

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

\$ There is MONEY for You \$
in Our Advertising Pages This Month—Read Them

The Advertising Section of the American Carpenter and Builder is just as Valuable and Important for You to read and study as the Editorial Pages. \$ It is your Directory of the Best and Most Reliable Concerns making and selling the Tools, Supplies and Building Materials you Need in your Work. \$ Write at once for the Free Booklets and Samples offered; and Investigate the different propositions. \$ Because of lack of space the Advertisers can only **begin** to tell you about their Goods. You have to Write if you want to find out All about them. \$ Any member of this Big Family of Readers is sure to receive Most Prompt and Cordial Attention in dealing with Our Advertisers. \$ You are wide-awake, progressive men—Carpenters and Builders, Architects, Building Contractors. \$ You are Large Users of Tools and Machinery Equipment. You Recommend, Specify and Use Building Materials of all kinds. \$ You owe it to Yourself to Keep Posted. \$ Read the Advertising Pages—they will give you New Ideas and will Save You Money. \$ Study the Ads. and Answer Them.

The Large Amount of Advertising in the American Carpenter and Builder—more than Ever before published in Any Building Paper—testifies to the High Standing of its Readers.

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THI
A25

ATKINS SILVER STEEL SAWS

WE HAVE said a great deal about ATKINS SILVER STEEL HAND SAWS. We have told you how they are made and what splendid service they are giving others and what they will do for you. Now, we want to show you a few pictures taken from photographs of the Saws themselves, because we know you will be interested. We can't show you the whole line, for we make hundreds of different kinds of SILVER STEEL SAWS for all purposes.



But look at this Hand Saw. Ain't she a beauty? Is there not something distinctive and individual about it? Look at its graceful lines and the finish and the Perfection Hardwood Handle. Does it not look like a Saw that would give results? This is our No. 53 and it comes in all sizes and points. There are a number of other patterns, styles and finishes, many of which are described in our Saw Sense Book.



Here is one of our finest Back Saws. Does it not look as though it would do the business? The blade is of SILVER STEEL and will, therefore, run a long time without filing the little fine teeth. The back is of heavy stiff steel and clamps the blade like a vise. The handle is of applewood, easy grip pattern. We make several styles of Back and Mitre Saws.



This Stairbuilders' Saw is a mighty handy tool. The blade may be regulated so as to cut any depth, assuring absolute uniformity.

How to Buy Them

ATKINS SILVER STEEL SAWS are for sale by most first-class Hardware Dealers, but if your dealer does not sell them regularly, he will be glad to order for you from his wholesale house. If you have any difficulty in getting them in this way, please let us have your dealer's name and we will see that you are taken care of.



This is one of the most popular styles of Compass Saw. We call it our No. 2. The blade is of SILVER STEEL and is, therefore, very hard and tough, but not brittle and it is difficult to twist these blades out of shape. The handle is of carved and polished applewood.

Our FREE Offer

We are still compiling our list of carpenters and if you will send us ten cents to pay postage, we will forward with our compliments, a fine strong nail apron, together with our Saw Sense Book or Carpenters' Catalog, our monthly time book with scale of wages and some mighty interesting information in regard to High Grade Saws.



This is our No. 3 Nest of Saws with Nail Cutting Blade. They are indispensable to every carpenter. The set consists of a Compass and Keyhole Blade, together with a hardened steel metal cutting blade, all of which attach to an adjustable handle. The next time you need a Compass or a Keyhole Saw you had better pay a little more for the No. 3 Nest and thus secure the advantages of the Nail Cutting Blade.

Write today and secure this valuable package.

E. C. ATKINS & CO., Inc. THE SILVER STEEL SAW PEOPLE **INDIANAPOLIS, IND.**

2/17-77/44-12

\$165⁰⁰

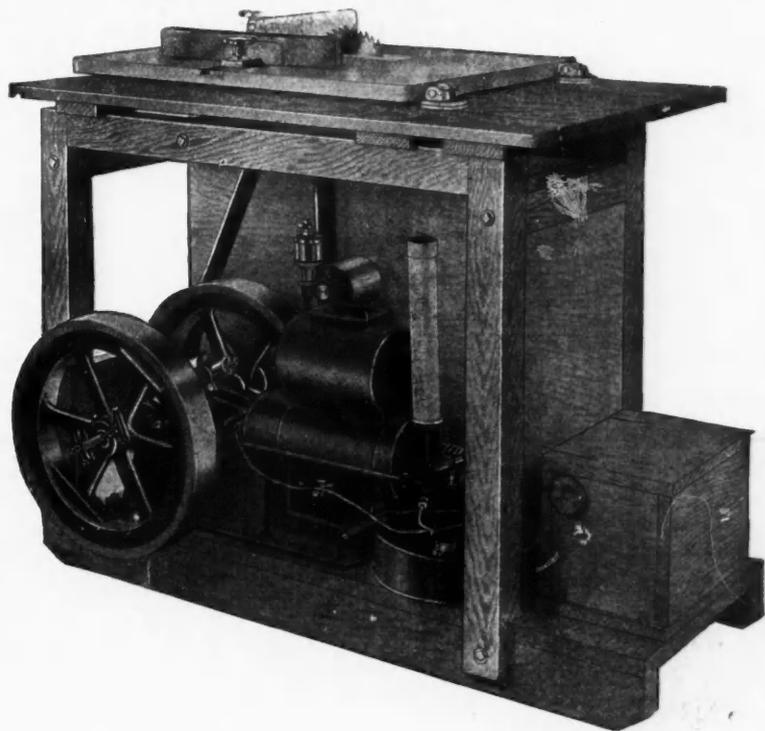
—FOR THIS—

PORTABLE SAW RIG

With the Following Attachments Included

Ready to Run when Outfit Reaches You

- One 8" Rip Saw
- One 8" Cross Cut Saw
- One 10" Cross Cut Saw
- One 1/2" Dado Head
- One 2 1/4" Jointer Head (four knives) and Adjustable Iron Block
- One Emery Wheel
- One Extra Spark Plug
- One Oil Can and Wrench
- One Belt Tightener Attached to Engine



Buy Only What You Need of the Extra Attachments as Follows:

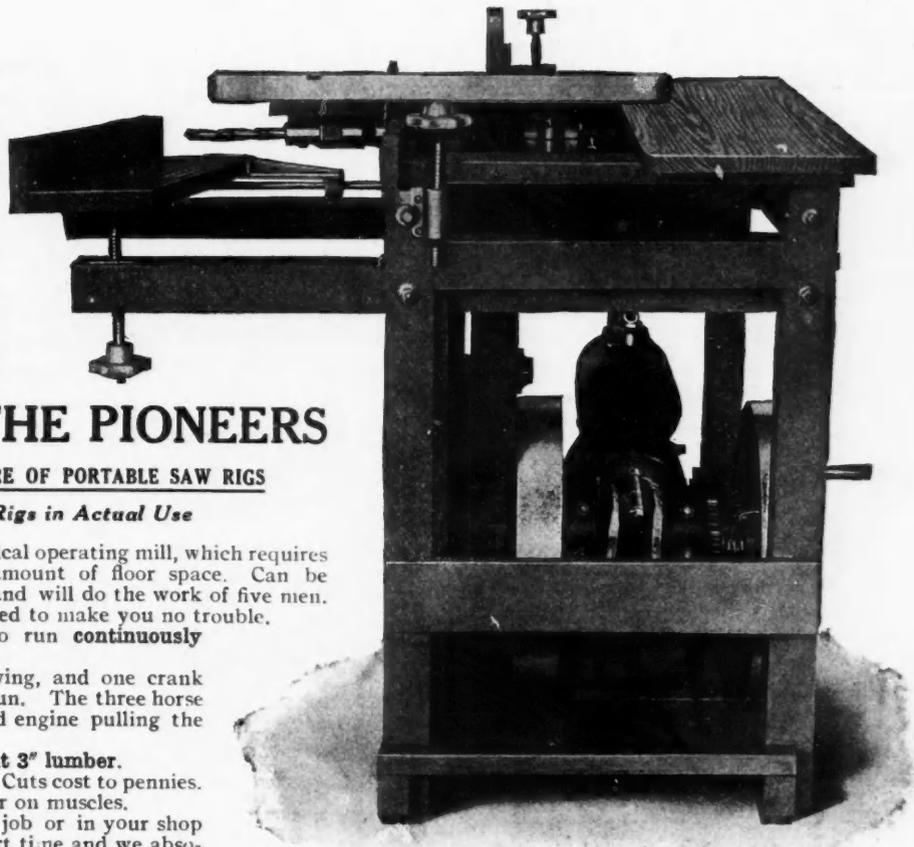
Boring Attachment complete with sliding table, bolts, chuck and two boring bits.

Sanding Disk.

Special Moulding Knives.

Different sized Dado Heads, Etc.

All these extra attachments will be charged to you at cost on your order for a complete outfit.



WE ARE THE PIONEERS

IN THE MANUFACTURE OF PORTABLE SAW RIGS

Over 1000 Rigs in Actual Use

A complete and economical operating mill, which requires no line shafts or large amount of floor space. Can be moved from job to job and will do the work of five men.

A power plant guaranteed to make you no trouble. Designed and built to run **continuously** under full load.

Always ready to do sawing, and one crank of the flywheel makes it run. The three horse power water hopper cooled engine pulling the 8" saws with ease.

Will rip 2" and cross cut 3" lumber. Cuts hours to minutes. Cuts cost to pennies. Cuts out the wear and tear on muscles.

This Rig put on your job or in your shop will pay for itself in a short time and we absolutely guarantee same or return at our expense.

Write for Descriptive Folder

GEORGE D. SMITH,

414 Fisher Building,

Chicago, Ill.

27/44-712

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.

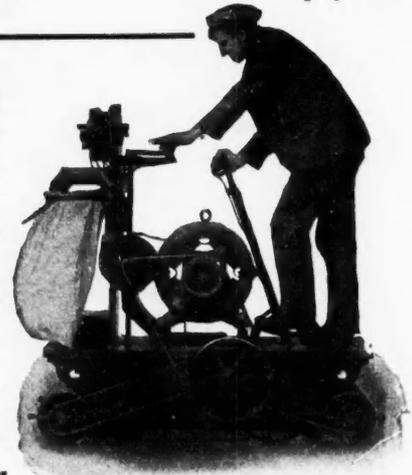
IT IS THE ORIGINAL and only two-roll, self propelled, dust collecting machine, that surfaces close to the wall and can be used in small rooms. Anyone can operate it.

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.

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

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



A NEW MACHINE

That Will Not Only Do the Work of
10 Floor Planers and Scrapers

But will do it more perfectly



We claim and have proven that it has no equal competitor on the market for perfect work. Liberal discount to agents in new territory.

Floor Sanding and Polishing Machine Co.

Driven by Electricity. Automatic
Throughout. Ask for Booklet "F."

1706 Chestnut Street,
PHILADELPHIA, PA.

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.

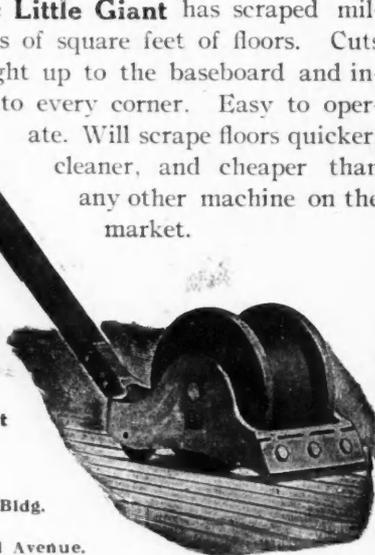
Ask us for our special price on this machine.

**Hurley
Machine
Company**

31 S. Clinton St
CHICAGO

NEW YORK:
1011 Flatiron Bldg.

DETROIT:
245 Woodward Avenue.



TWO MINUTE Lever Lock Mortiser

**It Chisels the Opening for Locks
Greatest Time and Labor Saver**

One builder wrote us last month: "You may expect an order for 3 machines as the carpenters are going crazy about my machine. The more I use it, the better I like it."

Think This Over Builder

Our patent double edge, side cutting chisel can cut more wood, four times more rapidly and 100% less exertion than any boring bit. Mortise to be of the same size.

Sent on trial to any reliable contractor

Our Butt Mortiser and Rule Gauge sent for 75 cents

A. W. Miller Mfg. Co.



Main Office:
CINCINNATI, O.

Western Office:
RIVERSIDE, CAL.

A WONDERFUL NEW ELLIPSOGRAPH and DIVIDER

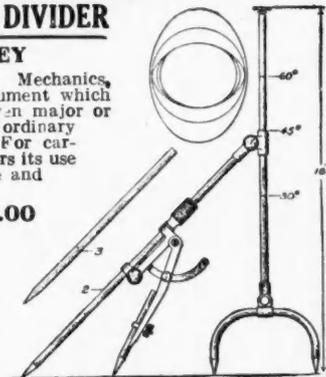
Called the **KELLEY**

Draftsmen, Pattern-makers, Mechanics, etc., can now obtain an instrument which will draw an ellipse of any given major or minor axis, just as readily as an ordinary compass will draw a circle. For carpenters, builders and contractors its use is a necessity for saving time and doing perfect work.

PRICE COMPLETE \$3.00

We positively guarantee satisfaction. Send \$3.00 for this unique instrument and we will send one by return mail and pay charges. It will pay for itself in a saving of time, labor and worry.

**J. T. KELLEY
WEST RUSH, N. Y.**

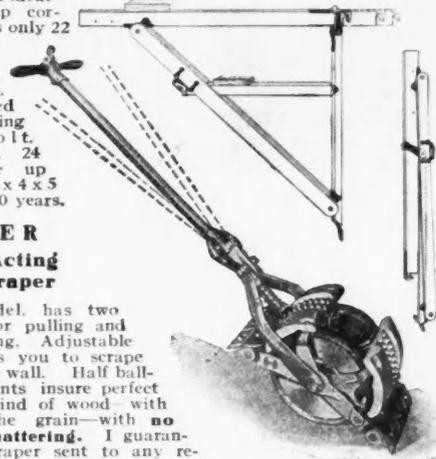


The Latest WEBER Work Savers

SAVE time and you make money. Crude tools delay work and turn out "botch" jobs. My devices are right up to the minute—mechanically correct—and you can't afford to be a day without them. Read every word of this ad; then send for complete catalog and prices. I have been a successful contractor for 25 years, and I absolutely **know** I can save you money at every turn of the road.

DOUBLE SCAFFOLD BRACKET

is the only one that can be adjusted for use on any kind of buildings. Will not swing sideways, and has two scaffold boards which make it ideal for putting up cornices. Weighs only 22 lbs., but is much stronger than the old, heavy scaffolds. Can be folded without loosening a single bolt. When folded, 24 brackets take up space only 3 x 4 x 5 feet. In use 10 years.



WEBER Double-Acting Floor Scraper

improved model, has two knives—one for pulling and one for pushing. Adjustable handle enables you to scrape right up to the wall. Half ball-and-socket joints insure perfect work on any kind of wood—with **no waves nor chattering**. I guarantee this. Scraper sent to any reliable contractor on free trial.

FOLDING SAW VISE

holds the saw with rigid, unyielding grip, and is as nearly noise-preventive as such a tool can be made. Can be thumb-screwed to any plank or bench in an instant. When folded, it takes up no more room than a common hammer. Saves many an aching arm from using dull saws, and should be in every kit.



FOLDED



OPEN

Cabinet Scraper and Sander

affords a firm grip and can be controlled with ease in the tightest corners. Knife



is fastened with a clamp, not with holes or slots, and can be used till but a half inch remains. Scraper can be quickly reversed and used for sandpapering and polishing. Weight 22 oz. Handiest tool ever made for the purpose.

SHARPENING DEVICE



for floor scrapers holds the file at the correct level for an even, true edge on Weber and other floor scraper knives. With this tool, anyone can do excellent work in short time without previous experience. Well worth investigation.

SEND FOR CATALOGUE

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

A TIME AND MONEY SAVER

THAT'S WHAT ACTUAL USERS SAY

Read these Recent Letters

Marshalltown, Ia., Mar. 3, 1911
Jos. Miotke,
Dear Sir:—

One year ago I purchased an Acme Floor Scraping Outfit and in regard to same can say that it has paid for itself many times, besides the hard labor it has saved. To-day I scraped 3½ squares of oak flooring in five hours in a first-class condition.

I have 2,000 sq. ft. of hardwood flooring to scrape at present and wish you would send me another burnisher, also your extra weight attachment.

Trusting you will give this prompt attention, I remain,

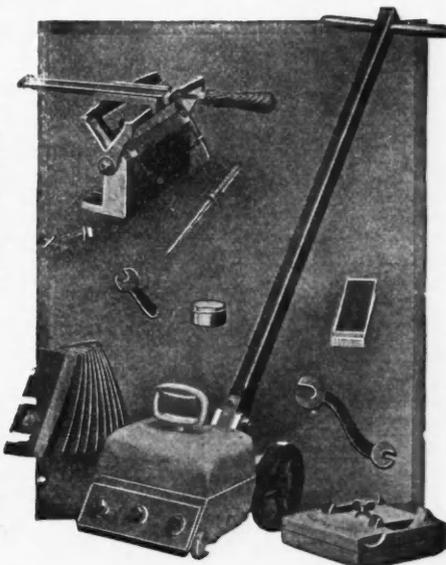
Yours truly,
W. E. LANGER

Cincinnati, O., Mar. 1, 1911.

Jos. Miotke,
Dear Sir:—

Send at once by express one doz. blades for the Acme Floor Scraping Outfit which I purchased from you about a year ago. We are well pleased with the machines, for we find them to be a great time and money saver, and think it is the best floor scraping equipment on the market.

Yours truly,
FITE & FITE.



Read this Free Offer

I will send the **ACME FLOOR SCRAPING OUTFIT** to any carpenter or contractor on one week's free trial basis. I will permit the party receiving the outfit to work with the same for a week, and if it does not prove entirely satisfactory the machines are to be returned to me at my expense.

Isn't this a fair offer? Don't you think it is worth your while to investigate? Thousands of carpenters are saving thousands of dollars daily by using the ACME FLOOR SCRAPING OUTFIT, so it's up to you if you want to share in this saving.

The time for you to investigate is now. Drop me a line to-day and get my booklet and full particulars, which I will send to you by return mail.

JOSEPH MIOTKE, 247 Lake Street, MILWAUKEE, WIS.

Get Acquainted

— with the —

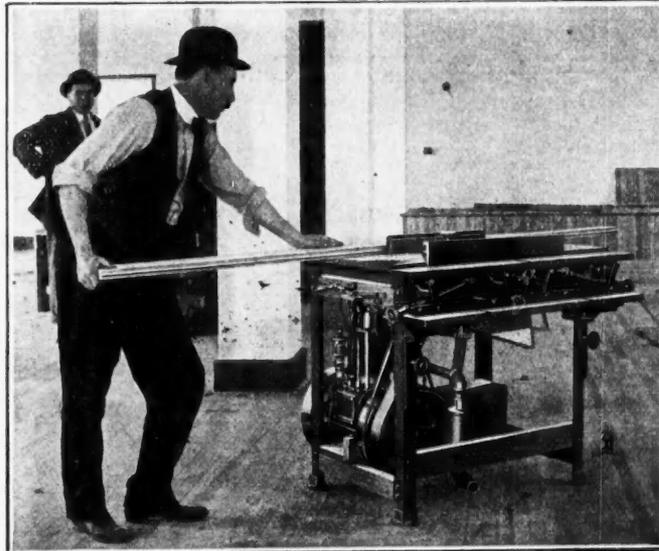
Grimm Woodworker

A Complete

Planing Mill

OUTSIDE OR INSIDE

A Wonder Worker



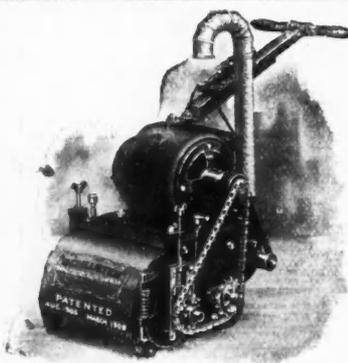
GROOVING AND PANELLING.

9 Machines In One

Rip Saw — Cross Cut Saw — Dado Head — Jointer
Sander — Moulding Knives — Emery Wheels
Jig Saw — Boring Attachment.

Rochester, N. Y.
Gentlemen:—My large machine is all set up and running fine. If you care to refer any prospective buyers to me, I think I can convince them that there is a saving in using it as we are turning out work and all kinds of it.
Yours respectfully,
(Signed) M. S. STROME.

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



Made in three sizes:
18 8x15 and 8x12 in. Roller

Perfect Results Are Easily Obtained By Using Schlueter Rapid Floor Surfacer

This machine is built on the only correct principle. It is guaranteed to be **The Best** machine with which to produce an even, smooth surface on any kind of large or small wood floor, old or new, hard or soft, and in all buildings: Residences, Stores, Factories, Bowling Alleys, Roller Skating Rinks, Reception and Dance Halls, Etc.

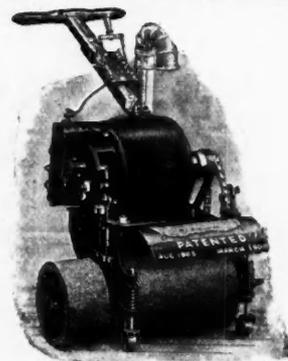
The **Schlueter** will remove all joints or warped edges, and oil, wax, lime stains, or the "muck" from skate wheels, in a most satisfactory manner.

Earning capacity, \$20.00 to \$35.00 per day

Send for prices and **Free Trial Proposition.**

M. L. SCHLUETER, Chicago, Ill.

103 N. Canal Street N. Y. Office, 1001 Flat Iron Bldg



Edge Roller easily adjusted
to either side.

The Only Self-Setting Plane

Over 25 years ago we commenced to make the Self-Setting Planes. They are shovled in every state and Canada. Thousands of carpenters use them doing work easier, better, quicker, saving time, trouble and temper.



Every issue of this paper has had our ad. in it. If not sold in your town, we will send you a Beech wood plane on trial on receipt of one dollar less than list price, and if you return it at our expense within 30 days of receipt we will refund your money. If you want more than one we will allow you dealers' discount.

In writing. If you mention this paper and send us the addresses of 10 plane users—no matter where they live—we will send you a carpenters' hard tough pencil. If you send us a 2-cent stamp we will send you two pencils.

Remember this trial will cost you nothing if you return the plane at our expense, as per circular. We will not knowingly send to consumers where our planes are being sold. This offer is good while this ad. appears.

This paper guarantees that the Gage Tool Co. will do as their advertisement states.

GAGE TOOL CO., Vineland, N. J.

THE FOLDING DRAW KNIFE

It's the Draw Knife for close packing
Takes but small room in your kit:
"Out of sight," or very near it.
And all workmen say it's IT.



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.**

AS SURE AS 2 AND 2 IS 4

A SHEARING CUT GETS BEST RESULTS IN FLOOR SCRAPING

Why does a mechanic when scraping a floor by hand use a Shearing Cut? Because he obtains smoothest and quickest work so. When you whittle a piece of wood you use a Shearing Cut.

A Shearing Cut is ALWAYS made with the
“DAISY” FLOOR SCRAPER
 With One Ten-Inch Blade Single Shearing Cut is Made
 With Two Five-Inch Blades Double Shearing Cut is Made

The “Daisy” CUTS EITHER WITH OR ACROSS THE GRAIN CUTS RIGHT UP TO BASE BOARD AND INTO EVERY CORNER IS EASIER ON THE OPERATOR AS IT REQUIRES ONLY A SLIGHT LIFT TO GET BEST WORK WILL DO MORE WORK THAN ANY OTHER IN SAME LENGTH OF TIME WILL DO PERFECT STRAIGHT EDGED WORK AND WILL PLEASE YOU CLAMPS ARE INSTANTLY FASTENED FILING DEVICE FILES BLADES TO RIGHT BEVEL EDGE-TURNING DEVICE IS A WONDER

UNSOLICITED TESTIMONIALS

Gillette, N. J., Oct. 11th, 1910.
 THE DAISY MFG CO.,
 South Bend, Ind.

Gentlemen:—
 The flooring has arrived and we have scraped it with your machine and I find it does all you claim for it. Inclosed you will find check as per agreement. Thanking you for your kindness in allowing me to try this machine and for extending the time for trial, I am,
 Yours respectfully,
 FRED L. WALTERS

Dubuque, Iowa, Sept. 1, '10.
 THE DAISY MFG. CO.,
 South Bend, Ind.

Gentlemen:—
 Immediately after using the Scraper we have found it to be satisfactory and superior to any we have seen in use. We herewith inclose draft in full for same.
 Yours truly,
 KUTSCH BROTHERS,
 per J. P. K.

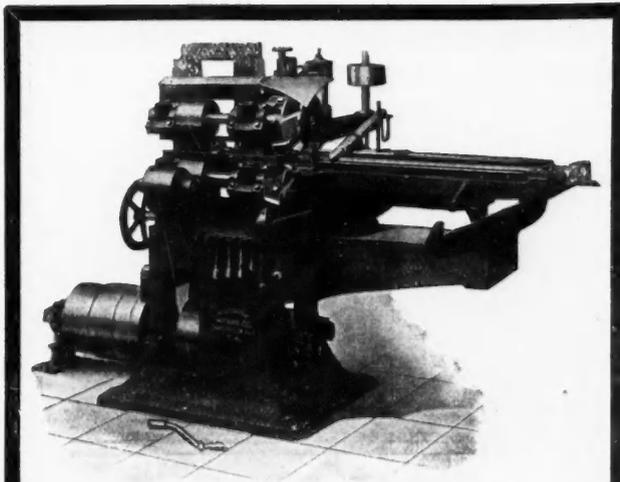
Belle Fourche, S. Dak., Aug. 4, '10.
 THE DAISY MFG. CO.,
 South Bend, Ind.
 Gentlemen:—
 After giving the three Floor Scrapers a trial we have decided that the “Daisy” is the one we want. Inclosed find draft in full for same.
 NELSON & GOLDING.

Ten
 Days
 Free
 Trial
 Offer



We will ship a “DAISY” Outfit to any responsible contractor who intends purchasing a floor scraper for a ten days free trial. Test it with others, if you do not find it best return it. The trial will not cost you a penny.

THE DAISY MFG. CO., South Bend, Ind.



SMITH'S Original Single End

Tenoning Machines were patented in 1852, since which time many improvements have been made, the annexed engraving representing the latest and best type.

The Design is unique with a rack for holding all the wrenches.

The Carriage is fitted with Roller Bearings so as to move easily and true across the ways. Made with double or single heads; with or without Copes and Saws

Also Builders of Double-End Tenoners. Address

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

BRANCHES: New York, Chicago, Atlanta, Shreveport

C. E. JENNINGS

TRADE
 ARROW → HEAD
 MARK

AUGER BITS No. 1 1/2



BEAT the WORLD. TRY THEM and SEE for YOURSELF. FULLY WARRANTED.

These Bits are universal in scope. They will bore equally well in hard or soft wood, with the grain or against the grain. They combine our single skip Auger twist with our extension lip. No pressure is required to make them bore. They draw themselves in—they are the easiest boring bits made.

Insist on Having Genuine

C. E. JENNINGS

ARROW → HEAD
 TRADE MARK
 TOOLS

Accept no substitute—Order by name and number

If you cannot purchase of your dealer we will furnish direct in sets of 13 in leather roll or hardwood case at \$6.00 per set.

C. E. JENNINGS & CO.

42 MURRAY ST.

NEW YORK



Copyright 1909, by the Stanley Rule and Level Company

Stanley Tools

STANLEY Plumbs and Levels both adjustable and non-adjustable are made of thoroughly seasoned and selected stock and have many special features which appeal to the workman; among them are:

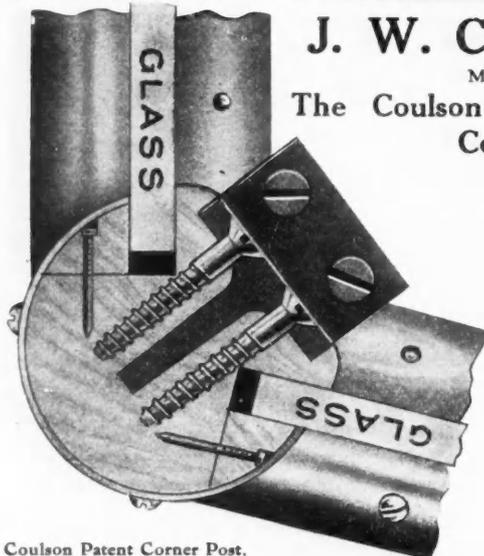
A new form of adjustment for both plumb and level. Glasses carefully proved with the central position of the bubble plainly indicated by two indelible lines, and so located that the bubble may be readily seen from either side or from below in overhead work. **"HAND-Y"** grip on the side making it easier to handle or carry—and general heavy trim and fine finish.

Made in all styles and sizes for CARPENTERS, MASONS, PLUMBERS, MACHINISTS, MILLWRIGHTS, ETC.

The name **STANLEY** appears on every tool we manufacture and is a guarantee that for quality of workmanship and material they are **UNSURPASSED.**



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



Coulson Patent Corner Post.

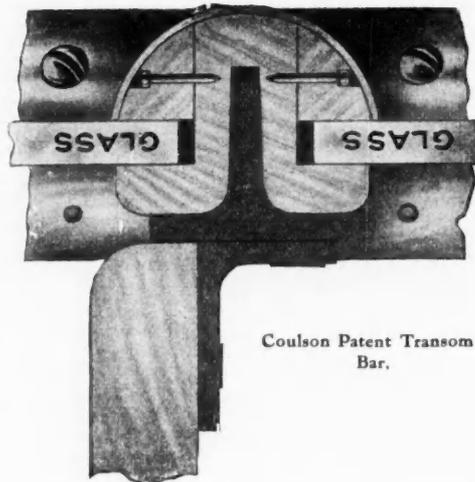
J. W. Coulson & Co.

Manufacturers of
The Coulson Patent Store Front Construction

Briefly described in Sweets', pages 737-739. Write for catalog E-800.

Main Office
234-236 North Third St.
COLUMBUS, OHIO.

Branch Office
202 Builders Exchange
DALLAS, TEXAS



Coulson Patent Transom Bar.

MR. JAMES SAYS?

CHICAGO MACHINERY EXCHANGE, Chicago, Ill.

Gentlemen—The Combination Saw and Jointer which I purchased from you have more than equaled my expectation. I more than saved the entire cost of both machines on one contract alone. Please send another one of your catalogues as the one you sent before has been lost.

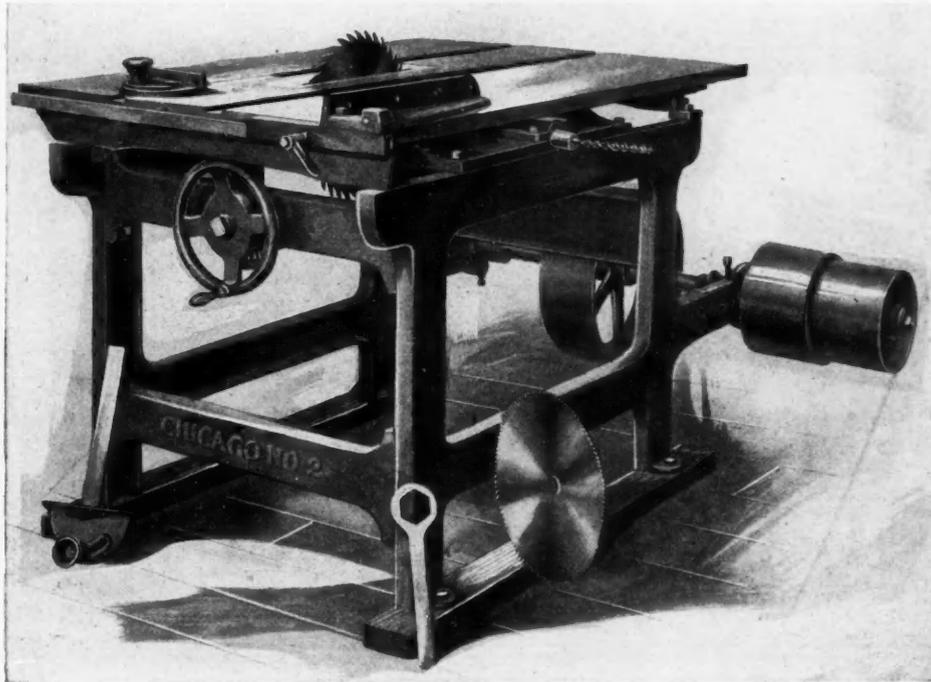
Jan. 10, 1911

Yours very truly,

A. C. JAMES, Contractor and Builder.

MACHINE No. 1

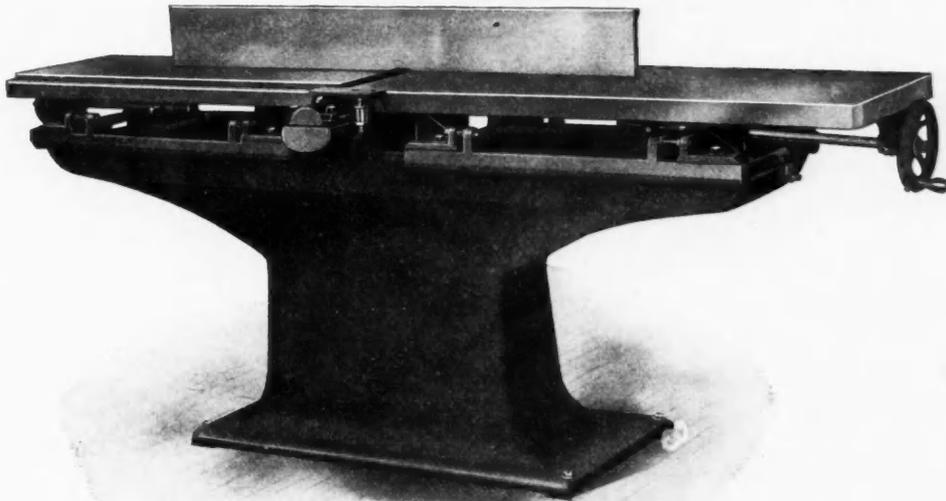
Chicago No. 2 Combination Saw Table



Used for Cutting Off, Ripping, Mitering, Grooving, Boring, Tenoning, Etc.

MACHINE No. 2

Chicago 12" Jointer and Planer



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

These Two Machines

for \$180.00, including belt for saw arbor, countershafts, 1 14" rip saw, 1 14" cut off saw, 5 boring bits— $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ " and 1 pair of jointer knives. Ask for price on one if you cannot use both.

Send for our Special Catalogue today. We issue a catalog of machines especially adapted to Contractor's and Builder's use.

Chicago Machinery Exchange1219-1227 Washington Boul.
CHICAGO, ILL.

CRESCENT

Safety Head Jointer

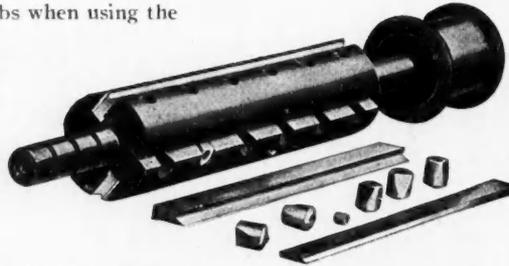
You are continually risking your life and limbs when using the ordinary, old style Jointer Head.

You Take No Chances

when using the Crescent Jointer with Safety Head. The Crescent Safety Head has many advantages over the ordinary square head. One of the most important points is that it is much stiffer than a square head of the same cutting circle; because it is of greater sectional area. This makes a steadier running head, with less tendency to vibrate, and less liable to get out of balance.

THE KNIVES on the Crescent Safety Head are made of high-speed steel which will hold the edge longer and turn out better finished work in less time than can possibly be done on a common jointer with ordinary knives. You can crowd the machine to the limit and the quality of the work remains the same as if run at ordinary speed. **THE PRICE IS REASONABLE.**

Get our 1910 Catalogue and find out all about this splendid tool and our elegant line of band saws, disk grinders, planers, planer and matcher, jointers, shapers, saw tables, etc.



The Crescent Machine Co.
224 Main Street, LEETONIA, OHIO

FOX

Universal Trimmers

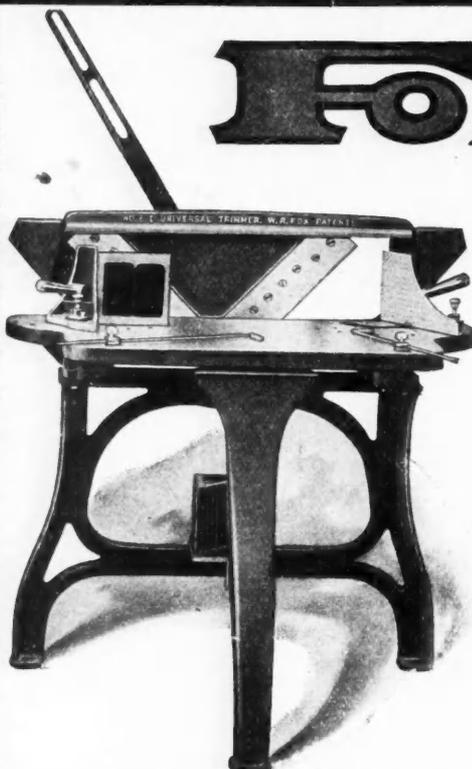
No Pattern Shop Complete Without a Fox Trimmer

We are the original builders of Wood Trimmers, having built the **FOX** Universal Wood Trimmer for 25 years. You receive the benefit of our experience as builders of these tools.

