 a year for tires, accident, fire and liability insurance policies; \$600 a year upkeep, garage expense, oil, gasoline, etc. The mileage basis was 40 miles per day for six days a week, 304 days a year; and on the 4-ton truck a speed of 12 miles per hour and on the 6-ton a speed of 9

miles per hour. These costs total about 6c per ton mile for the 4-ton truck and 5c per ton mile for the 6-ton truck.

During the night every truck is gone over carefully so that there is no question about it being in perfect condition when it is delivered to the customer in the morning at seven o'clock.

Showing the extent with which this matter has been figured out in detail, the signs on all the cars are standard size and removable so that the merchant can always have it appear that the truck is his own.

The Speedwell Company, in its own dealings with a truck customer, adopt the same policy of figuring costs of operation. This is done in advance, wherever possible, and on a conservative basis, so that when the buyer has his truck in work he discovers, nine times out of ten, that its cost is really less than he had been led to expect from the Speedwell Company's figures.

Best for all Walls

TAPESTROLEA Burlaps and Canvases

Recommended by
Architects, Builders, Decorators, Owners

*Beware of Worthless, Cheap and
Unsatisfactory Imitations*

*Illustrated Booklet and Samples
on Application*

RICHTER MFG. CO.
Main Office and Works
TENAFLY, N. J.

SALESROOMS: New York, 20 E. 21st Street
Chicago, 6 W. Lake Street

Copper Clad Steel Nails

Have a steel core to which molten copper is welded.

Are **not** "coppered" steel.

Drive like steel and **last** like copper.

Cost more than galvanized, but less than copper.

TRADE MARK



WELD CLAD"

Singer Building
NEW YORK CITY

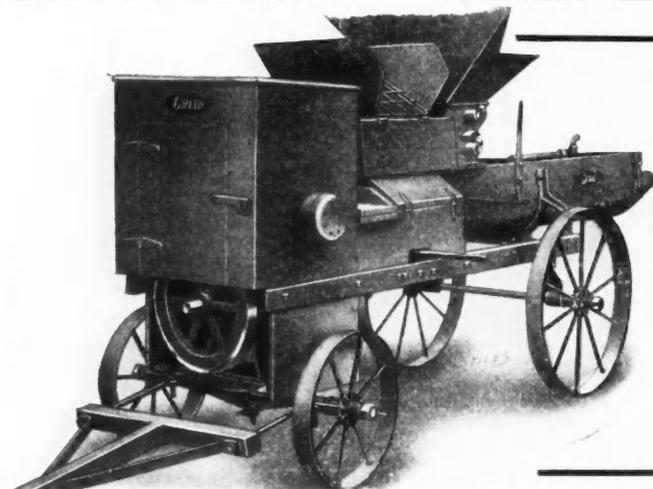
**Duplex
Metals Company**

Main Office and Works

CHESTER, PENNSYLVANIA

Peoples Gas Building
CHICAGO, ILL.

P. S.—Ask your dealer about them.



'Ever Stop To Figure What It Costs To Move?

Take any small concrete job, or one that requires frequent moving of mixer to keep it in convenient position for work, with a heavy, cumbersome machine, the profits all go in moving the mixer. That's just one of the economies of the light, portable and dependable

The Baby Grand

But it's not only a machine that can be always placed to save greatest manual labor—it's a perfect mixer. Absolutely accurate proportioning, a positive force feed, combines a dry and wet mix, and the mechanical construction is simplest and strongest on any continuous mixer.

Meets every condition as to **quality**, meets the **important** one when you figure the total cost, **greatest economy**. Shall we send the catalog?

Hall-Holmes Manufacturing Co.

426 Oak Street : : : Jackson, Mich.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Before Buying New Bits you should
get a good look at the new

Russell Jennings Precision Bit



Its *turned shank* is gripped more securely than any bit you ever saw; it positively can't pull out; it gives such a long bearing in the brace chuck that you can't detect a sign of "wobble."

The extension lip and screw point are Russell Jennings standard. You know what that means.

Remember the *TURNUED SHANK*.



Let us send you our new up-to-the-minute bulletin on Carpenters' Bits.

Russell Jennings Mfg. Co.

CHESTER, CONN.

21-58



Profit by Our Facilities

You realize how important the color scheme is to the effect of the completed house. You know how difficult it is to hit upon appropriate combinations. Don't trust to luck. Don't repeat ideas just because they happened to turn out well before. Let us place at your disposal the experience of users of

Lowe Brothers Paint, Varnish and Stain

A postal card explaining your problem will put you in touch with the extensive facilities of our entire organization. Besides making practical suggestions for interior and exterior color schemes we will show you why "High Standard" paint and other products bearing the "Little Blue Flag" pay you best.

Ask for Color Cards and "Harmony in Color" FREE

The Lowe Brothers Co.

450-452 Third St. Dayton, Ohio
Boston New York Chicago Kansas City

THIS SMITH PREMIER \$26! Standard Typewriter—Yours for

For more years than you probably can remember, the Smith Premier Typewriter has been recognized as *One of the Two Leaders* among standard \$100 typewriters.

The Model No. 2, shown here, writes 76 characters, including the alphabet in capitals and small letters, figures, punctuation marks, etc. It has 76 finger-keys. "A key for every separate character." Hundreds of thousands of this model are in use to-day.



From a
Photograph

Your Opportunity

to purchase this famous typewriter for practically one-fourth the makers' price is due to the new Visible Writing Smith Premiers, for which No. 2 Models were accepted as part payment.

By an exclusive purchase we got all of the turned-in No. 2 machines, and are thus enabled to offer the best of them (some but little used) at this unheard-of low price.

Your Guaranty

of satisfaction in the typewriter you buy from us is this seal—placed on the machine itself—equivalent to the makers' original guaranty.



The Other Fellow's Impression

When you receive a *pen-written* letter from a business or professional man in these days, don't you immediately lower your opinion of the sender's importance?

Then how can you afford to send out scribbled correspondence—bills of account—estimates—reports—orders—(whatever your need for writing may be) to represent your business or yourself.

Typewriting Easily Learned

Anyone can operate a Standard Typewriter. You can learn all you need to know about the machine in one evening and finish by writing a letter.

Speed comes with use; a novice can soon write as fast as a rapid pen-writer (20 to 30 words a minute), and an ordinary stenographer easily typewrites TWICE AS FAST AS pen-writing.

For practical use, year in and year out, there is no other typewriter that will give you better service than the Smith Premier.

"American Factory Rebuilt"

The Smith Premier typewriter we offer you has just gone through our Newark factory. Our expert workmen have dismantled the entire machine, examined it thoroughly, and replaced every worn or defective part with a new part.

Thoroughly reconstructed, realigned and readjusted, this typewriter performs like new. Refinished and re-nickeled it looks like new. We fully guarantee it for one year.

Free Trial

Sign the coupon below and mail at once—no obligation, no expense to you—and we will write you how you can examine and try this typewriter in your own home—to prove to your satisfaction that it is exactly as we say. Promptness will be wise, for there are only a limited number of these typewriters for sale.

AMERICAN WRITING MACHINE CO.,
345 Broadway, New York.

Please mail me full particulars of the Free Trial Offer of a Smith Premier Typewriter for \$26.00, without any obligation or expense on my part as advertised in the American Carpenter and Builder.

Name

Address

When Writing Advertisers Please Mention the American Carpenter and Builder.

This Tool Will "Pry" Into Anything

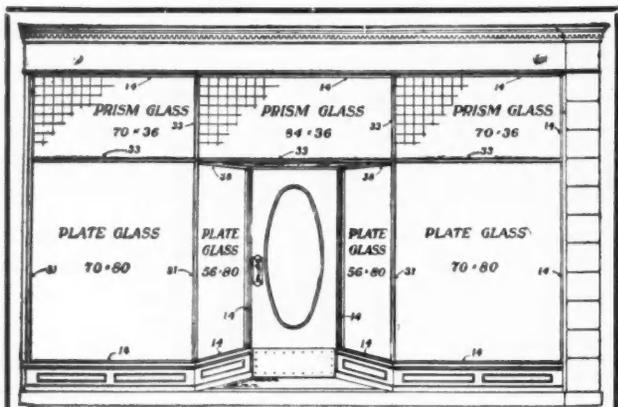
It has the strength and leverage for safely opening packing cases, taking up floors, removing scaffolding and other like jobs that carpenters, plumbers and electricians come up against every day. Sizes 14 and 23 inches.

are 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 housewrecking 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. Send for samples and prices.

C. E. BONNER MFG. CO., Champaign, Ill.

For a Lasting Store Front

specify Petz Bars. You will never have to replace them with another make of bar, as they possess strength, safety, and style in advance of any bar on the market.

Wherever used, in large or small buildings,

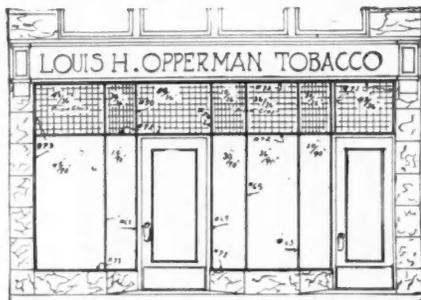
Petz Bars

have given satisfaction, because of their easy installation, because they conform to the best ideas of style and beauty, and because they do not break glass, or cause the windows to frost.