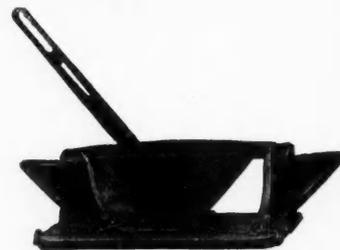
20,000 Satisfied Users Testify to
FOX EFFICIENCY

Prices Range From
\$22.50 to \$150

WRITE TODAY FOR OUR COMPLETE CATALOG OF TRIMMERS



No. 6-E TRIMMER

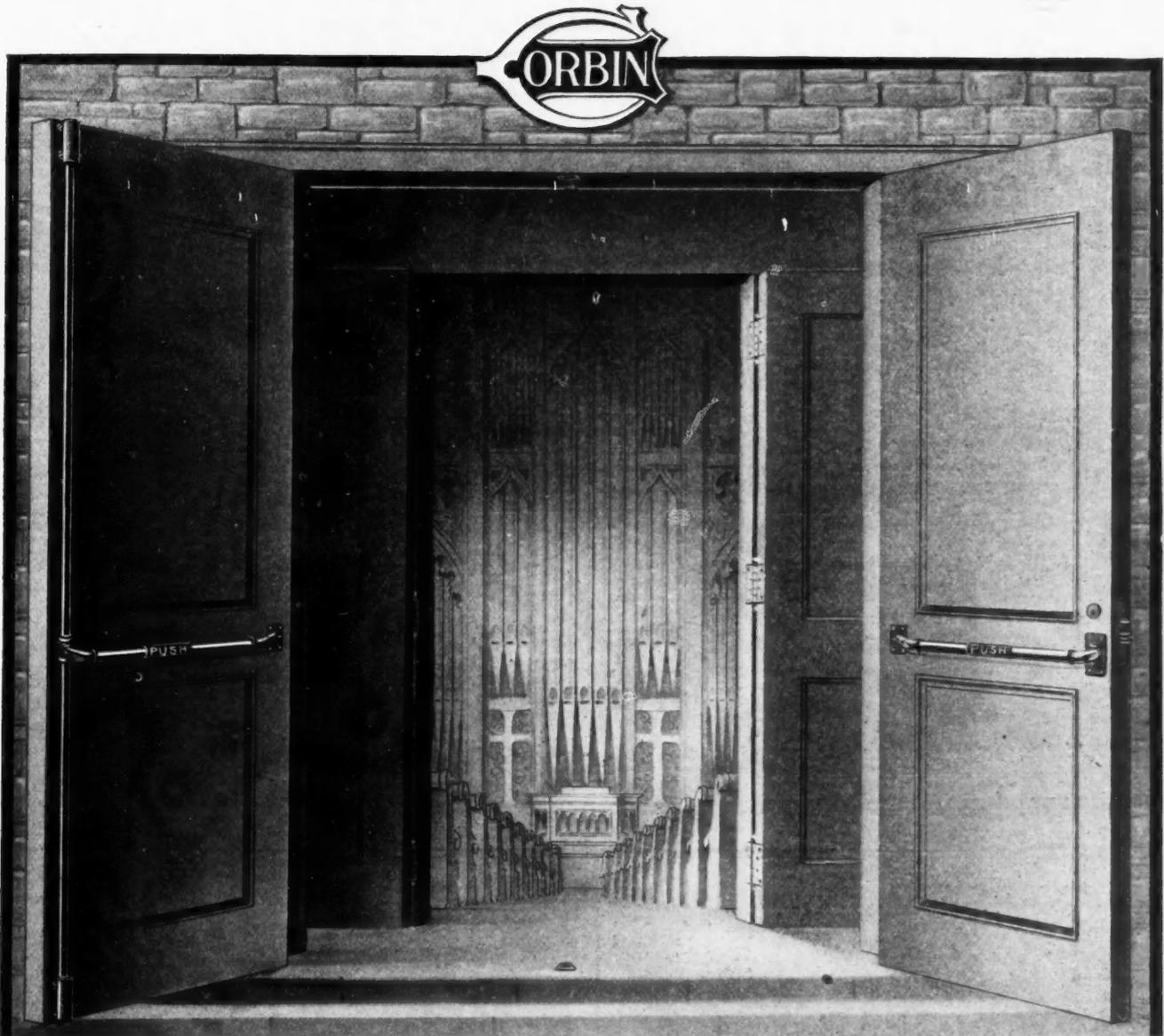


No. 4-A TRIMMER

FOX

MACHINE CO.

2211 FRONT STREET
Grand Rapids, Mich.



Corbin Anti-Panic Door Fixtures

are easily applied and operate perfectly. The line embraces the bar type illustrated, lever handle sets, bolts of special construction and adaptations of Corbin hardware for ready-exit use, covering requirements for all applications. A 56-page catalogue describes the different articles. Directions for application supplied with each set.

Sold by all Dealers in Corbin Hardware

Send for Publication

No. BK 33 Corbin Anti-Panic Door Fixtures

No. BK 17 Corbin Colonial Hardware

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No. BK 53 Corbin Princeton Design

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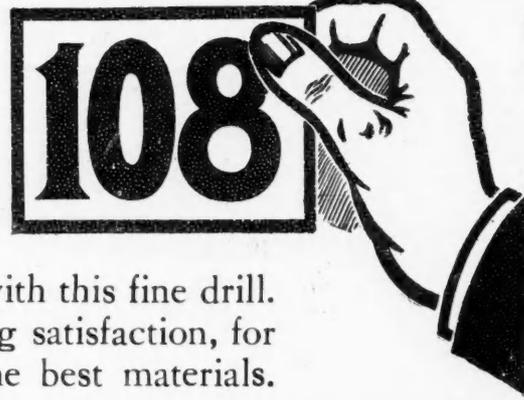
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BE SURE TO ASK FOR
Goodell-Pratt's



Insist on your dealers supplying you with this fine drill.
It will give you long service, and lasting satisfaction, for
it is made on right principles from the best materials.

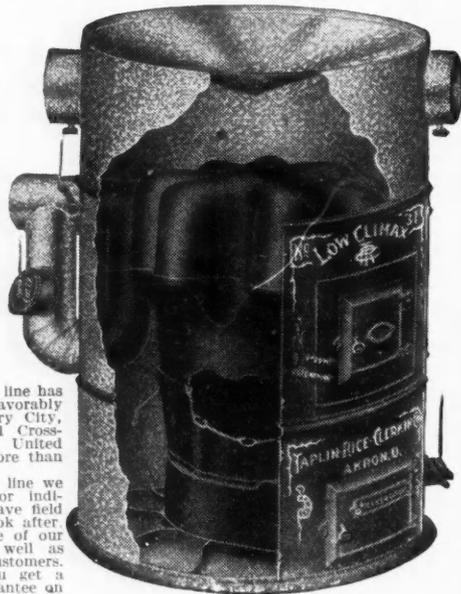


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Toolsmiths

GREENFIELD, MASS., U. S. A.

Ten
Substantial
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Why You
Should
Purchase
the
CLIMAX
Line of
Furnaces,
Stoves and
Ranges—
and no
other.



1. Because the line has been well and favorably known in every City, Village, and Cross-roads in the United States, for more than forty years.
2. Because the line we sell directly, or indirectly, and have field Agencies to look after and take care of our business, as well as that of our customers.
3. Because you get a Factory Guarantee on your whole outfit.
4. Because your heater is made by, and installed by practical men—ones **WHO KNOW HOW TO DO IT.**
5. Because you can burn any kind of fuel in the **CLIMAX**—even the refuse from other Furnaces.
6. Because the furnaces are made by stove-plate Molders, of stove-plate material, all brand new, and not half old junk.
7. Because of improved principle of combustion, giving you over-draft, down-draft—any kind of draft.
8. Because equipped with large double feed doors—big enough to drive in pony and cart.
9. Because has a Cast Iron Smoke Pipe.
10. Because we sell all our heaters under the strongest guarantee, that they do the work—or no pay:—**BEWARE OF TRAPS FOR THE UNWARY.**

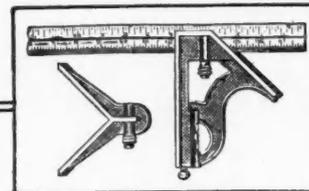
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COMBINATION SQUARE

THE ORIGINAL : : THE MUCH IMITATED
Send for free Catalogue No.186, of Fine Tools for all
kinds of mechanics.

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"A Bit Of Utility"

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

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

Unequaled for Delicate Work

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

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

The Progressive Mfg. Co.
Torrington, Conn.



THE "LIGHTNING" AUGER BIT

WARRANTED



WARRANTED

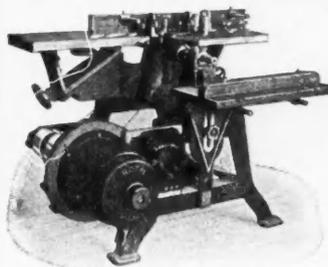
It will bore through any kind of wood in common use about twice as quickly as the best and fastest heretofore on the market. The worm has a double thread terminating in two cutting points.

The double thread with the specially formed twist secures its double quick work without increase of power. Only by actual test can the great advantages of the lightning bit be fully realized. Secure from your dealer or sent by mail. Price postpaid.

1/8"	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
\$0.28	.28	.28	.28	.32	.34	.38	.42	.50	.50	.55	.55	.62	.62	.73	.73	.85	.85

TOWER & LYON CO., 95 Chambers Street, New York, N. Y.

Next machine you buy, order a— **Rothmotor**



to drive it individually. You will be pleased. You will be gaining some profitable experience in economy.

Ask
ROTH BROS. & CO.
1422 West Adams Street,
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NEW YORK OFFICE:
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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.

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NEW CATALOGUE

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74 RUBY ST. ROCKFORD, ILL.



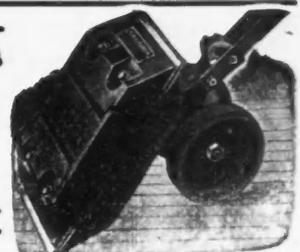
CHAMPION FLOOR SCRAPERS

WHY PAY EXORBITANT PRICES?

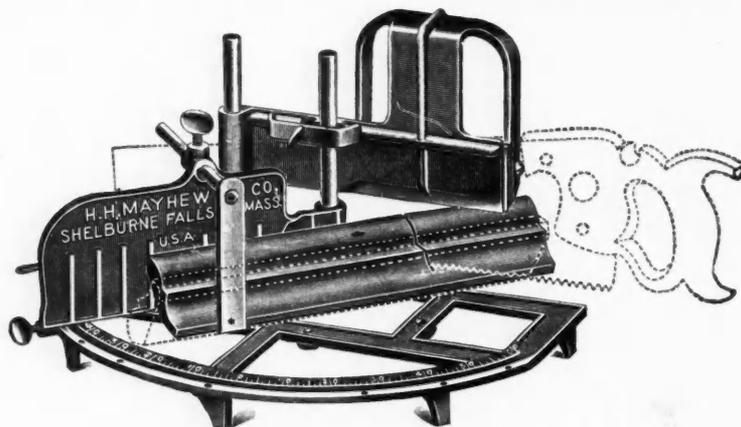
Don't give double what anything is worth. We have a machine that does the same kind and quantity of work as the highest priced.

We Can Save You Money Both first cost and every day machine is used.
SEND FOR OUR CIRCULAR.

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MAYHEW 60° MITRE BOX



This box embodies more distinctive features than any other made
 Designed for Simplicity, Accuracy, and Durability.
 Strictly a right hand tool for mitering.
 Box embodies a new feature in reversing the principle commonly used on other boxes.
 Any of three saws may be used — Panel — Hand or Back saw.
 Saw guide adjustable for any thickness of saw.

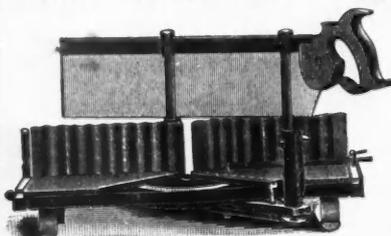
Extreme mitre to 60° without makeshift. May be used as a stationary or pivot box by use of the pin posts.
 In mitering duplicate cuts there is no restriction on length.
 Will cut compound mitre.
 Parts take down into space 10x10x4 inches.
 Weight 15 lbs. complete.
 Box contains full directions for use.

PRICE EACH, \$10.00

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GOODELL MITRE BOX

Made of STEEL - Cannot Break



First in Quality and Improvements
 Automatic Stops for holding up saw.
 Corrugated Backs Graduated.
 Gauge for duplicate cuts and many other features
 Send for Circular "C"

GOODELL MFG. CO., Greenfield Mass.

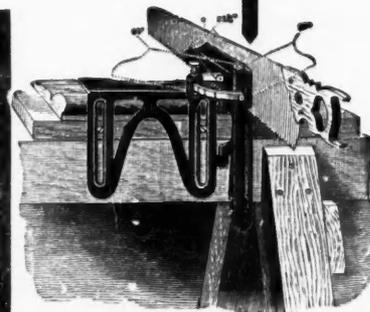
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Cuts Any Angle

Meets Every Requirement

Special Offer

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Portable — Can be carried in the Tool Kit

Weighs 2

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LUFKIN Tapes & Rules

are Standards of Accuracy, Durability and Workmanship.



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In over eighty publications, covering every town in the United States and Canada, and reaching over 27,750,000 readers, we are running strong advertisements giving good, logical, believable reasons why J-M Asbestos Roofing is the best.

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We are telling these people that



Plant of the B. F. Goodrich Co., Akron, Ohio. Covered with J-M Asbestos Roofing.

J-M ASBESTOS ROOFING

is the only fire-proof ready roofing, the only one that never needs painting, and is not affected by gases, chemicals, fumes, etc., and many other points that cannot be said of other ready roofings.

Will you couple your name with our fame and let us help you to your share of the profits to be made in your locality? We will furnish you with handsomely lithographed metal signs, also with beautifully printed booklets, folders, catalogs and samples to give away.

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And—we don't ask you to carry a large stock, only enough to meet the first demand our advertising creates.

Don't hesitate. Write us for full details of our proposition to-day.

H. W. JOHNS-MANVILLE CO.

Manufacturers of Asbestos and Magnesia Products

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Asbestos Roofings, Packings, Electrical Supplies, Etc.

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For Canada—THE CANADIAN H. W. JOHNS-MANVILLE CO., Limited

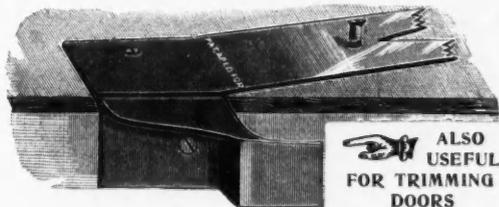
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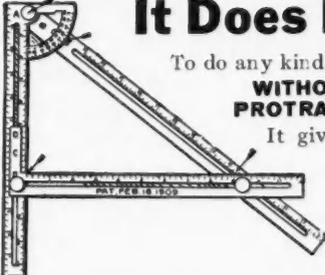
WHIPPLE'S CARPENTER COMBINATION BENCH HOOK

The Handiest Little Tool Ever Manufactured ARE QUICKLY ADJUSTED TO A TEMPORARY BENCH EVERY CARPENTER SHOULD OWN ONE

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R. P. WHIPPLE & CO., 275 Main Street, SPRINGFIELD, MASS. See Our Ad on Page 149



It Does Not Pay

To do any kind of framing work WITHOUT THE ABC PROTRACTOR SQUARE

It gives bevels and cuts as well as lengths, and it is the most TIME SAVING and PRACTICAL tool on the market.

The ABC Protractor Square is guaranteed to do what we claim for it, or money cheerfully refunded, if returned in 30 days.

SEND FOR THE tool today, with illustrated directions. PRICE REDUCED TO \$2.00.

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and see that he gives it to you. It is impossible to



substitute, as our name is stamped on every foot of cord. Silver Lake Sash Cord is the Original Solid Braided Cotton Sash Cord, and has been the standard since 1868. No other is just as good.



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Andrews Heating Co., 1165 Heating Bldg., Minneapolis, Minn.

From an economy standpoint

STAR HACK SAW BLADES

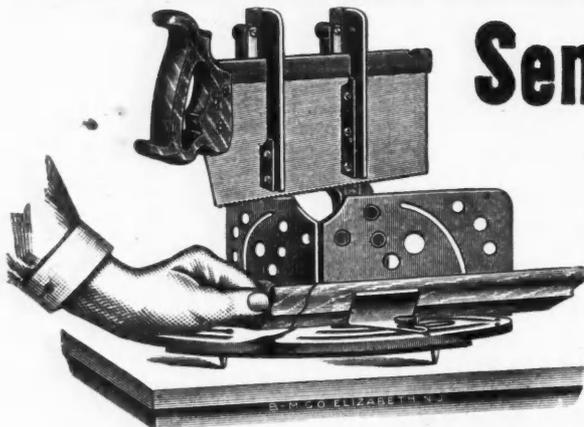
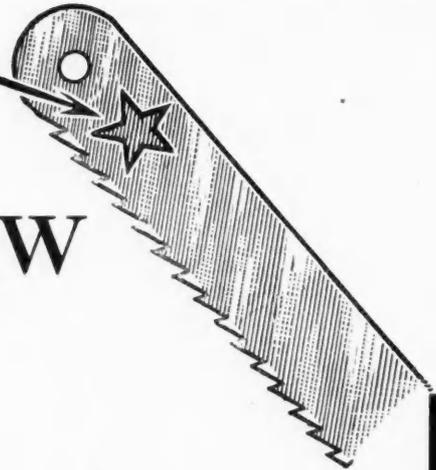
FOR MACHINE USE, 12 x 5/8

Surpass all other Blades. Eliminate carrying in stock Blades of varying widths and thicknesses with different numbers of teeth to the inch. They are made of the best material. Possess great strength and durability. Ask for and insist upon getting the Blade with the ★

ALL DEALERS KEEP THEM

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The Famous Dorn Revolving Miter Box. Will saw compound as well as plain miters any width with a back saw 4 inches wide.



Compound Miter

Send for Booklet Called "Tools That Last"

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We guarantee that our chisels will hold their edge all day with one sharpening, even if used on quartered oak across the grain

Chisels look simple, but there is no tool of which such hard work and varied service is required. Recognizing this we have given the choice of the steel, regardless of cost, and the design of these chisels, the most extensive study and experimentation, and in their manufacture the greatest care and highest order of skill is employed

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THE CELEBRATED BARTON TOOLS

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AUGER BIT ESSENTIALS

THE THIRD REASON

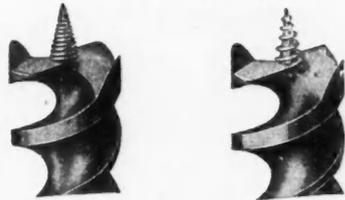
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RUSSELL JENNINGS BITS

are so extensively used is that they have clean-cut, properly shaped

SCREW POINTS

which lead the bit into the wood without forcing



Our double-thread screw point is the standard for accurate work in any wood not extremely gummy or hard.

Our single-thread screw point is for quick boring. It does not clog in gummy wood and leads the bit into extremely hard woods such as iron-wood and lignum vitae. It is suitable for end boring.

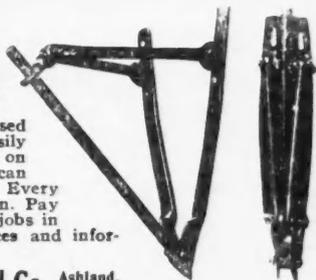
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Folding Scaffold Bracket

Best and strongest bracket made. Used on any kind of siding. Adjusts to any space studding or pitch of roof instantly. Just the thing for carpenters, tiners, painters and brick masons. Folds instantly. No pins or bolts used in adjusting. One bracket easily carries 1000 pounds put up on 4-10d nails. No contractor can afford to be without a set. Every man who uses them orders again. Pay for themselves on first two jobs in time and material. For prices and information, write.



Ashland Folding Scaffold Co. Ashland, Ohio.



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WHEN BUYING EDGE TOOLS? Did You ever stop, consider and *FIGURE* that *TIME, MONEY, and PATIENCE SPENT* on *INFERIOR TOOLS* requiring continual sharpening is greater than the purchase price? Do you add the grinding expense to the price paid for your tools, or do you make the mistake of judging the cost only by the price you pay the dealer?

Save Money BY LESS GRINDING Make your first cost the last cost. Buy *WHITE'S Edge Tools* and they'll save enough in grinding to pay for themselves. They're **GUARANTEED PERFECT** in *quality, shape, material and temper*, for any wood, any job, at any time, always ready, sharp, accurate and perfect. The **BEST TOOLS** for **BEST WORK**. It'll pay you to buy **White's Edge Tools**. If not at your dealer, furnish us his name and secure our latest catalogue.

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LOOK FOR IT
DEMAND IT
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3 Styles
13 Sizes



You Won't Do Without a
"YANKEE" Screw Holder
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Works easy and quickly. Slight thumb pressure opens Jaw—insert screw—release spring and there you are ready for business. Positively self releasing as screw sinks into wood. Slip holder back on the blade and you have a plain "YANKEE" Ratchet Driver.

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NORTH BROS. MFG. CO.
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PHILADELPHIA, PA.



Do You Use Your

Strong right arm in mortising window frames for the sash pulleys? Just consider boring 1 1/8-inch holes 1/2-inch

centers and set the pulley in—i. e. the **Grands Rapids No. 12**. No cutting—no fitting—no counterboring—no breaking—no swearing—no nails—no screws.

These **Grand Rapids** pulleys save more time than they cost in money. If we are telling the truth you cannot afford to use ordinary pulleys if you get them for nothing. We can prove it too.

WRITE FOR FREE SAMPLE

Say what pulleys you are using and how many you buy

Grand Rapids Hardware Co.
36 Pearl Street
GRAND RAPIDS, MICH.



Nicholls' Rafter Framing Rule Explained

The outside inch figures indicate the rise of your roof in inches to the foot.

Under these you will find your figures to obtain the length of common, hip, valley and jack rafters; also their cuts.

To get the length of rafters multiply by half the width of the building.

FOR EXAMPLE:

If your roof raises 16 inches to the foot, under 16 on the first line are the figures 20.00; this is the length of common rafter for one foot run; if the building is 14 feet wide, half the width of building would be the run of common rafter; in this case it would be 7; multiply

$$\begin{array}{r} 20.00 \\ 7 \\ \hline 140.00 \end{array}$$

you have 140 inches, or 11 feet 8 inches. To obtain the bottom and top cuts of common rafters, use the figures 12 on body and 16 on tongue; 12 side gives bottom cut; 16 side gives top cut; the same figures give bottom and top cuts for jack.

Our Squares Have Hardened Corners
Send for Our Direction Sheet

Nicholls Mfg. Co., Ottumwa, Iowa



There is a Decided Satisfaction in Knowing That Carborundum Sharpening Stones

Are always ready for use—never filled or gummy but always clean, free and fast cutting. Carborundum is the greatest sharpening agent known. There is nothing harder or sharper. Its minute crystals are brittle enough to break slightly after a time and turn up new cutting edges—that is why a Carborundum stone never glazes.

The Carborundum Round Combination Bench Stone No. 107 is a wonder-worker. Just the right shape for that rotary motion required in sharpening chisels and plane bits. Price each, \$1.00.
No. 103, oblong shape, in quartered oak box, \$1.50.
No. 146, Carborundum Pocket Stone in leather case, 35c.

ASK YOUR DEALER OR SEND DIRECT TO
THE CARBORUNDUM COMPANY, Niagara Falls, New York

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 1/2 feet.....	2 85
" 2 ".....	3 00
" 2 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 1/2, 3, 4 and 5 foot have . . . 1 1/2 x 1/4 inch bars.
5, 6, 7, 8, 9 and 10 foot have 1 1/2 x 1/4 " "
Joiners' Clamps—1, 1 1/2, and 2 foot have hand-wheels for rapid work. 1 1/2 x 3-16 inch bars.

In ordering parts always make sketch, to avoid delay.

Hargrave's New Adjustable SPECIAL Clamp.



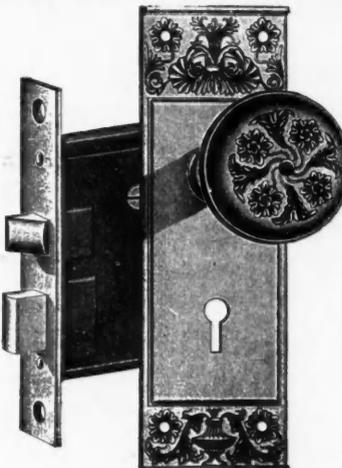
Hargrave's Perfection SPECIAL Clamp.



Hargrave's Joiners' SPECIAL Clamp.



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



Are You Ready

for the hardware on that new building? Then use a new and up-to-date design in

Builders' Hardware

No. 8030 Lock Set as per cut, steel, Antique Brass **44c** shaded, per set.

Free Our illustrated catalogue and net price list

Rehm Hardware Co.,
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CHICAGO, ILL.



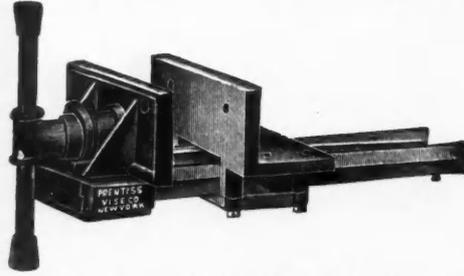
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Rapid Acting Wood Workers Vise.
Cheapest for you, because best.
You can see them at your dealers.

Write us for booklet.

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BLAKE QUICK ACTING VISE



For Cabinet Makers and Wood Workers. Simplest—Strongest
—Cheapest—Best
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SEND no money—just mail us your name and address. Your book will reach you by return mail. Keep it 5 days—use it—then either send one dollar or return the book.

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Address.....

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E-Z ELECTRIC FLOOR SANDPAPERING and POLISHING MACHINE

REPRESENTATIVES WANTED

everywhere to sell this valuable machine. Write for particulars.

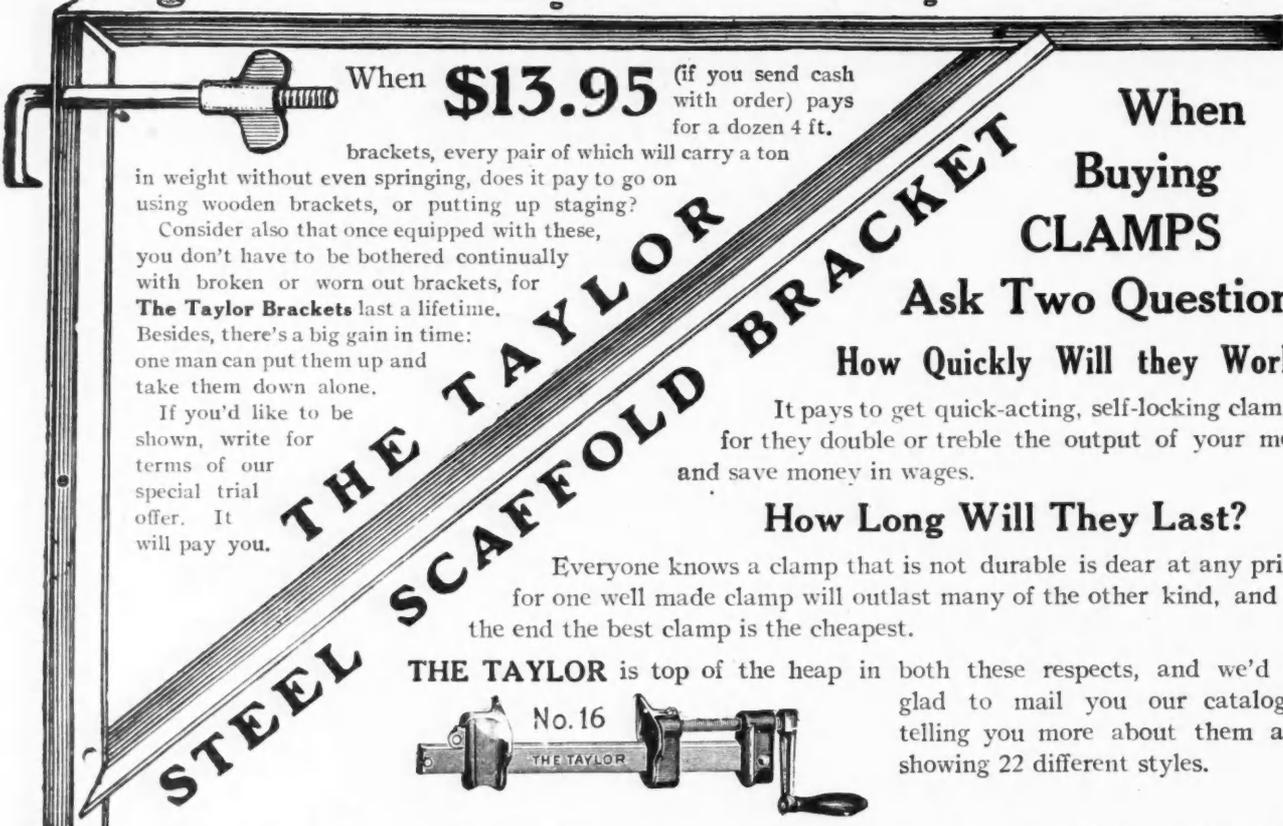
It grinds and polishes **MOSAIC, TERRAZZO** and **MARBLE** floors.

Machines Used and Endorsed with flattering Testimonials by the **Largest Firms** and Institutions.



Write For Free Trial Offer

John Herr Mfg. Co.
53 Merchants Bldg. :: PHILADELPHIA, PA.



When **\$13.95** (if you send cash with order) pays for a dozen 4 ft. brackets, every pair of which will carry a ton in weight without even springing, does it pay to go on using wooden brackets, or putting up staging?

Consider also that once equipped with these, you don't have to be bothered continually with broken or worn out brackets, for **The Taylor Brackets** last a lifetime. Besides, there's a big gain in time: one man can put them up and take them down alone.

If you'd like to be shown, write for terms of our special trial offer. It will pay you.

THE TAYLOR STEEL SCAFFOLD BRACKET

When **Buying CLAMPS** Ask Two Questions

How Quickly Will they Work?

It pays to get quick-acting, self-locking clamps, for they double or treble the output of your men, and save money in wages.

How Long Will They Last?

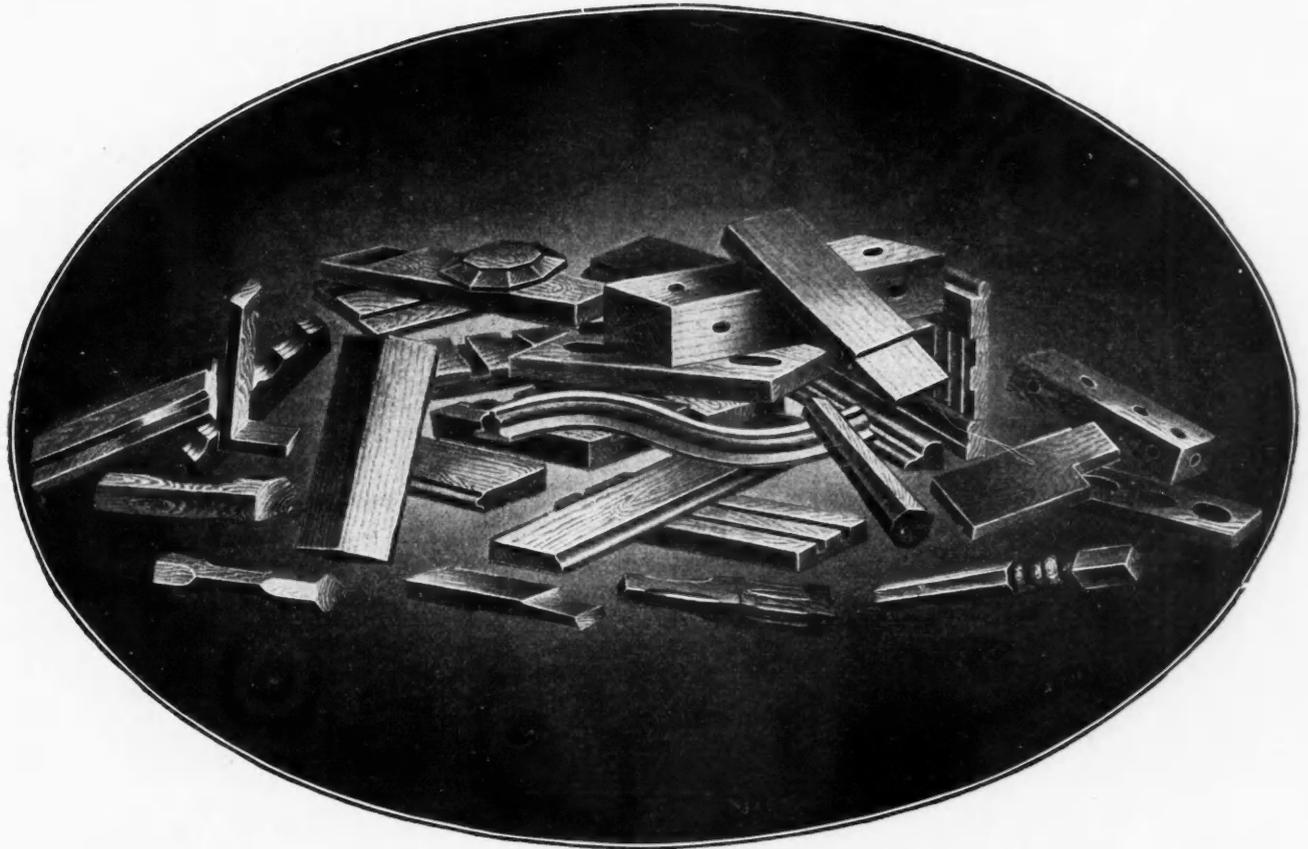
Everyone knows a clamp that is not durable is dear at any price, for one well made clamp will outlast many of the other kind, and in the end the best clamp is the cheapest.

THE TAYLOR is top of the heap in both these respects, and we'd be glad to mail you our catalogue telling you more about them and showing 22 different styles.



No. 16
THE TAYLOR

JAMES L. TAYLOR MFG. CO., Poughkeepsie, N. Y. U. S. A.



Some Samples of Work That Can Be Done

— ON OUR —

No. 62 UNIVERSAL WOODWORKER

1st	Plane out of wind	13th	Stick Beads
2nd	Surface straight or tapering	14th	Work circular mouldings
3rd	Rabbet door frames	15th	Rip
4th	Rabbet and face inside blinds	16th	Cross-cut
5th	Joint	17th	Tenon
6th	Bevel	18th	Bore
7th	Gain	19th	Rout
8th	Chamfer	20th	Rabbet
9th	Plow	21st	Joint and bead window blinds
10th	Make Glue Joints	22nd	Work edge mouldings
11th	Square up bed posts, table legs and newels		
12th	Raise panels, either square bevel or ogee		

Users have called this machine
"A WHOLE WOOD-SHOP IN ITSELF"

The title is apt, indeed, for the variety of work it will do is only limited by the skill of the operator.

If you are a Carpenter, Contractor, Builder or Retail Lumberman, write us for PAMPHLET No. 1-G, which fully illustrates and describes this machine and tells all about the great variety of work it will do.

J. A. FAY & EGAN CO., 545-565 W. Front St., Cincinnati, Ohio

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CUSTOM MADE Fly Screens

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

Our screens are made from kiln dried lumber and have waterproof coped joints and the frames are weather proofed before finishing coats are applied.

Best grades of Wire Cloth, enameled, galvanized, genuine bronze, fastened by the most approved method.

The new "Ironwood" screen is the cheapest good custom made screen yet produced. Intending purchasers may have free, by mail, samples of woods, finishes, wire cloth and a copy of catalogue. Agencies in nearly all large cities. Agents wanted in smaller cities. Special terms to contractors and builders.

A. J. PHILLIPS & CO., FENTON, MICH.
28 YEARS' EXPERIENCE 3 1-2 ACRES FLOOR SPACE



60,000 Columns

At an average of \$5.00 each or 6,000 at \$50.00 each gives you an idea of the annual capacity of our plant.

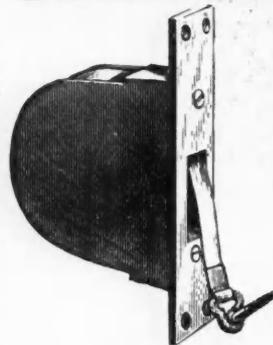
We own the largest factory building in the world devoted exclusively to the manufacture of high-grade COLUMNS and PORCH WORK.

A new and very complete catalogue of COLUMNS will be sent on request Ask for H-40.

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Sole Manufacturers of
KOLL'S PATENT LOCK JOINT COLUMNS
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The best columns for porches, pergolas or interior use.



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Does away with weights and cords, and VASTLY more durable.

Makes sashes work perfectly.

Permits greater window space in new work, as box frames are not necessary.

May be applied to old windows without altering sashes or frames.

Write for circular to the
Caldwell Mfg. Co.
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Save 1/2 to 2/3 Your Fuel Cost

Unless you have money to burn, let us quote you a price and send you our Home Heating Book and Literature Free—save you on first cost and lasting economy and reduce your fuel bills 1/2 to 2/3. Find out about the experience of thousands of satisfied owners of Holland's Double Grate Surface—Patented Cored Air-Admitting Double Firepot, burning fuel from sides and top, nature's way, for greatest even heat. Consumes gas, soot and clinkers with least smoke. No explosions or gas. Book tells all improved tested points, convenience and satisfaction of

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Burns Any Kind of Fuel "Makes Warm Friends"

Can use soft coal—slack screens—hard coal, lignite or wood with least waste. Special Double Guarantee. Books tell many other points.



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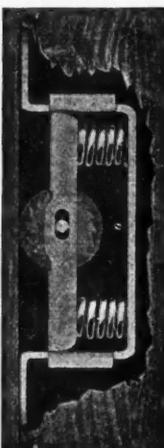
Holland Furnace Co., Dept. 15
Holland, Mich.

Send me your Holland Furnace Books Free and prices.

Name.....
Address.....
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DON'T PUT SASH WEIGHTS ON YOUR WINDOWS—THEY ARE OUT OF DATE

The "AUTOMATIC" SASH HOLDER



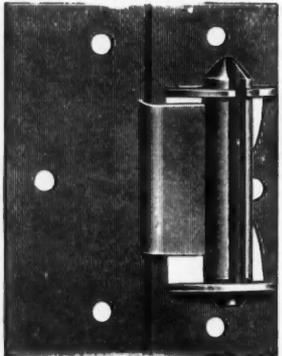
The "Automatic" Sash Holder is the new, modern, up-to-date device that dispenses with cumbersome sash weights, kinking cords or ribbons, useless weight pockets, misfit pulleys and reluctant balances, and saves all the time, labor and expense of fitting them in.

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

Sold by hardware dealers or direct from us. Correspondence solicited. Representatives and side lines travelers wanted all over the world.

Automatic Sash Holder Company
277 Broadway, New York City.

Diehl's Separable and Reversible Hinge No. 20



This hinge is designed for storm and screen doors. The door may be swung at right angles and lifted from its bearings without removing the screws, as the shank slides through the small slot in the upper ear so that it makes it very easy to change from storm to screen doors and from screen to storm doors without removing the hinges. They are made of open hearth wrought steel 14 gauge and finished in black baked Japan or oxidized copper. A sample of these hinges will be sent upon receipt of 25 cents in stamps.

Manufactured by the
Diehl Novelty Company
Sheboygan Wis.

WATER-FIRE AND
LIGHTNING PROOF

TRADE
TITELOCK
MARK

**METAL
SHINGLES**

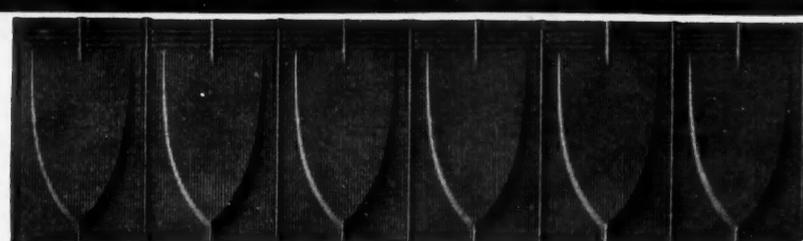
MAKE THE BEST
ROOF COVERING

NOTE THIS
LOCK-JOINT!



LAYING
SHINGLE

SHINGLES LAID
IN PLACE



The nature
of embossing
and the crimping
lengthwise of the
plates insure rigidity
and strength, also pro-
vide perfectly for the
expansion and contrac-
tion of the metal.

SEND FOR SAMPLES
AND BOOKLET.

"Invisible Joint"
STEEL CEILINGS
SEND FOR CATALOG.

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PIPE, ELBOWS, RIDGE
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SEND FOR PRICE LIST.

PERFECTION

ELEVATORS

The Best Value for the Money in the World
Mechanically Correct

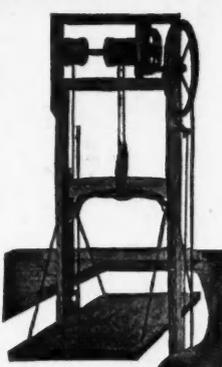
Dumb Waiters, Carriage and Store Elevators, Sidewalk Hoists, Etc., Etc.

Our Elevators are noted for their EASY RUNNING and SERVICE-
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The Low Cost Will Surprise You

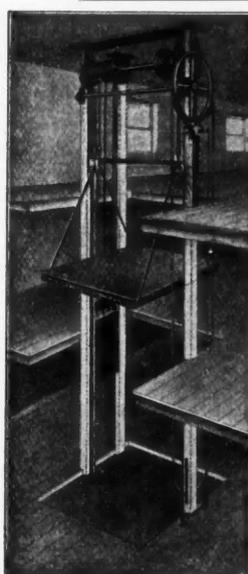
State your requirements, giving capacity, size of platform and number
of feet to travel and we will name our lowest money saving estimate.

SIDNEY ELEVATOR MFG. COMPANY, SIDNEY, OHIO



The New Otis Metal Hand Power Elevator

FOR STORES

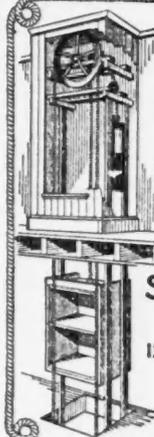


WORKS EASIER AND
LASTS LONGER
THAN OLD STYLE
WOODEN ELEVATOR

**\$75.00
TO
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SEND FOR
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**OTIS ELEVATOR
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NEW YORK CHICAGO
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And All Principal Cities



DUMB WAITERS AND HAND ELEVATORS

OF THE MOST IMPROVED
AUTOMATIC CONSTRUCTION

INVALID LIFTS
TRUNK, CARRIAGE,
SIDEWALK AND
FREIGHT ELEVATORS

SEDGWICK MACHINE WORKS

128 LIBERTY ST. NEW YORK

CATALOGS AND
ESTIMATES FURNISHED
SEE SWEET'S INDEX

The American Combined Level and Grade Finder



All progressive and up-to-date Carpenters, Contractors and
Mechanics should have one of our levels and grade finders.
An instrument with which at one glance you can get the true
slant on any line or grade, either in degrees, inches or percentage,
or all at one time, and will at once give the exact distance
needed to plumb up to a true level.

The most practicable, durable and convenient instrument of
the day. In addition to ordinary mechanical work the American
Combined Level and Grade Finder will prove serviceable in
cutting off rafters, laying off and leveling buildings, getting height
of any object and is useful in dozens of ways.

Write at once for large list of testimonials and special intro-
ductory price given only to first applicants with privilege of
taking agency.

American Level & Grade Finder Co., Railroad, Pa.

SARGENT

Hardware



Sargent Locks are *secure*.

A building equipped throughout with these locks is as near proof against dishonest intrusion as locks can make it.

Perfect in mechanism, assembled with exact precision and finished with most thorough workmanship, they work

smoothly and surely through long years of service.

There are Sargent Locks for every purpose—Cylinder Locks, Union Locks, Padlocks in all sizes. For the sake of *safety* and long wear, it is worth while to be certain of getting the Sargent make.

Sargent Hardware adds to the beauty of a dwelling, makes it worth more to you if you live in it, and increases its selling value.

Next to the architecture of the house itself the hardware on the front door conveys an impression. It may bespeak good taste, harmony, solid worth.

Give your personal attention to this feature when you build or remodel a house.

A dwelling equipped throughout with Sargent Hardware is a better house to live in. Safe, smooth-working locks, door hinges that won't sag, casement adjusters that won't get out of order, latches that always latch. This kind of hardware is more economical in the long run and gives satisfaction all the time.

For Public Buildings and office structures, Sargent Hardware is preferred by architects for its artistic quality and durability. The Consolidated Stock Exchange, Liberty Tower and Hotel Rector, New York, and the Hughes High School, Cincinnati, are some of the newest important edifices equipped with this hardware.

Sargent Book of Designs—Free illustrating many handsome designs for door fittings in various schools of architecture. Write for a Complimentary Copy and ask for our Colonial Book also, if you are interested in that period.

SARGENT & COMPANY, 1149 Leonard Street, New York

Ambrogio Minn
 July 24 1911

Dear Sirs please send me
 some of your saw filing hints
 and a catalog showing some
 of your products.

P.S.
 I sent to Germany for one
 of the best saws they could
 get and when it came it had
 H. Diston Sons on it then
 I laughed.

S.O. Wiehl
 Ambrogio Minn

Bovee Furnaces at Manufacturers' Prices

Will Save You One-Half the Price and One-Half the Fuel

The Bovee is the only Furnace that has a Perfect Ventilating System for Every Part of the House

Don't compare our prices with small, cheap furnaces that do not have one-half the capacity. Measure the firepot, measure the combustion chamber, measure the compound circulating radiator. Note the long travel of heat before reaching smoke pipe. See why the Bovee Furnaces *last longer, use less fuel and cost less* in comparison with other furnaces of equal size and capacity.

[SPECIAL PRICES]

Three-Run Heating Plant for Residences

Including Pipe Registers and All Fittings

40-inch Furnace

20-inch firepot, 28-inch combustion chamber. Heats 10,000 feet. Price, **\$65**

These furnaces will carry from 5 to 8 pipes, which can be added at small cost when desired.

Store, Church and School Furnaces

One large run directly over Furnace and two cold-air plates, including pipe-registers and fittings.

54-inch Furnace

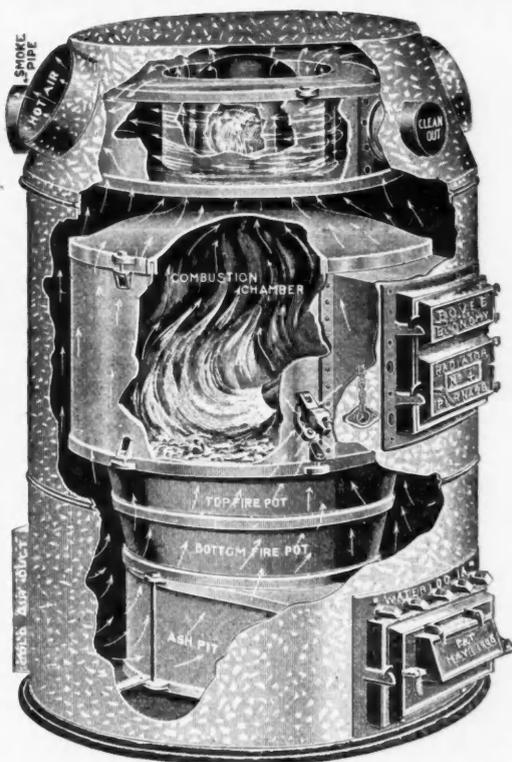
32-inch firepot, 40-inch combustion chamber. Heats 40,000 feet. Price, **\$95**

Horizontal Furnaces, with equal heating capacity when desired. More heating pipes can be added at small cost. Prices on larger furnaces for any kind of buildings furnished on application.

Complete Catalogue and Specifications for the Heating Plants Sent on Receipt of Rough Floor Plans

Bovee Grinder and Furnace Works

50 Eighth Street, Waterloo, Iowa



The Bessler Movable Stairway



THE BESSLER STAIRWAY IN POSITION



Panel in Ceiling—looking up

Saves space—operates automatically—can be raised or lowered as easily as opening a door.

It costs less than a Stationary Stairway.

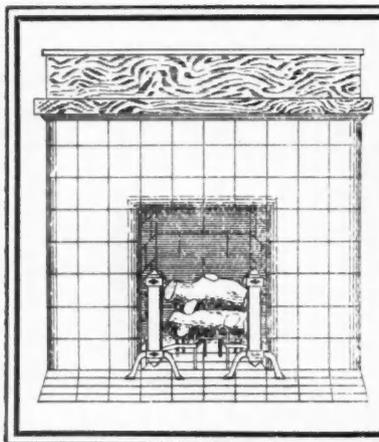
This movable stairway as the cuts illustrate, is operated through an opening in the ceiling and being counterbalanced can be raised or lowered as desired. A handsome panel on the ceiling of the room below is the only part of the stairway visible when stairway is raised.

It affords a splendid means of Ventilation.

Perhaps you would like to use that space over your shop or garage, but again you have no place for an ordinary stairway. In all these places and many others Bessler's Movable Stairway will meet your wants. Recommended by architects and builders.

Write for our descriptive circulars today.

The Bessler Movable Stairway Co.
RAVENNA, OHIO



IF You Want the Best Wood and Tile Mantels at the LOWEST PRICES

write for our 50-page illustrated catalogue, mailed free on application.

Special prices to contractors and builders.

MOORMANN & OTTEN, 611-613 Main Street CINCINNATI, OHIO



No Dust
Dirt
Smoke
Cinders

Travel Over the Road of Good Service

THE GREATEST INTERURBAN SYSTEM IN THE WORLD
THE MCKINLEY LINES
EXPRESS SERVICE AT FREIGHT RATES!

PERRY WATER SYSTEM

THE MOST SANITARY AND SATISFACTORY SYSTEM OF WATER SUPPLY. THE ONLY SYSTEM OF WATER SUPPLY THAT ELIMINATES THE STORAGE OF WATER. THE ONLY SYSTEM THAT DELIVERS WATER DIRECT AND FRESH FROM THE WELL



PERRY PNEUMATIC WATER SYSTEMS

Are Being Installed in Every State in the Union, Because—

The Perry System is the most hygienic method. It is the only fresh water system. One air outfit will supply hard and soft water. It is economical in operation. It may be operated by any power. Perry Systems are designed for large or small capacity.

Send for Booklet "Fresh From the Well"

United Pump & Power Co., 495 Old Colony Bldg., Chicago

100,000 OTTO USERS



This Fact—that there are over 100,000 Otto Gas and Gasoline Engines in successful operation today in all parts of the world, under all sorts of conditions, is conclusive proof to you that the Otto is the safest and most economical gas or gasoline engine investment that you can make today.



What is your idea of gasoline engine economy? One that is a few dollars less in first cost and burns twice as much fuel as it should, or an engine that costs a few dollars more than most and saves several times the original difference every year for a lifetime?

If it is year-in-and-year-out economy you want, combined with real dependability, there is no place you can be so sure of getting them as in the Otto Gas or Gasoline Engine. No other engine can offer you 35 years of success which are back of the Otto; nor the organization—comprised of seven factories in seven different countries throughout the world.

If you are already a gas or gasoline power user ask us about the Otto. Usually we can show enough saving to make it interesting even to present owners of other engines.

If you are *not* a gas or gasoline power user it can only be because you are not familiar with the facts, for it is the most profitable single investment Carpenters or Builders could possibly make.

Write today asking us what we can do for you, or the attached coupon mailed would serve the same purpose.

Find out right now.

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 Gentlemen.—Please fax to your ad in Amer. Carp. & Bldg. April send me catalog, etc. together with all (or Gasoline) Engine of H. P.
 To be used for.....
 Name.....
 Firm Name.....
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No. 8 'UNION' COMBI-NATION SAW



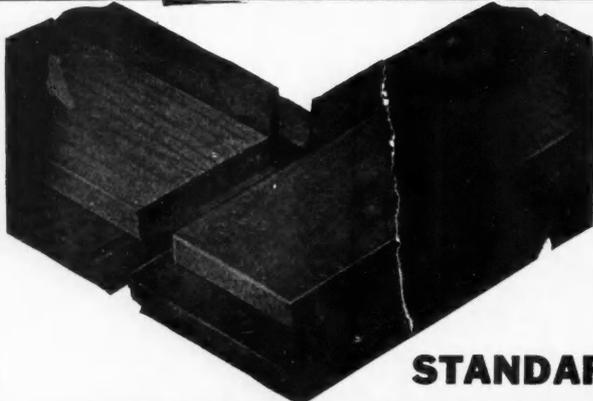
A well-built, light power machine, at a low cost, has a wide range for work, will rip stuff up to 3½ inches thick, also cut off, mitre, and with attachments, bore, edge-mould, groove, dado, etc.

The No. 8 Union Saw may be easily connected to electric motor or gasoline engine and complete outfit mounted on skids to move from one job to another.

Send for Catalog A

describing our complete line of Foot, Hand and Light Power Wood-working Machinery.

The
Seneca Falls Mfg. Co.
 218 Water Street
 Seneca Falls, N. Y. U. S. A.



'SEE THAT CORNER'—Notice that rails lap over stiles, which prevents the splitting of plowed edges, so common with most screens, but not with ours. They cost no more than the inferior.

Your local mill cannot compete with us. We are SPECIALISTS of WINDOW and DOOR SCREENS and run our factory all the year around. Get your screens direct.

Fly Screens and Screen Doors

for residences, apartment houses, hotels, clubs, hospitals, schools, and all places requiring ventilation.

Made to Order Neatly and Promptly

From a single screen or door to a thousand. We use the best grades of wire, black enamel, galvanized and copper bronze, etc., fastened by the most improved **Standard Shoulder Strip Method**, can never sag nor pull away, which makes the wire taut and firm.

MR. CARPENTER, BUILDER or CONTRACTOR, write for FREE copy of our 1910 illustrated catalogue.

STANDARD SCREEN CO. 1848-1850 W. 14th St. CHICAGO, ILLINOIS

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

Makers of

Fine Hand Made Hand Saws

The Purest of Quality Our "GREYHOUND" Hand Saw



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

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

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

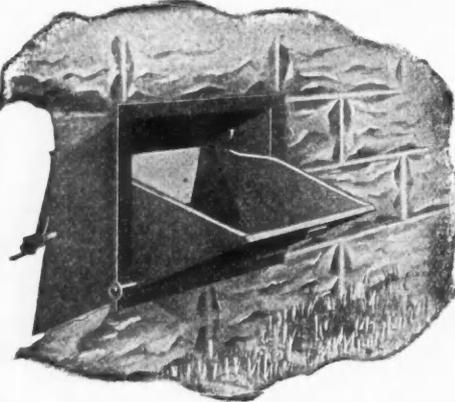
In workmanship this saw possesses all the skilled mechanical features known to the art of saw making. The hang of the blade has been carefully studied and adjusted, to suit the fancy of the most critical.

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



Roenius Wood and Coal Chutes

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



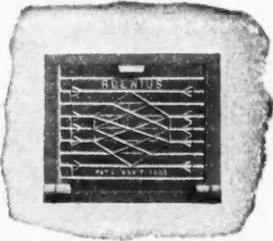
Roenius Chutes are equally desirable for houses of low or high cost.

Nearly 20,000 in Use

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

Write for Catalog

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



A Problem and Its Solution

When you are in the market for a floor scraper, and you look through the ads of the different machines and find that all claim to have the best

WHAT'S THE ANSWER?

In hopes of solving the problem, you may write for further information and receive prices and circulars, together with more claims. After wading through all this matter, you will find that you are scarcely any nearer to a solution than before.

No one, of course, will admit that theirs is not the best, even if it can be manufactured and sold for 30 cents.

Price, therefore, being about the only point of difference, it would seem that you may as well buy the cheapest—while the claims of one appear to be as good as that of another.

There's where you are most apt to make a mistake. Judge not by the price alone, nor by the manufacturers claim, but judge by the machine itself.

To those who believe that there is economy in buying the best, and who are in the market for a Floor Scraper, we will send our machine on a week's free trial.

There is satisfaction in **knowing** you have the best. You can satisfy yourself positively on this point by **trying** different makes. Take any one of the old style Dead Weight Machines (there's practically no difference between them except in the name or some auxiliary sharpening contraptions) and try it out, together with the new Triple "A" **Spring Driven**, and you will get a fair comparison on the two classes of floor scrapers on the market today.

After you have made such a test, the problem is

simple enough. You will be just as enthusiastic about the Triple "A" as any one of the following writers, who are now satisfied owners.

Hamilton, Montana.
Triple "A" Machine Co., Chicago, Illinois.
Gentlemen:—We have delayed answering your letter of recent date regarding the Triple "A" Floor Smoother that we purchased from you, as the work for which we had intended it was not ready. Since then, however, we have had occasion to use it, and are pleased to state that it has given the fullest satisfaction and has done all you claim for it.

Yours truly,
VALLEY MERCANTILE COMPANY,
H. A. STEWART,
Manager Hardware Department.

Upland, California.

Triple "A" Machine Co., Chicago, Illinois.
Gentlemen:—Your Triple "A" Floor Smoother has made good on my trial. I gave it a hard trial and it worked all right. I am very much pleased with the machine. The first test was an oak floor that had been filled and waxed and used for two months. It

had been scraped with another machine and left full of marks and holes. I went on it with your machine and made a good job of it.

Enclosed find check in payment of same.
Yours very truly,

W. WILKINS,
Jefferson, Iowa.

Triple "A" Machine Co., Chicago, Ill.

Gentlemen:—I wish to express my appreciation for the work your machine has done. I think it is the only machine of the kind today that comes anywhere near filling the requirements of a floor surfacing machine. I can clean up a job in a very short time and do a fine job of surfacing.

I can say the Triple "A" is the only machine. It's in a class by itself. No others which I have tried comes anywhere near the Triple "A." Enclosed find draft for amount of your bill.
Yours respectfully,

P. L. SHULTZ.

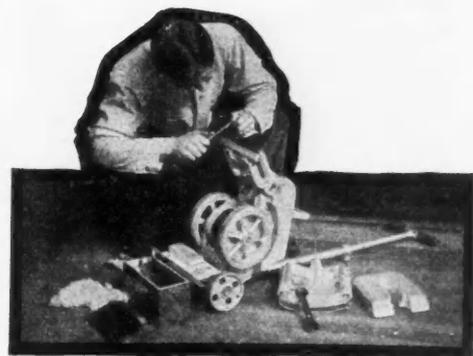
The Triple "A" Spring Driven Floor Smoother combines the advantages of the hand machine and the power machine.

No more expense in operation than the former—Yet the capacity and ease of operation of the latter.

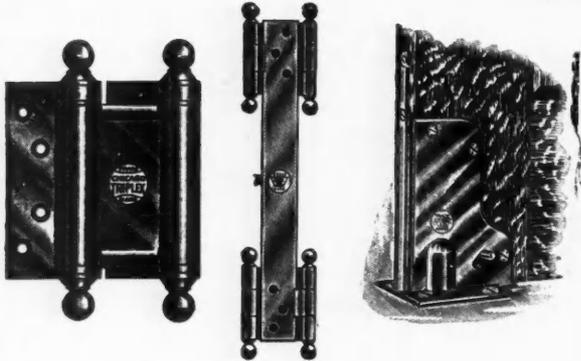
NO WASTED ENERGY—that's all.

Triple "A" Machine Co.

114 South Clark Street, CHICAGO



CHICAGO SPRING BUTTS



A PRODUCT OF RECOGNIZED SUPERIORITY

combining all the valuable features which experience has demonstrated to be desirable.

Chicago Spring Butt Company,

CHICAGO



NEW YORK

Send for Catalogue C-26.

Amatite ROOFING

Why the Buyer of Amatite Never Com lains

When a man buys ordinary ready roofing he usually neglects to paint it and after three or four years he comes back to the dealer with a protest. It is human nature to neglect painting roofs.

When a man buys Amatite Roofing he lays it on his building and in three or four years it is still as good as new and does not need any paint. He forgets he has such a roof but no harm is done by that.

There is nothing to neglect in the case of Amatite. Amatite has a peculiar surface—a sort of plastic concrete made of pitch and mineral matter.

This surface is plastic enough so that the material can be rolled up into handy

rolls in the usual manner and handled just like any other ready roofing. When unrolled on the roof and nailed down it presents to the weather a continuous surface of mineral matter and pitch. On this surface wind, rain, storm, heat and cold have little effect. Year after year it looks up to the sky undisturbed and unaffected. It costs nothing to maintain and relieves the owner from all responsibility.

Dealers can improve their business by selling Amatite and buyers make a good bargain when they buy it. The price of Amatite is less than that of most painted roofings of less weight and durability.

Sample free on request.

Address our nearest office.

BARRETT MANUFACTURING COMPANY

New York Chicago Philadelphia Boston
Cincinnati Minneapolis Cleveland St. Louis
Pittsburg New Orleans Kansas City London, Eng.
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\$1.75 will buy this ever-ready DOOR CLAMP.

No contractor or carpenter can afford to be without one.

Saves cost in time and labor on one job. Holds doors firmly on edge while locks and hinges and other attachments are being fitted. Adjustable to any thickness of doors or sash.

SATISFACTION GUARANTEED OR MONEY REFUNDED

This tool will please you, send us your order today.

WILLSHIRE CLAMP CO.
WILLSHIRE, OHIO

THE "SPECIAL" SAW SET

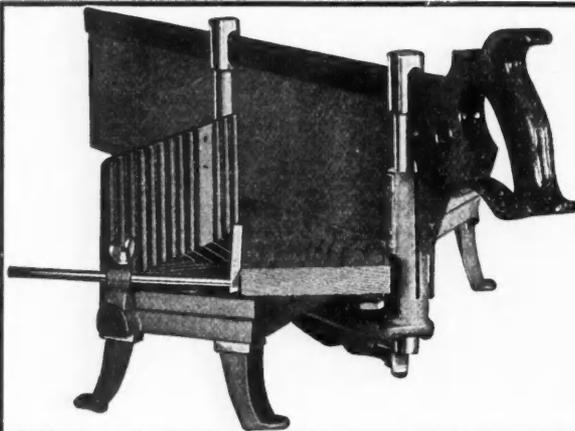


MY TRADE MARK ON ALL MY GOODS

Any person can set any hand saw with a "Special" Saw Set, and get perfect results.

THAT'S WHY WE SELL SO MANY

CHAS. MORRILL, 271 Broadway, New York



MARSH-AYER BOXES cost more to manufacture than any other; but they cost you no more. We are satisfied with a small profit, and you get more for your money.

Saw and all attachments are included.

Size	Saw	Capacity at Miter	Price
A26	26x4	7 inches	12.50
B28	28x5	7 inches	13.75
B30	30x5	7 inches	14.00
C30	30x6	7 inches	15.50

Illustrated circular on request.

H. C. MARSH COMPANY

606 Race Street

Rockford, Illinois

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American Carpenter and Builder

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Furnished on application. The value of the AMERICAN CARPENTER AND BUILDER as an advertising medium is unquestioned. The character of the advertisements now in its columns, and the number of them, tell the whole story. Circulation considered, it is the cheapest trade journal in the United States to advertise in. Advertisements, to insure insertion in the issue of any month, should reach this office not later than the 20th of the month preceding.

THE industrious man is the motive power of his own success.

THE secret of success lies in the man and not in the stuff he works on.

TOOLS aren't human. They won't be found in the right place unless they're placed there.

THERE are two most valuable possessions which no search warrant can get at, which no execution can take away, and which no reverse of fortune can destroy; they are what a man puts into his brain—knowledge; and into his hand—skill.

WORK is the prayer that is answered.

The Man Who Wins

THE man who wins is the man who does,
The man who makes things hum and buzz,
The man who works and the man who acts,
Who builds on a basis of solid facts;
Who doesn't sit down to mope and dream,
But humps ahead with the force of steam;
Who hasn't the time to fuss and fret,
But gets there every time—you bet!

The man who wins is the man who wears
A smile to cover his burden of cares;
Who knows that the sun will shine again,
That the clouds will pass and we need the rain;
Who buckles down to a pile of work,
And never gives up and never will shirk
Till the task is done and the toil made sweet,
While the temples throb with the red blood's heat.

The man who loses is he who moans
That the way is rough and he dreads the stones;
Who is looking for something soft to do,
Where the pay is big and the hours are few;
Who dreams of this and dreams of that,
But never sails in and throws off his hat;
Who fears the feel of a drop of sweat,
And never gets anywhere—you bet!

The man who wins is the man who climbs
The ladder of life to the cheery chimes
Of the bells of labor, the bells of toil,
And isn't afraid that his skin will spoil
If he faces the shine of the glaring sun
And works in the light till his task is done—
A human engine with triple beam
And a hundred and fifty pounds of steam.

—Brush and Pail.

Old Wood Stronger Than New

ALMOST anyone would say, at first thought, that new wood is always stronger than old. It has been found, however, in a series of tests made by C.

P. Buchanan and reported by him in the *Engineering News*, that sound timber a quarter of a century old is materially stronger than new stock. This applies only to white pine, since that was the wood on which Mr. Buchanan made his experiments, but the editor of the paper just named, in commenting on the results, says that there is no reason to suppose that oak, hard pine, or any other wood commonly used in building

would behave differently. It is fair to conclude, he goes on to say, that all wood maintains its strength, except as decay weakens it or fire and mechanical abrasion destroy it.

It may be said that engineers are already using wood for permanent service where it is kept under water. Its permanent reliability under such conditions is literally a foundation fact in engineering. For use in

superstructures, however, engineers are prone to look upon wood as a perishable and temporary material.

Admittedly, wood above water is subject to destruction by fire and decay, but if these two enemies are kept away it is difficult to set a limit to the useful life of wood. Mr. Buchanan's tests were of wood only twenty-five years old, but there are plenty of wooden truss bridges all through the East whose structures have been protected from the weather and which have been carrying traffic for 50 to 100 years. The bridge over the Hudson at Waterford, N. Y., which burned down last year, will be recalled; that structure was in service about 105 years. Many European travelers will recall noted wooden bridges and other wooden structures abroad of much greater age. In fact, were it not for the increasing cost and scarcity of good timber, there is reason to believe that many county highway bridges of moderate span and light loads would be actually more permanent structures, having longer life and involving smaller cost for maintenance during their life, if built of wood than if built of steel.

Although wood is the oldest historically of our constructive materials, yet the question of change of strength with age has never before been studied.

OUR SIXTH ANNIVERSARY

ON the occasion of this, our Sixth Anniversary, I want personally to thank all the members of the "Big Family" for their continued loyalty, friendship and unwavering support.

There are a great number who have been with us from the very start, the staunch old Charter subscribers. To these I want to say especially—I appreciate your steadfastness; I count it the sincerest compliment on the work we have been doing for you, as well as the surest sign that—on long and close inspection—you have found that work good, that you are still with us, renewing your own subscriptions year after year, and telling others, also, about the Good Things you find in the AMERICAN CARPENTER AND BUILDER, and so getting them to subscribe too.

Yet no less do I value the friendship, assistance and co-operation of the new comers. You have given us many good suggestions and practical ideas. You have "loaned us your plumb lines" on many occasions; and we have spared neither money, time nor effort to build solidly and well—making the structure just exactly *what you want*.

And for the seventh year, just commencing, our aim is to serve you better. A more interesting, more practical, more helpful, bigger and better AMERICAN CARPENTER AND BUILDER—closer to the readers—progressive—wide awake—full of life; these are some of our plans and ambitions for the future. We are by no means satisfied yet! With your cooperation and help we are just beginning!

I want you to get all the Good Things out of the AMERICAN CARPENTER AND BUILDER that are in there for you. Some are getting out only half. They read and study the articles appearing in the editorial pages—and then stop! They miss fully one-half of the Good Things we are putting into the AMERICAN CARPENTER AND BUILDER for your benefit.

As practical, progressive men—carpenters and builders, architects, building contractors—men actively engaged in building, you cannot afford to overlook our advertising pages. I wish you would *Read* them and *Study* them. You will discover that the advertisements appearing in the AMERICAN CARPENTER AND BUILDER are vitally interesting. There is money in them for you. Write for the free booklets and samples offered, and inquire into the various propositions. In these days of labor saving tools, improved methods and new materials in the building world you *must keep posted* if you are to keep up with the procession.

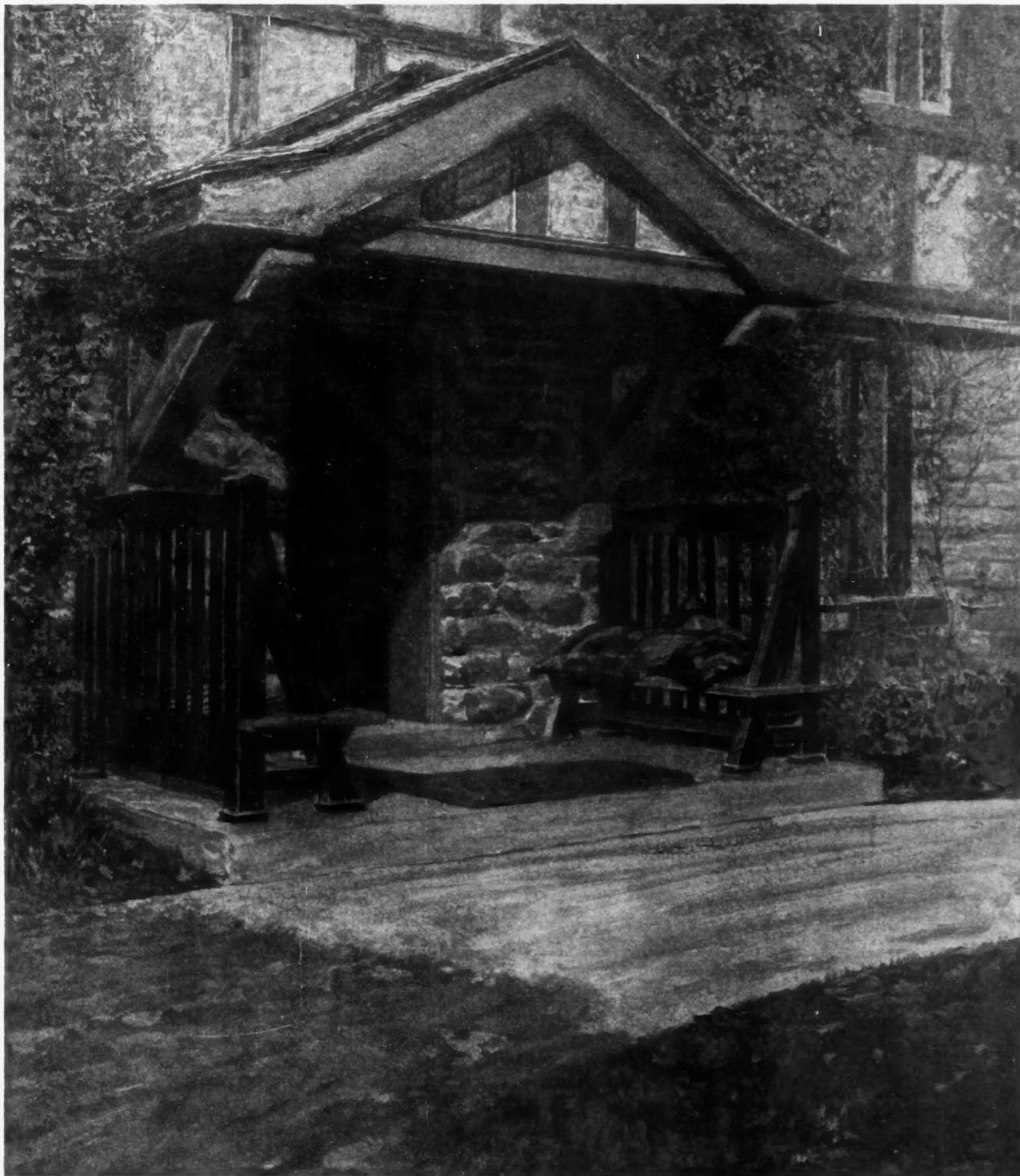
The advertisers in their limited spaces have only room to *begin* to tell you about what they have to offer. If you want to really understand their propositions (and you ought to) you have to write for full particulars. You will find our advertisers very ready to serve you, and to give you all information and help. Members of our Big Family of Readers can be certain of receiving most prompt and special attention from the AMERICAN CARPENTER AND BUILDER advertisers.

This is our Sixth Anniversary number, yet it is not a *Special Number*, except that we plan to have *every* number of the AMERICAN CARPENTER AND BUILDER a special number in that it must be just a little bit better and bigger than the one before. We know that we will have your active and hearty cooperation to this end. I thank you for your hearty support in the upbuilding of the World's Greatest Building Paper.

Most sincerely yours,



EDITOR-IN-CHIEF.



A Bit of Old English Half-Timber Work

Water Color Painting by Wilbur G. Kurtz

THE present popularity of cement plaster outside walls laid off into panels—for decorative purposes—by means of wood strips, makes interesting the early English “half-timber” work, the old original of which the present mode is an imitation.

In outward appearance the two resemble one another, often very closely; in reality they are entirely different. In the old work, the wood exposed to view is the outer edges of solid oak timbers, thoroughly

framed and mortised together,—a complete outside skeleton of the building having been first erected with the heavy timbers, and the panel spaces between them being then filled in solid with lime mortar.

With the modern stucco house, on the contrary, the “timbers” are just thin pine boards—nailed on after the first cement plaster coat is applied, and serving no real purpose except decoration and (to some extent) preventing plaster cracks.

A Plea for the Big Trees of California

By Ira]S. Griffith

MUCH has been written, much will be written and much deserves to be written of the Big Trees of California. They are one of the wonders of the world. Americans are so prone to magnify the wonders of the Old World that they frequently fail to consider justly the wonders of America. In view of this and the heated argument for and against conservation of our natural resources, of which our forests form no small part, a short article on our Big Trees seems appropriate.

Scientists tell us that evidences found in the earth prove conclusively that thousands of years ago old mother earth as we know it now in our temperate

Surviving this great epoch in natural history we have two species of trees, both of them included in the popular name, the Big Trees of California. Comparisons of fossil remains of trees of the pre-glacial period with the Big Trees prove this. An age of most marvelous things, both in plants and animals, was this pre-glacial age and these two species are all that remain!

Rings of growth, as every woodworker knows, tell the age of the tree. By them we know that these trees themselves are of very, very great age. For every year of growth a new ring is added, composed of a light open growth in the spring and a close hard



A Fallen Giant, Mariposa Grove, California

zone was covered by a great drift of ice from the north which destroyed animal and vegetable life as it then existed. This great ice drift changed the very face of the earth, depositing land where it was not and removing it where it was; making magnificent deposits of one kind of soil in one place and of another in another.

Before this drift there was most luxurious vegetation, great trees and mammoth animals as far north even as Greenland, Iceland and Alaska. This is evidenced by our coal fields, and fossils of animal remains.

growth in the summer. From these rings it is estimated that these trees range all the way from 2000 to 4000 years of age.