The merchant who has a store front of Petz Bars is sure to be satisfied. Write today for our booklet, "Modern Store Front Construction."

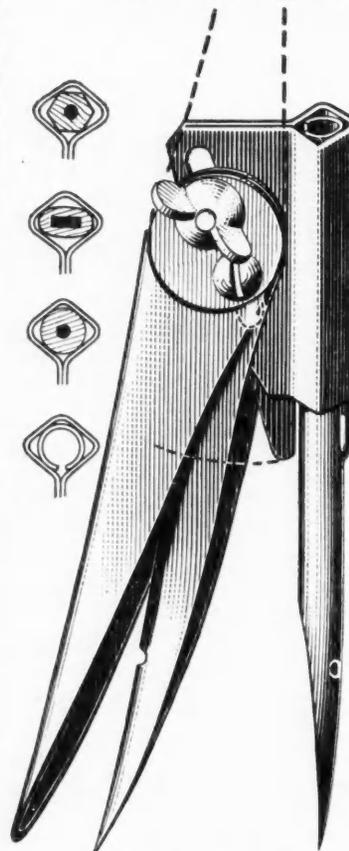
DETROIT SHOW CASE COMPANY

Sole Makers
491 Fort Street West, : Detroit, Mich.



When Writing Advertisers Please Mention the American Carpenter and Builder.

Double Compass and Scriber



New Tool Being Offered by Potter Bros.

The illustration here-with shows a brand new tool—the Peerless double compass and scriber, which has been placed on the market by Potter Bros., 612 W. 110th St., New York. This tool should be of interest to all carpenters and builders, as it is said to be the first device of its kind ever invented.

This double compass and scriber will hold pencils of any length and of various shapes, which is also claimed as an exclusive feature. The steel point, shown in cut, is of course taken out when pencils are to be inserted. Potter Bros. will be glad to send further particulars and circular on request.

Time-Saving Cutters

For many years wood-workers have been making mouldings by machinery. Some have done the work crudely, whereas others have had

more or less success, but one and all recognized the need of a reliable system whereby the work could be reduced to a positive, inexpensive basis.

Blackened edges, which are frequently seen in hardwood mouldings, indicate the use of inferior tools—tools that friction and burn because they do not have clearance or are not shaped right.

The Shimer reversible Cutters for single spindle Shapers, Variety Moulders, etc., are carefully moulded opposite to the shape to be produced, in such a way as to have only the cutting edges touch the lumber.

These cutters will be found to be complete, inexpensive, time-saving. They are manufactured from a grade of steel which holds an edge for a long time. Being always ready to slip on the machine they will be found to be a great factor in maintaining standard grades as well as a great help in filling orders promptly.

If you send blue prints or samples of your work to Samuel J. Shimer & Sons, Milton, Pa., they will make a careful estimate on Cutters that will soon pay for themselves by saving time and annoyance.

L. A. Sayre & Son Shingling Hatchet

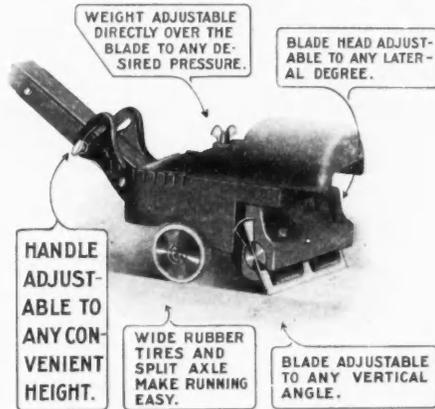
Attention is called to the improvement made by L. A. Sayre & Son in the head of their special shingling hatchet. The head is made oval, and with 144 points, covering the full surface of the head to the edges, with points. This hatchet is their No. 144.

They are also making lathing hatchets—this pattern—with the same head, as shown in the accompanying illustration. This hatchet is their No. 140.



\$30.00 FOR AN Adjustable Floor Scraper

From this picture you must know it is a practical machine. It IS a success—a winner—a dandy



I will send you one on approval and let you give the machine a chance to speak for itself in your own hands.

If not more than pleased with its work, ship it back at my expense. If perfectly satisfied, remit \$30.00, payment in full.

I will make one profit the day the sale is made, but you will make a profit every day you use it.

H. P. DIDRICKSEN, SOUTH BEND, IND.
944 Riverside Drive

Stair Building



Made Easy

A PRACTICAL TREATISE FOR CARPENTERS BY

David Mayer

127 PAGES (5x7 inches)
111 ILLUSTRATIONS
Handsomely bound in cloth

PRICE 50 CENTS

Sent postpaid on receipt of price. Your money back if you are not pleased.

A COMPLETE and clear description of the art of building the bodies, carriages and cases for all kinds of stairs and steps, together with illustrations showing the manner of laying out stairs, forming treads and risers, building cylinders, preparing strings; carriages for common platform, dog-leg and winding stairs; also the method of setting out stairs, laying out strings, plans of stairs, pitch-boards, construction of steps, line of nosings, housing strings, placing balusters, finishing ends of wall strings, trimmers and joists, lower newel finish, well hole finish, straight platform stairs, planning stairs, dog-leg stairs, close string stairs, continuous stairs, geometrical stairs, carriages of stairs, story rod, dancing the treads, double platform stairs, straight flights and winders, solid newels, all winders, etc., etc.

This work takes hold at the very beginning of the subject, and carries the student along by easy stages until the entire subject of Stair Building has been unfolded, so far as ordinary practice can ever require.

SEND FOR OUR CATALOG OF BOOKS ON BUILDING

Industrial Book Co. 178 Fulton St. NEW YORK

BIG BOOK ON HOT WATER HEATING



The Andrews Hot-Water Plant in this South Dakota 8-room home cost \$274. In satisfactory operation for several years.

Our big portfolio book contains 72 pages of information of great value to everyone considering installing a heating plant in a new or old home. It is prepared from the experience gained through 15 years of contracting, manufacturing and designing heating plants for all classes of buildings from modest cottages to the largest public and private buildings. It shows in detail and with fine illustrations what we have done on these various kinds of jobs, some one of which may be similar to yours.

From It You Learn

how we cut, thread and ream all pipes to fit perfectly; how fittings, radiators, boiler, etc., are made ready; how all parts are tagged and crated ready for shipment, and how our instructions are made so simple and clear that any handy man can set up the plant.

Two styles of steel boilers as well as cast iron boilers are described and illustrated, and their large amount of heating surface is shown. The kind of grate which experience has shown to be the best as well as styles of ornamental radiators for various uses, are fully described. You can easily understand the fuel economy of these boilers after studying their construction and the diagram which show what fuel saving means to you.

Regurgitating Safety Valve

a wonderful device which makes the radiators 50% hotter in cold weather, is explained. Stops "boiling over." An exclusive feature with Andrews Systems. Write for this Big Book before buying any heater and send plans for estimate. Both are free. Please send also the names of your acquaintances who might become purchasers.

Andrews Plant (Verticle Boiler)

All tagged and boxed ready for shipment.

ANDREWS STEEL BOILER



ESTIMATES FREE For Old or New Houses

It is nearly as easy to install an Andrews Plant in an old house as in a new one. Just give us a rough sketch or architect's plans of your floors and basement, showing sizes, windows, doors, height of ceilings, etc., and our engineers will figure out the exact cost of a plant to give best efficiency under your particular conditions.

We do it Right 360 DAYS FREE TRIAL Guaranteed in 44 States By Bond

You take no risk in buying an Andrews Plant or any Andrews Equipment. If at the end of 360 days' trial you find it other than as represented we will take it back and return you your money in full.

Andrews Thermostat

This is the simplest temperature regulator on the market. A small, very neat Thermostatic Thermometer in the living room governs a basement motor which in turn opens and closes the dampers at changes in temperature. Saves fuel and all the bother of fussing with dampers. Only \$20 direct. Guaranteed for Life.

Andrews Steel Boilers

The two styles of Andrews Steel Boilers, vertical (shown in cut in center of ad.) and locomotive, are the highest types of hot-water boilers. They are made of steel-plate like power boilers and their very large fire travel together with the close proximity of fire and water make them heat quicker than any other boilers on much less fuel. A child can clean either style in a few minutes. Average annual cost of coal \$3.00 to \$5.00 per room. Our catalog also shows cast iron boilers.



Sewage Disposal

The Septic Tank is one of Mr. Andrews' own inventions. A small steel tank placed underground just outside the basement treats the sewage in such a manner that it becomes purified and passes off into a drain bed. An almost indispensable device for any home not having sewer connections. Cheap and lasts forever. State size of house and grounds when writing for estimate.



Plumbing

The Andrews Plumbing line is complete of the very best material. Complete plans and instructions for erecting accompany each order. Pipes are cut to fit, threaded, etc., so that any handy man can easily erect. Write for estimate.



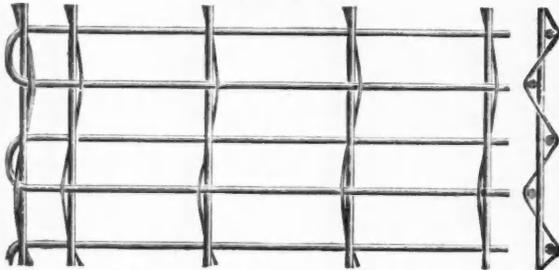
Good for \$5.00

To check up the people who buy from this ad., it will be accepted as payment of \$5.00 on the price of a hot-water heating plant sold direct or through a contractor.