You may wonder how the rings can be counted when the tree is still standing. They can't. However, it is an easy matter to count the rings of a fallen giant, and that is what is done, and determining the number of rings per inch compute the age of any standing tree, knowing its diameter. This growth has been found to be about one inch for each twelve years.

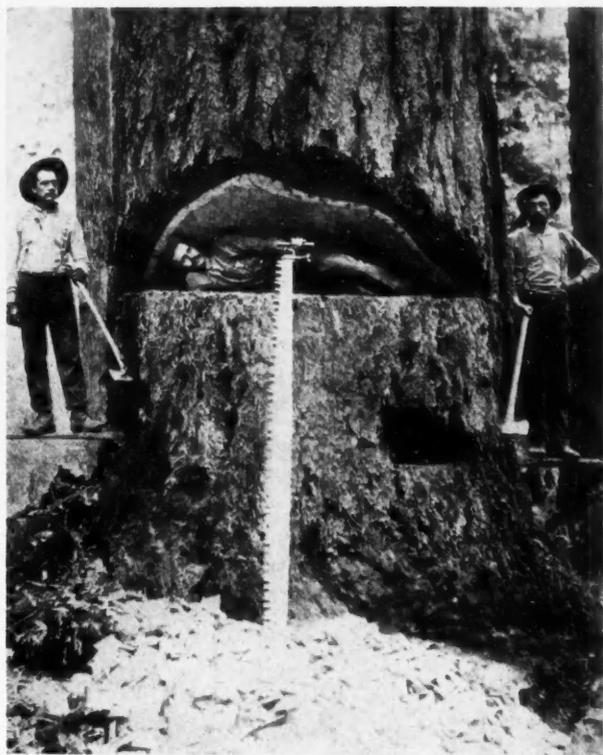
Cold figures do not mean much to most people. Let

us consider by comparison what these ages mean. We think of the discovery of America as being in the long ago. When Columbus made his eventful voyage some 400 years ago these very trees of California, many of them, were celebrating their 2500 birthday. It is quite possible that they were here even before the red man is supposed to have come across the straits to the northwest. Again, we think it so long ago since Christ walked upon earth—about 2,000 years ago—that we sometimes fail to consider it a matter of history. When Christ was on earth some of these magnificent trees had already lived 2,000 years, as long before His coming as it has been since.

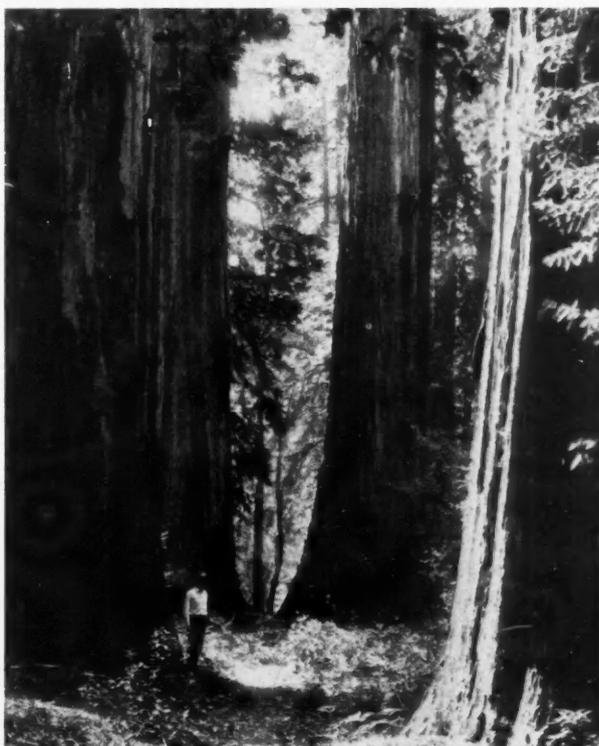
Americans have never been accused of being foolishly sentimental, yet what man, woman or child is there who could stand in the presence of these aged giants of the forest and, knowing their history and how long they have stood while the world was making history, not feel a sense of awe and reverence?

Aside from the fact that these trees are the only remaining species of that wonderful pre-glacial period of our natural history, thousands and thousands of years ago, and the fact that the trees themselves have withstood the ravages of time and made growth for years beyond our comprehension, their magnificent size and appearance alone ought to offer sufficient argument for their preservation.

Think of a tree 360 feet high! This is the height of one, Starr King. Another tree, Grizzly Giant, has a circumference at its base of 93 feet 7 inches. Divide this by 3.1416 and we get the diameter, about



Felling a Small One at Sedro Woolley, Wash.



Four Big Red Woods at Basin, Santa Cruz Co., Calif.

31 feet. The first branch of this tree is 200 feet above the ground, and is 8 feet in diameter.

Again I fear figures do not mean much. Stop for a moment and consider. Just try taking your measuring stick and laying off in your shop 31 feet, the thickness of this tree at its base. It very nearly necessitates some of you getting out of doors, doesn't it? Now just lay off a circle with this diameter, 31 feet, and take a walk around its circumference of 93 feet 7 inches. You begin to get some idea of what magnificent objects these trees are.

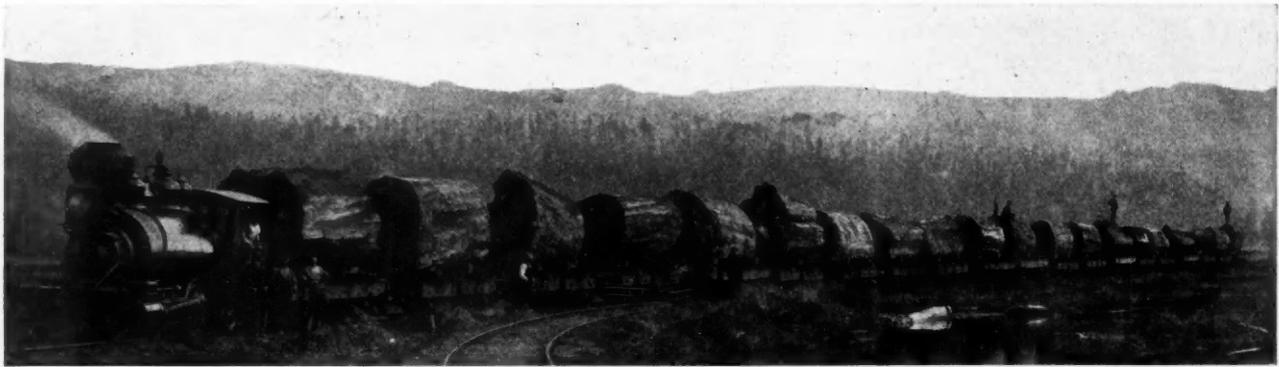
As to the height, the only fair comparison is made by placing, in your mind, one of these trees alongside a tower or building of which you know the height. Take the highest building or steeple in your town and draft it to a scale alongside a 360-foot tree, then you will get an idea of what superb things these trees are.

Imagine being called upon to place a swing on the lower limb of a tree where the lowest was 200 feet above the earth and 8 feet in diameter. You would need the equivalent of some seven or eight double extension ladders! Some of these trees, due to split formations at the roots, are even much larger and permit teams and covered carriages to pass through them easily.

It may interest some of the younger men of the craft to know how these heights are determined. An engineer with a knowledge of that branch of mathematics called trigonometry usually determines these heights. By means of a steel measuring tape and an instrument called a transit he makes an observation. This gives him data which he substitutes in trigonomet-

ric formulae. By means of tables these formulae give him the result wanted, in this case the height of the tree. An observer who has had proportion in arithmetic can make rough estimates in this way: Take a position where your shadow falls on ground sloping as does that where the trees shadow falls. Determine the length of your own shadow and also the length of that of the tree. You know now three quantities to your

Even if the Big Trees were extremely reproductive they could never hold their own against American lumbering interests. Our northern woods are stumpage. We must have lumber. Even now we are cutting the stumpage for lath lumber. Isn't it about time we were beginning to demand that, as a people, we maintain a rational system of forestry that will provide for the adequate reproduction of cut areas



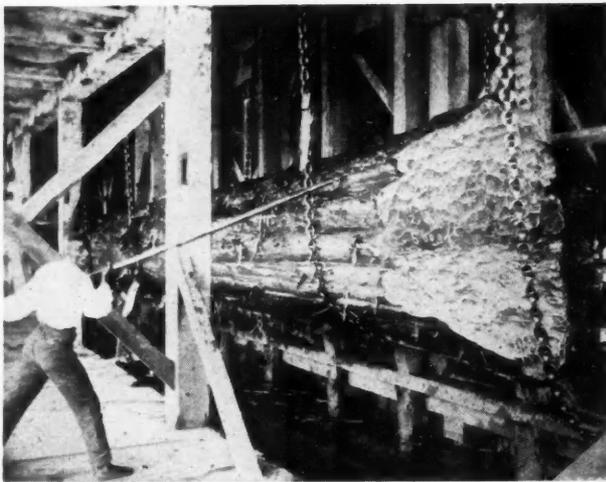
Redwood Logs on Way from Forest to Mill—Humbolt Co., Calif.

proportion, you know your own height of course. Your shadow: Your height:: Tree's shadow: The tree's height. Multiply the figures representing your height and the tree's shadow and divide by that of the tree's shadow and you have the tree's height.

As was said, only these two species of the forests of the pre-glacial period remain. Not only do they not exist in any other part of the world but they exist here only in most favorable localities. What is more, the southern groups alone are making any headway toward reproduction, and that is so slight that should

which will provide lumber for our children and our children's children and take from them the desire to call malediction upon our heads for our present shortsighted and selfish policy in regard to our timber resources?

By all means let us preserve these Big Trees. The lumbering of them is a positive crime from the economic standpoint as well as the sentimental. The waste that follows their felling would never be tolerated in any line of work where the resources of nature had to be considered. Their great height through which they have to fall and their great weight shivers the limbs and upper trunk into thousands of tons of waste wood. The great cost of cutting up the trunk into workable sizes makes it cheaper to use powder, with still greater waste. Often full one-half of the available standing wood is wasted. Not infrequently an owner finds himself poorer by the transaction than when he started. Of course American genius with experience will be enabled to devise means to avoid some of this waste. However, this country soon must begin to figure its lumber cost upon the cost of reproduction instead of simply destruction of our trees, and in the light of this economic principle the Big Trees could never be considered possibilities for lumbering. Before it is too late let us demand that not a one of these trees ever be cut down.



"Jack Johnson" in Training—Getting Redwood Logs into the Mill

the older timber's protection be removed by lumbering, they would never be able to hold their own. The northern groups are making no headway at all toward reproducing their kind. There are not over 500 trees that are remarkable for their size and many of these are in regions owned by private parties who bought them for lumbering purposes.

First Choice

Mr. Jawback—My dear, I was one of the first to leave.

Mrs. Jawback—Oh, you always say that.

Mr. Jawback—I can prove it this time. Look out in the hall and see the beautiful umbrella I brought home.—*Toledo Blade*.

Tree Surgery, Using Concrete

TREE surgery not only consists in cutting away all the decaying and dead matter of the tree, but embraces also the pruning and chaining of limbs, scraping and filling of cavities. Through the skilled methods used by the tree surgeon it is possible to give a new lease of life to trees which apparently have reached their limit of existence. The cavities are caused by poor pruning of limbs, the breaking off of branches and other injuries. While the treatment of the cavities varies more or less in different cases, if the specifications given below are followed closely a good job should result.

The tree grows in girth by the deposit of a thin layer of new wood between the wood and the bark. It is this new layer and others recently formed which are known as the sapwood and form the active section of the trunk and branches. The inner rings are gradually covered by the yearly deposit of this new growth, and in turn the living sapwood becomes heartwood, which is dead, and serves merely as a strong framework for the living parts of the tree. This is the reason why hollow trees may often be found in

prevent any cracks between the cement and the wood.

The cavity, if it is a large one, may be reinforced, to better hold the concrete in place, with either some woven wire, mesh reinforcement or with small steel rods placed across from side to side of the cavity. Cut back the bark for about $\frac{3}{8}$ of an inch or so around the entire wound in order to prevent bruising it while the work is in progress, and in order to get the cement perfectly flush with the wood, which cannot be done when the bark is not cut away.

For a large cavity some kind of a form must be used to prevent the concrete from caving out when it is being placed. For this boards may be fitted to the opening, leaving space at the top to pour in the concrete; or metal, like zinc or tin, may be thoroughly greased and tacked on. When it is ready mix up a batch of concrete composed of one part Portland cement, two parts of sand and four parts of screened gravel or stone made up to a rather stiff consistency, about like jelly.

If the opening to the cavity is small, so that no form is required, trowel the surface of the concrete



The Wound



Healed with Concrete



Cleaned out Carefully, and Reinforcing
Rods in Place

a flourishing condition when the heartwood has entirely disappeared.

The method of filling the cavity with concrete is as follows: Cut out all the deceased and decaying part of the tree without regard to the size of the wound which is made. This must be cleaned out with the same thoroughness which a dentist uses when cleaning the cavity of a tooth for a filling. If all of the decayed matter is not removed the decay will continue as if the filling had not been placed. Disinfect the freshly cut surfaces with a coat of creosote or crude petroleum oil. Heat some coal tar and apply a thick coat to the disinfected surfaces. This coat of tar applied thick serves as a plastic substance to

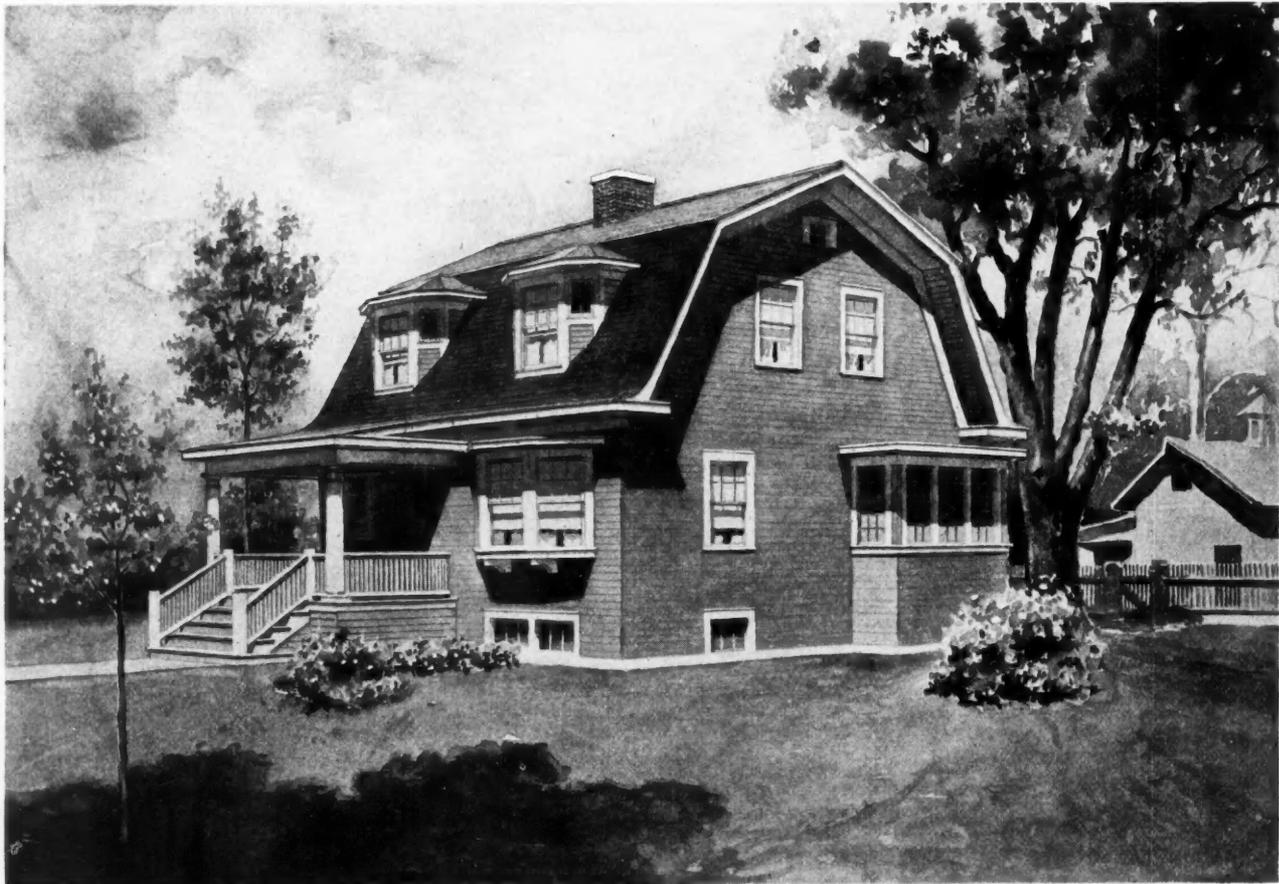
lightly so as to leave it smooth. If the concrete is too soft to make a good vertical surface or if the upper part of the cavity is not entirely filled, wait for two or three hours until the concrete has begun to stiffen, ram it in again to completely fill the hole and then trowel the surface, adding a little stiff concrete if necessary.

If the forms are used, remove them as soon as possible, either in a few hours or else the next day, and go over the surface so as to slightly roughen it and remove the form marks.

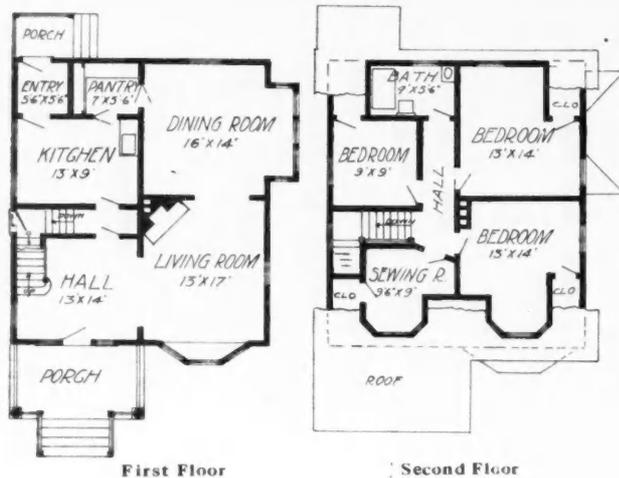
The bark on a tree treated in this way will in time, grow over the concrete and in some cases not even leave a scar.

IDEAS FOR HOME BUILDERS

Three Popular House Styles



Gambrel Roof 8-Room Cottage—Artistic and Economical—Estimated Cost \$3000



THREE house designs are illustrated on this and the two pages following, embodying a number of features that will interest prospective builders. They are of three very different styles—a gambrel-roof, story-and-a-half cottage, a western bungalow and a stucco house in the latest mode.

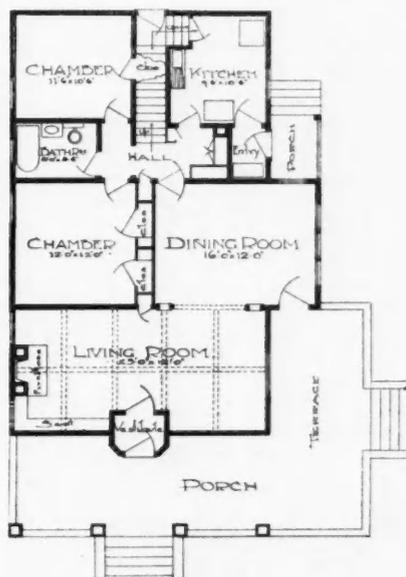
For the amount of lumber and other building material required, the square, gambrel-roof cottage probably contains more good, usable living space than any other style of dwelling one could pick out. It is a style of design that has to be carefully handled, however, if it is to "look like anything." The roof must be proportioned just right and the dormers made harmonious. The perspective, which was made especially for publication here—to illustrate this type of house—

may serve as a model. The two bay windows are also worthy of note. The floor plans show a good arrangement of rooms—a very pleasant living room and dining-room with large square reception hall. The kitchen and pantry are conveniently placed. On the second floor are four nice rooms with clothes closets and bath.

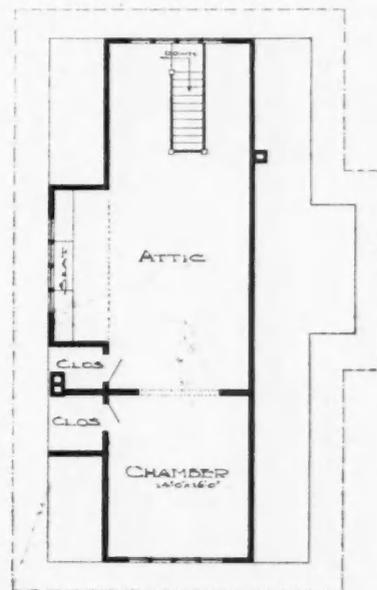
have just a simple entrance with vestibule, and if there is any outside shelter at all—more than a door-hood—it is apt to be a pergola with brick or tile floor. The porch itself is then shifted to the side or rear of the house, where—gaining more privacy—it can be used comfortably as an outdoor dining-room and liv-

A Western Bungalow

A snug little bungalow of breezy western flavor is illustrated below. The photograph shows a novel combination of materials for the exterior; rough boards, laid ten inches to the weather, extend from the brick foundation up to the window sill band; narrow beveled siding is used above this up to the plate; and the gable ends are of cement plaster divided into panels. With a finish of tobacco brown stain, trimmed with white or cream, the beauty and attractiveness of this cottage can be imagined. The floor plan sketches show some new and interesting features of interior arrangement. The living room clear across in front, the dining-room opening out of it with wide columned opening, the two bedrooms with bath well away from the rest of the house, the convenience and separation of the kitchen, are all good. There is also very desirable space upstairs "under the roof."



First Floor Plan

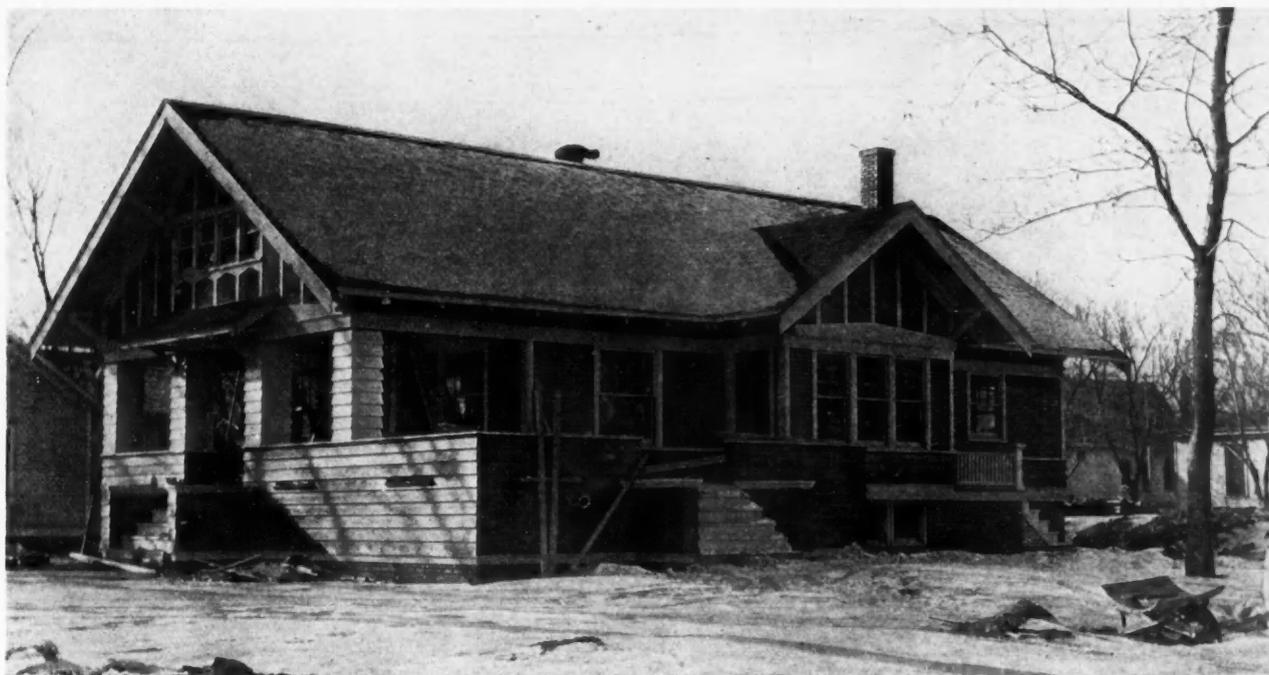


Second Floor Plan

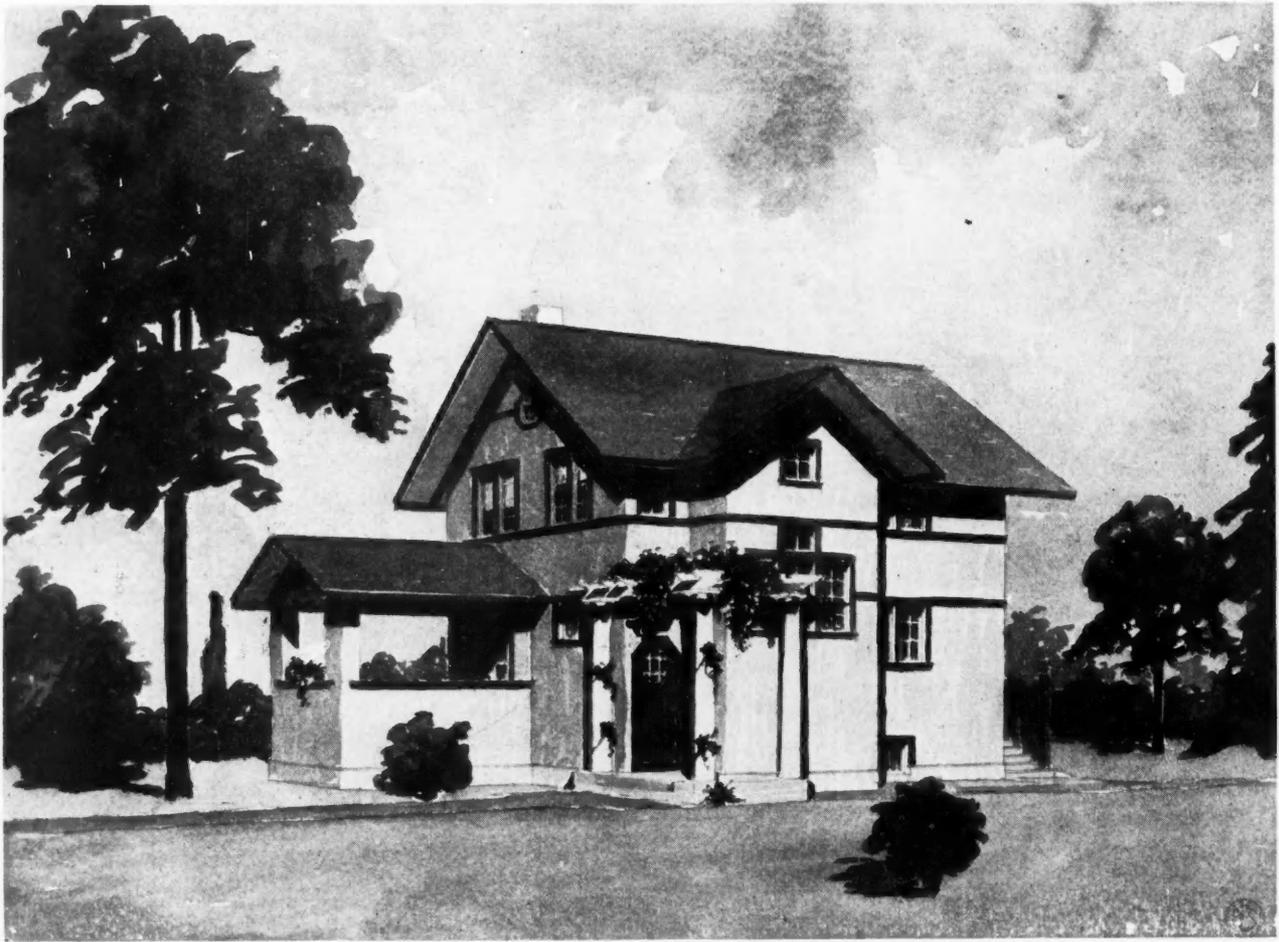
A Modern Stucco House

The tendency now in house planning is to do away with the large showy front porch and in its place to

ing room. The perspective and floor plans presented on page 40 have been especially prepared to illustrate this point. The exterior is of cement plaster. The second-story windows, set close up to the roof line and having a strongly marked continuous sill course, give the "high waist line" effect noticeable in much of the present day work.



The Bungalow Still Continues in Favor: This One by H. D. Frankfurt, Architect, Columbus, Neb., Cost, \$2000



The Pergola Entrance, Private Living Porch at One Side and the High "Waist Line" are Special Features Now Becoming Popular



First Floor Plan



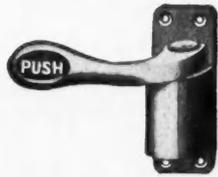
Second Floor Plan

ARCHITECT'S PERSPECTIVE AND PLANS OF A MODERN STYLE CEMENT PLASTER HOUSE TO COST \$4,000

Modern Builders Hardware

SOME NEW AND INTERESTING FEATURES IN FINISHING HARDWARE, OF VALUE AND IMPORTANCE TO ALL WHO BUILD

THE real importance of the hardware used in the finishing of modern buildings is not generally realized. In some cases, however, it is, and there more care is used in its selection, with the result that the home is beautified at but slight increase in cost. Also the occupants experience the pleasure that



Anti-Panic Fastener for Inside of Door—Always Operative Even When Door is Locked from Outside.

comes with the use of hardware trimmings that are appropriate and that harmonize with the other fittings of the building.

Wear and tear should be considered in buying hardware for any kind of a building. Durable locks and trimmings that will stand all kinds of usage are selected by careful people. The better the building the better the trimmings, but that does not mean that structures of moderate cost cannot be handsomely trimmed.

Builders, particularly, could profit by investigating and using better grades of hardware. Hardware that is particularly designed for the place should be used, instead of making something else do. For front doors, cylinder locks are now used; these provide the greatest security and enable the owner to carry a smaller key; the difference in cost over the old style lock is slight. For outside doors the wise builder will use bronze hardware. This does not rust and always presents a good appearance. If the cost of cast bronze is prohibitive, there are good designs in wrought bronze sold at a lower price. In bath rooms and kitchens, on account of steam and dampness, bronze hardware finished in nickel plate should be used in place of steel or iron.

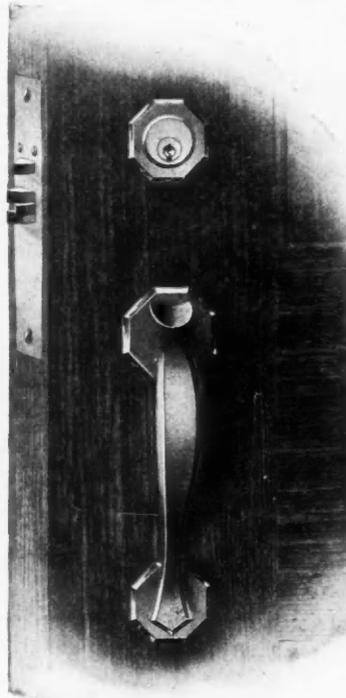


Knob and Escutcheon for Use with Cylinder Front Door Locks.

The manufacturers of builders' hardware have naturally given the subject much attention and study and have perfected many devices in this line that builders can use to advantage. For instance, there is made a special lock for bath rooms, without a key, an obvious improvement. For school houses a special lock is made that is always operative from the inside even when locked from the outside; in case of fire and panic it is always possible to open the doors from the inside.

lock is made that is always operative from the inside even when locked from the outside; in case of fire and panic it is always possible to open the doors from the inside.

The "Unit" lock, is also a modern production. Its principal characteristics are the placing of the key hole in the knob, the assembling of all parts at the factory, and the consequent nicety of adjustment in no other case obtainable. The ease with which these locks are

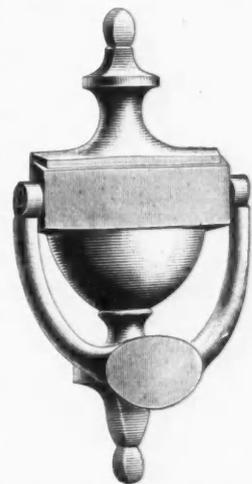


Modern Adaptations of the Old-Style Door Handles with Grips and Thumb-Pieces are Growing in Favor for Use upon Entrance Doors.

applied, and their security and strength are their credentials. An interesting point about them is that this is the only type of lock which was produced complete, without any long process of evolution and which at once came into general favor.

Floor hinges and floor checks are also of recent invention and their advantages are: first, the doing away with any protruding parts; and second, the adaptability for use where an overhead check could not be applied. These are rapidly coming into favor.

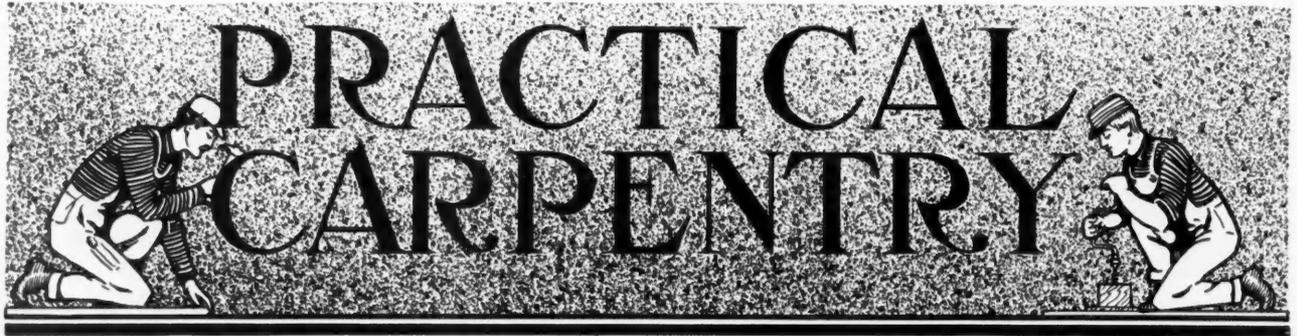
New features in builders' hardware are always of interest. The old-fashioned door knocker is now being extensively used again; some of the knockers are made to be used with electrical attachment and others are used for appearances only, in addition to the electric bell. For front doors, especially for the Colonial style of houses, handles are now being quite generally used again, in place of the regulation door knobs.



Colonial Door Knockers Have "Come Back."

There are three general characteristics that stand out prominently in connection with modern builders' hardware.

These are: first, the development of design—it is only of recent years that builders' hardware manufacturers of knobs and escutcheons, have made their goods conform in style to the various schools of design; second, the rapid development of wrought goods, which in many lines are superseding the old cast patterns; and third, the evolution of master key systems, and their adaptation to residences.



Timber Forms, Caissons and Piling

IMPORTANT CARPENTRY CONSTRUCTION IN CONNECTION WITH FOOTINGS AND FOUNDATION WORK

By Owen B. Maginnis

IN the placing and setting of footings, and the building of stone and brick foundation walls, especially those which must be carried down to extreme depths below the curb or surface levels, much temporary timber-framed carpentry is required. So it is the purpose of this article to explain and illustrate

of safety, always relying, of course, on the best judgment to provide for different contingencies which are likely to arise.

Commencing with the simplest form of this work, let the readers notice the sketch Fig. 1, which illustrates the method of forming a guide or boxing of boards or

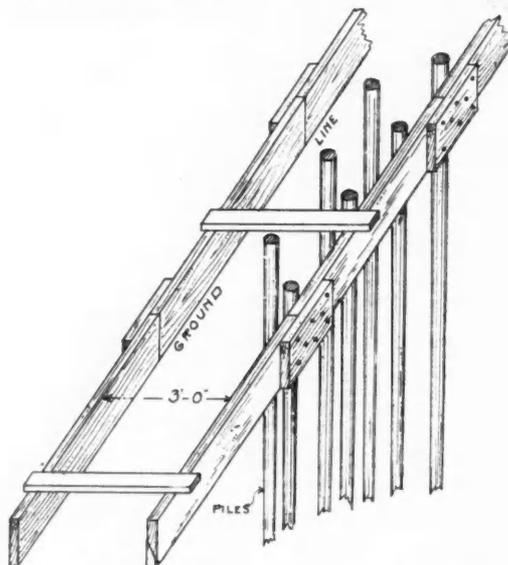


Fig. 1. Forms for Concrete Footings, Either Directly on the Earth or On Top of Piles.

some of the best methods employed in this work at the present time.

Much, of course, depends upon the depth and nature of the materials to be excavated; yet the methods are general and can be followed with a fair degree

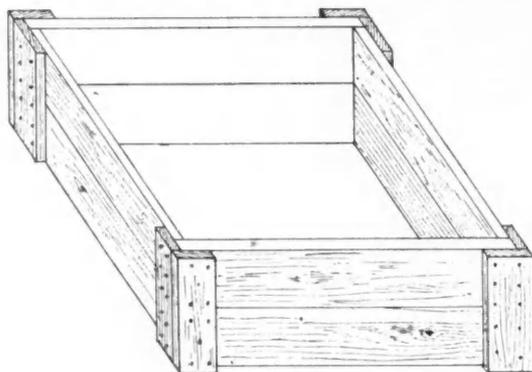
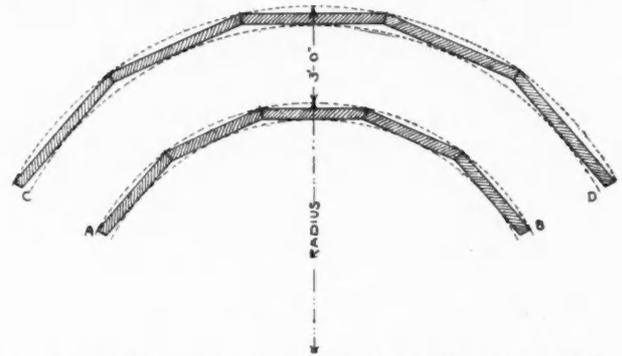


Fig. 2. Form for Square Concrete Footing.