SPECIAL DISCOUNT TO CONTRACTORS
Andrews Heating Co., 1235 Heating Building, Minneapolis, Minn., U.S.A.

WIRE LATHING

(GREENING'S)
PATENT TRUSSED STEEL WIRE LATHING



ELIMINATES ONE-HALF OF INSTALLATION COST, owing to its Truss formation, which makes it possible to staple or nail it directly to studs or joists without furring.

It will take sharp corners without cutting, and has a sustaining power of three and one-half times greater than square mesh lathing of equal weight. IT EMBEDS ITSELF COMPLETELY in the mortar and is thus secured from the corrosive action of the atmosphere, and WILL NOT RUST.

Another feature of this Wire Lathing is the fact that rust will not attack the smooth round wires, as it does the thin cut edges of the metal fabric. Walls or ceilings plastered on this lathing will never crack or drop off, the key being so firm.

Send for our Booklet No. 6 AA on Wire Lathing for further information.

We are also manufacturers of GRIMM'S CORRUGATED GALVANIZED WIRE LATHING.

BUFFALO WIRE WORKS CO.

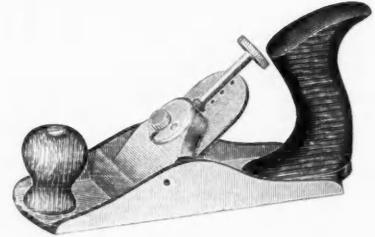
(Formerly Scheeler's Sons)

BUFFALO, N. Y.

NEW YORK OFFICE: 30 Church Street

Buckeye Iron Planes

The Buckeye Saw Vise Co., of Cleveland, Ohio, are placing on the market a new iron plane, making them in two sizes, Smooth Plane 9½ inches long, 2-inch iron, and Fore Plane 18 inches long, 2¼-inch iron.



The 18-inch or Fore Plane can be adjusted to do the work of Jack Plane and Jointer, without removing the plane from the work or the iron from the plane, as these planes have no extra cap plate, but only an adjusting plate that acts as cap plate and tension plate, and is fastened to the body of plane by a screw which goes through the tension or cap plate and into the sides of the plane. In adjusting the iron, the tension or cap plate does not move, thus causing a greater or less margin at the cutting edge of iron.

The mechanic has only to buy two of these planes against four of the old style, and has two planes less to carry in his tool chest, and also two less to keep in order. It is claimed that these planes positively will not clog, chatter, or tear out in the most difficult wood.

The adjustment is so quick, that only a slight turn of the screw is required to move the iron, and this is done with the tension off the iron. The large adjusting screw has four actions, causing the iron to move forward or back, and to right or left to square the iron with the bottom of plane. The adjustment of these planes is very simple, and there is nothing to get out of order.



OAK FLOORING

Attracts Your Attention Immediately and Holds Your Admiration Permanently

Builders and owners use OAK FLOORING because it is the one flooring that women of today want. There are good reasons. OAK FLOORING will harmonize with any kind of furniture, interior trim or any decoration scheme. It imparts an air of refinement and elegance. In color it is rich and cheerful. It is the modern floor.

OAK FLOORING ¾-inch thickness by 1½-inch or 2-inch faces, can be laid over old floors in old homes or over cheap sub-floors in new homes at a very low cost. It is cheaper than carpets or pine flooring. When laid it has all the appearance of a heavy floor.

Any landlord will tell you that OAK FLOORING increases the renting and selling values, besides a better class of tenants is assured when OAK FLOORING is used.

CARPENTERS and CONTRACTORS find it very profitable to lay ¾-inch stock over old floors in old homes during the Winter Season. A little canvassing on their part is all that is necessary to secure jobs.

Write us for further information

THE OAK FLOORING BUREAU, 862 Hammond Bldg., DETROIT, MICH.

OLDS DIAPHRAGM PUMP

For pumping, excavations, cofferdams, trenches, etc.

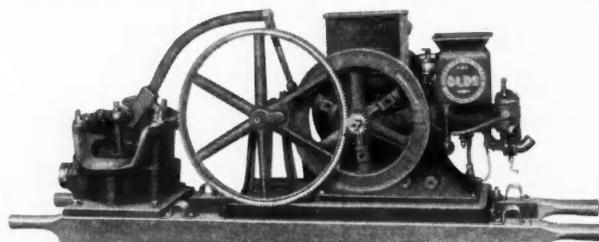
Handles 3000 gallons per hour on one pint gasoline.

It is a money saver every minute.

Engine can be removed and used for other purposes and easily replaced.

Construction the most durable possible.

We also make a full line of gasoline engines, pumps and hoists. Write for catalog.



L-687

SEAGER ENGINE WORKS

Lansing Michigan

Olds Gas Power Co.,
 2112 Central St., Kansas City
 1007 Farnum, Omaha
 204 N Los Angeles St., Los Angeles
 65 Beverley St., Boston

When Writing Advertisers Please Mention the American Carpenter and Builder.

CASSENS "IDEAL" EAVES TROUGH
 (ENDS TROUGH TROUBLE)

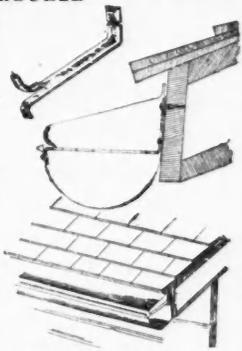
**TAKES WATER ONLY
 IT WILL NOT CLOG**

Nothing but water can enter the spout. It will not freeze and burst.

Assures users of clean cistern water. These Troughs are practical necessity.

We want a live agent in every locality. We have a very profitable proposition.

CASSENS MFG. CO.
 EDWARDSVILLE, ILL.



CASSENS IDEAL EAVES TROUGH
 PAT. NOV. 15, 1910 OTHER PATENTS PENDING

Be
 the man
 who
 gives
 orders



If you aspire to be one of the men who do things, to rise above the poorly paid class, and to be independent, you must have special training. You have the ability, but it is latent, it needs developing. By our practical and complete correspondence courses we can positively teach you to become proficient in **DRAFTING**—

Estimating, Plan Reading, etc., by Mail.

In full or partial courses to fit your individual need. The courses cover every conceivable branch of the building trades. Conducted by a large and successful firm of Chicago architects—your lessons are supervised by them. Blue-prints of buildings actually being erected in Chicago to study from. Courses are especially prepared for contractors, bricklayers, carpenters and all men in construction work. Low tuition, easy terms. No text books to buy. Send for instructive folder.

CHICAGO TECHNICAL COLLEGE, 654 Athenaeum Bldg., Chicago, Ill.
 We also teach these same courses, including architectural, mechanical and structural drafting, at our Chicago School. Day and evening classes. If interested in the resident course ask for Catalog X.

ACB

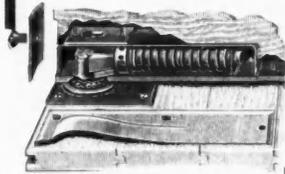
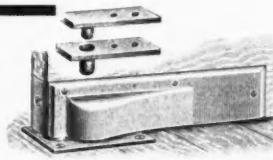
**The New Shelby
 Chief Floor Hinge**

Is the original Shelby Chief Double Acting Ball-Bearing Surface Floor Hinge, with valuable improvements.

Notice in the sectional view the mechanical construction of this hinge. Also the deep beveled cover plates which cover all defects in notching the door, and gives an attractive finish to the door.

Ask us or your dealer to tell you more about the New Shelby Chief

The Shelby Spring Hinge Co.
 SHELBY, OHIO



Established Twenty Years

Our Specialty

Interior Columns Colonnades Consols

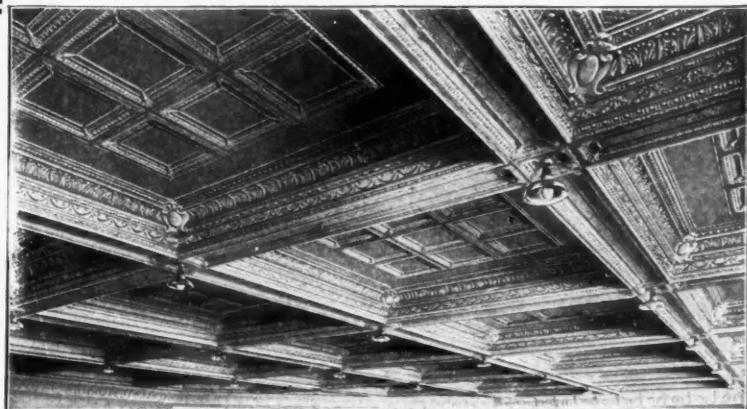
Get our prices on anything in the line of Grille Work before placing your next order.

Chicago Grille Works

828-838 Wells Street : : : Chicago, Ill.

**The Way to a Good
 Steel Ceiling Business,
 Better Profits, Increased
 Prestige---**

**"BERGER'S"
 Classik
 METAL CEILINGS**



BERGER'S "Classik" Steel Ceilings offer the most complete selections of artistic, embossed steel ceilings.