No. 3. Plank Forms for Concrete Footing Under Circular Wall.

planks, for shaping and retaining concrete footings, either when placed directly on the earth or on top of piles. The width of this footing will be 36 inches and its depth 12 inches, intended for a 24-inch stone foundation wall. In this construction (usually done by a skilled laborer) the planks are placed end to end, battened and leveled. This

is perhaps the most primitive form of falsework known to builders yet is none the less essential. When the footing is deeper, two or more planks are battened together after the manner of Fig. 2, which represents a boxing, or form-mold for the concrete footing of a pier, or a footing under an iron or steel shoe, supporting a line of columns above. The forms are kept level and square by nailing braces or strips across the top edges, the same as shown in Fig. 1. The forms must be well

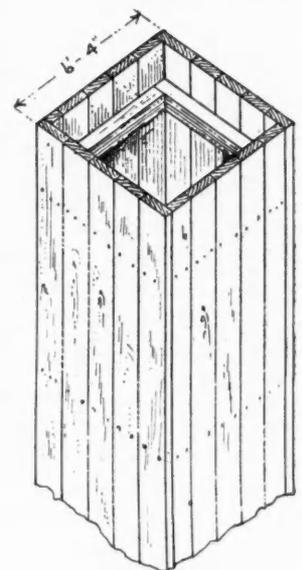


Fig. 4. Square Caisson.

nailed on all corners, and, if over 5 feet in length, have intermediate battens placed in the middle of the length or width. These forms take many shapes according to the requirements of the foundation plans and may be triangular, oblong, rhomboidal, or polygonal. But whatsoever the shape this simple construction can be adhered to and carried out.

For curved forms where steel plates or flexible timbers are not available, the method illustrated in Fig. 3 will be found economical. Here we see the plan of a corner footing on a segmental curve.

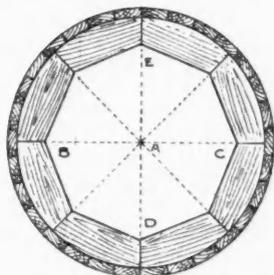
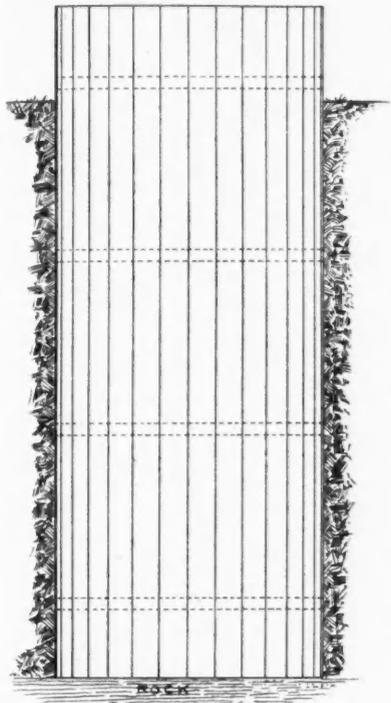


Fig. 5—Circular Caisson

of timber of various horizontal sections ranging from square, as at Fig. 4, all through the geometrical figures to circular, Fig. 5. The carpentry of the square form is not difficult, but must be exact—not only as to measurements, but also as to the dimensions of the timbers, which must be of sufficient strength to resist the lateral pressure of the earth into which the caisson is inserted.

As the digging proceeds, the caisson sinks with its own weight; but it should be the duty of the foreman to make sure that it is in its proper position, according to the foundation plan, and to maintain it plumb as it goes down. In this connection, I would recommend the placing of two diagonal strips, or laths, from corner to corner of the square caissons to obtain

a corner footing on a segmental curve. The form is made by using straight planks, the outer set of which have their faces C-D tangential to the curve and parallel to the inner forms, A-B. The ends are battened together as before; but those on the outer ring must be cut out with the saw and axe to fit over the angle strips, and the braces must be nailed across the top edges to preserve the inner and outer planks parallel and the leveling and setting must be carefully and exactly done.

For footings of more than 4 feet in depth caissons become necessary. These useful auxiliaries are built

the center of the square; this will be at the intersection of the diagonals. By placing this under the point of a plumb-bob hung from a longitudinal or transverse cord line, the exact position of the caisson may be

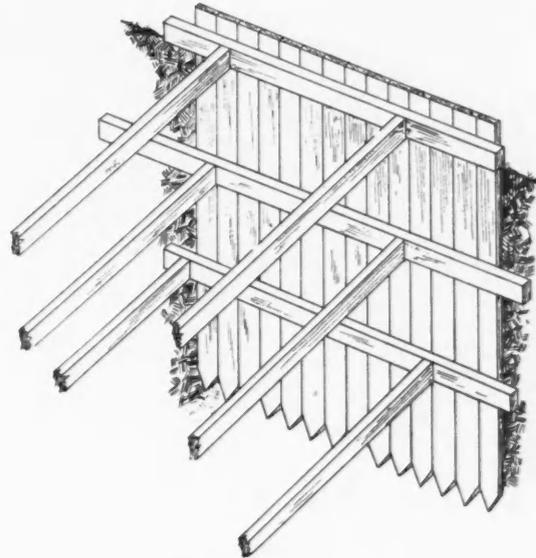


Fig. 6—Sheath Piling

located. If there be a series, as there generally is in modern buildings, all can be accurately placed according to the measurements on the foundation plan.

For a 4 by 4 foot caisson, 4 by 4 inch frames will be sufficient spaced about 4 feet in height with 2-inch planking; for a 6 by 6 foot caisson, 6 by 6 inch timbers; for an 8 by 8 foot caisson, 8 by 8 inch timbers. The thickness must be increased as the superficial area of the caisson increases.

Now as to cylindrical caissons, they are employed in very deep excavations because of their great strength and ability to resist extreme lateral pressure. Observe Fig. 5, shown in plan and elevation. This example shows the usual method of construction which is as follows:

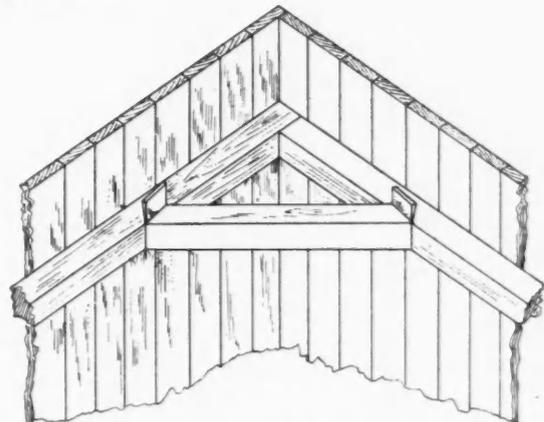


Fig. 7—Method of Bracing Corners

On a clean board, or floor, fix the center A and draw the two diameters B-A-C and E-A-D. With A as center, describe with a 3-foot radius rod the circle as shown, also the thickness of the lagging, or staves,

the joints of which will all radiate from the center A. Next lay down the frames, as indicated, of 3-inch good spruce. These frames can be battened, but are best doubled, to give greater strength and rigidity. The nailing of the frames spaced about 3 feet apart in

height, must be most thorough.

Fig. 6 and 7 illustrate sheath piling and how it should be done. The last sketch shows how corners can be braced without spur shoes where sheath piling is used.

How to Set Tile for Wood Mantels

PRACTICAL, EASILY UNDERSTOOD DIRECTIONS FOR SETTING TILE, PLACING WOOD MANTELS AND ARRANGING A SUCCESSFUL FIREPLACE—AN AGGRAVATING PROBLEM SOLVED

ONE of the problems confronting the carpenter and builder in the small towns is how to set the tile which goes with every wood mantel, without calling for the expert services of the professional tile setter "from the city." Recently we have had a number of requests for practical directions for doing this work.

In order that builders in general may not be deterred, because of this difficulty, from using wood mantels, we present herewith some methods and rules for doing this work. These have been tested many times and have been found reliable. Any carpenter will readily see how this work is done; and so put himself in line for his share of the wood mantel business.

Fig. 3 shows clearly how the chimney and fireplace should be built to insure satisfaction. The chimney is seldom detailed by the architect and it is generally supposed that any good bricklayer can build a chimney correctly. This, however, is not the case; and the mantel manufacturer is, as a consequence, blamed "because his fireplace does not draw," whereas this is solely due to improper construction of the chimney and flue. For this reason we cannot urge too strongly the importance of having the flue built correctly. If the outlines shown in Fig. 3 are followed carefully the builder may rest assured that the grate will give perfect satisfaction.

The foundation for hearths should be placed upon

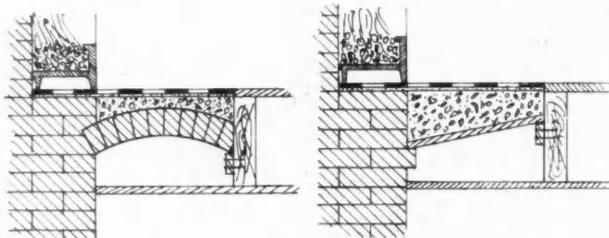


Fig. 1—With Brick Arch Fig. 2—Without Brick Arch
Sections Showing Foundation for Hearth Tiling.

a brick arch if possible, as shown in Figs. 1 and 3, to insure perfect fire protection. Above the brick arch is a layer of concrete, consisting of one part Portland cement, two parts clean sharp sand and two parts clean gravel, thoroughly mixed with sufficient water to form a hard solid mass when well beaten down into a bed, which should be from 2½ to 3 inches thick and which should extend up to within about 1 inch of the finished floor level.

If the hearth is placed upon a sub-foundation of wood, as shown in Fig. 2, the concrete should be at

least 6 inches thick and in this case may be composed as follows: one part Portland cement, one part clean sharp sand, one part clean gravel.

Before proceeding to the setting of the mantel and tile, see that the chimney is well built and sound, the arch properly turned for the hearth and the space above filled in with concrete as just mentioned.

Next lay out the hearth, getting the exact size of same. Cut out the floor to fit the hearth, but allow one-fourth of an inch for spreading.

Put all the tile to soak in clean water, letting them remain there an hour, and then lay them out to drip. Now mix up some good Portland cement mortar (one-third cement and two-thirds clean sharp sand) and put this on the concrete, leveling same by using a straight-edge, with notches cut out one-

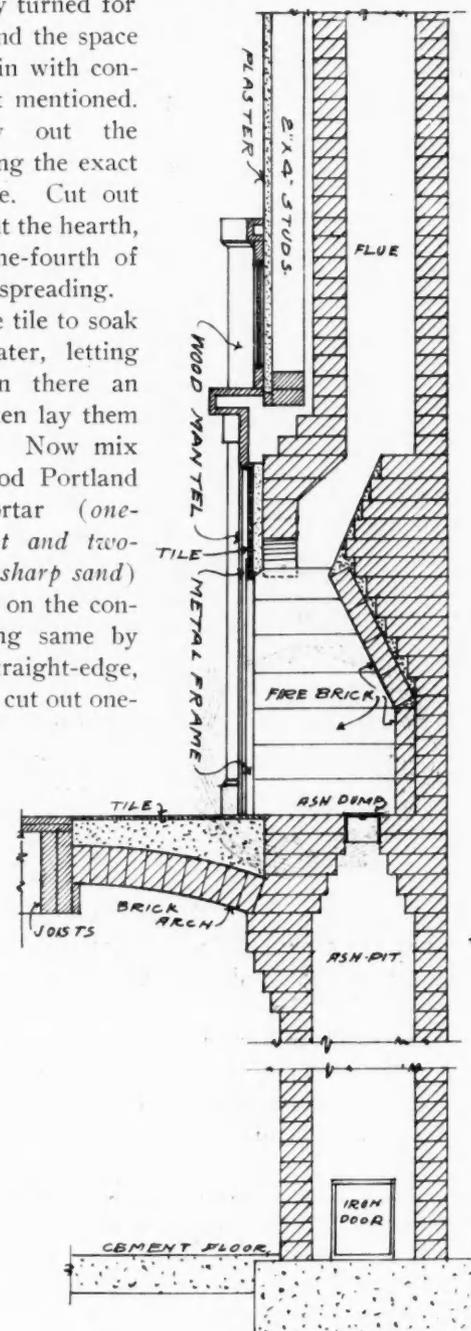


Fig. 3—Section Showing Proper Construction for Open Fireplace When Wood Mantel is Used.

fourth of an inch at each end. This straight edge should be three inches longer than the hearth. Now commence at back of hearth and draw straight edge forward or backward until cement is perfectly smooth and level. Lay in the tile, commencing at the front, taking care to follow whatever pattern is to be used. (Diagrams are furnished by the manufacturers giving the various patterns.) After the tile are all laid and fitted nicely to place, hammer them down lightly to level of floor with a small block of wood about twelve by four inches. When you have them all nicely in place, level and evenly spaced, mix up a little pure Port-



An Inexpensive Mantel—Very Popular for Small Houses.

land cement, quite thin, and wash it over the surface, working it into the joints where needed. After this has partially set, wipe the tile perfectly clean with sawdust or a damp sponge. All of the cement should be cleaned off the face of the tile, as it is very difficult to remove after it is set. Let the cement set thoroughly before proceeding.

After the hearth tiling is in place and thoroughly bedded, it is next in order to set the mantel. To do this plugs are inserted in the wall at the proper places, and the mantel is screwed fast to them. There should then be $1\frac{1}{4}$ inches of space available for the tile facing and its cement mortar base, between the brick arch of the fireplace and the wood mantel.

For putting up the tile facing the cement mortar should be *one-third Portland cement, one-third slack*



An Attractive Novelty—Top and Side Cases. These Side Cases can be Applied to any Square-Line Mantel.

lime, one-third sand. Mix together thoroughly. Place this cement mortar or plaster on the front of the brick flue-arch (first dampening the bricks) and with a straight edge one inch longer than the mantel opening smooth the cement off by drawing the straight edge upward until the surface is perfectly smooth. Now put up the tile facing, commencing at bottom and tamp each tile as you put it up. Having done this let facing set for a few hours.



Dutch Design, with Quaint Decorative Panels and Square Dutch Tiles.

It should be noted that these directions for setting hearth and tile facing apply to cases where tile has not been ordered mounted. If the hearth is ordered mounted it is only necessary to lay same down and mark around it and cut out the floor the proper size to receive it; and then see that it is evenly bedded in good cement or good rich mortar. If the facing is ordered mounted all that is necessary is to place same in proper position and then build in behind with the cement mortar.

So much attention has been paid of late years to the beautifying of homes, and so much money is now expended, compared with former years, in securing the desired effects, that a larger number of designs are now used in the manufacture of mantels than would have been thought possible ten years ago. Regular architectural designs are followed in making plans of mantels, and the styles vary greatly. The simple craftsman mantels are in great demand for the popular bungalow, which is being built in such great number at present, while mantels following classic lines, with Ionic or Doric columns, are in demand for larger residences.

[Note: We are indebted to Chas. F. Lorenzen & Co., of Chicago, for the data on which this article is based. Ed.]

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Spontaneous Combustion from Oil and Sawdust

It may be that many of the readers are already acquainted with the fact which I am about to state, writes a correspondent in *Building Age*, but I only discovered it by actual experience a short time ago, and think it may be of interest to others. It all happened through an accident, and in this way: A tin of boiled linseed oil was spilled in the paint shop. Some redwood sawdust was brought in and spread over the oil to absorb it. This sawdust saturated with the oil was then thrown outside the door of the shop on to some waste lumber that happened to be lying there. The incident occurred at noontime during the summer when the sun was shining upon the lumber.

About an hour afterwards, one of the workmen, having occasion to go to that particular locality, saw smoke rising from the lumber pile. Investigation showed that a fire was smoldering. There was, however, no harm done, but the incident evidently set the boss to thinking, for he carefully gathered up the rest of the sawdust and took it out to the middle of the yard, where he spread it upon a flat stone. In half an hour the sawdust was blazing, and yet when it was placed on the stone there was not a spark in it.

The question naturally arose, Would the timber and sawdust have caught fire if the oil had not been there? Had it not been discovered in time most likely the shop would have been destroyed, thus adding another to the list of mysterious fires.

Beauty in the Rough

The accompanying half-tone is of a residence that possesses more genuine art than is usually found in buildings of this class. The exterior is of quarry stone roughly dressed, and wood construction, the second story being shingled.

Unfortunately the floor arrangement of this house



Unique and Artistic Use of Materials

is not at hand, neither do we know to whom to give credit for the design, nor the builder for the construction.

Suffice it to say, they did their part well. The design possesses architectural merit too good to be lost to the building public.

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Cost of Granolithic Finish of Concrete Floors

The following figures of cost for the finished surface of granolithic concrete floors are average results obtained by a Boston construction company during their long experience in laying this class of floor.

For a 1-inch finished floor surface laid integral with and at the same time as the structural concrete, finishers being paid 50c and laborers 20c per hour, costs figured for 100 square feet of finished surface:

Finishers' time	\$1.00 to \$1.30
Mixing and placing concrete.....	.42
Cement, 1 ¹¹ / ₁₀₀ barrels.....	1.40 1.55 ¹ / ₂
Sand, 3 ¹ / ₂ feet at \$1.....	.12
Fine stone, 3 ¹ / ₂ feet at \$2.....	.25*

\$3.19 to \$3.64¹/₂

If laid after the structural concrete has set and not integral with it, the total cost of the floor will be about \$1.50 more per 100 square feet. If finished surface is reinforced with ¼-inch steel bars 12 inches on centers to prevent cracking, add extra labor for mixing and placing concrete 40c., and extra labor finishing 30c., or 70c. per 100 square feet, and for placing steel, 50c. per 100 pounds, with cost of steel about \$3 per 100 feet laid down.

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BE ON good terms with your fellow-workman. In many ways it pays to be friendly.



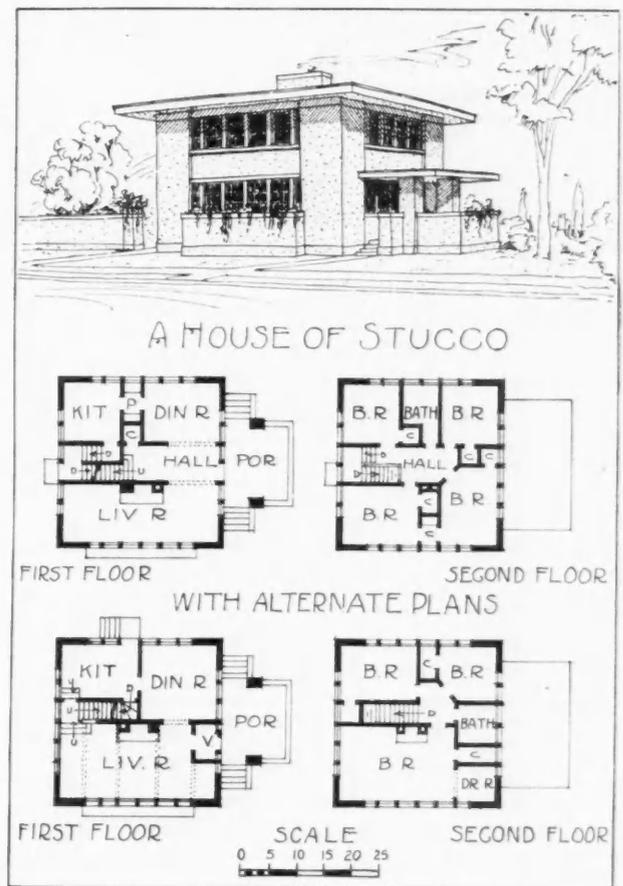
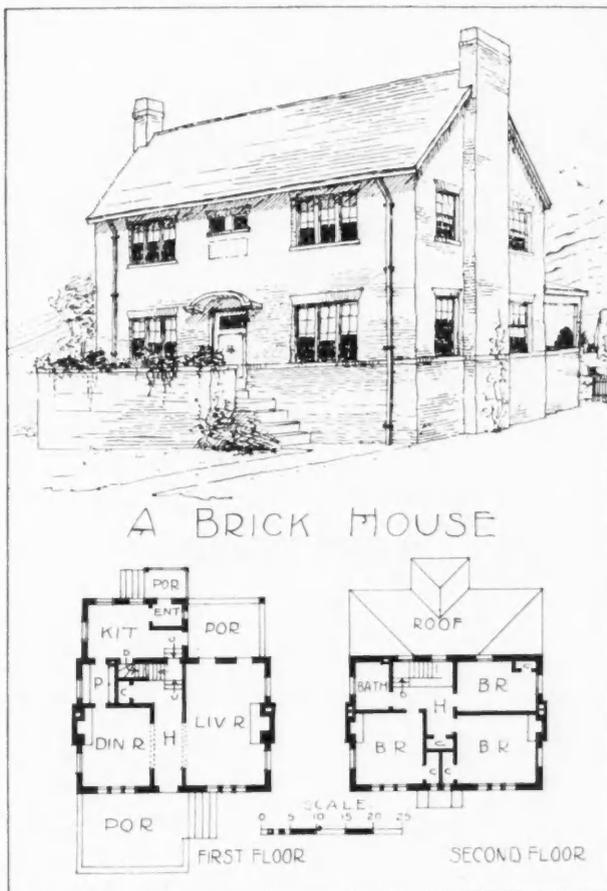
Two Interesting Designs

SKETCHES SHOWING SOME WORTH-WHILE IDEAS BOTH AS TO ARRANGEMENT AND OUTWARD DESIGN FOR TWO MODERN MEDIUM SIZE DWELLINGS

WE have entered upon a new era in American home building, an era in which the talents of the architect will play a larger part than ever before. One may have his own ideas about the plan of his house, but he makes a lasting and grievous mistake if he does not employ the skill of a good architect to develop them. An architect will not usually overlook the value of a good suggestion, but will point out any weakness there may be in one's theories, and substitute ideas which have come as a result of training and experience.

Beauty of design advances the value of a house; it has a tangible market value. Wholesome beauty does not necessarily mean grandeur, but rather

simplicity, restraint in the matter of ornament, and harmony with environment. A house possessing these qualities is shown below in the first design. The proportions of the house are good, and the form is pleasing without being complicated. The impression produced by its general appearance is that room, comfort and convenience are within its walls. It is built of brick which can be made beautiful, is permanent and is a good investment, since it requires little expenditure for its maintenance and its initial cost is little more than for one built of cheaper and poorer materials. The uncovered terrace in front with only a small hood over the entrance door is a feature worthy of notice. A living porch is situated at the rear with French



windows opening from the living room. Direct communication is also had from the kitchen to this porch. The combined front and rear stairway form a good feature of this design. The second floor contains large, well lighted bed rooms with ample closets and a convenient bath room.

The other design is a small house covered with stucco. It illustrates how much convenience can be obtained in the least possible space, the plan being a good example of how much more economical is the cube than the parallelogram or any irregular form

applied to a building. We offer this house as a model and present alternate floor plans. One of the arrangements shows a central hall into which the living rooms communicate with wide openings and with the stairway located in the hall. In the other, simply a vestibule is provided and a combined front and rear stairs is located between the kitchen and living room. This arrangement makes it possible to secure a much larger living room, although only three bed rooms are provided, while in the first arrangement there are four.

Unique Inlaid Library Table

SIXTY-SEVEN DIFFERENT KINDS OF WOOD GATHERED FROM EVERY QUARTER OF THE GLOBE ARTISTICALLY JOINED AS THOUGH THEY GREW THAT WAY

ONCE in a lifetime it is our fortune to meet with a man who is real genius in some art or trade. George Kensing, of El Paso, Illinois, certainly ranks as a genius in the finer crafts of woodworking.

During the past three years Mr. Kensing has employed his idle moments in the construction of a wonderful library table. On a foundation of solid mahogany is inlaid an intricate design of various woods. Sixty-seven different kinds of wood collected from every quarter of the globe enter into its construction.

from Asia, baywood from Italy, boxwood from England, camphor from Formosa Island and Japan, satin wood from East and West Indies, sandal wood from Isles of Archipelago, zebra (sometimes called pigeon wood) from Guiana, rosewood from Brazil, hazelwood from Europe and Asia, mahogany from Central America, osage or hedge from Mexico, olivewood from near Jerusalem, cocobola from Jamaica, ebony from Central America, gum from Australia, lignum-vitæ from Cuba, and the sycamore from Switzerland.

The delicate lines and graceful curves of the design necessitate the use of two thousand, two hundred and twenty-three separate pieces of wood. Some pieces are so small as to make it seemingly impossible to shape and fit them to their places, yet each is so exactly perfect that the whole has the appearance of a single piece of wood.

Without the aid of paint, varnish or stain, the table has been finished and polished to perfection. The value of this unique table is said to have been placed by connoisseurs at five thousand dollars.



How to Remove a Wood Screw

A handy way of removing a wood screw that has stuck, and is so tight that there is danger of twisting off the head, is as follows: Heat a poker or a piece of round iron red hot, and hold it against the screw head for a little while. Wait a few minutes for the screw to cool off, when it will be found that the screw can be removed quite easily with the same screw driver that just previously would not perform the work. The explanation is simple. The red-hot poker heats the screw, the screw expands, and makes the hole it is in just a bit bigger. The screw then cools down and resumes its original size, leaving the hole in the wood a size larger. The writer has given this little kink a fair test in taking screws out of some oak boards that were built in a refrigerator where the wood had become set around the screws.



The Product of a "Home Shop," Valued at \$5,000—Made of 2,223 Separate Pieces of Wood of 67 Different Kinds, Both Native and Foreign

Of the home-grown or native American woods there are: Washington red cedar, bird's-eye maple, fir, red wood, red elm, white pine, linn, yellow pine, black gum, red gum, water elm, red birch, white birch, hickory, chestnut, curly maple, spruce, beech, apricot, hemlock, hackberry, applewood, Spanish cedar, plum, white oak, rock elm, blue poplar, English walnut, peach, persimmon, pecan, burr oak, willow, butternut, hard or sugar maple, red cedar, cherry, ash, cotton wood, soft maple, white poplar, yellow poplar, black walnut, white cedar, cypress, red oak, box elder, and basswood.

The foreign woods are: Amarath from Australia, catalpa from China, tulip from Brazil, white holly

DETAILS of CONSTRUCTION AND FINISH



CHARLES P. RAWSON

Store Front Construction, Saw-Tooth Roof

CLEARLY DRAWN DETAILS SHOWING CONSTRUCTION AND ARRANGEMENT FOR A MODERN STORE FRONT
—COMPLETE DETAILS FOR "SLOW BURNING" SAW-TOOTH SKYLIGHT
ROOF FOR FACTORIES AND SHOPS

THE advertising value of an attractive store front is in reality of much more importance than many merchants realize. A neat, handsome store front undoubtedly makes a strong and lasting impression on passers by and prospective customers. The construction of the windows, the awnings, the signs above them and the general appearance of the building is almost of as great importance as the window display itself and is the first point by which a customer judges a store. We show herewith an interesting type of present-day store-front construction for a building twenty-five feet wide. It is a thoroughly practical type, the windows are brought down close to the sidewalk, and are large and well arranged. Above them is an arrangement of prism glass which throws a flood of light back into the store.

The plan and front elevation are given to the scale one-eighth inch equals one foot; and two sections and three plans at various heights at the scale of three-eighths equals one foot. There are also one-quarter full sized details of various parts to make the construction clear. It will be noted that all glass is secured in place by small iron straps, which make a very neat and attractive appearance.

Construction of Saw-Tooth Skylights

The advantages of saw-tooth roof and skylight construction, together with their increasing use, and the lack of familiarity with them in many sections of the country, make it desirable to present details of approved construction.

The advantages in brief are as follows: They provide uniform diffusion of light throughout the entire room, thus making all space in it available; with all interior surfaces painted white and with ribbed glass in the sash, the diffusion of light is almost perfect; the adaptability for lighting large floor areas in wide low buildings compared with what is necessary in the same buildings when ordinary skylights are used; this construction provides the true solution to the problem of keeping out the direct rays of the sun and

obtaining the very desirable north light in all parts of the room; economy in lighting is assured in that they lessen the charges due to the decreased number of hours during which artificial light is necessary; better working conditions are provided which increase production and encourage permanency of the help.

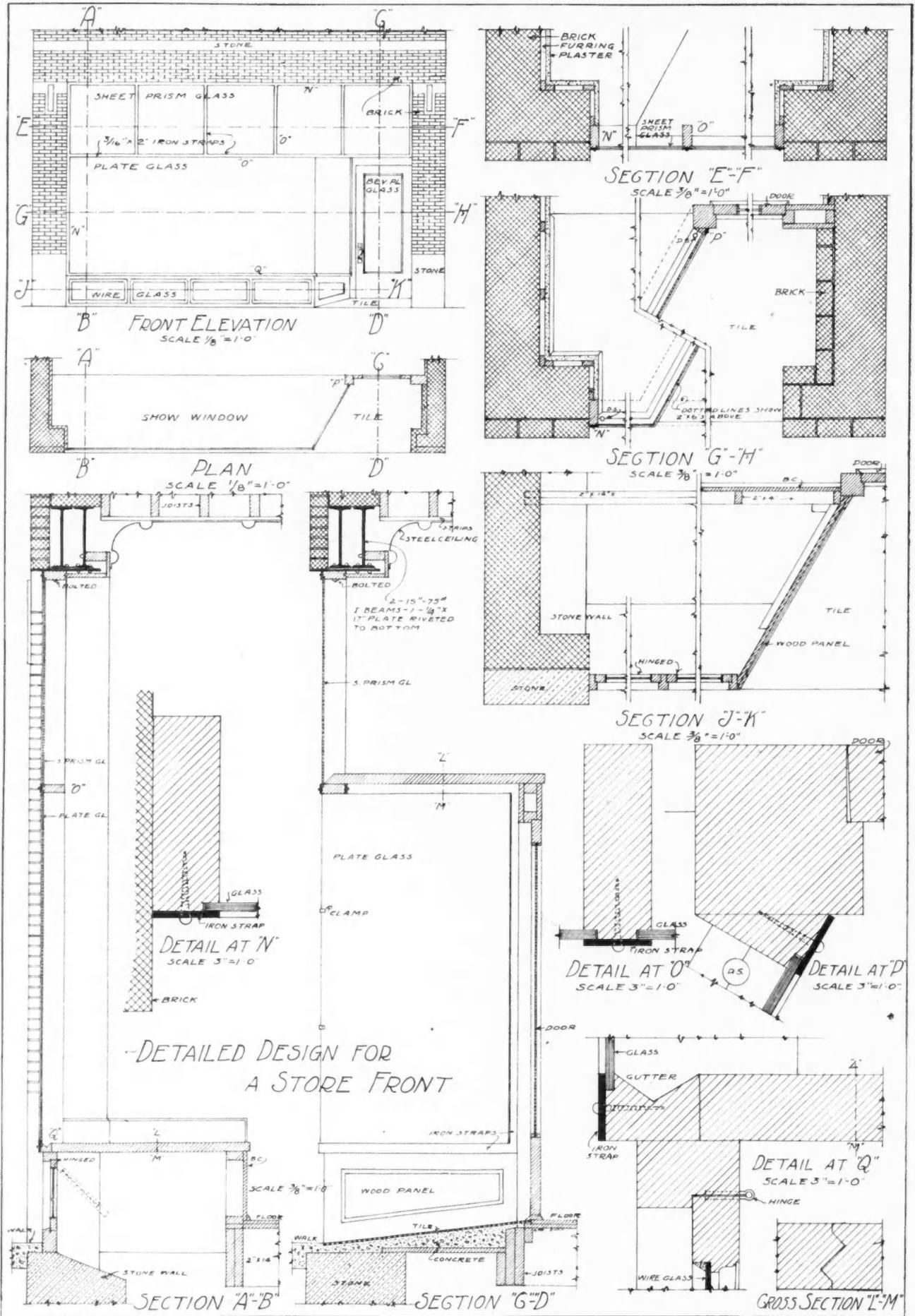
As to the disadvantages, while the testimony is almost uniformly favorable, some difficulty has been experienced, due almost entirely, however, to poor workmanship or faulty design. The difficulties in general are caused by leaks, poor ventilation, excessive heat and condensation.

In order to avoid the direct sunlight and at the same time to obtain an abundance of perfectly diffused light, it is desirable that the saw-teeth should face approximately north; and the glass should be inclined to the vertical, to take advantage of the brighter light in the upper sky. This arrangement also assures the diffusion of light upon the floor rather than on the under side of the roof. If the glass is set at an angle of twenty to twenty-five degrees with the vertical, with an angle of approximately ninety degrees at the top of the saw-tooth, the results will be about right; the variations depending somewhat on the latitude and on the amount of light required.

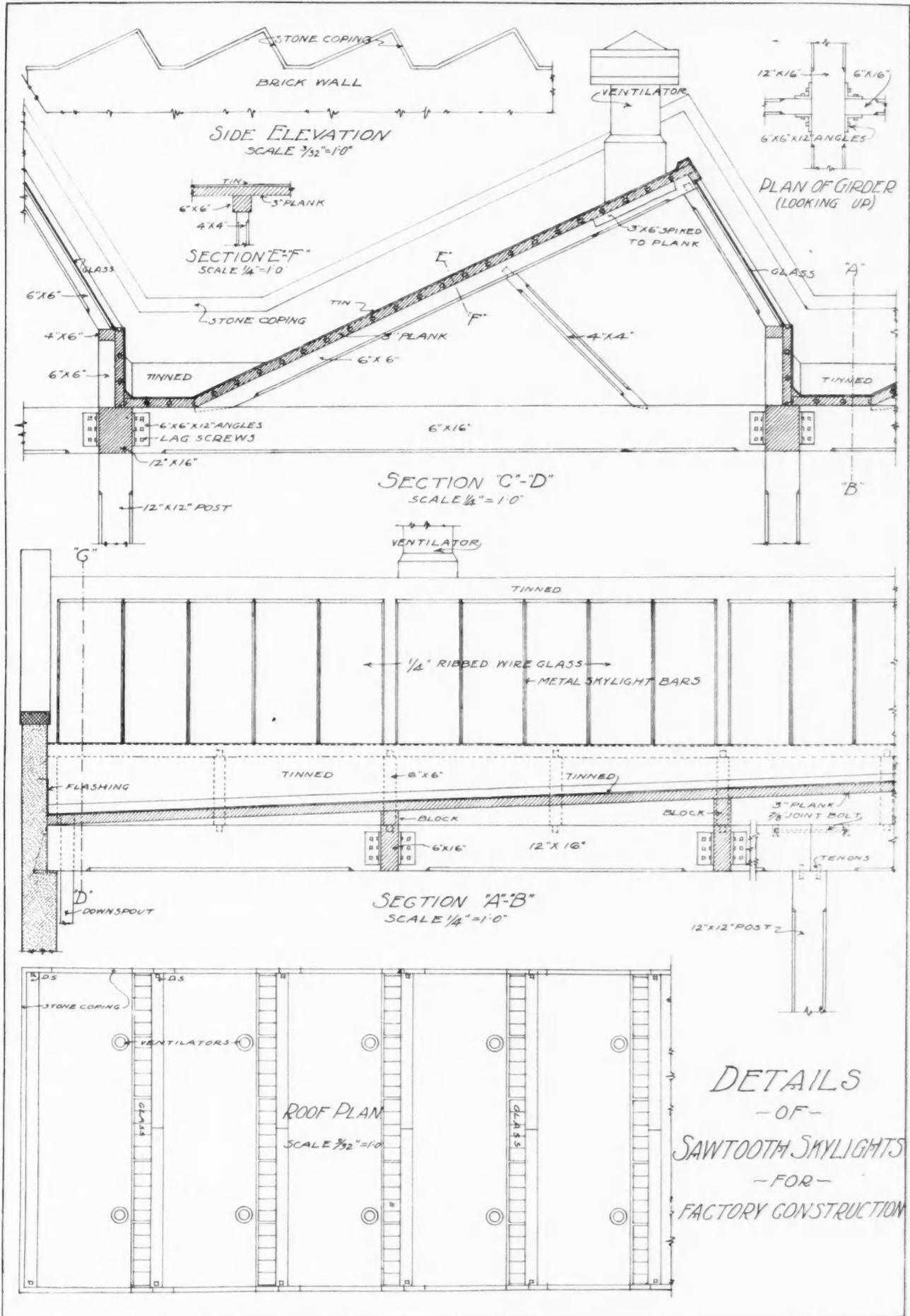
Valleys between the saw-teeth should be flat, from one to two feet in width and should pitch slightly towards the conductors which should be of ample size. The necessary pitch is obtained by blocking as shown in the detail.

Ventilation and cooling of these large rooms with comparatively low stories is very important. So ample vents are needed at the top. These are to be recommended instead of pivoted or swinging sash which are apt to leak. Good windows are advised in all side walls as experience has shown their value. Saw-tooth roofs necessarily cost more than the ordinary flat roofs but the additional cost is far out-weighted by the advantages of the saw-tooth type for good work where light is desirable.

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

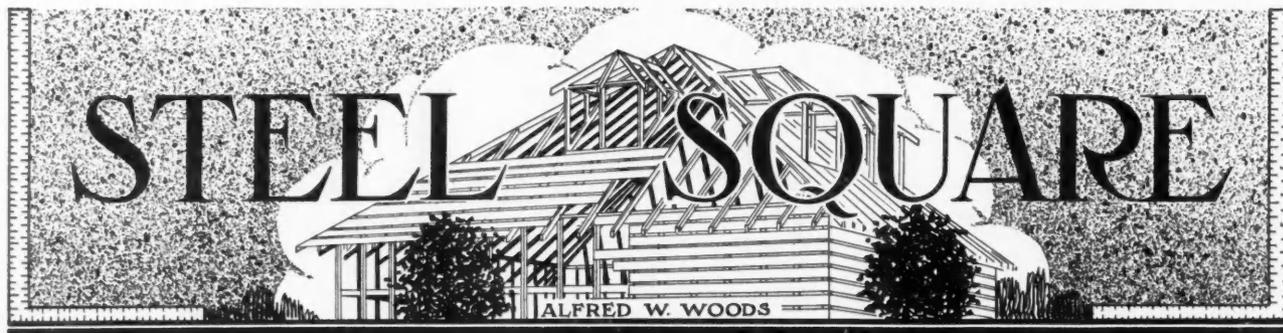


ARRANGEMENT AND DETAILS FOR MODERN STORE FRONT



DETAILS
 - OF -
 SAWTOOTH SKYLIGHTS
 - FOR -
 FACTORY CONSTRUCTION

SAW TOOTH ROOF OF FIRE RESISTING TIMBER CONSTRUCTION



Practical Uses of the Steel Square

EXEMPLIFYING THE MITER AND SIDE CUTS FOR PURLINS, HOPPER CUTS, ETC., WITH THE AID OF THE STEEL SQUARE

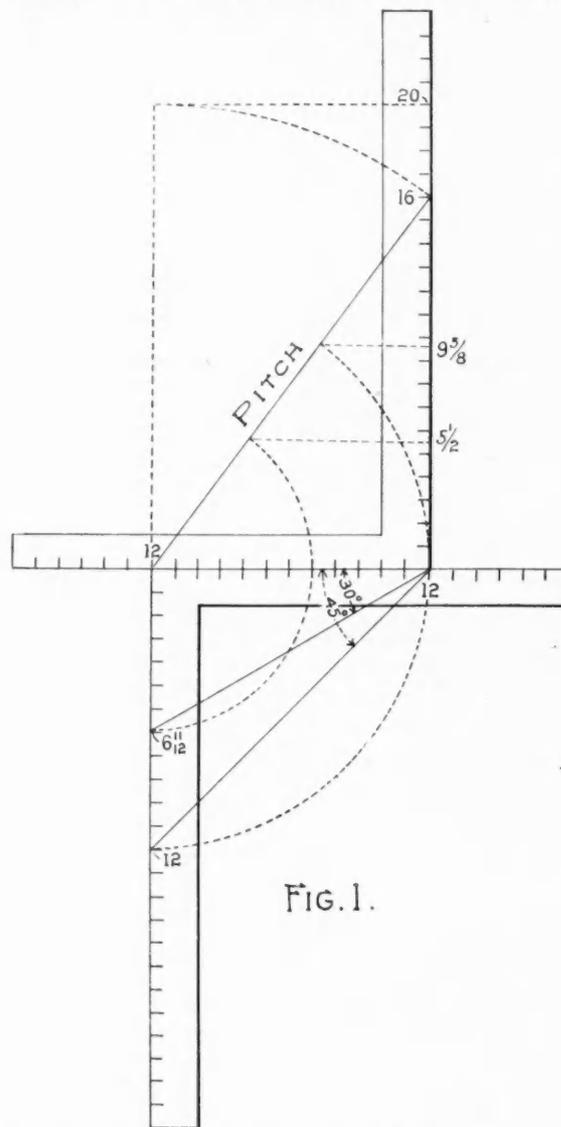
IN our last article, we were considering the subject of miter cuts for the purlin when the same is set with the rake of the roof; and also pointed out a comparison with the corresponding cuts for the roof boards that fit over the hip; also a general formula to apply to any kind of an angle that a building may have.

We will now take up the same subject again, as applied to the steel square and the application of same for the cuts. Remember the miter cut for the purlin is the same as the cut of the corresponding roof boards, or for a hopper cut of same pitch. The fact that the purlin is a large timber instead of a board, makes no difference. In other words, if it lies in the same position that the roof boards do, it necessarily must have the same cuts.

Referring to Fig. 1, the same problem is shown as in Fig. 2 of last month; but in this the steel square is brought into use showing the figures on same that are used to obtain the cuts. In this, it will be seen, that we use as a basis 12 on the tongue of the square for the starting point and two squares are brought into use for illustration purposes. From the heel to 12 on both squares represents the run of the common rafter, regardless of what the actual run of the building may be. The solid diagonal line on the upper square represents the pitch (which in this case is 12 and 16 or $2/3$ pitch); while on the lower square is shown the angle that the runs of the square and hexagonal hips are to that of the common rafter. The dotted lines show the transferring of the different parts so as to obtain the figures to use on the steel square for the cuts. Note that the measurements shown on the lower square represent the distance that the seat of the hips for the hexagon and square cornered building diverge from that of the seat of the common rafter in a 1-foot run of the building; namely, $6\frac{11}{12}$ and 12 respectively. These measurements are transferred to the pitch line; and the perpendicular height at intersection of same, taken on the blade, represents the figures to use on that member for the miter cut of the purlin. Thus, 12 on the tongue and $5\frac{1}{2}$ on the blade; and the latter will give the miter cut for the hexagon corner, or if it is for a square corner take $9\frac{5}{8}$ on the blade. For the cut across the

side of the purlin, take the length of the pitch line (20) on the blade and $6\frac{11}{12}$ on the tongue and the latter will give the cut. If it is for a square corner, take 20 on the blade and 12 on the tongue and the cut will be on the latter.

In Fig. 2 is shown the application of the square



for all of the above described cuts, as follows:

No. 1 shows the angle across the side of the purlin for the square corner; the tongue giving the cut.

No. 2 shows the angle across the top of the purlin for the miter cut, for the above; the blade giving the cut.

No. 3 shows the angle across the side of the purlin for the hexagon corner; the tongue giving the cut.

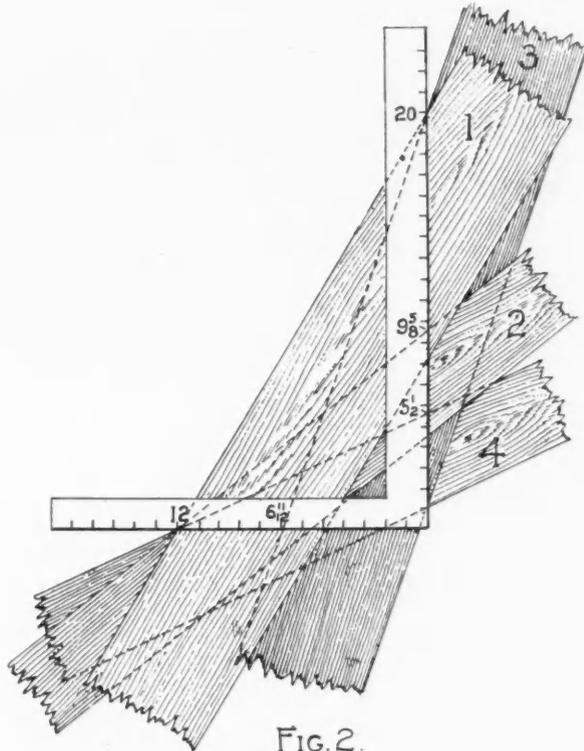


FIG. 2.

No. 4 shows the angle across the top of the purlin for the miter cut for the above; the blade giving the cut.

Remember these proportions are the same as would be used in making a hopper out of a 1-inch board or any other thickness, of material.

Wire Nets to Stop Sky Scrapper Death Leaps

By a recent order of the Chicago Building Commissioner, wire nets, not unlike rope screens under flying trapeze artists in a circus, are to be stretched across the open space or central rotunda in sixteen of Chicago's down town buildings. This order was signed by Building Commissioner Campbell as a direct result of the death of W. T. J. Plummer, who plunged to the floor of the rotunda of the Chamber of Commerce building from the eleventh floor a short time ago, almost crushing to death men beneath him.

Plummer was the fourth to die in that manner in this one building and the second within a year. It is to protect persons on the ground floors, as well as to deter possible suicides that the wire screens are to be stretched. They will be placed below the third floor.

The management of the Chamber of Commerce building voluntarily agreed to take the necessary precautions. Commissioner Campbell asked the city law department for an opinion as to his right to compel others to do likewise.



TH' mills o' th' gods er usin' th' same ole roller process.

After a Big Haul

"Binks used to be daft on the subject of buried treasure. What's he up to now?"

"He's got up an expedition to Asia Minor to try to find the place where Methuselah stored his birthday presents."—*Toledo Blade*.

FIGURES don't lie but you kin group 'em so they'll answer the same purpose.

How Did He Know?

The stranger laid down four aces and scooped in the pot.

"This game ain't on the level," protested Sagebrush Sam, at the same time producing a gun to lend force to his accusation. "That ain't the hand I dealt ye!"

SOME fellers hustle along an' manage t' make both ends meet an' others wear emblurmatic pins an' watch charms.

No Secret

"Mrs. Chucksley, is your husband a member of any secret society?"

"He thinks he is—but he talks in his sleep."—*Chicago Tribune*.

THE more important a feller gits around a concern th' easier it seems t' git along while he is on a vacation.

A Sad Case

Beggar—Please help me to recover my child.

Lady—Is your child lost?

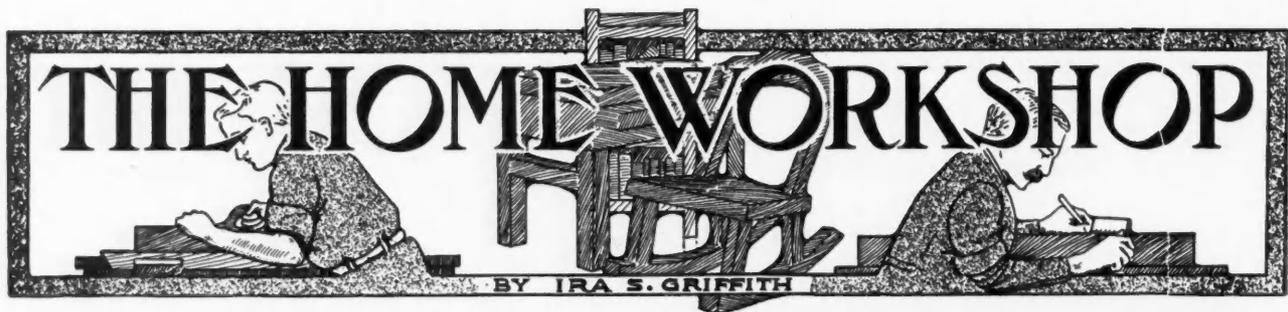
Beggar—No, mum, but his clothes are worn out.—*Boston Transcript*.

A FELLER will flare up in a minute when he's accused o' doin' somethin' he didn't do, an' smile from ear t' ear when praised fer somethin' he couldn't do.

A Winner

Young Lady (coming in with partner from room where progressive whist is being played)—Oh, mummy, I've captured the 'booby.'

Mother—Well, my dear daughter, come and kiss me, both of you.—*Scraps*.



Mission Library Table and "Shower" Light

COMPLETE INSTRUCTIONS WITH WORKING DRAWINGS SHOWING HOW TO MAKE THESE INTERESTING PIECES OF HOME FURNITURE BY HAND IN THE HOME WORK SHOP

TWO pieces of handicraft that harmonize well with their surroundings are shown in the accompanying photograph, the table and electric drop lights. Two styles of shades are shown in the picture but only one is described. The construction of the other is so simple that it can be easily worked up by the reference to the picture only.

For the dining room drop shades, support and chains, there will be needed stock as follows:

STOCK BILL FOR ELECTRIC DROP SHADES.

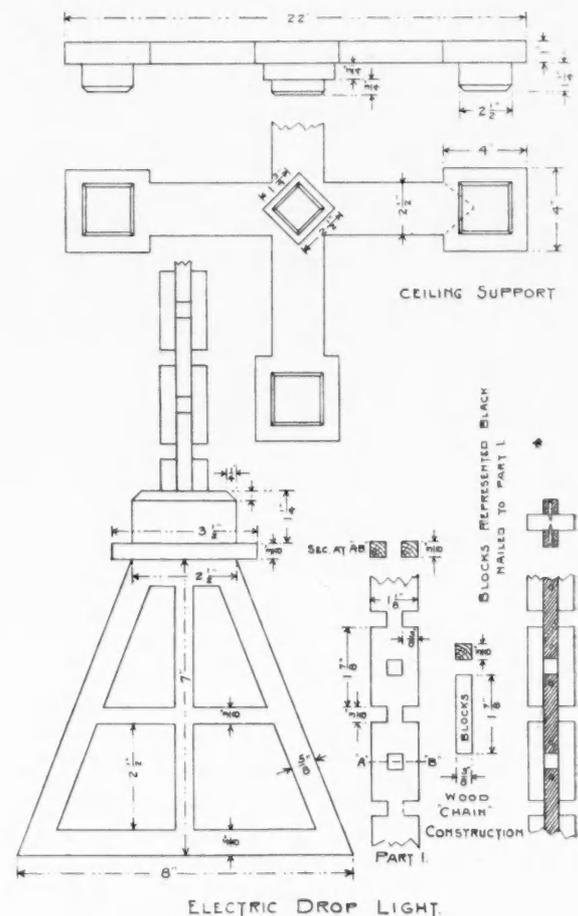
- Support, 2 pieces, 1 by 4 by 22½ inches, S-4-S.
 4 pieces, 1¼ by 2½ by 3 inches, S-4-S.
 1 piece, ¾ by 2½ by 3 inches, S-4-S.
 1 piece, ¾ by 1¾ by 2 inches, S-4-S.
 Chains, 4 pieces, ¾ by 1⅞ by 36 inches, S-4-S.
 8 pieces, ¾ by ¾ by 36 inches, S-4-S.
 Shades, 4 pieces, 1¼ by 2½ by 3 inches, S-4-S.
 4 pieces, ¾ by 3½ by 4 inches, S-4-S.
 32 pieces, ⅜ by ⅞ by 8½ inches, S-2-S.
 16 pieces, ⅜ by ⅞ by 3½ inches, S-2-S.
 16 pieces, ⅜ by ⅞ by 8½ inches, S-2-S.
 16 pieces, ⅜ by ⅞ by 6 inches, S-2-S.
 16 pieces, ⅜ by ⅞ by 7½ inches, S-2-S.

The support being the easiest to make may well be made first. Square up the cross pieces and shape the sides as shown in the working drawing. Since it will be difficult to shape the sides of these pieces with the ends blocks on, it may be well to separate these end blocks by mitering the blocks as shown by the dotted lines. After the cross pieces have been planed to width the blocks, which have already been squared to size, may be affixed with glue and brads. If a really fine piece of work is desired these blocks and the others will be built up by mitering them so that no end grain will show. Lay out and cut the cross-lap joint at the center. Make the other blocks as shown in the working drawing. The center is to have a drop composed of two square blocks, one of which will have a chamfer. Small brads will be used to fasten these blocks in place, the heads being set and later puttied over with a putty colored to match the rest of the finish. If the corner blocks are mitered in building them up, the blocks should have glue placed on their sides before nailing them in place.

The shades may next be made. Square up the inner edges of each piece for a face edge on the four outside pieces of each side of each shade. The inner

pieces or mountings should be squared on both edges to width. Miter the parts to the proper lengths, making half-lap joints and using glue and clamps for holding them together. When the glue has set the outer edges are to be planed up to uniform width and fitted one to another using a mitered edge. In fastening these parts or the four sides of each shade together use good glue on the mitered edges and reinforce the joints by means of glued corner blocks on the inside. Square up the two blocks for the top of the shade and affix them by means of glue, corner blocks and brads.

The glass panels are easiest set by cutting a glass the full size of the four panels combined and using small metal clips so bent that they will extend over the the glass when fastened to the wood on the inner side of the shade.



The advantage of this method is obvious. It saves rabbeting the frames and also saves much of the glass cutting and fitting.

The wooden chain is not made up of loose links of wood as the picture would seem to indicate. It could be made that way but a very satisfactory substitute is obtained by working the wood as shown in the detail of the working drawing. In this latter construction the main part of the chain is made of one piece stuff and the small pieces are fastened to this with glue and brads to give the link effect. There

all the parts clean and smooth, apply a coat of spirit stain or wood dye of a color suitable for the room in which the fixture is to be placed. When this has dried sandpaper it very lightly with very fine paper and apply a coat of filler colored to match the stain. The directions for staining and filling will be found upon the bottles or cans in which they come. The makers of these woodfinishes also tell what colors of fillers are to be used with any particular stains. Allow the filler to harden then apply a very thin coat of shellac. The shellac must be very thin or the re-



LIBRARY TABLE AND ELECTRIC "SHOWER" LIGHT AS THEY LOOK IN THE HOME
Complete Directions are Given Herewith for Making Them

should be at least one or two loose links however, so that the rigidity of the chain may not cause disaster should anything accidentally brush against the shade.

The art glass may be bought in various color treatments and effort should be made to select a color that will harmonize with the rest of the furnishings of the room in which the shades are to be placed.

Method of Finishing

A very satisfactory finish may be obtained as follows: Having thoroughly scraped and sanded

the result will be a gloss. On the shellac, after it has been sanded lightly with fine sandpaper, apply a coating of wax. Care should be taken not to get the wax too thick and to get it cleaned out of all corners; otherwise the result will be unsatisfactory. There are many patent preparations that might be used instead of the shellac and wax. Dead-lac, Lacklustre, Under-lac, Old Dutch finish, etc., are very satisfactory, especially on a piece like this where there are so many little corners that make it difficult to apply a rubbed finish. Just a very thin coat of shellac produces in itself an acceptable finish.

How to Make the Mission Table

The picture shows very clearly a use for the Mission table. The stock bill follows.

STOCK BILL FOR LIBRARY TABLE.

Top, 1 piece, $1\frac{1}{4}$ by $30\frac{1}{2}$ by $42\frac{1}{2}$ inches, S-2-S.
 Legs, 4 pieces, $2\frac{1}{2}$ by $2\frac{1}{2}$ by $29\frac{1}{2}$ inches, S-4-S.
 Side rails, 2 pieces, $\frac{7}{8}$ by $4\frac{1}{2}$ by 35 inches, S-4-S.
 End rails, 2 pieces, $\frac{7}{8}$ by $4\frac{1}{2}$ by $23\frac{1}{2}$ inches, S-4-S.
 Stretchers, 2 pieces, 1 by 3 by $23\frac{1}{2}$ inches, S-4-S.
 Shelf, 1 piece, $\frac{7}{8}$ by 22 by 39 inches, S-2-S.
 Slats, 10 pieces, $\frac{3}{8}$ by $2\frac{1}{2}$ by $17\frac{1}{2}$ inches, S-4-S.
 Keys, 4 pieces, $\frac{3}{4}$ by 1 by 3 inches, S-2-S.

Square up the edges and ends of the top to the dimensions called for by the working drawing. Next square the ends of the four legs or posts. Cut the rails to length. The rails are to be tenoned into the posts with blind mortises so that they need be sawed to length only, the ends need not be planed. Lay out and work the tenons on these rails. The tenons on the upper rails should be so tenoned that there will be no danger of splitting the post when the tenons are put in place.

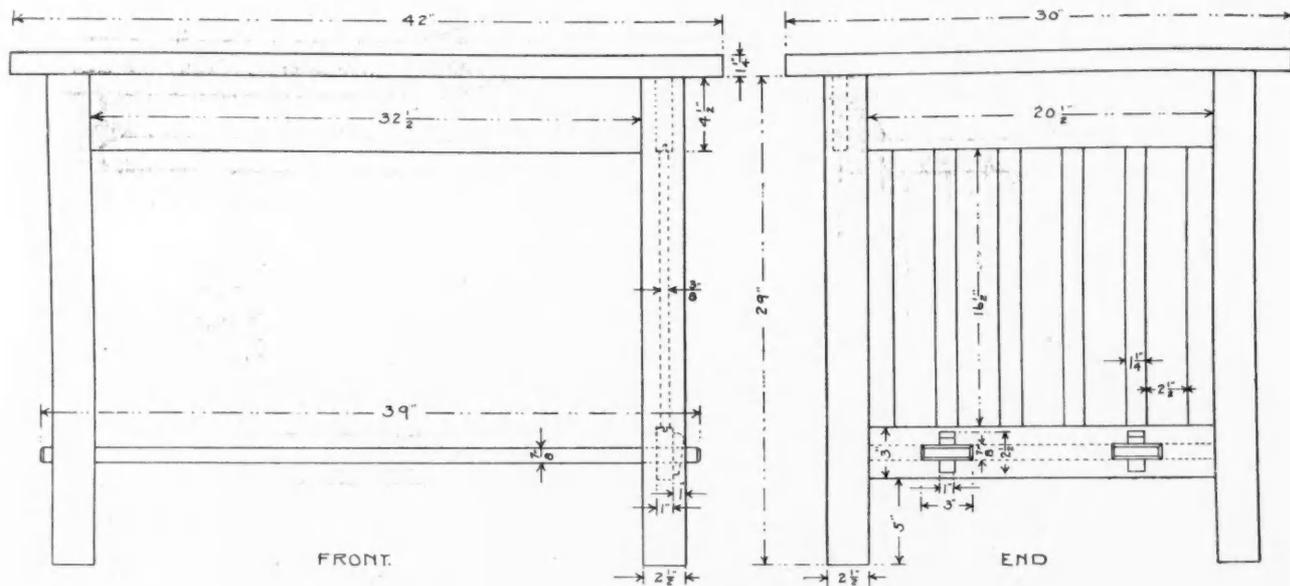
screws slanting through the upper edge of the rails are methods in common use. The wooden buttons are best as they do not interfere with any shrinkage or swelling of the top as do the other fastenings.

Proper Finish

The table should be finished to harmonize with its surroundings as well as the shades. Apply a coat of penetrating oil stain and wipe it off according to the directions given with it. On this apply a filler colored to match. When the filler has hardened put on a coat of shellac and follow this with several coats of some good rubbing varnish. Rub each of the first coats of the varnish with hair cloth or curled hair and the last coat with powdered pumice stone and crude or raw linseed oil.

**A Colossal Concrete Statue**

What may become one the most famous statues in the world stands above Eagle's Nest, across the river



MISSION LIBRARY TABLE

Tenon the lower rails or stretchers and work the mortises in them, into which the shelf is to be tenoned. These rails should be tenoned with shoulders on all four sides.

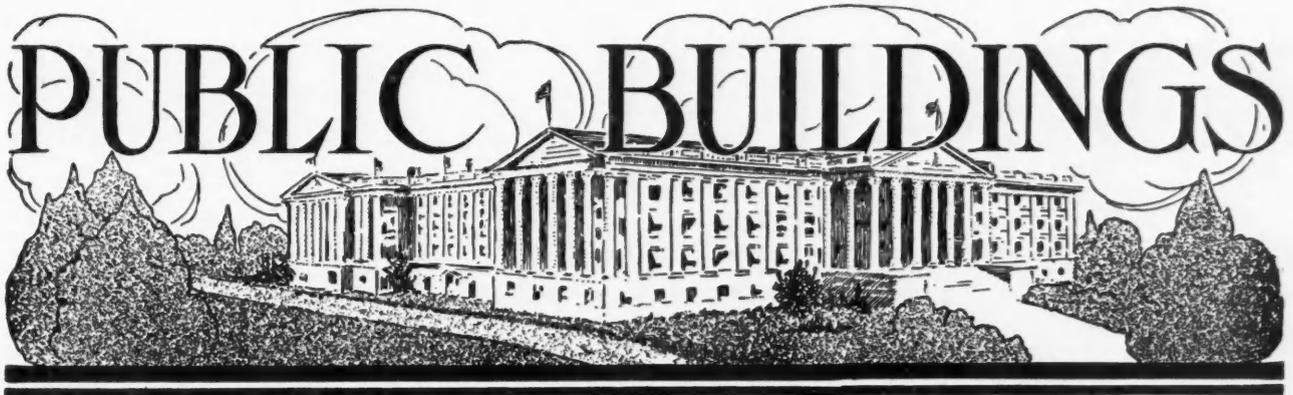
The slats should be cut to length and shouldered on one side only at their top ends. The reason for this will be seen by a glance at the working drawing. The lower ends should be shouldered on all four sides.

Now shape the shelf, putting the tenons on the ends and working the mortises for the keys as shown. Make the keys or wedges.

The ends of the table should be assembled first and after the glue has set on them the side rails and the lower shelf should be placed. There are various ways of fastening the top to the frame. Angle irons, wooden buttons working in slots made in the rails and

from Oregon, Ill. It has been in process of making three years and is now near completion. It is constructed of concrete. The Indian figure, which is 48 feet high, stands facing the south, looking down the river. The head and profile and folded arms appear perfect in detail as they are outlined against the sky and forest from many viewpoints around the country.

The claim of the statue to fame lies in three things: (1) Any one may read its message; (2) the statue's great size, 48 feet, without counting either the artificial base or the natural rock foundation, 250 feet high, on which it is placed, puts it on a scale with the Goddess of Liberty in New York harbor and the great statue of "The Pilgrim," on the New England coast; and (3) the greatest claim to fame is that it is built to be permanent.



An Artistic "Bungalow" Church

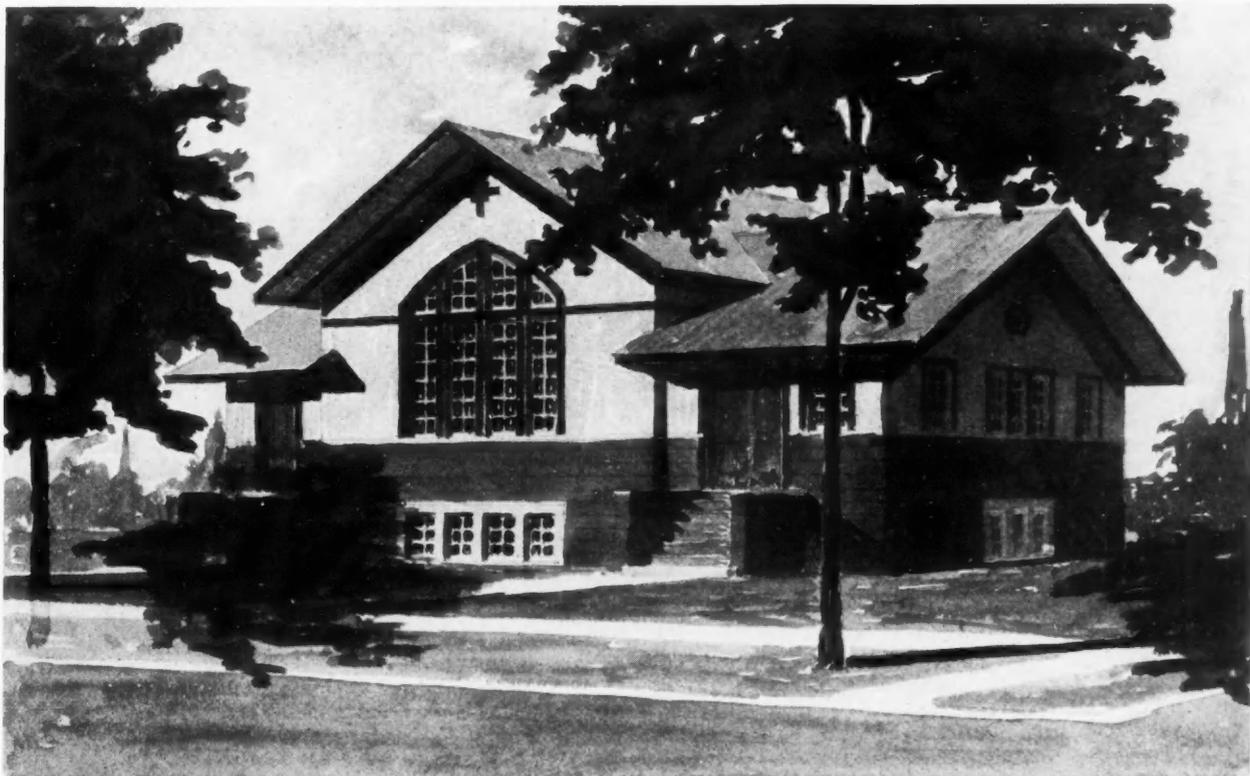
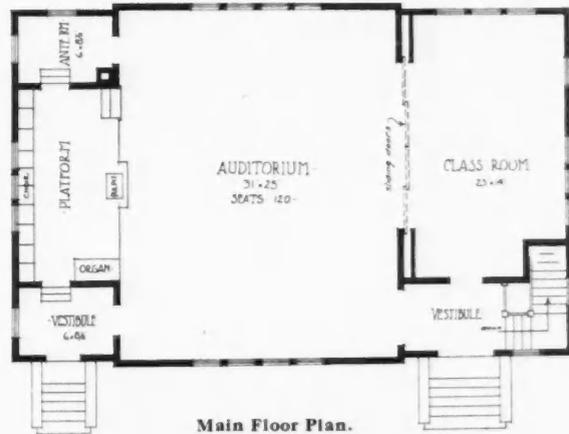
ARCHITECT'S PERSPECTIVE DRAWING AND FLOOR PLAN SKETCH OF A VERY ATTRACTIVE VILLAGE CHURCH OF RATHER UNUSUAL LINES

A pleasing breaking away from the hackneyed, traditional lines of church edifice design is exemplified in the drawings presented herewith.

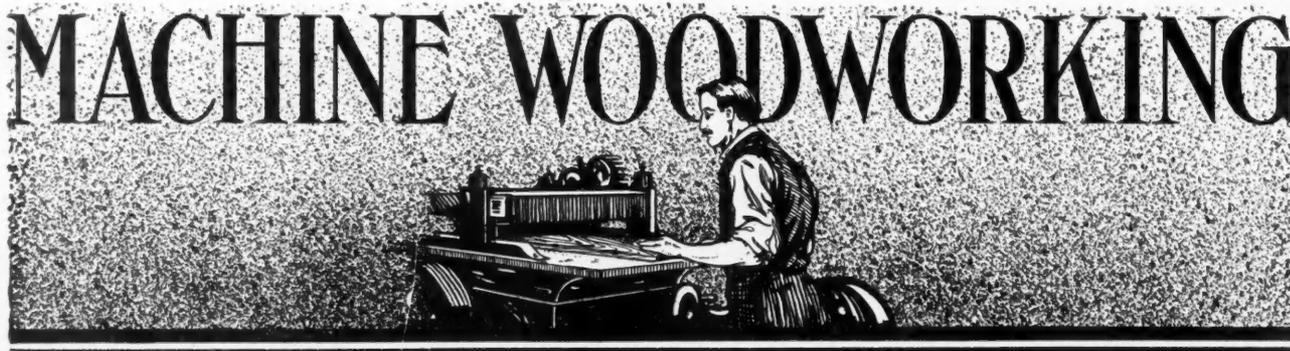
It has been said that the orthodox churchly lines—high and narrow with steeple pointing upward—symbolize the heart of religious man reaching up toward higher things. Maybe so. At any rate, the "bungalow" church—with lines low and broad, reaching out invitingly on all sides—suggests hospitality within and brotherly love reaching out the hand of helpfulness.

This design is worked out using creosoted boards with wide exposure from grade up to the windows; above is cement plaster. A wide cornice completes the effect. The auditorium seats 120 and the class room

back of it (connecting with sliding doors) about 50 more. In the basement are kitchen and supper room.



New Congregational Church for Berwyn, Ill., G. W. Ashley, Chicago, Architect



The "Portable Shop"

PORTABLE SAW RIGS, PLANERS, ETC.—THEIR PRESENT PLACE AND UTILITY FOR CARPENTERS AND BUILDERS—HOW WILL THEY AFFECT THE CARPENTER SHOP?

By J. Crow Taylor

THE modern machinery equipment for the carpenter shop is taking on portability rapidly these days. It has not only come to the point where power-driven machinery is available for shop use, but much of it is found useful and necessary right out on the job where the work is being done. This, of course, calls for portable machinery, machinery that can be moved about from place to place with comparative ease and put into service anywhere.

The rapid development in the way of portable machinery brings to view two mental pictures of the carpenter shop of the future.

One is of the shop in which the carpenter may still retain and even add to his stationary equipment of machines for use in doing shop work proper, and to which he may add a shed or storage room into which he can bring and store certain portable machines when they are not out on the job somewhere, and where he can have them for overhauling and putting in order during the dull months of the winter so as to get them in good trim for strenuous service when the building season opens again.

The other is of a shop in which during the busy building season there is practically no machinery visible. The machines, all of portable character, are taken out on various jobs where the work is going on and are kept at work right with the men all during the busy season. Then during the winter, when there are no jobs on hand, they are brought back into the shop, put under cover, put in repair, and made to do whatever service may be required of them right in the shop.

This latter picture, which is strictly in keeping with the modern tendency, covers the extreme inclination of portability in connection with power-driven machinery for the carpenter. His shop then becomes simply a home for the machines, as his own residence is a home for himself, into which they are taken when there is no outside work for them and where he assembles all of them when he goes into winter quarters. There he puts them in order and then makes

use of them doing whatever work he may be doing in the winter time, such as getting out interior finish, making up window frames, and doing odd jobs of the winter class.

That the carpenter must buy and use more power-driven machinery right along goes without saying. We have already got beyond the purely hand-work stage in construction work, and have come to the point where the man without power appliances of some kind is seriously handicapped and really is not in a position to bid for the best jobs. There are now power rip-saws and cross-cuts, not only to work up lumber to make the false work for concrete, but to help do the actual structural work and relieve hand labor of the burdensome part, leaving only the more *skilled* work to be done by hand tools. Undoubtedly much of the framing in the future will be done by machinery, not merely ripping and cross-cutting rough lumber, but the coarse framing of all parts of the house, including the rafters.

This is the proper way and the man who doesn't fall into line and adopt such modern labor-saving methods will be left in the race wherever competition is sharp.

What the writer is trying to figure out now is just what effect the adding of all the different classes of portable machinery to carpenters' and builders' equipment will have on the character of his shop at home. The question is will a man retain his regular stationary equipment and build an addition to his shop in which to store and keep portable machinery when not in use, or will he convert his shop into purely portable equipment. This is the question that every carpenter and builder will do well to give attention to and figure on carefully these days.

His decision in the matter will probably depend somewhat on local conditions, on the amount of work done in the shop and the necessity for having constantly at hand power driven machinery in the shop itself. The conditions vary in different localities and each man will have to figure this out for himself.

Where a man does a lot of purely shop work, where there are no planing mills convenient and where he can do much of his planing mill work proper in his shop it is probably well to keep certain stationary machines there for that purpose and simply add to the equipment the necessary portable machinery for work out on the job, because at times it will be fully as important to have a shop equipment ready for service, as it

will be to have portable machinery on the job to relieve the burden of hand labor.

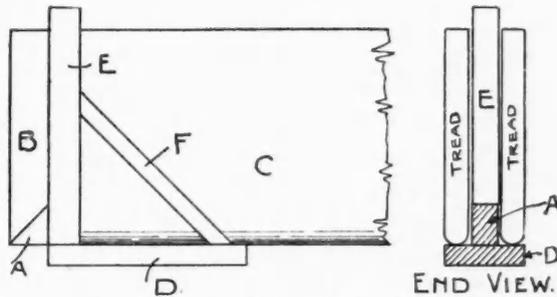
Still, each man will have to figure the matter out for himself according to his local conditions and his personal convictions, but to impress the fact that here is something that should be given consideration and figured upon is the reason for portraying the two mental pictures above.

Shop Kinks

THIRD ARTICLE—A NUMBER OF PRACTICAL HELP HINTS AND IDEAS ON MILL WORKING, CABINET MAKING AND CARPENTRY WORK FROM THE EXPERIENCE OF A SHOP FOREMAN

By William C. Jasbury

JUST a few more shots at random. **Here is a tool** in the shape of a square made to mark off the miter and square edge for a return nosing on a stair tread. It is a mean thing to square across a stair tread with a steel square, or try square after the tread has been nosed (make round).



Gauge for Laying Out Return Nosings

This tool will do the trick either right or left, also mark for the miter.

The square should be made of birch or any hard wood as follows:

D is the stock of the square made wide, say 3 inches, to go against the round nosing; it is $\frac{5}{8}$ inch thick. E is the tongue, $\frac{3}{8}$ by 2 by 14 inches long, to mark off the square cut. A is a small piece cut on 45 degrees miter, tacked on the edge of the tongue to give the miter mark, also the distance the tongue is from the end of the tread each time. C is the tread. B is the piece off the end of the tread that is to be replaced with a return nosing with grain of wood at right angles with that of tread. F is a brace to keep the tool square.

A wrinkle used by some turners for centering round and square stuff before placing it into the lathe is illustrated. It consists of disks of card board cut to a true circle, with diameters 3, 4, 5, 6 inches, etc. With a short brad awl, or screw, in a short handle, punch through the exact center of the card board; place the disks on the stuff to be centered and get about the same margin all

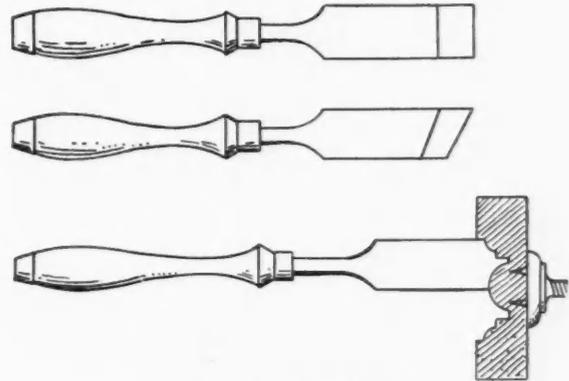


Cardboard Circles for Centering

kind is made as follows: First turn a cylinder on the lathe out of any kind of wood and to the diameter of the work at hand, then rip a slot in it $\frac{1}{4}$ inch

around; then hit with the hand on top of the handle hard enough to make a visible impression on the timber. This will locate the point for the lathe center.