They comprise eleven distinct classes of architecture. Each of these eleven classes is made in a variety of design, making possible the arrangement of hundreds of beautiful combinations.

A good selection for your customer to choose from makes easy sales for you.

Berger's "Classik" Steel Ceilings are easy to erect—every man who handles them will tell you so. Easy erection means time saved—money saved—better profits for you.

Berger's "Classik" Steel Ceilings have a prestige that wins trade—wins profits—wins dollars. They will win these for you.

The nearest Berger Branch will give you full particulars—a handsome catalogue, too. Write today.

The Berger Mfg. Co., Canton, Ohio

New York Chicago Philadelphia Boston St. Louis Atlanta Minneapolis San Francisco

We also manufacture Black, Galvanized and Painted Roofings, Tin Plate, Metal Lath, Prong Lock Studs and Furring, Metal Tile, Eaves Trough, Hangers, and Conductor Pipes, Brick and Stone Siding, etc.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Don't Use Stored Water

STORAGE tanks supply tepid water in summer and often freeze and burst in winter. "Compression tanks" become foul and unsanitary and can never be cleaned. It is no longer necessary to store water. Simply store the power, in the form of compressed air, to deliver the water. Result, *fresh water all the time.*

Perry Water System

with one air compressing outfit, will deliver water from any number of wells or cisterns, or both, through widely separated. Air is used, and pumps operate only when water is drawn from the faucets. Any power may be used to run air compressor. Most economically operated. Send for descriptive booklets.

United Pump & Power Co.
CHICAGO, ILLINOIS

WRITE TODAY FOR CATALOGUE AND COMPLETE INFORMATION

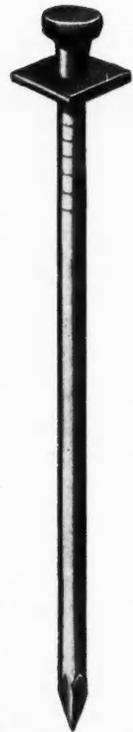
The Buckeye Saw Vise Co. are so confident of the superior qualities of these planes that they offer to refund the price paid if the mechanic, after giving them a trial is not convinced that they are the best planes he ever used.

Double Headed Nails for Forms Scaffolding and other Temporary Work

The Economy Double Headed Nail illustrated herewith is manufactured by the F. A. Neider Company, Inc., Augusta, Kentucky.

Carpenters will readily appreciate that this nail is a labor and lumber saver. For concrete forms, staging and other temporary lumber construction these nails are invaluable; because: The second head has an area of four or five times as great as the ordinary nail. This means that these nails can be driven home and the boards drawn much more tightly together than is possible to do with the regular nail.

These nails can be withdrawn and used over many times. This feature alone brings their cost down to or even below the cost of ordinary nails; and the lumber saved is clear gain. When using the regular nail you spoil a lot of lumber. With these "Economy Double Headed Nails" it is claimed that there is absolutely no waste of lumber, hence a great saving is accomplished.



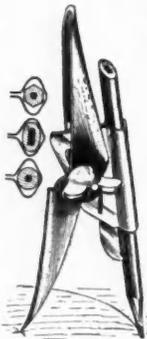
THE PEERLESS LINE — THE ONLY COMBINED COMPASSES AND SCRIBERS THAT WILL HOLD PENCILS OF ANY LENGTH AND OF VARIOUS SHAPES. ORDER BY MAIL TODAY!

Peerless 3 in. Scriber

Patented

Broad point for plaster walls, fine woodwork, etc. Sharp point for quirks and mouldings. Will hold any shape pencil equally well. This scriber will hold framer's pencil, doing away with breaking of pencil point. Adapted for extra close scribing. Steel points can be moved up or down to suit pencil.

No. 30—Polished Steel, 30 cts.
No. 35—Nickel-plated, 35 cts.



Peerless 5 1/2 Double Compass and Scriber (No. 57)

Patent Pending

Combines all features of No. 30 Scriber and No. 55 Stork's Beak. No other compass can equal it. As a scriber, beats them all. Every carpenter and mechanic should order this tool today.

Legs marked 8 and 9 when used in connection with each other, form entirely separate scriber. When so used, the steel point, No. 5, is taken out entirely. Send for circular.

Price, nickel-plated, 60 cents, postpaid. Order now.



Peerless 5 1/2 "Stork's Beak" Combined Compass and Scriber (No. 55)

Patent Pending

Double joint and thumb screws make it most secure and rigid compass on the market. Insert any style or length pencil for scribing. Regular price, 45c. Nickel plated.

Figure 1 shows steel point inserted; 4—lever for fastening pencils; 6—holder for pencils and steel point; 5—steel point; 7—double locking device.

Special Offer—To introduce, will fill orders for limited time at 30c each; add 5c for postage. Pencils 5c extra if desired.



Peerless Flexible Bit Gauge No. 100
Patented
Will not mark wood nor slip upwards, nor interfere with chips. Lightest and most durable made. Nickel-plated, 30c, postpaid.



Dealers, jobbers and exporters referred to Sargent & Co. Mail orders promptly filled. Stamps accepted by

POTTER BROS.
612 W. 110th St. - New York

No. 5 "UNION" SAW

Almost a Complete Work-shop in One Machine

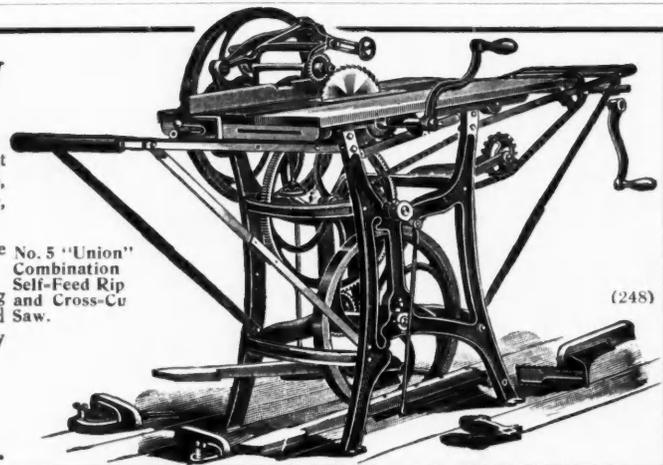
This Machine is a combination Self-Feed Rip and Cross-Cut Saw, suitable for various kinds of work—ripping (up to 3 1/2 inches thick), cross-cutting, mitering, etc., and with attachments, rabbeting, grooving, dadoing, boring, scroll-sawing, edge-moulding, beading, etc.

The heaviest, most substantial, accurate and easiest running machine of its kind on the market.

We Build a line of Foot, Hand and Light Power Woodworking Machinery; guarantee each machine to be thoroughly practical and accurate. Machines sent on trial, and if not found entirely satisfactory may be returned. Send for Catalogue "A."

The Seneca Falls Mfg. Co.

218 Water St., Seneca Falls, N. Y., U. S. A.



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

(248)

When Writing Advertisers Please Mention the American Carpenter and Builder.

To You

ON this, the beginning of the NEW YEAR we tender a hearty greeting with our sincere wishes for your continued prosperity.

Your interests, as users, and ours as manufacturers, are mutual and we take this occasion to express full appreciation of the trade you have given us.

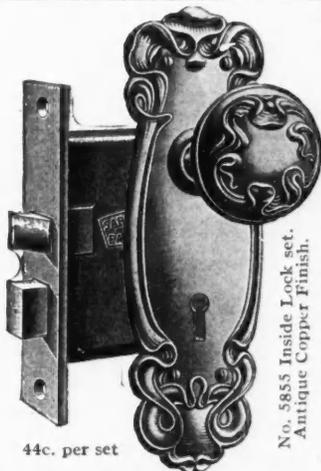
On our part we shall spare no effort or expense necessary for the maintenance of that superiority of Quality, Workmanship, Design and Efficiency, which has been so characteristic of Disston Saws, Tools and Files thus meriting a long continuance of your orders.

Yours very truly,

Henry Disston & Sons

Incorporated

*Keystone Saw, Tool, Steel and File Works
Philadelphia*



44c. per set

No. 5855 Inside Lock set.
Antique Copper Finish.

Do You Know

What it means to buy Builders' Hardware at the right prices?

Send for our No. 5 illustrated catalog and net price list free to contractors and material men.

When sending for catalog state whether contractor, carpenter, or material man.

We do not sell to contractors, carpenters or material men in Cook County.

Rehm Hardware Co.
1501 Blue Island Avenue,
CHICAGO, ILL.

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.

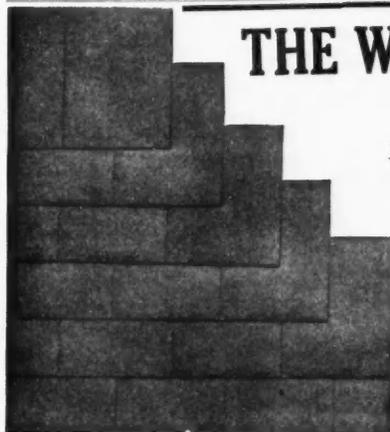


PAYS ITS COST ON ONE JOB

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.