Speaking about turning I have found it an excellent idea for corner block turning to take an old wornout turning chisel one inch or so wide and grind it from one side only—not square across. This makes a good tool to scrape the center of a corner block when turning by hand. Also parting tools for turning can be made out of old three-cornered files of various sizes. To make a good turning chisel out of a blacksmith's rasp, first have it re-tempered and it will be



Good Turning Tools

O. K. I have used one many times and they work very well. I have seen many corner blocks turned with a chisel ground to the shape of the block as in the illustration.

A power sandpapering device which makes a very practical way to clean up small circle work, faces of brackets and numerous other kinds of work of this



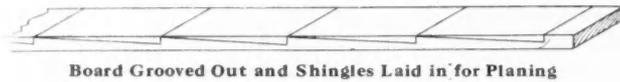
For Power Sanding with a Turning Lathe

kind is made as follows: First turn a cylinder on the lathe out of any kind of wood and to the diameter of the work at hand, then rip a slot in it $\frac{1}{4}$ inch

wide lengthwise of the cylinder. Cover with sandpaper and drive a wedge into the slot, which contains both ends of the sandpaper. Now put the cylinder back into the lathe and turn on the power. Hold the stuff against it and the cylinder will do the work faster and better than can be done by hand.

In shipping stave columns, especially those having compo caps, often there is an extra crate containing the plugs to go up through the cap. Now, these plugs could be pushed up in the large end of the column and would not only make the freight one crate less, but would keep staved columns from being crushed like an egg-shell, like I have seen some, for the plug will go up about half way. See it?

A kink for planing shingles on an ordinary pony planer is illustrated. Just notch out a couple



of boards 16 feet long to drop the shingles in while feeding them through the machine.

To lengthen the life of a tie post or fence post bore a hole in the top and fill up with salt, then plug up. This is claimed to do the business. Can you beat it?

How to chase a gun stock is sometimes an aggravating point. After the stock is made the required shape a tool like that illustrated is used. Use



the same movement as you would with a file; and after one pair of creases have been cut, the last one can be used as a gauge to cut the others, which only gives one cut or crease at a time. Then cross cut the same way; the edges of the tool should be sharp and cut with teeth similar to a fine saw.

Washing Gravel in Perforated Wheelbarrows

A novel scheme for washing gravel has been in use at Bangor, where construction has been under way for some time on a new mechanical filtration plant, which is being built by the New York Continental Jewel Filtration Company, to replace the existing water purification works. The concrete aggregate is delivered in piles near the work and carried from them to the mixer in wheelbarrows. The gravel contained a certain amount of loam and it was considered necessary to wash it before incorporating it in the concrete. To accomplish this, holes were punched in the bottoms and sides of the wheelbarrows, converting them practically into sieves. Between the mixer and the storage piles a water pipe was connected up with a large perforated nozzle at its discharge end. Each wheel-

barrow load of gravel on its way to the mixer was rolled under the nozzle and streams of water discharged upon it, the material being churned about with a spade to expose the lower part of the load to the cleansing action of the water. The water and the loam which is flushed out passed out through the perforations in the wheelbarrow and the clean gravel was then carried to the mixer and used.

Cement Used at Panama

An idea of the immensity of the operations on the Panama Canal may be gained from some statistics about bags used in transporting cement. Over 50 barrels of cement daily are realized from the dust shaken out of the used bags, says *Engineering-Contracting*.

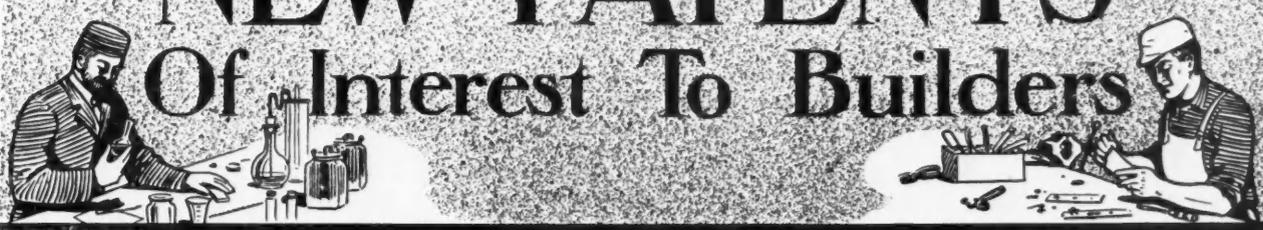
About 90 per cent of the bags in which cement is shipped to the Isthmus for use in the Pacific Division locks are saved and returned to the manufacturers, who allow 8.5 cents apiece for them. The cement is shipped in a bag enclosed within another bag, both made from material of the same grade and weight, the allowance to each bag of cement, therefore, representing 17 cents. As fast as the bags of cement are emptied at the mixers they are loaded into box cars and carried to an old building formerly used as a storehouse by the Pacific Division, situated a little north of the yard office at Miraflores, where they are sorted and baled. The bags are shaken before they are placed in the bailing-press, and the sweepings resulting therefrom amount to 50, or more, barrels a day. This cement is in good condition, and the value of it pays the wages of the force employed at the sorting-shed. Many of the bags sent to the States months ago are now returning filled the second time, and are still whole, capable of being used again. A statement of the number of good bags returned to the manufacturers from the beginning of concrete operations at the Pedro Miguel and Miraflores Locks, and the value thereof, is shown in the following table:

Month.	No. of Bags.	Value
To April 25, 1910.....	740,000	\$62,900.00
May	180,000	15,300.00
June	180,626	15,353.22
July	182,516	15,513.86
August	120,016	10,201.36
September	540,592	45,950.32
October	600,000	51,000.00
November	661,300	56,210.50
Total	3,205,050	\$272,429.26

The cost of handling, less freight charges, during the month of October was \$983.71 for 600,000 bags returned.

THERE is no place in life for the man who is not a hard worker.

NEW PATENTS Of Interest To Builders

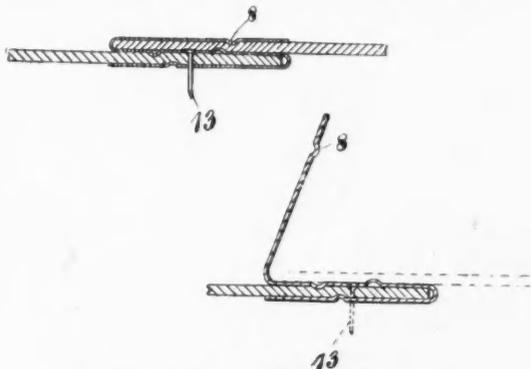


CONDUCTED BY WATSON & BOYDEN, PATENT LAWYERS AND SOLICITORS, WASHINGTON, D. C.

Waterproof Lock-Seam for Roofing-Paper

984,860—Patented Feb. 21, 1911, by Frank E. Smith, of San Bruno, Calif.

This invention provides means for rendering the seams of composition roofing water proof. It consists in a strip of metal bent upon itself so as to form pockets for the reception of the adjacent edges of the roofing. Ribs (8) are formed



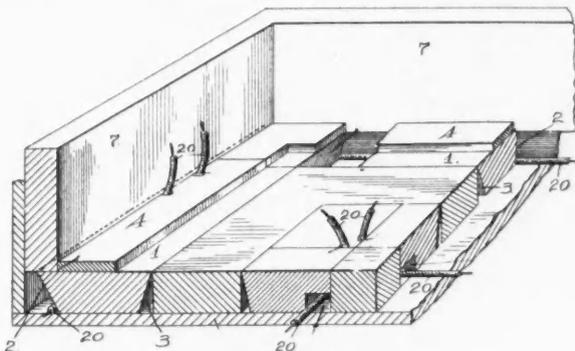
Metal Lock Seam for Ready Roofing

in the strips so as to tightly grip the material between them and form a close joint. As shown in the second illustration one edge of the strip is turned back to permit nails (13) being driven through the under layer of roofing.

Removable Floor-Strip for Wires

982,522—Patented Jan. 24, 1911, by Walter S. Mitchell, of San Francisco, California.

This invention seeks to provide a strip which may be readily removed from the floor to permit the insertion of electrical wiring. To this end there is provided a strip (1) having



Floor with Removable Strips

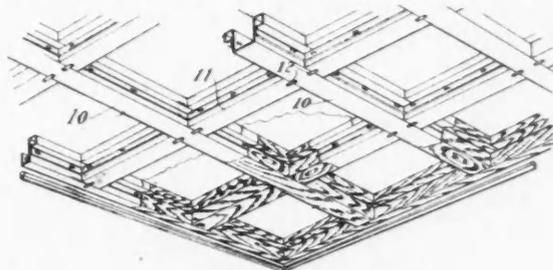
beveled edges (2 and 3), the former being underneath to form a chamber for the reception of the wire (20). The edge (3) is cut back in such a manner that this edge of the strip may be raised up in order to withdraw the opposite edge from underneath the base board (7). The number 4 design-

ates a finishing strip which may be either integral with or attached to the strip (1).

Imitation Beamed Ceilings

985,367—Patented Feb. 28, 1911, by Arthur H. Pitney, of Berwyn, Ill.

This invention provides an inexpensive construction which may be applied to the ceiling of a room by unskilled labor and which will be so close an imitation of a wooden beamed ceiling construction that it can scarcely be distinguished therefrom. To this end the invention consists in the provision of



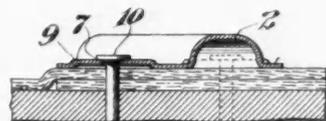
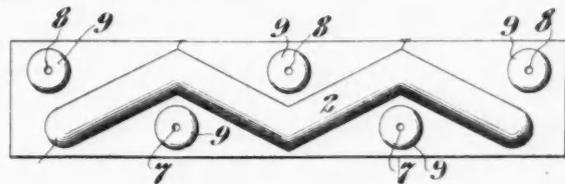
Grained Paper over Straw Board

a collapsible tubing structure (10 and 11) formed of straw board or other suitable material which is made up in sections so that it can be readily assembled, fastened together by means of spikes (12), and secured to the ceiling to form a foundation over which grained paper may be pasted to produce an exact imitation of wooden beam construction. The arrangement is cheap and can be easily applied.

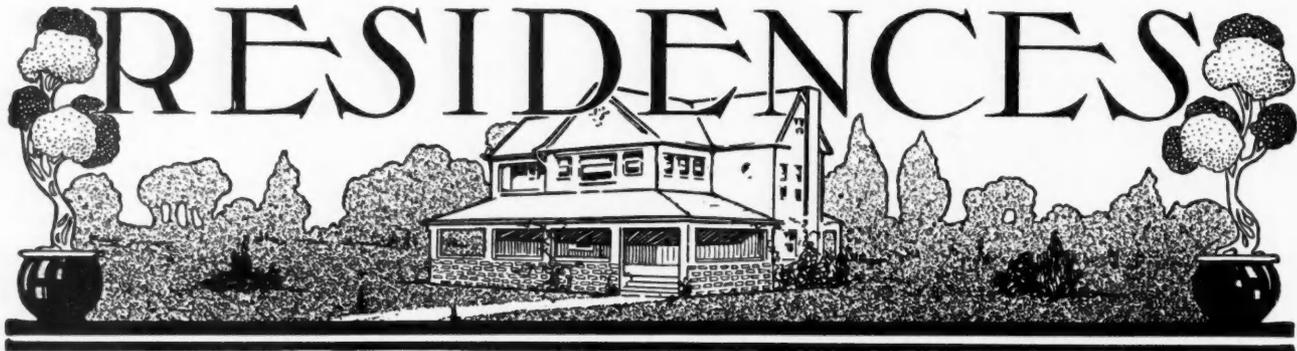
Strengthened Roofing-Cleat

985,501—Patented Feb. 28, 1911, by James H. Bell, of Philadelphia, Pa.

This improved cleat has a large number of bosses such as (9) to keep the nail heads (10) up out of the wet, containing nail holes (7 and 8) and also a strengthening arched section (2) arranged in a zig-zag manner between the nail holes. This zig-zag construction results in strengthening the cleat both transversely and laterally and making it extremely rigid.



Zig-Zag Corrugation Gives Strength



Complete Plans for Modern Stucco House

COMPLETE SET OF PLANS, WITH ALL DIMENSIONS AND DETAILS FROM WHICH THIS ATTRACTIVE RESIDENCE CAN BE BUILT

A VERY popular style of house at the present time, and one that can very easily be made truly artistic, is the cement plaster house with brick trimmings. The perspective drawing herewith illustrates a good example of this. Bluish brown

built, are reproduced. These plans are being used by many of our readers to help them practically in their work. They are drawn out very completely, showing electric lighting and wiring, location of all special features of finish, full details, etc., all sizes and dimen-



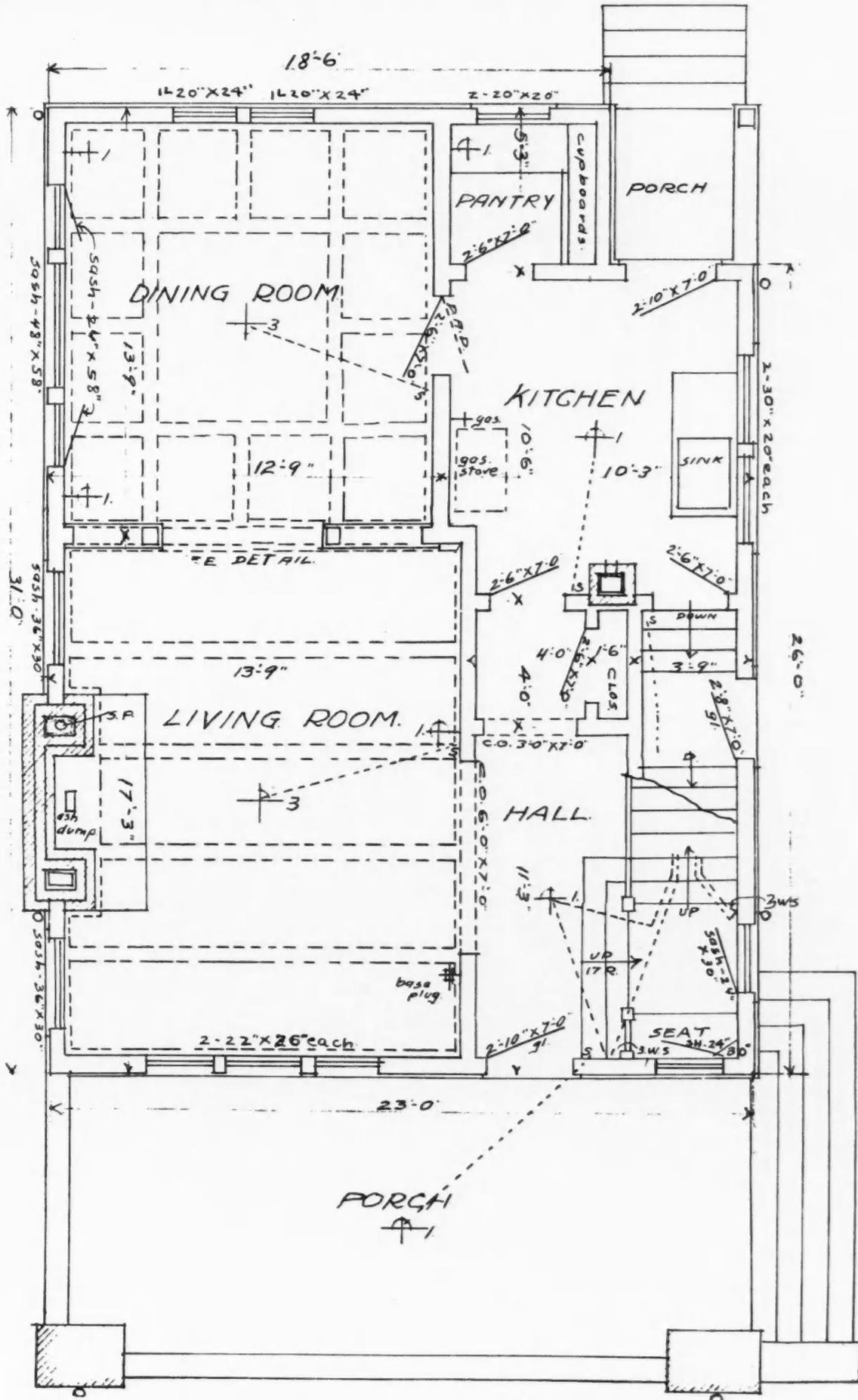
Six-Room Stucco House Trimmed With Brick—Designed for Miss M. Seamon, to be Built this Spring at Ravenswood Gardens, Chicago

glazed brick are used for the chimney, porch piers, continuous sill course at the height of the porch rail and as a sill under all other windows. The stucco is painted a contrasting color, making a rich, striking effect. In this design ornamental rafter ends and supporting brackets are also used as decorative features.

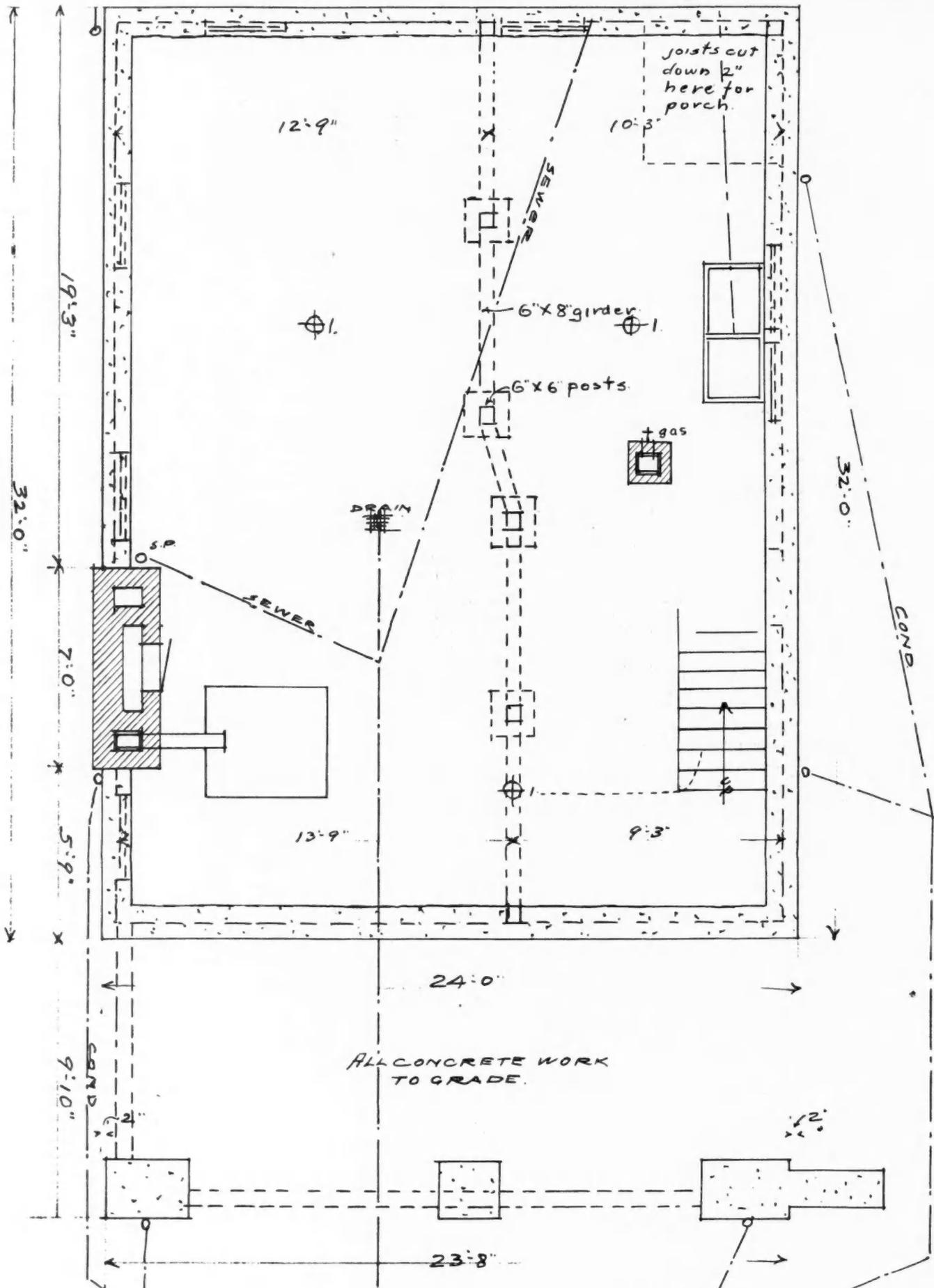
On the next following pages the full set of architect's drawings, from which this residence can be

reproduced, are clearly shown. A study of these plans will reveal many worth-while points.

This is a good design for a narrow building site. The first floor is given over almost entirely to the connecting living and dining-rooms. The arrangement of ceiling beams in these rooms is noteworthy. Upstairs are three very nice bedrooms, with an abundance of clothes closet space.

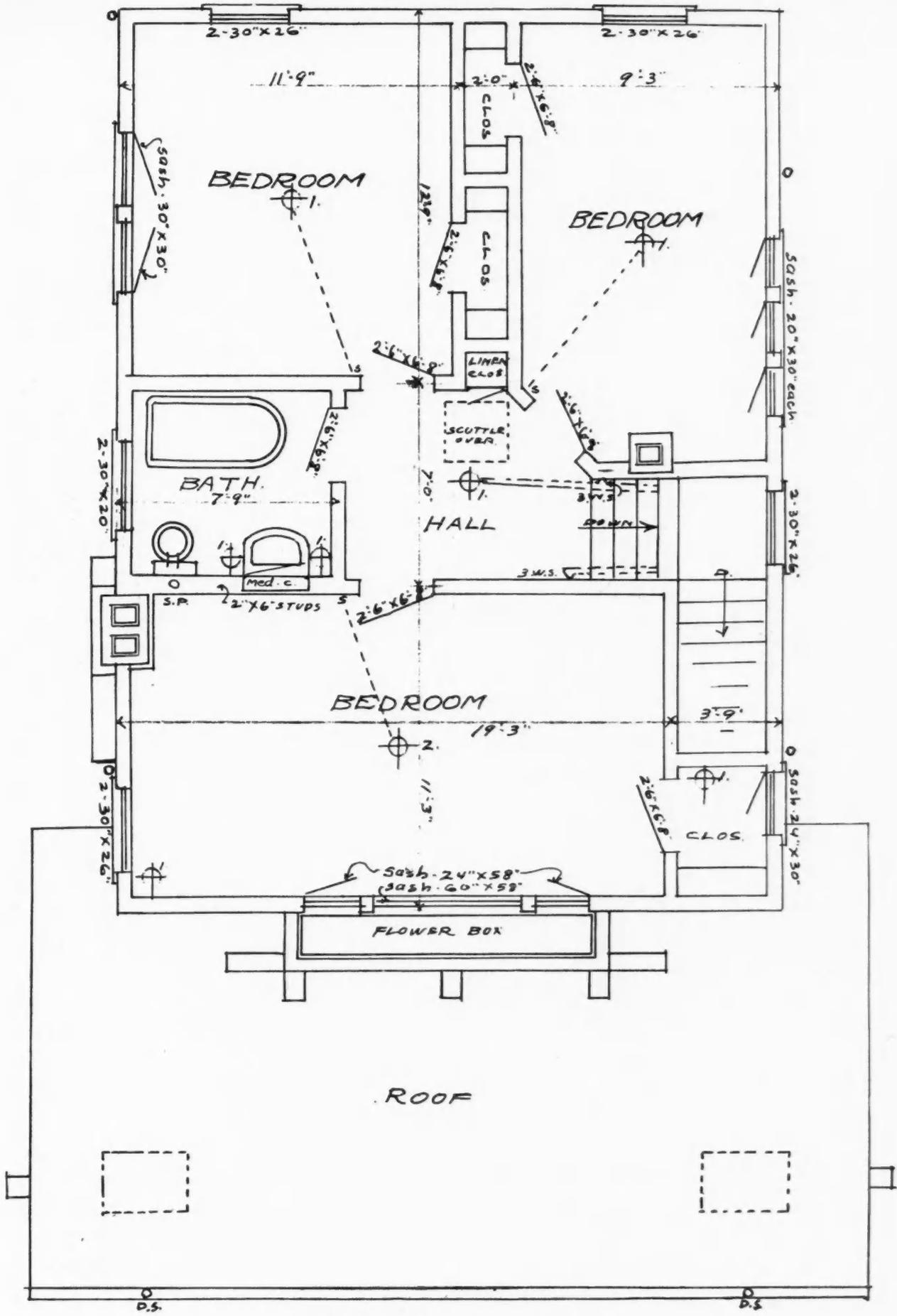


FIRST FLOOR PLAN
House Shown on Page 62



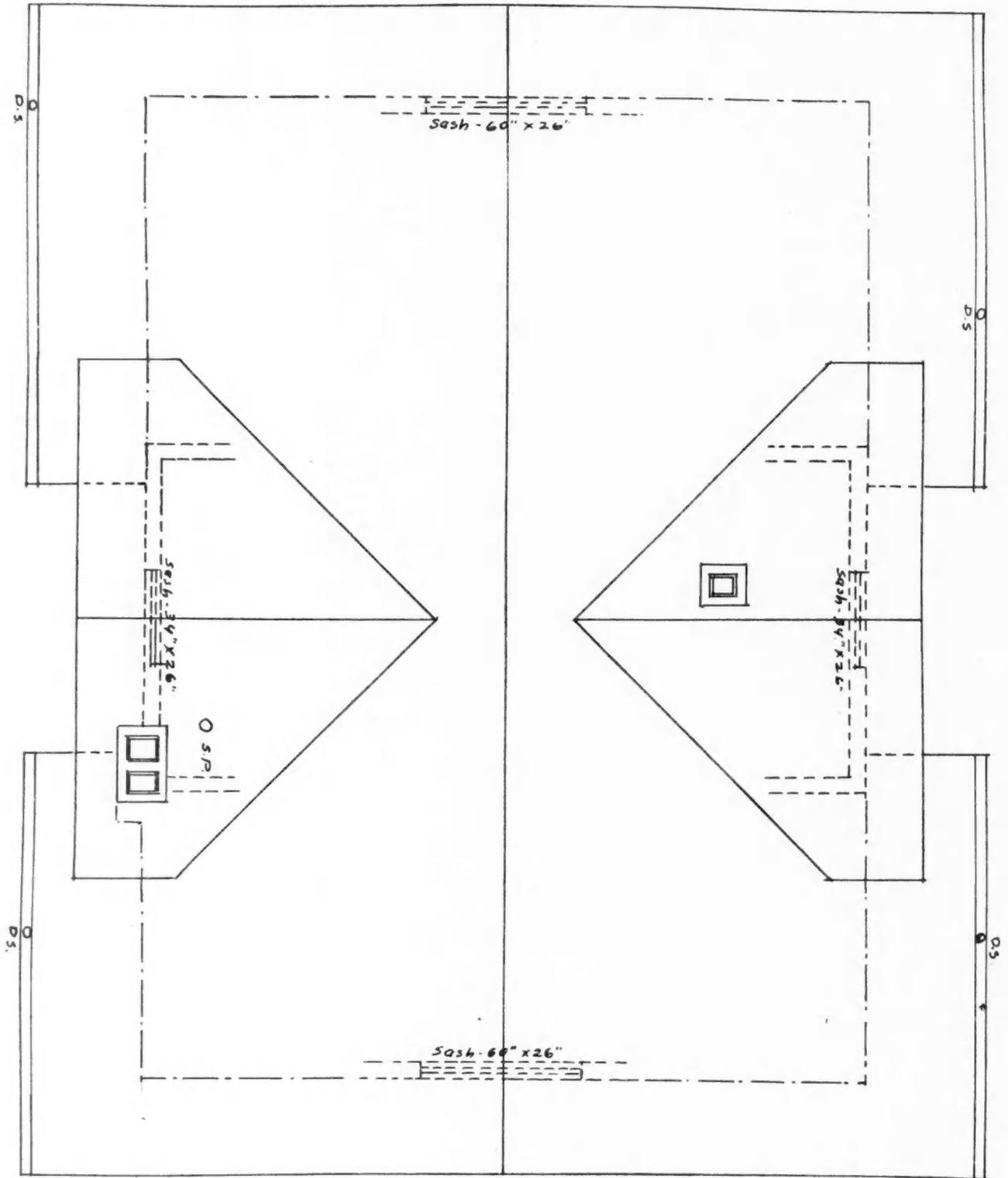
BASEMENT AND FOUNDATION PLAN

House Shown on Page 62



SECOND FLOOR PLAN

House Shown on Page 62



ROOF AND ATTIC PLAN

House Shown on Page 62



LEFT SIDE ELEVATION



RIGHT SIDE ELEVATION

House Shown on Page 62

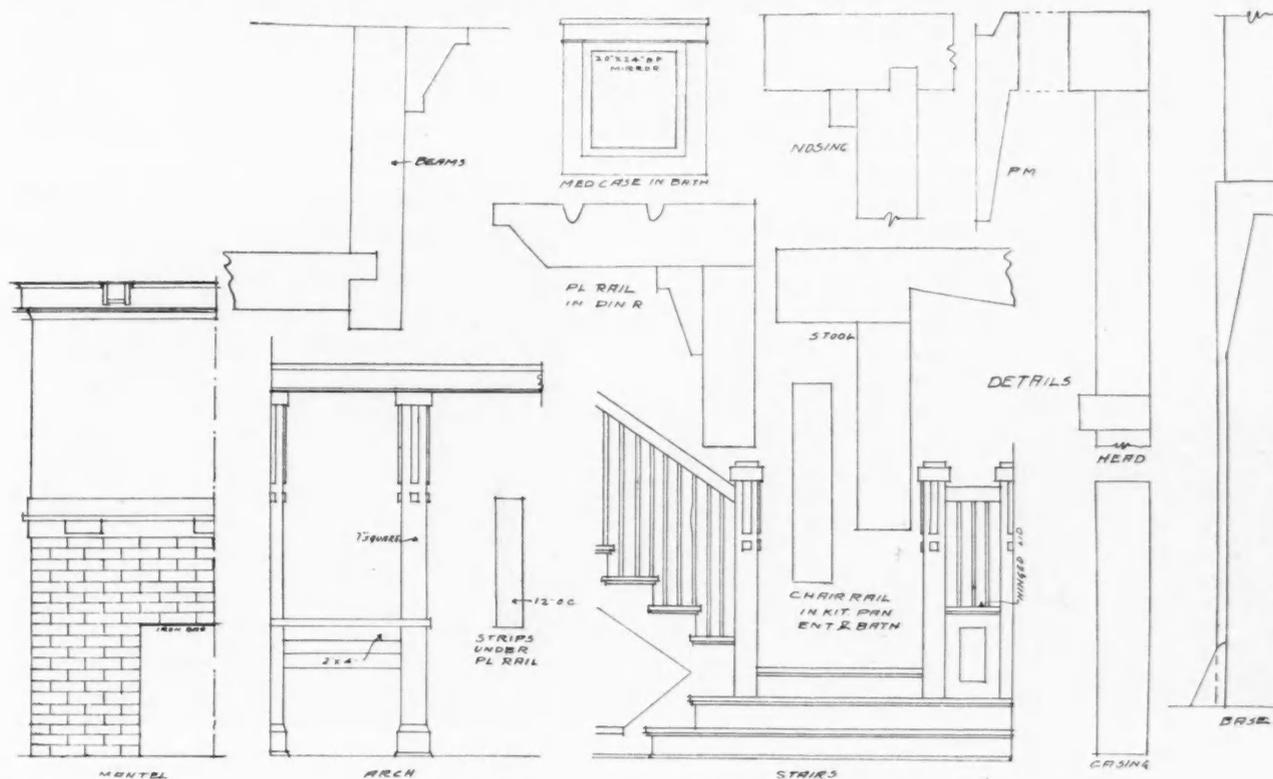
Showy Piazzas Passing

The piazza may be fairly accounted a peculiarity of the American country home. It is rarely seen in houses built in European country towns and here in America it has its strongest following in the South and on the seashore. Suburban dwellers now favor the piazza when it seems an essential part of the home.

Some of the earlier Colonial houses show the style of piazza which was in reality a part of the house. The low stooping roof supported by the white columns and forming a piazza six or eight feet wide because the facade of the house is kept back that far from

home used to be only wide enough to let a string of occupants settle on it like wet sparrows on a telegraph wire. Then occasionally the line of the roof extending over a brick floor provided piazza enough for the needs of this earlier time. It was in the late 70's that the piazza began to attain the abnormal size that it possesses in so many country towns.

It shot from all sides of the Victorian house. It followed the lines of the most picturesque Queen Anne structure with such fidelity that not a curve or an angle in the imaginative architect's plans could escape the piazza. Usually it would have a roof on it, which sometimes served as a balcony for the second story.



DETAILS OF INTERIOR FINISH

House Shown on Page 62

the line of the cornice is a detail of American Colonial architecture that may even be observed at Mount Vernon. This same piazza covered by the roof and in this way made to appear an essential part of the house was used in some of the early Dutch Colonial houses as well.

The Charleston houses, with their broad galleries built about the sleeping rooms, stand in a class by themselves. Of course the utility of such ample facilities to enjoy the open air in a hot town like Charleston excuses a great deal. But the obvious impropriety of subordinating a whole architectural scheme to them couldn't fail to impress itself on some sensitive artistic souls, so they tried to make their porches seem a part of their houses.

In the North the piazza, where it is not nearly so much needed, did not grow so rapidly into favor. The traditional piazza added to the small American

This was not its practical purpose, however. The main object of the roof was to make the drawing room and the dining room as dark as possible.

+

Use of Soft Solder

The use of soft solder in and about machine parts is not generally regarded as consistent with good workmanship, but in the case of loose fixtures it is often useful in tightening up the parts when loose. For instance, if the driving gear of a lathe on the spindle and the latter is so light that it does not afford a good support for the key, the gear, key and spindle may be tinned and heated sufficiently to melt the solder so that it acts as a sort of glue when the parts cool and holds the gear firmly in its place. Such a job will last almost as long as the various parts and save all the lost energy and wear that accompany loose, rattling machinery.



Who Can Beat This?

William A. Radford, Editor-in-Chief: Ohlman, Ill.
I am sending you postal card showing six houses I and my 17-year-old boy, with the help of two men, have just completed. In addition to the above we put up one barn 36 by 40; one barn, 24 by 36; one barn, 20 by 24; one lumber shed, 20 by 60; one blacksmith shop, 24 by 60; one doctor's

A Real Advertising Idea

To the Editor: Oneonta, N. Y.
We are enclosing photo of a concrete water trough which was erected by us and presented to the Oneonta Union Agricultural Society. We also gave three troughs to the City of Oneonta and the towns surrounding. The Universal Portland Cement Co., believing that results would follow, shared



Mr. Baxter and his Son—and Some of their Recent Work

office, 12 by 24; one store building, 16 by 20; and one cement house, 12 by 18; we completed this work in 42 weeks.

If this does not find the waste basket, just tell the boys that we had time besides to read the *AMERICAN CARPENTER AND BUILDER*, the greatest building paper ever published.

We have had your "Cyclopedia" about one year, and can say that I think it the best money I ever spent. The boy reads it and goes out on a job, puts the ideas to practical test and says he could not be without it.

Would be glad to hear more from the boys that are driving nails.
S. W. BAXTER.

with us in the expense of building them. We thought you might be interested in this little advertising scheme which we believe is being productive of business. The original idea was the sale of Portland cement. This was, of course, successful. However, the troughs did more than simply sell cement; they put the firm of N. H. Briggs & Son before the trade in such a manner that it felt friendly toward us, even if they had never dealt with us.
N. H. BRIGGS & SON.

A Word of Encouragement

To the Editor: Graymont, Ala.
Your February number is certainly interesting and instructing, and if you keep on improving your paper at the rate it is going until now, you will not only build a monument for yourselves, but you will be the creator of a class of intelligent craftsmen and mechanics.

If any trade needed improvement and uplift, the carpenter's trade is decidedly the one, and any young man, and the old ones too, for that matter, cannot occupy his spare time any better than by perusing the pages of the *AMERICAN CARPENTER AND BUILDER*.
N. POOL.



One of the Watering Troughs Presented to the Town

Diagonal Under-Flooring to Prevent Cracks

To the Editor: Melfort, Sask.
 In reading the correspondence section of the February issue of the AMERICAN CARPENTER AND BUILDER, I notice W. T. White's criticism of W. D. Graves' remarks concerning which is the better way to nail wall boarding and under flooring, diagonal or at right angles across studs, or joist.
 Now, I quite agree with Mr. White, as far as he went into the matter, and I would add that there is a distinct ad-



vantage in boarding diagonal on the under floor for these reasons. In this region, all dimension lumber and ship-lap, common boards, etc., are of spruce and not seasoned. In fact, the lumber is green, and where it is used for boarding and sheathing, there is a great shrinkage. The wider the boards, the greater will be the cracks when it dries out. Now, when the boards are nailed on Mr. Graves' way and the finished floor laid over them, wherever the cracks are in the lower floor, the upper floor is sure to pull apart at that point, as shown in the illustration.