THE WINTHROP SOLID TAPERED ASPHALT SHINGLES

ARE OF A COOL, GRAY SLATE COLOR

And have all the Durability of Asphalt—the Fine Appearance of Slate and the Light Weight and Low Cost of Wood Shingles. Laid with regular Shingle Nails, the same as Wood Shingles. **NEVER REQUIRE PAINTING.**

Write for Free Booklet and

**SPECIAL INDUCEMENTS TO THOSE WHO APPLY
FIRST ROOF IN EACH TOWN**

Winthrop Asphalt Shingles are Fire-resisting, Water-proof, Wind and Sun-proof, and never Crack Break or Fall Off.

**WINTHROP ASPHALT SHINGLE CO. 1101 1/2 The Temple
CHICAGO, ILL.**

When Writing Advertisers Please Mention the American Carpenter and Builder.

**Take a Course in
Architectural
Perspective**



And You will Then be Able to Close Many a Contract that Would Otherwise be Lost

The demand for Architectural Perspective is increasing yearly because those who build are demanding, in addition to the plans, perspective drawings of their buildings. A well made perspective drawing, properly shaded and set off by a little landscape and secondary detail, pleases the eye, and is a valuable adjunct to the regular plans and elevations. Our correspondence course in ARCHITECTURAL PERSPECTIVE and DRAWING OF BUILDINGS is complete, practical, and can be learned at home at odd times. Instruction likewise given in twelve separate, complete Art Courses, for pecuniary profit, or pleasure only, as desired. Year Book sent upon request.

SCHOOL OF APPLIED ART
Battle Creek, Mich. U.S.A.
675 APPLIED ART BUILDING

*Carey's
Flexible Cement
Roofing*

When Carey's Roofing is specified and used, roof quality, durability and satisfaction are assured. Its standardized construction is recognized everywhere—proved by twenty-five years' tests.

Furnished and applied—under our direct supervision and guarantee—to any class of buildings, flat or steep surface. Write for full particulars.

THE PHILIP CAREY MFG. CO.

50 Branches Established 1873



58 Wayne Avenue, Lockland, Cincinnati, Ohio

Moving Picture Machine Booths

The State of New York is the most recent convert to the plant of rigid supervision, at the hands of building inspectors, of moving picture theatres. The New York legislature has recently passed a comprehensive bill with particular reference to moving picture machine booths, requiring that they be built of absolutely fireproof material and insisting that the manufacturers who produce said material submit same to designated engineers for exhaustive tests as to the qualifications of the material for this particular use.

The law requires that the booth be built of angle iron, the roof and floor, as well as the sides, to be covered with asbestos boards of a designated strength and thickness.

The tests prescribed require that the material shall resist a high temperature for a given length of time and shall possess a specified minimum modulus of rupture.

The ideal material for this purpose is "Asbestos Building Lumber," made of strong, well selected asbestos fibre and hydraulic or Portland cement, mixed in the presence of a large volume of water, and then compacted under enormous hydraulic pressure resulting in an extremely hard, tough, durable, fireproof material such as was in the minds of the legislatures of various States at the time the laws were passed. The manufacturers of "Asbestos Building Lumber" recently submitted their materials to tests at the hands of Prof. James S. MacGregor of Columbia University and the reports were entirely favorable to the use of "Asbestos Building Lumber" for moving picture machine booths. The manufacturers are Keasbey & Mattison Company, Ambler, Pa., and they will be glad to furnish information either from their main office at Ambler or from their branch offices, which are to be found in all the important cities of the United States.

C. J. S.

C. E. JENNINGS' ARROW HEAD EXPANSIVE BITS

Steers' Patent April 1, 1884. Jennings-McElney Patent December 19, 1905, and A. B. Jennings' Patent March 1, 1910

TRADE MARK REGISTERED

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.

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.



SEE THAT BEVEL ON CAP AND CUTTER

CUTTER CANNOT SLIP!

NOTE MICROMETER SCREW ADJUSTMENT.

SEE THOSE TEETH! CUTTER CANNOT CREEP.

PRICE INCLUDING TWO CUTTERS AS FOLLOWS:

No. 11 1/4 Bit (Large) with Nos. 3 and 4 Cutters, cutting from 3/8 to 1 1/4 and from 1 1/4 to 3 inches **\$2.00** each

No. 12 1/4 Bit (Small) with Nos. 1 and 2 Cutters, cutting from 3/8 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.

C. E. JENNINGS & CO., : : Sole Manufacturers : : 42 MURRAY STREET, NEW YORK

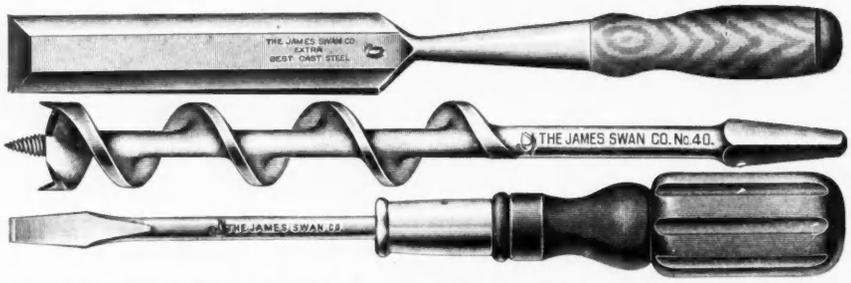
1810 THE JAMES SWAN COMPANY 1911

SEYMOUR, CONN.
Manufacturers of

Mechanics' Tools, Augers, Auger Bits, Draw Knives, Chisels, Hollow Augers, Gimlets, Boring Machines, Gouges, Screw Drivers, etc.

Send for Catalogue



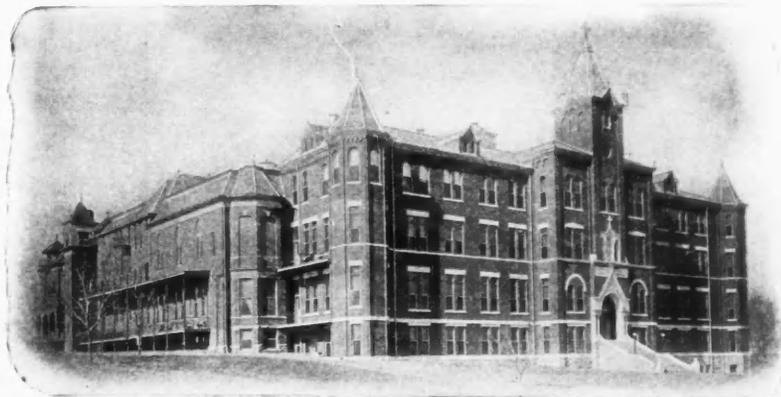


When looking for quality buy goods with the "Swan" trade mark.

When Writing Advertisers Please Mention the American Carpenter and Builder.

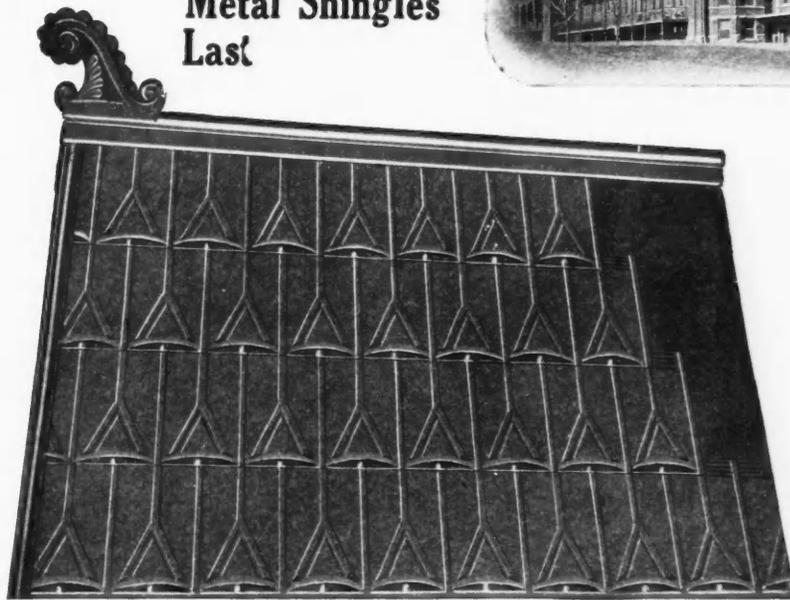
ST. FRANCIS HOSPITAL, Colorado Springs, Colorado, is a very fine building, as this photograph shows. No expense or care was spared to make it THE BEST AND MOST SANITARY hospital in the West. After exhaustive competitive tests, the authorities decided to roof it with THE BEST COVERING FOR ROOFS KNOWN—for

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.

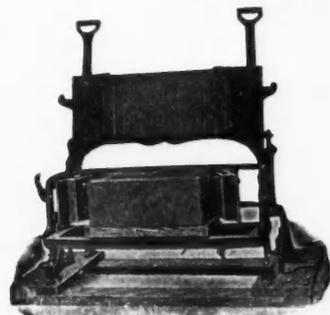


NATIONAL SHEET METAL ROOFING COMPANY

Inventors of the FIRST Metal Shingle
JERSEY CITY, NEW JERSEY



THE SIMPLEX IMPROVED MIXER 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

Makes Stone in Lengths, 4", 6", 8", 10", 12", 16", 18", 20", 22", 24"; in Width: 4", 6", 8", 10", 12"; in Height, 4", 6", 8". Also Angle Stone, Circle Stone, Gable Stone, Hollow or Solid Stone. The Contractor's Friend, Simple, Strong and Rapid. Lowest in price.

WRITE FOR NEW 1911 CATALOGUE

THE MILES MFG. CO., Inc. 309 E. Franklin St. JACKSON, MICHIGAN

Van Guilder Hollow Wall Concrete Machine—A Continuous Air Chamber from Cellar to Roof

Steel Reinforcement Throughout

Completely revolutionizing building methods. We manufacture and build with one operation; saving manufacturers profits, transportation charges and half the labor cost, producing a more durable and up to date building. Only one machine needed for each job.

Van Guilder Houses Costs Less Than Wood and Sell Quick at a Wonderful Advance

They have stood the test for over three years and are long past the experimental stage.

This superior construction was immediately approved by the building department of the city of New York, one of the most severe and conservative boards in the world.



Send for Booklet

VAN GUILDER HOLLOW WALL CO.

"See our demonstration at spaces 310 and 311, Balcony, New York Cement Show, Madison Square Garden, Jan. 29th to Feb. 3rd"

720 Chamber of Commerce Bldg. ROCHESTER, N. Y.

SILO WALLS

Our curved silo machine produces a silo which is waterproof and frostproof, greatly improving the quality of the ensilage. The most economical and durable construction in the world.

When Writing Advertisers Please Mention the American Carpenter and Builder.



The Simple, Little, Light, Handy and Substantial NORTHFIELD MIXER

will save you big money on every job. Conservative Capacity: 90 Cu. Yds. per day. It can always be set to discharge direct into Forms, cutting out 1/2 the wheelers. It saves you 3/4 the Transportation charges and all repair bills, as compared with any other mixer.

No man's business is so big, nor no job so small but what it will pay to have this little Money, Time and Worry Saver on the Work.

New Principle: Plows, Hoes, Stirs, Mixes Mortar, Plaster or Concrete. Insures a thorough mixture under all conditions. The only satisfactory color blending machine.

IS NOT A MAN-KILLER

Operates by either Engine, Motor or Hand Power. Most reasonable priced good mixer on the market.

Sold on trial. Satisfaction Guaranteed. Write at once for FREE Catalogue, Price and Terms.

Manufactured by
NORTHFIELD IRON COMPANY

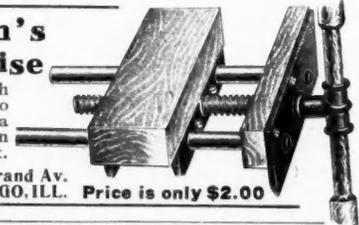
402 Water Street : : : Northfield, Minn.

Not an Infringement

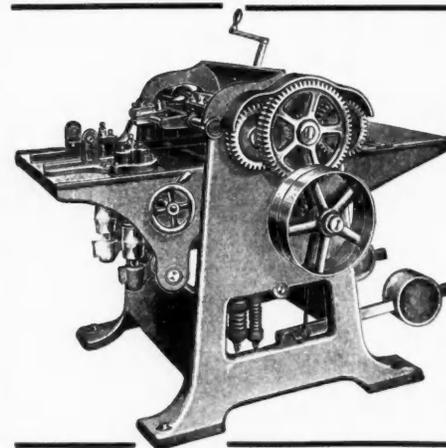
Utica Drop Forge & Tool Company's Fence-Wire Plier Patent, No. 794,064 to H. L. White, has just been held by the United States Circuit Court of Appeals for Third Circuit not infringed by the three point tool complained of by said company and made for the Smith & Hemenway Co., 150-152 Chambers Street, New York, by the Irvington Manufacturing Company.

Christiansen's Steel Screw Vise

is the handiest ever out which every Carpenter ought to have. It can be attached to a plank or a heavy table top in 5 minutes. Send for Booklet.



C. Christiansen, 2221 Grand Av. CHICAGO, ILL. Price is only \$2.00



A high grade modern

WOOD WORKING MACHINE

for Contractors, Builders, Planing Mills and general use.

Many exclusive features

Send for Catalog and get posted. It will pay you.

CORDESMAN, MEYER & CO.
41-45 Central Ave. CINCINNATI, O.

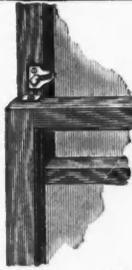
THE
Fox Floor Scraping Machine
IT DOES THE WORK
The Fox Costs **\$25.00**
IT'S RELIABLE
Has no parts to break.
Leaves an even finish.
Scientifically made.
FOX SUPPLY CO., Mfgs.
1 East Main Street
Madison, Wisconsin
Price **\$25.00**

THE DENNIS "CLINCHER"
FELT WEATHER STRIP
(PATENT PENDING)
Specify The
W. J. Dennis Clincher Felt Weather Strip
If You Want the Best Made
NOTE-NAIL PASSES THROUGH BOTH MOULDING AND FELT.
Manufactured only by
W. J. Dennis & Co. - 2226 W. Lake St., Chicago
Free Sample to any address for your Hardware dealers' name.

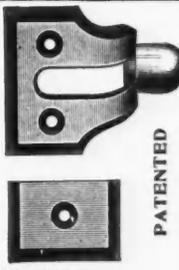
SHINGLING HATCHETS
With Positive Gauge
No. 144
OVAL HEAD. 144 POINTS.
Gauges by 1/4 inches from 4 1/4 inches to 5 1/2 inches
Full Polished, Solid Tool Steel, Extra Quality
L. A. SAYRE & SON
8 Oliver St., NEWARK, N. J.

"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 is guaranteed to give absolute satisfaction.
G. J. KEPPLINGER
Main Office: - DWIGHT, ILL.
Mnfd. also in Canada.

When Writing Advertisers Please Mention the American Carpenter and Builder.



The Ives Window Ventilating Lock.



**A Safeguard for Ventilating Rooms.
 A Lock, quickly applied and operated.
 Affording Sure Protection against Intruders.**

CHILDREN KEPT IN.

BURGLARS KEPT OUT.

—WRITE FOR DESCRIPTIVE CIRCULAR.—

THE H. B. IVES CO.,
NEW HAVEN, CONN., U. S. A.



Economy Double Headed Nail

(PATENTED DEC. 20th, 1910)
(PATENTED MAY 31st, 1910)

A Labor and Lumber Saver

For concrete forms, staging and other temporary lumber construction these nails are invaluable. Because: The second head has an area of four or five times as great as the ordinary nail. This means that these nails can be driven home four or five times as hard as the ordinary nail.

Ask for sample. Orders shipped promptly.

The F. A. NEIDER CO., Inc.
 AUGUSTA, KENTUCKY

DECORATE

Your Home and Church

With F. & B. Co.'s
ART WINDOWS

Designs and Estimates on Application
Without Charge.

Beveled Plate, Metal Sash, Memorial
Figure Windows and Residence
Work Our Specialty

Grand Prize Awarded Louisiana Exposition,
Established 1883.

The Flanagan & Biedenweg Co.
 Office, Studio and Salesroom,
 312 to 318 W. Illinois St., near Franklin
 CHICAGO, ILL. Tel. North 218

HESS MEDICINE LOCKER

SANITARY 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.

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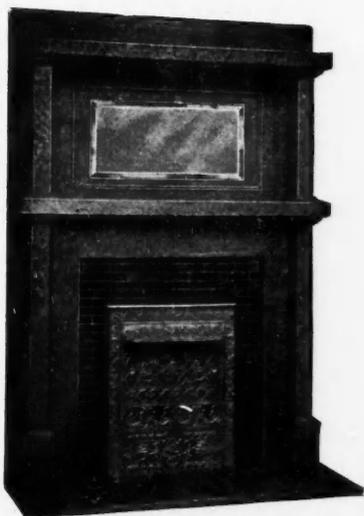
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are distinctive in workmanship, finish and style. Twenty years' experience enables us to know and satisfy the needs of those who want mantels of quality, different from the rest. We build all styles—Colonial to Mission.

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All Steel Cork Bedded and Ventilated Bottom Bar.

Also Shultz Patent Burglar Proof Coal Chute.

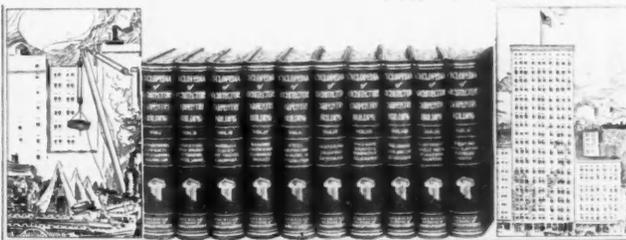
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Don't stick along at an under job through all the best years of your life. Don't let the humdrum drudgery of every-day routine CRUSH your ambition. Don't be satisfied with merely pushing a saw and driving nails. Learn to PLAN as well as to work—to use your BRAIN with the same skill that you use your hands.

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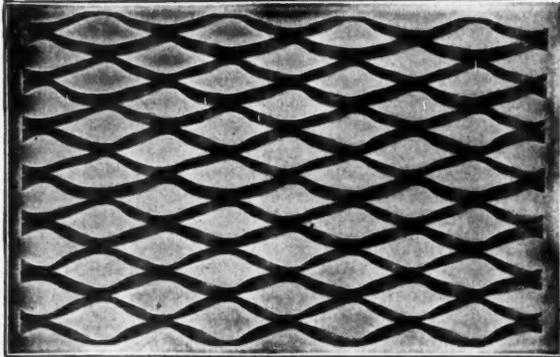
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THE MOST SUPERIOR RUST-RESISTING
**Government Approves It---Architects Specify It,
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Made From
**"AMERICAN
 INGOT IRON"**

The Attainment
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**Highest Purity
 in Iron**

99.94% PURE



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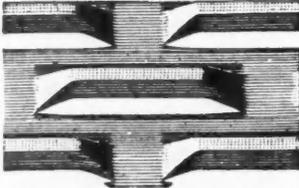
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Rigidity

**Is unequalled by any expanded lath made, NOTE that "Spiral" Twist
 SAVING of THREE to FOUR cents Per Yard IN labor AND Plaster.**
 MADE IN ALL GAUGES, ONE STANDARD SIZE 16½ INCHES x 96 INCHES
Samples and Prices Furnished on Request.

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that can be plastered on either side — cannot be applied wrong because both sides are alike.

We make two kinds—Sykes Expanded Cup Lath, and Sykes Trough Lath. Both are supreme for their own purpose.

The top illustration shows Trough Lath, bottom cut depicts Cup Lath.

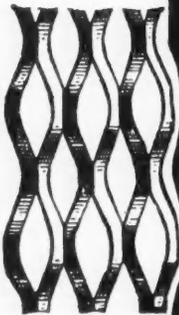
NO PICKLED LATH

Sykes Lath is absolutely guaranteed not to have been pickled in an acid bath. This means that the weight and thickness is not reduced and is less susceptible to rust. Requires no furring out from studs because it is self furring.

It has been approved by U. S. Government and by leading architects, carpenters and builders throughout the country. In fact, when we say it is the best ever made we are simply stating a proven fact.

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The lath that is positively different to anything else made; different because it combines more good features.

Cup lath is the only Expanded Metal Lath

MONITOR SASH LOCKS



(PATENTED) ©

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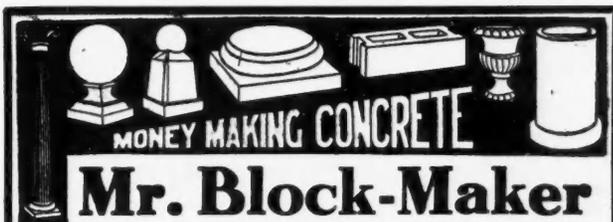
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If the upper plate drops, the Monitor "Never Break" Sash Lock will pick it up from a lower point than any other, adjust the sashes perfectly, prevent all vibration and lock securely, so it cannot be opened from the outside.

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The Champion Safety Lock Co.
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Three blocks at a time is Right.
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The Mogul Invincible Block Machine

COMBINES ALL THESE
IT IS RIGHT

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 mill machine. It has every adjustment that any other machine has and many that no other machine has.

PRICE—Machine and Outfit, \$75.00

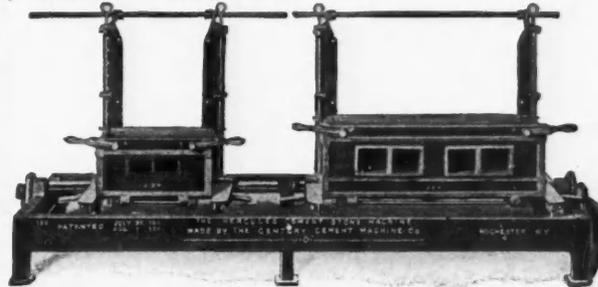
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WHY THE Hercules Concrete Block Machine

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.



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

CENTURY CEMENT MACHINE CO.
290-300 St. Paul St. ROCHESTER, N. Y.

A FREE BOOK

On Concrete Machinery

**BUILDING BLOCKS
BRICK
PORCHES
CHIMNEYS
DRAIN TILE
SEWER PIPE
SILO BLOCKS
AND OTHERS**

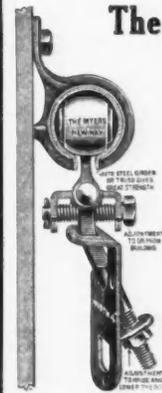
It isn't exactly a catalogue because it gives you the cost of making concrete Blocks, Bricks, Porches, and Chimneys. It tells all about the profits in making Drain Tile for farmers. The advantage of drainage, etc.

You ought to have this book if you are interested in concrete. Sixty-four pages of illustrations and interesting reading. Send at once, today, a postal will do.



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ASHLAND, OHIO



TRUS-CON Joist Hangers

Made in all sizes and styles, for use with brick or concrete block walls or with wooden or steel beams

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.

Write for catalog and prices

TRUSSED CONCRETE STEEL CO., 344 Trussed Concrete Bldg., Detroit, Mich.

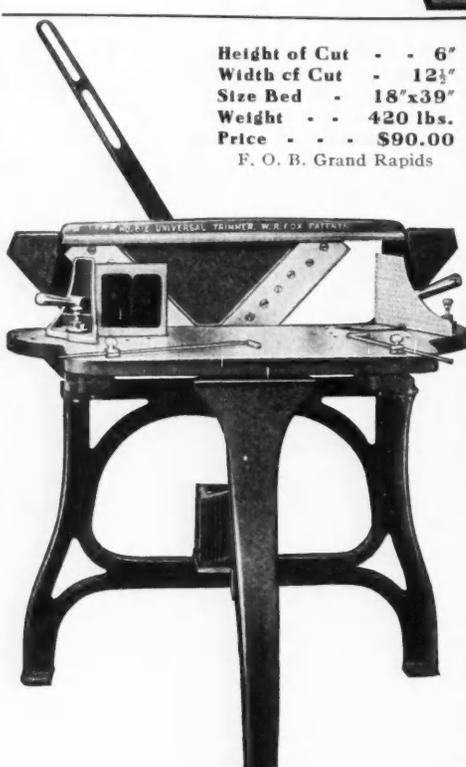
Trus-Con Pressed Steel Inserts for Supporting Shaft Hangers in Concrete Buildings



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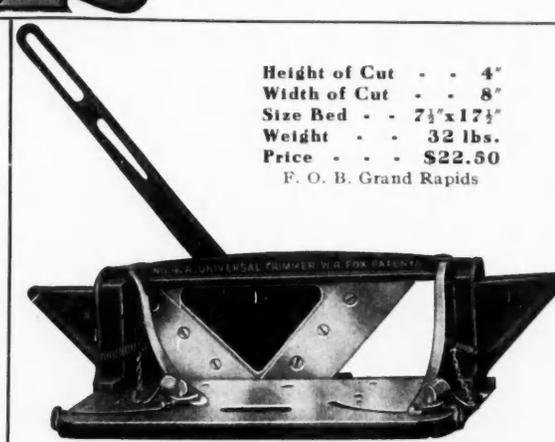
6-E Universal Wood Trimmer

Height of Cut - - 6"
 Width of Cut - - 12 1/2"
 Size Bed - - 18"x39"
 Weight - - 420 lbs.
 Price - - - \$90.00
 F. O. B. Grand Rapids

Bench and Floor Type

"Universal" Wood Trimmers

To Meet Every Demand



4-A Universal Wood Trimmer

Height of Cut - - 4"
 Width of Cut - - 8"
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EVERY PATTERN SHOP, INTERIOR FINISH MILL, FURNITURE FACTORY, and others doing work requiring **perfect glue joints** and **angles** should have our Trimmers or Miter Machines to produce the best results

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FOX MACHINE CO.

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 30 Church Street, New York
J. B. STONE & CO.,
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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 fixture 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.

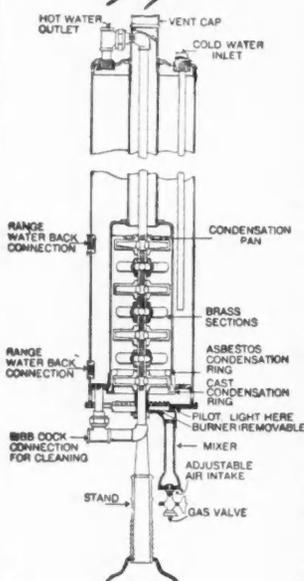
Secondary Circulation equal to thirty-five per cent. of total efficiency—altogether absent in other types.

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



This is the inner radiator of the **HESS STEEL FURNACE**

It's all steel and contains the fire, with its gas, smoke and dust. Radiator leakage in other furnaces sends gas and dust to the rooms, but never in the **HESS**. For every joint and seam in a **HESS** radiator is sealed tight **WITH MELTED STEEL. EVERY JOINT IS WELDED AND STAYS TIGHT FOREVER**

Inferior furnaces are not built that way. Cemented radiators always open after a while and give trouble. It's impossible with the **HESS**

HESS Sent on Approval **FURNACE**

You can buy our furnace direct from our factory, at the factory price, and test it 60 days in winter weather. If not pleased, return it at our expense for freight both ways and pay us nothing.

This offer and lots of good furnace information will be found in our free 48-page furnace booklet. Ask us for one. A postal card will do.

HESS, 916 Tacoma Bldg. - CHICAGO



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without a cent deposit, prepay the freight and allow 10 DAYS FREE TRIAL on every bicycle. IT ONLY COSTS one cent to learn our unheard of prices and marvelous offers on highest grade 1912 models.

FACTORY PRICES Do not buy a bicycle or a pair of tires from anyone at any price until you write for our new large Art Catalog and learn our wonderful proposition on the first sample bicycle going to your town.

RIDER AGENTS everywhere are making big money exhibiting and selling our bicycles. We sell cheaper than any other factory.

TIRES, Coaster-Brake rear wheels, lamps, repairs and sundries at half usual prices. Do Not Wait; write today for our latest special offer on "Ranger" bicycle.
MEAD CYCLE CO. Dept. R-122 CHICAGO

The Gale Wall Safe

It makes your Valuable papers, Jewelry and Silver secure against Porch Climbers, Petty Thieves, Fire, etc.

No Home or Apartment house complete without one. It has a combination lock. Write for descriptive matter today
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WILLIS MFG. CO.

Galesburg, Ill.

SANDOW \$37.50
2 1/2 H. P. Stationary Engine—Complete

Gives ample power for all farm uses. Only three moving parts—no cams, no gears, no valves—can't get out of order. Perfect governor—ideal cooling system. Uses kerosene (coal oil), gasoline, alcohol, distillate or gas. Sold on 15 days' trial. **YOUR MONEY BACK IF YOU ARE NOT SATISFIED.**

Five-year ironclad guarantee. Sizes 2 1/2 to 20 H. P., at proportionate prices, in stock, ready to ship. Postal brings full particulars free. Write for proposition on first engine in your locality. (116)

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4 Ton Capacity - - - \$3,500
 6 Ton Capacity - - - \$4,500
 Prices include standard stake or side board express body.

Estimates will be furnished upon request—for equipping Speedwell Trucks with any style of body required
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A Complete List of Technical Books published on Architecture, Building Construction, Design, Structural Engineering, Concrete, Plumbing, etc.
 64 Pages

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you should see that the contractor uses the Zimmerman Iron Base on your columns. It ventilates the columns preventing them from opening and preserves the base of the column and floor by allowing air to circulate at the base.

Send for Circular E.

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Bottom View of Patent Iron Base Showing Center Bearing

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on a square gives the easiest method ever devised to mark roof-framing—and by far the quickest. It is universal and marks any pitch roof—of hundreds—inside of 5 minutes. And in 17 seconds all these: irregular hip; jack side bevel; mitre bevels on sheathing, fascia, plancher, purline and a hopper. The work of this Gauge cannot be duplicated with any other tool or rule—in the same time. It has no equal as a Stair and brace Gauge. Sent prepaid for \$1.50, with directions, and money returned if Gauge is, inside 30 days.

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Contractors and carpenters can make money by recommending them and putting them up themselves. We own the largest factory devoted to such work. Let us tell you more of the artistic use of the pergola.

A new and complete catalogue of pergolas and our patent lock joint columns will be sent upon request. Ask for H-40.



Hartman-Sanders Company

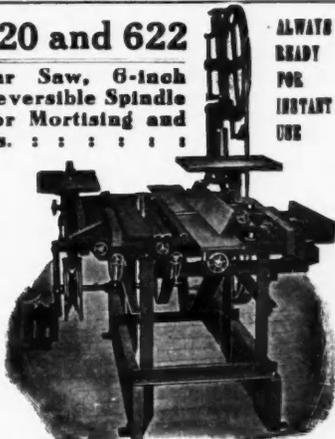
Sole Manufacturers of
KOLL'S PATENT LOCK JOINT COLUMNS
 2155-2187 ELSTON AVENUE, : CHICAGO
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 The best columns for porches, pergolas or interior use.

PARKS' No. 620 and 622

Combination Circular Saw, 6-inch Jointer, Band Saw, Reversible Spindle Shaper with Boring or Mortising and Rabbeting attachments. : : : : :

Six Machines in One and all in Plain Sight. No unbolting or bolting is necessary before you can see, or use all the attachments. Economical, cheap, and a constant money maker for Carpenters and Contractors.

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CARPENTERS' TOOL SATCHEL



Especially adapted for jobbing trips. Made of heavy canvas with steel frame for lock and key, leather handles and strap. Contains 5 saw pockets, bit and chisel rolls. Can't rip. Durable and convenient.

Send for Catalog showing our line of Mechanics Tool Bags

EXCELSIOR BAG & MFG. CO., Inc. TROY, N. Y.

Carpenters' Tool Satchel.

SLATE WE HAVE WHAT YOU WANT

*In Roofing Slate, Slate Blackboards
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ASK FOR DELIVERED PRICES

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"A CONTRACTOR IS KNOWN BY THE CUSTOMERS HE KEEPS."

IT'S THE DOOR THAT MAKES THE JOB!

Isn't it, Mr. Contractor? You've noticed how the owner goes around *sizing up the whole place by the DOORS* you put in for him—He has a critical eye for doors—and its up to you to make good.

Gum Veneered Doors are the *most remarkable doors on the market today*. They are being used in the most expensive and beautiful buildings in the world, and *yet their cost is phenomenally low*. **Red Gum Doors** resemble almost perfectly Circassian Walnut, and many experts consider the grain more beautiful. **White and Unselected Gum Doors** take the most beautiful Mahogany and Enamel finish of any wood in the World, and *cost less than Birch Doors*. Think of it!



BUY BY THIS MARK



**"AMERICA'S
FINEST
DOORS"**

Made of

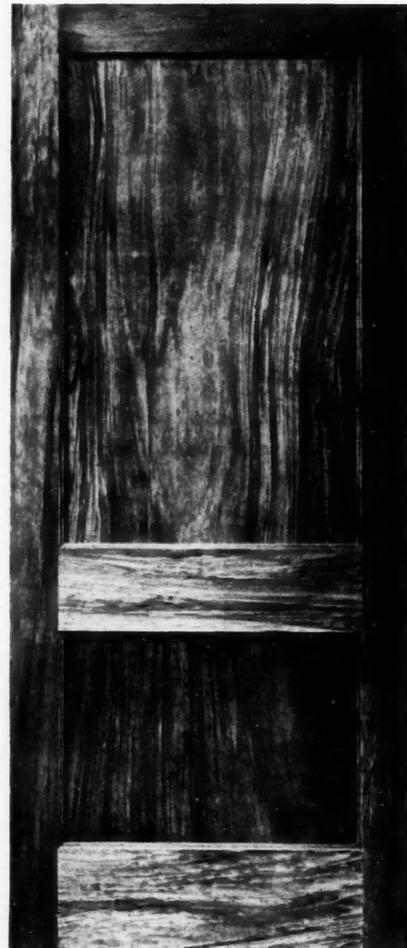


GUM

**"AMERICA'S
FINEST
HARDWOOD"**



BUY BY THIS MARK



We are the largest producers in the world, of **GUM VENEER DOORS** The choice of the most critical

We make Red, White and Unselected Gum Doors, also Oak, Birch and other Hardwood Doors, all *fully warranted* by our Trade Mark "**Nenador**". This trade mark on a Veneered Door is a sign of the *highest possible quality in doors*. They will help your reputation for *fine work*, Mr. Contractor.

WRITE US ABOUT ANYTHING YOU THINK OF IN THE DOOR LINE—
WE'LL COME BACK WITH THE STRAIGHT FACTS

HARDWOOD PRODUCTS COMPANY
NEENAH, WISCONSIN

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NOTICE TO ADVERTISERS
 Forms for the February number of the American Carpenter and Builder will close promptly on January 20. New Copy changes and orders for omissions of advertisements must reach our business office, 178 West Jackson Boulevard, Chicago, not later than the above date. If new copy is not received by the 20th of the month preceding date of publication the publishers reserve the right to repeat last advertisement on all unexpired contracts. AMERICAN CARPENTER & BUILDER CO.

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Applying Wall Board to Ceiling

Applying Bishopric Sheathing

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The non-burning Asphalt-Mastic protects the lath. Buildings have been saved because of this wall board.

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Save 75 Per Cent by Using Bishopric Sheathing

Bishopric Sheathing is made of precisely the same materials as Bishopric Wall Board, but finished surface is not so smooth. It saves, by actual figures, 75 per cent of the cost of applying lumber and building paper. It is far better. Binds cement or stucco to building as nothing else can. Proof against cold, heat, dampness and vermin. The family can move right into a comfortable building the day it is finished with Bishopric Wall Board and Sheathing.

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Price of Bishopric Wall Board. Each crate contains sixteen sheets, 4x4 feet, making a total of 256 square feet. Price, \$6.40 per crate of 256 square feet, or \$2.50 per square of 100 square feet, f. o. b. Cincinnati.

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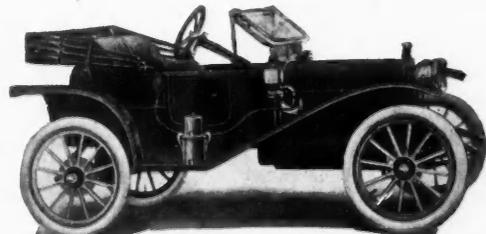
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