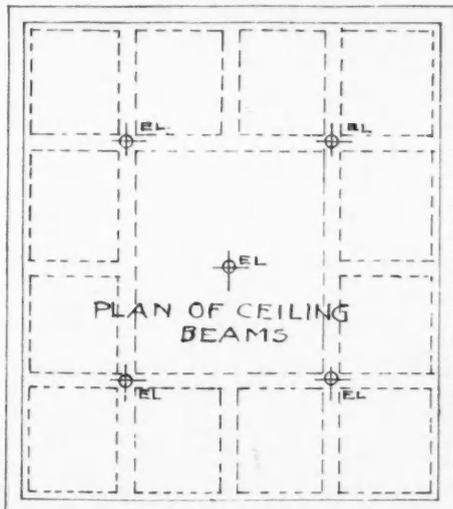
W. M. MOORE.

Paneled Ceiling and Side Walls

To the Editor: Buhl, Idaho.
 I have been a reader of your magazine for about two years, and I have also a set of "Radford's Cyclopedia of Construction," which has been of very great benefit to me.
 A friend has asked me about paneling a dining-room. He wonders whether the paneling should be dropped for a short distance onto the side walls, and how these walls should be fixed to harmonize with the paneled ceiling. I am not familiar with this kind of work and have seen nothing just like it in the magazine. I believe it would be beneficial to others as well as to myself if you would have something about it in the columns of the AMERICAN CARPENTER AND BUILDER.

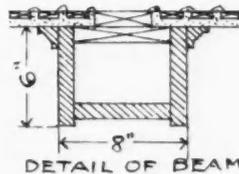
C. R. OVERBAUGH.

Answer: For an attractive paneled ceiling that would not be too expensive, we would suggest an arrangement of wood ceiling beams, arranged as in the accompanying sketch; the panels, or spaces between the beams, to be plastered and tinted. An electric light in the middle of the center panel,



with four smaller lights, one at each of the corners, as indicated in the sketch, would make a very effective lighting scheme.

As for the side walls, we would suggest a five foot six



wainscot formed of burlap, laid off into panels with three-eighths by two-inch wood strips, as indicated. A stock plate rail would finish this at the top, the space above to be papered.

Strictly speaking, the paneling does not "drop" down the side walls; yet, something of that effect is produced by the half-beams which extend entirely around the room and which, being six inches in depth, make a very neat cove finish. The addition of a stock moulding below the half beam completes the finish.

EDITOR.

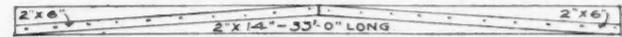
Wanted—An Irrigating Water Wheel

To the Editor: Wisdom, Mon.
 The question I want now to ask is how to build a water wheel to lift water from a stream to irrigate about 100 acres of land. The river is about 120 feet wide and has a fall of about 8 feet to the mile. What I wish to know is how to proceed and how large to build. There may be some of the brother subscribers who have had experience in this line. This wheel is to lift the water from the stream, and is to be made of wood.

VICTOR C. KNUDSEN.

Span Too Long for Wood Joist

To the Editor: Memphis, Mo.
 We have a room to build, 33 feet wide, center to center of walls, walls being of concrete and brick. We wish to span this 33-foot span with yellow pine joists, using no I-beams

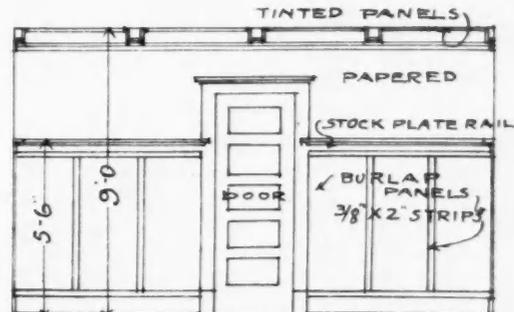


A Bracing Method of Little Real Value

or center posts. Will yellow pine joists 2 by 14 be sufficiently rigid? The live load is 50 pounds. If not strong enough, will they be all right if reinforced with 2 by 6's as per sketch?

MYERS, MOORE & Co.

Answer: It would require 3 by 14 inch joist placed 12 inches on centers to carry the required loading of the floor. Thirty-three feet is a very unusual span for wooden joist and we would suggest that you put steel I-beams at intervals and then run the joist the other way, resting them on these beams. The 2 by 6 inch pieces which you have shown spiked along the side of the joist are of little real value, as overloading will cause these pieces to split along the line of the nails.



ELEVATION OF ROOM.

In case 3 by 14 inch on 12-inch centers are used, we would suggest that at least five rows of diagonal bridging be used in order to stiffen the floor or in other words to more evenly distribute the load upon it.

EDITOR.

To Form the Rail of the "Simple Colonial Stair"

To the Editor: Hamilton, Ont.
 As a constant reader of your valuable paper, I would like to suggest that you give us, in one of your issues, the working drawings to construct the ramp and scroll at the bottom of Colonial staircase, as shown on page 41 of your January number. Also some problems worked out on double curvature would, I am sure, be of great interest to your army of readers. Both subjects are deep and the principles involved are applicable to many problems.
 JAMES HUCKSON.

Answer: To lay out and construct a wreath rail for such a stairway, proceed as follows:

First draw a full size plan of the rail, and the elevation of few of the first steps, as shown in Fig. 1 of the accompanying illustrations. The curve of the rail is described from two centers, shown at 1 and 2. The straight lines *ab* and *bc* are tangents to the center line of the curved part struck from the center 1. The joint at *c* is to be made square to the tangent *bc*.

The side and front elevations of the stairway, as shown in the January issue, indicate the wreath to be level all around

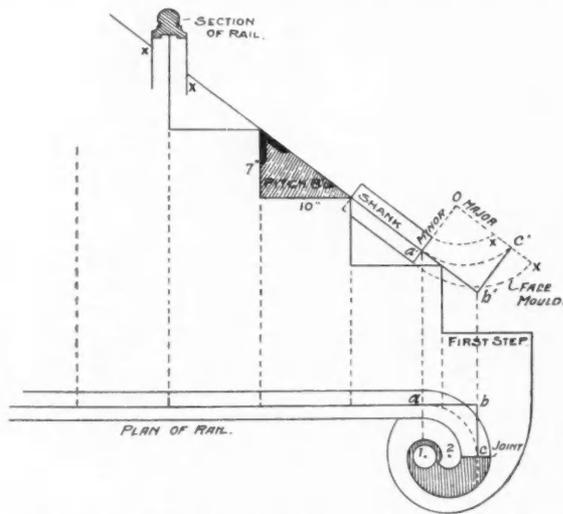


Fig. 1. Plan of Rail and Side Elevation of Stairs

the curve, from point *b* through *c* to 1. Knowing such to be the condition, we proceed to lay out the face mold with the understanding that the tangent *bc* will be a level tangent and that the other tangent *ba* will incline the same as the pitch of the stairway.

The problem regarding these tangents, therefore, will be to find the length of each and also the angle between the two, as required upon the face mold to square the joints.

Because the tangent *bc* is level, its length upon the face mold will be the same as on the plan. The length of the tangent *ba* is found as shown at *b'a'* on the pitch line in

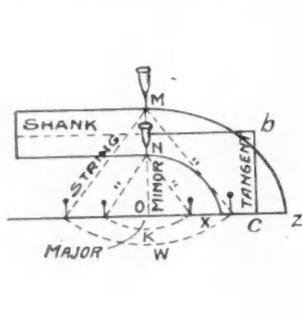


Fig. 2. To Layout the Face Mold by Use of Pins and Strings

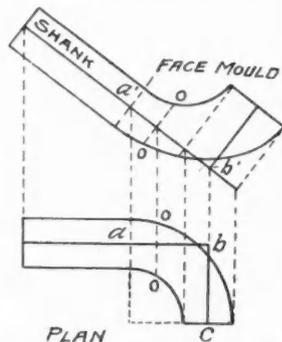


Fig. 3. To Layout the Face Mold by the "Ordinate" Method

Fig. 1, where also at *b'* is shown the angle between the two, as required upon the face mold.

Now, make the joint at *c'* square to the tangent *b'c'* and at *a'* (or further up if a shank is to be added to the curve) square to the tangent *b'a'*.

It may be well to remember that the use made of face mold tangents is to square the joints and nothing else.

It will be observed that the angle between the two tangents

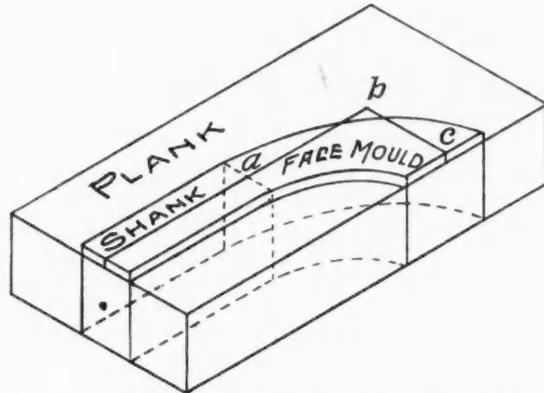


Fig. 4. How to Cut Out the Material for the Wreath from the Plank

is a right angle, and such will always be the case where one tangent is inclined and the other level, as in this example; and for the same reason, it will be necessary to have but one bevel to square the wreath; this is always found, as shown in Fig. 1, to be the top angle of the pitch board.

This bevel is to be applied to the joint, shown at the end *c'* of the level tangent; and therefore this end of the face mold will have to be wider than the end *a'*, which in this case will be the exact width of the plain rail; and that because it is upon the minor axis, as shown. The exact width of the mold at the joint *c'* may be found, as shown on the pitch line at *x* and *x* in Fig. 1.

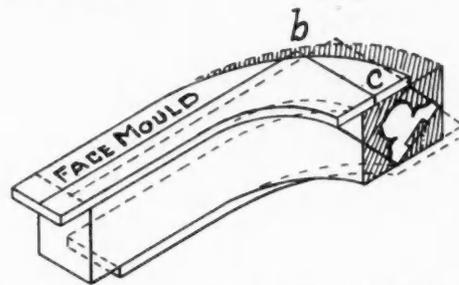


Fig. 5. How to Apply the Face Mold to Twist the Wreath

To complete the mold, we now have but to draw the curves, which are shown dotted, extending from *a'* to *c'*; and for this purpose we will need to find points upon the major axis to fix pins.

How to find these points, is shown in Fig. 2, which is a duplicate of the face mold shown in Fig. 1. In this figure, it is shown that the length of the semi-major axis for the outside curve is equal to the distance shown from *o* to *x* upon the major. Place this length in the dividers, fix one leg in *M* on the minor and describe the arc, *W*, cutting the major, as shown, where the pins are fixed.

For the inside curve, the length of the semi-major, as shown upon the major, is from *o* to *x*; place this length in the dividers; fix one leg this time in *N* on the minor; and describe the arc, *K*, cutting the major where the pins are shown.

Now, fasten a piece of string to the pins on the major, extend it to the points, *N* and *M*, on the minor; place a pencil,

as shown, at these points and sweep the curves as shown from N to *x* for the inside; and from M to *z* for the outside; thus completing the face mold.

In Fig. 3 is shown another method of laying out the face mold. The bottom part of this figure is the plan of the curve and tangents, taken from Fig. 1. Draw the pitch line, shown at any distance above the plan, and draw the perpendicular lines from the plan to cut the pitch line. From the points on the pitch line, draw the lines shown, square to the pitch line; and make each one equal in length to its co-relative line in the plan, measuring from the tangent lines *ab* and *a'b'* respectively.

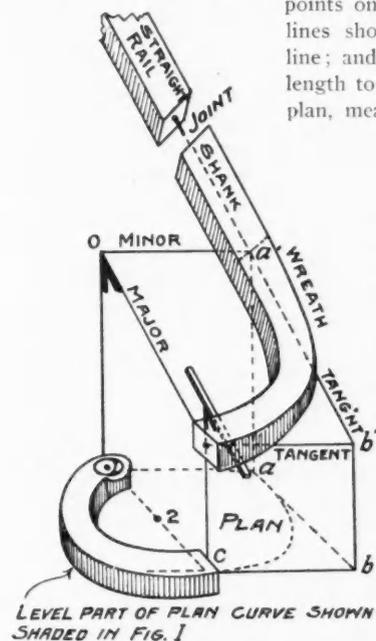


Fig. 6. Perspective of Wreath in Position.

In Fig. 5 the material is shown after it is cut and ready to apply the bevel to it, as shown at the end, *c*. The way to apply the bevel is to hold the stock parallel with the joints and the blade right in the center of the plank, as shown. The face mold will now have to be applied to the top and bottom face of the material, as shown, to mark the finished form of the wreath.

Now, the wreath may be twisted by chopping off the waste wood, shown shaded in the figure.

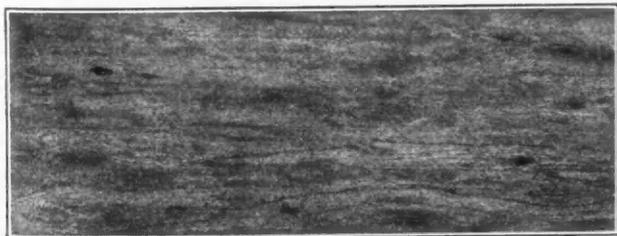
The portion of the curve shown shaded in the plan Fig. 1, is level, and therefore needs but to be cut square to the face of the plank.

The joints shown at *c* between the two pieces will be a "square butt" joint, owing to the bottom tangent of the wreath being a level tangent, as may clearly be perceived by comparing Fig. 1 with Fig. 6, which is a perspective sketch of the wreath in position, showing the position of the tangents, axis and all the points made use of in Fig. 1, and cannot fail being of great help toward understanding all of the preceding figures.

MORRIS WILLIAMS.

"Bird's Eye" Elm

To the Editor: South Woodstock, Vt.
I am sending you a piece of elm taken from the mill of Mr. Geo. Rood of this place. Unfortunately the lumber



Elm With Delicate "Bird's Eye" Marking.

from this tree was sawed into trunk straps before it was found what the quality was. The piece I am sending you was taken from a slab. Mr. Rood has been in the mill business some thirty years, and this is the first elm like this he has ever found. The tree was the same clear through.

Can you give us any information in regard to this?

C. F. PERRY.

Answer: We agree with you that this is quite a curiosity, as it is what might well be called "bird's-eye" elm. It is difficult to say just what caused this peculiarity of growth, yet it is probable that some fungus disease attacked the tree when young, which affected the inner bark and the layer where the tree growth takes place. This condition evidently continued throughout the whole life of the tree, so that every "ring" as it was added each year showed the markings, which are really scars, and which now being cut across reveal the beautifully figured surface and peculiar graining in evidence in this slab. (Most of those markings were too delicate to be successfully caught by the camera.)

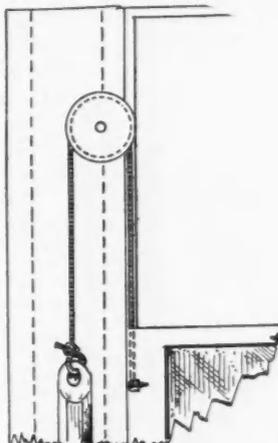
Perhaps some of the readers have some ideas to offer in regard to this.

EDITOR.

Some Kinklets

To the Editor: Novinger, Mo.

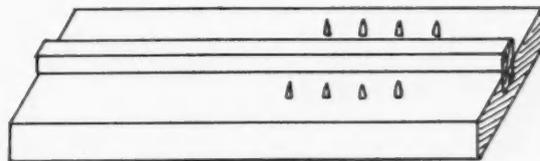
Here is a plan to fasten sash pulleys, which may be new to some of the readers. Drive a No. 16 nail through the side jambs, just back of the pulley stile and passing through the pulleys, as shown in the illustration.



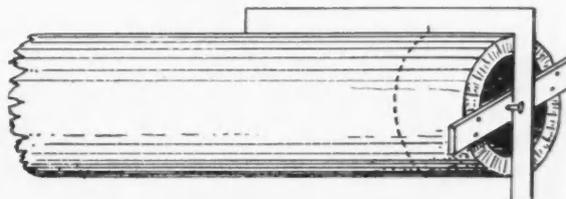
To Fasten Sash Pulleys.

A *Templet for Pulley Openings*.—Take a 7/8-inch block, seven inches long, and plow groove in center for parting stop, and set four points on each side and file them to a sharp point. Then fasten in a piece of stop and it is ready for use. Place the template on the pulley stile and press down. The points will locate the centers to bore for the openings.

To *Square a Round Timber*.—To square the end of a round column or shaft, drive a nail partly up anywhere in end of column. Hang the square over the end of the column with



Handy Templet for Laying Out Pulley Openings.



To Square the End of a Round Timber.

wing resting against the nail and the body along the face of the column, and make a row of check marks clear around the column at point to be squared.

CHAS. E. OTTO.

More About Heating Pipes

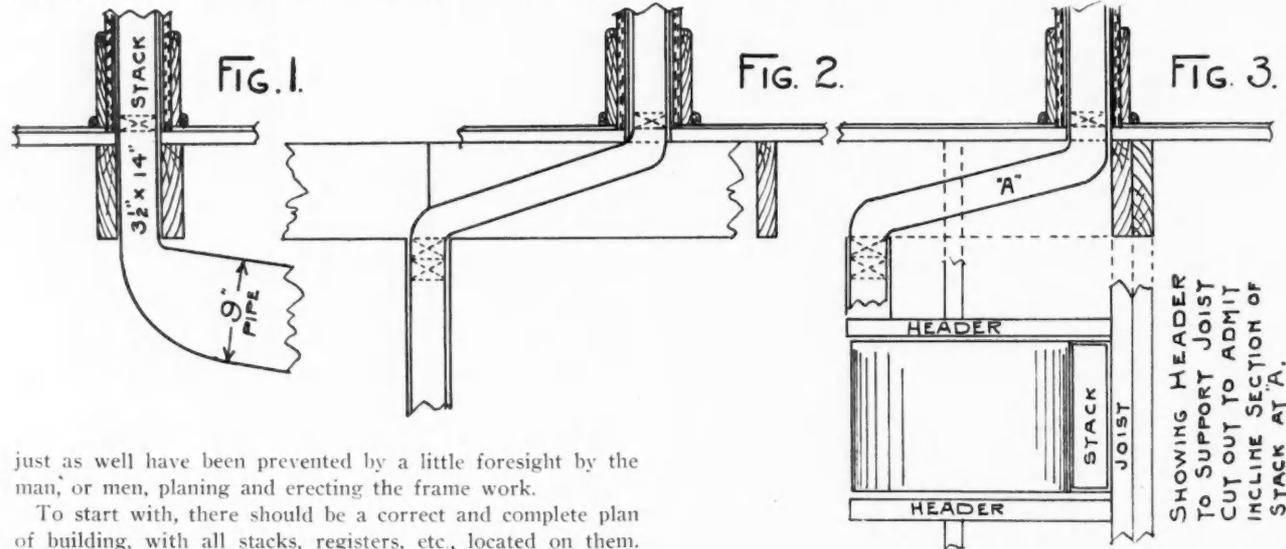
To the Editor:

Grinnell, Iowa.

In looking over the January number of Correspondence pages, I noticed a protest against the way hot-air pipes and stacks are sometimes installed, and agree with your correspondent that the method cited was wholly wrong and could

Now, in erecting that portion of frame work where hot-air stacks pass between studding from first to second floors, all studding and joist should be placed directly over each other and thereby obviate all cutting, etc., when stack is being placed.

Another important point to be looked after, is the direction of second floor joists when second floor partitions do not



just as well have been prevented by a little foresight by the man, or men, planing and erecting the frame work.

To start with, there should be a correct and complete plan of building, with all stacks, registers, etc., located on them. This plan should be on hand while the frame work is being erected, as carpenters can then place all studding and joist so as to do away with the unnecessary waste of time and material usually consumed by the furnace men in getting a run for pipes and stacks, to say nothing of the detriment to frame work caused by the cutting to admit stacks and pipes, and which could have been avoided, had the studding and joists been placed with a view of admitting the furnace pipes.

Your correspondent shows by sketch where a joist is placed directly under partition, having a stack entering at bottom. The joist being so placed would necessitate cutting quite a portion of joist away or reducing the size of pipe, as was done in that case. Now, had the carpenters placed the joist to one side of partition, the stack could have been connected with pipe in basement, without any cutting or reducing the size of pipe, as shown by Fig. 1.

come directly over lower partition, as is sometimes the case, as shown by Fig. 2.

In a plan of this kind, joist if possible, should run at right angles with second story partitions, but if joist must run parallel with partitions, as is sometimes necessary to support a projection or extension of some kind, then there must be headers framed in to admit the horizontal run of stack, as shown in Fig. 3.

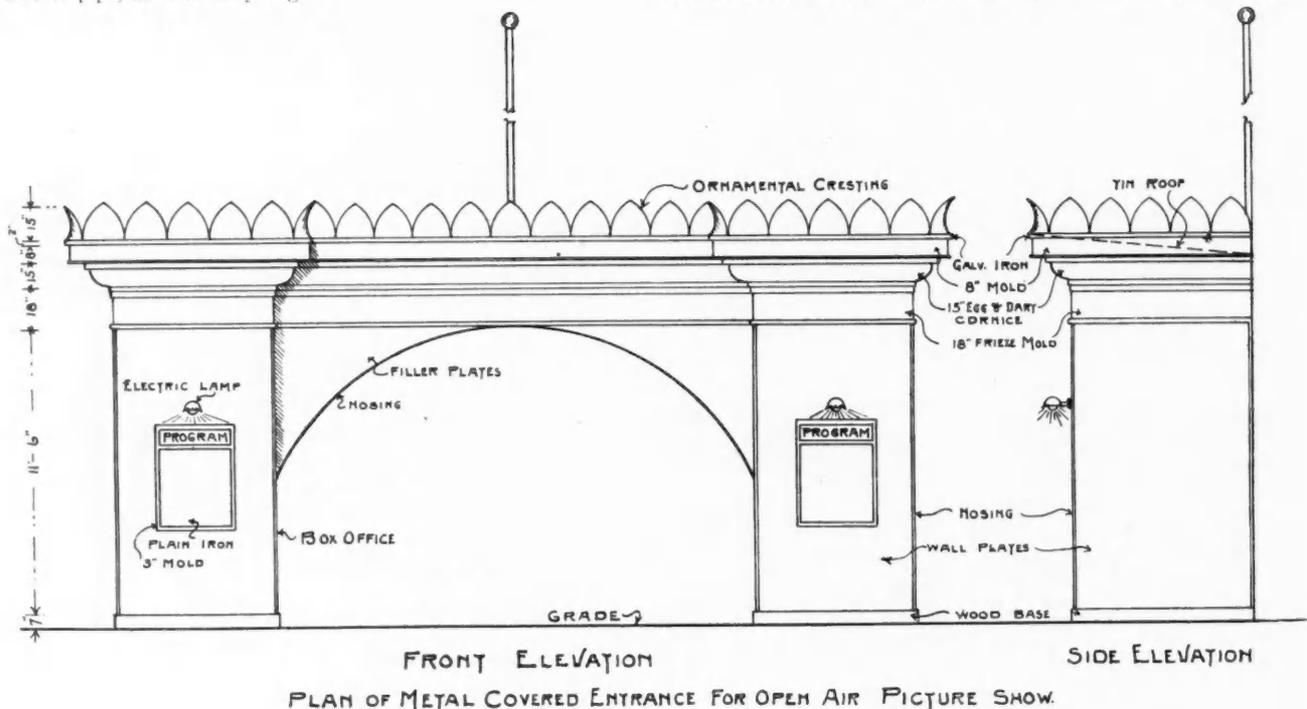
G. J. SHUSTER.

Metal Entrance for Open Air Picture Show

To the Editor:

St. Louis, Mo.

The open-air photo-play has created considerable new and special work. The exhibitor is looking for the most attractive finishes of their respective kinds. Herewith is shown a metal covered entrance for an open-air show. The design is orig-



PLAN OF METAL COVERED ENTRANCE FOR OPEN AIR PICTURE SHOW.

inal and especially planned, using stock cornices, molds and plates. The carpenter work is the most important. Same should be well done. Care should be taken in lining up all exposed surfaces.

Frame the whole in the regular manner. Cover all studding and roof rafters with 7/8-inch common sheathing. Cover roof with tin or some good composition roofing. The ornamental cresting can be had of any manufacturer of sheet metal specialties.

In erecting same, provide a base, as shown in sketch, formed out of galvanized iron, set to project about 3 inches. The member marked "8-inch molding" should be of some flat pattern. Provide a 15-inch egg and dart cornice, with an 18-inch frieze at the base. Select one with a rope mold attached.

The floor plan shows merely two towers connected by an arch which intersects towers about 6 feet from floor line. Arch is set back about 12 inches, to allow a neat mitre in cornice. Cover the arch with a neat filler, using nosing at the corners. Cover walls of towers with a neat wall plate, with a nice flowered or block pattern. Use a 10-inch wood base. Form frame for program as shown, using a 3-inch mold with a neat profile; frame can be made in size to suit.

In painting, select light harmonizing colors, which have a tendency to bring out the embossing in bold relief. Keep the metal well painted to protect same from the weather. An entrance finished as described above is sure to meet favor, and can be built for 1/3 less than another finish.

W. W. DANIELS.

T-Shape Gothic Roof Barn

To the Editor: Highland, Mich.
The gothic roof for barns is a style that is going to become popular and in some sections a large number have already been built. The one I built last fall (described in the February number of the AMERICAN CARPENTER AND BUILDER, page 72), is the only one in this part of the country, that I know

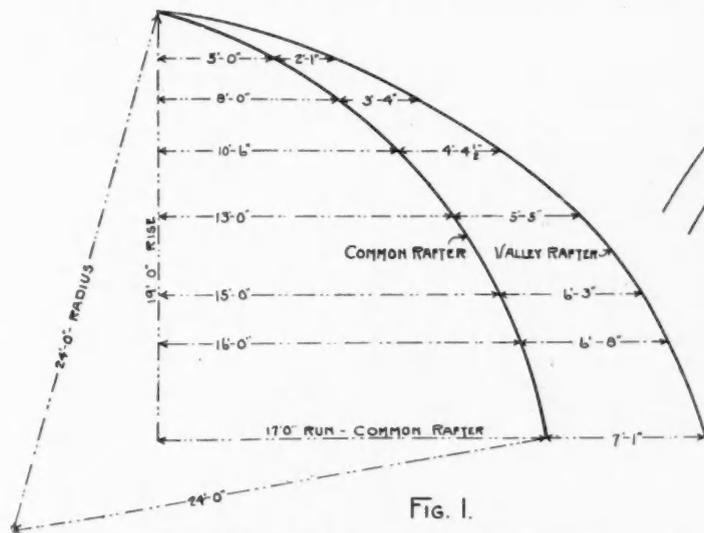


FIG. 1.

of, but already there are several farmers talking of having barns built after that style. I have already taken one large barn to build this year with gothic roof, and this will have an addition on one side, same width and height as barn proper, making it necessary to frame valley and jack rafters and (by Heck) we can do that too. I am going to try to explain how I expect to get the shape, length and cuts of the various rafters used in the valleys.

This barn will be 34 feet in width and the roof will have a rise of 19 feet above the plate line.

In the February number I tried to show how I developed

the rafter by bisecting from face of purlin and main plates and using a 24-foot radius. But for this barn I am going to use the rise and run of roof, which will be more simple and easy to understand, but of course makes more figuring to get position of purlin plates.

Fig. 1 shows how to get common and valley rafters. To get lengths and cuts of jack rafters, the diagram will have to be spaced according to width and distance apart of the rafters (Fig. 2), and as many jack rafters of each length built as will be required. By squaring across face and under side of jacks from the parallel lines on floor representing the thickness of rafters, and then marking diagonally top and side of jack, I will have the plumb cut of each, Fig. 3. You can readily see that each length jack will have a different plumb cut from the others.

The same method will work for hips; and do not forget to reverse for opposite sides.

ALBERT GONNE.

How to Frame Window and Door Caps

To the Editor: Marion, Ohio.

I shall be very glad to see published in your Journal the best way to frame caps for windows and outside doors. I have used several ways. I have reference to caps which are used over doors and windows, and especially where patent siding is used. Which is the better way, when flashing is used?—to frame in the cap, or rip the cap so as to butt the edge against the siding and nail the flashing on top; the top edge of the flashing to have a flange which should be driven into the siding and nailed to make a perfectly tight job.

I have had complaints about both ways. First, in framing the watertable so as to have a neat, tight job, the siding naturally swells some after exposure to damp weather, which seems to raise the cap on the outer edge and causes a leak between the cap and the bed, or cap mold, and especially so over large windows.

Second, by butting the cap against the siding, as previously described, is a better and more substantial way, which can be fixed easily if there should be a leak, but it seems to reveal

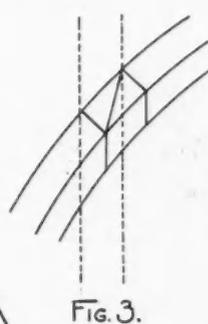


FIG. 3.

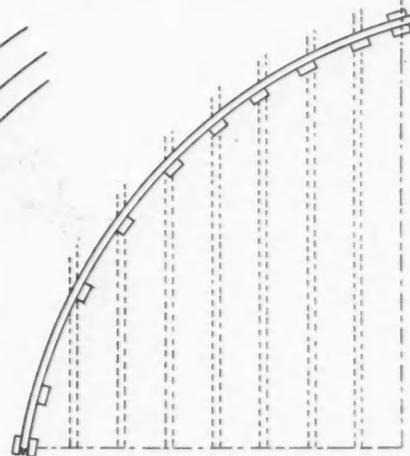


FIG. 2.

a cheapness because of the cap not being framed into the siding. Nevertheless, the word cheap does not in my estimation signify a poor job, but rather a poor job is one which causes trouble afterwards.

E. B. ZACHMAN.

Answer: As Mr. Zachman puts and answers his own question so completely that it does not leave much for the Editor to say, except to side in with him. However, we will leave a place open—to get in out of the wet, if need be—and let others come to our rescue. Every carpenter is up against this proposition and those in the more rainy sections of the country should be the best judges in service ability. EDITOR.

A Good Line of Work

To the Editor:

Mason, Nevada.

Find enclosed \$2.00 for my subscription to the AMERICAN CARPENTER AND BUILDER. I'm a subscriber of only two years' standing; but can assure you that I'll be a subscriber for the remainder of my life, no matter whether I follow the business or develop into a "bloated bond holder." Your paper is all, and more, than you claim for it.

I'm enclosing photos of some of the work I've done this past summer, as I frequently see pictures of some of the



New Baptist Church, Mason, Nev.

work done by other subscribers. I designed, made the plans, and afterward contracted for and erected the buildings pictured.

The residence is 36 by 42 feet, 12 rooms, two baths, 9 closets, store room, two fireplaces, and a 20 by 30-foot basement, modern plumbing and "Honeywell" heating system. The church is 32 by 56 feet, arched ceiling, with a class room at front. This is divided from main room with counterbalanced doors, which enables them to throw the entire building into one room. I have built two depots, 26 by 40 feet in size, besides 4 cottages and some plain ware-houses, etc. I am going to turn in my bid tomorrow on a 46 by 80-foot two-story brick building.

A. W. FRASER.

Wanted: How to Lay Out Sash and Door Work

To the Editor:

Chicago, Ill.

In your next edition, would you please publish all the information you can regarding laying out sash and door work. I am taking your magazine, and is a great help to me in my work, as I am a woodworking machine hand, and all I lack is the knowledge of laying out cash and doors.

ED. J. PEAR.

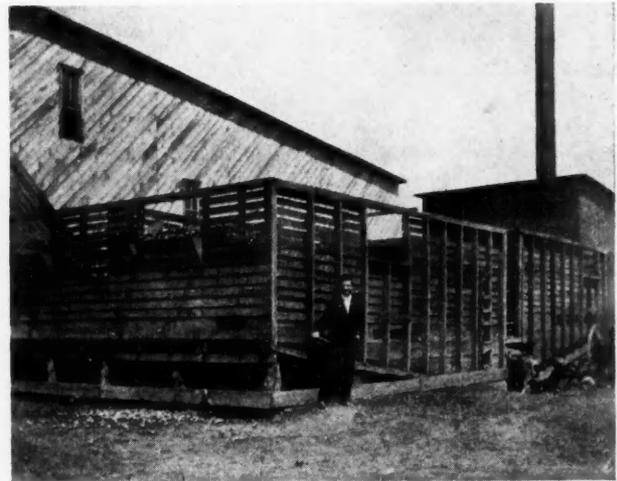
+

Apple Bins

To the Editor:

St. Louis, Mo.

You may be interested in this picture showing the apple



How They Store Apples in Arkansas.

bins of the Southern Fruit Product Company, located at Rogers, Ark. This plant has an output of 10,000 gallons of vinegar per day. Some of the large receptacles in this plant hold 16,000 gallons.



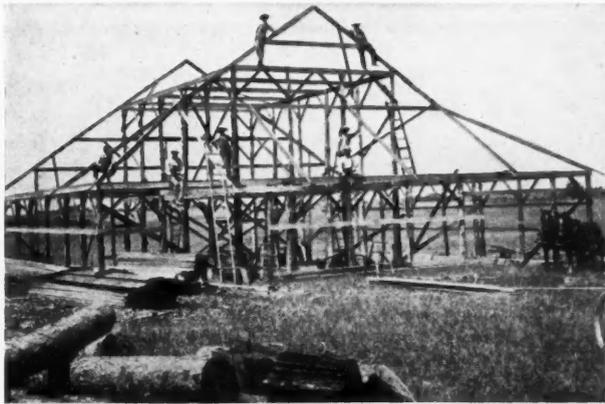
12-Room Residence With All Modern Appointments, Designed, Drafted and Built by Our Subscriber.

How a Pole Barn Is Built

To the Editor:

Milo, Iowa.

I am sending you a photograph showing the framing of a barn of rather novel construction; that is, it may be new to many, although this is a style quite often seen in these parts. It is a pole barn which I built last July for Frank Crabb, one mile east of Milo. I have seen several frame barns in your paper but I do not remember of ever having seen any pole barns illustrated, so I thought I would give you this one. It



Round Pole Barn Framing.

is of comparatively small size, being 56 by 56 feet square in the main part. The center posts are 24 feet long and the side posts ten feet.

In localities where dressed timber is scarce and hard to obtain, pole frame barns are good since they are stanch and strong, though inexpensive. The picture shows pretty well how the framework is arranged. J. W. OLDAKER.

Chemistry of Lime Setting

To the Editor:

Urbana, Ill.

In an article in the August number I set forth the principles involved in the setting of gypsum plaster, or calcium sulphate (Ca S O_4). I shall now attempt an outline of the setting of lime (Ca O), incidentally mentioning the chemical composition, manufacture, use, etc. Lime stone is found abundantly in nature, the chemical composition being Ca CO_3 (calcium carbonate). The process of manufacture is simply one of heating the Ca CO_3 (lime stone) until the CO_2 (carbon dioxide) is driven off, leaving a simple oxide of calcium, Ca O , (quick or barrel lime).

The reaction of lime stone burning is $\text{Ca CO}_3 + \text{heat} = \text{Ca O} (\text{quick lime}) + \text{CO}_2 (\text{gas})$.

When the lime is slacked the reactions are as follows: $\text{Ca O} (\text{barrel lime}) + \text{H}_2\text{O} (\text{water}) = \text{Ca} (\text{OH})_2 (\text{slacked lime})$.

$\text{Ca} (\text{OH})_2$ (calcium hydroxide) or slacked lime, is then mixed with sand to give it body and is ready to be used as mortar.

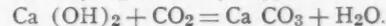
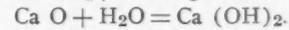
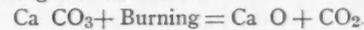
We have thus far been trying to get the lime in a condition to use as mortar, but as soon as we have used it we want the Ca CO_3 , or lime stone, condition again. To cause the $\text{Ca} (\text{OH})_2$, slacked lime, to become Ca CO_3 , or lime stone, again is our sole object.

We will take a practical example. A house is plastered with lime and with the "brown" or rough work applied in the usual manner. The house should be immediately closed and kept so, for a period varying from one to three weeks, depending on outside temperature, in warm weather the chemical changes being quicker than in cold. This is the vital time, for it is at this stage that CO_2 (carbon dioxide) is being absorbed from the air; and in the presence of the re-

tained moisture it changes the $\text{Ca} (\text{OH})_2$ (slacked lime) to Ca CO_3 (lime stone) again. The reaction equation is $\text{Ca} (\text{OH})_2 + \text{CO}_2 = \text{Ca CO}_3 + \text{H}_2\text{O}$.

The building is then thrown open and completely dried, without direct drafts; the brown coats to be thoroughly dry or nearly so before any finish coat is applied. If setting has not been completely accomplished when the finish is applied two very serious things happen. First—the CO_2 nearly ceases to circulate through the brown coats, thus stopping the hardening process. Secondly, the finish (usually depending on gypsum for its hardening) is kept wet too long; and as a result changes more or less.

Lime mortar will never harden completely so long as the moisture is retained; for after the carbonization has been completed, in other words after the CO_2 has completely satisfied all the calcium, then the CO_2 in the presence of H_2O , or water, forms $\text{H}_2 \text{CO}_3$; and this acting on the Ca CO_3 changes it into the unstable form of the carbonate Ca H CO_3 (calcium acid carbonate). This is a soluble substance. Bear in mind one thing, no chemical changes take place as well without water as with it. If you use lime mortar for plastering, don't try it too quickly. In laying bricks be sure the bricks are not so dry that they absorb all water from the mortar, especially if the work is where it will not subsequently be damp, as in chimneys, inside parts of thick walls, etc. Remember for the proper setting of lime mortar air and moisture are absolutely necessary and that set lime should be the same chemically as it was when taken from the quarry. In other words, from quarry to wall is from rock to rock. The cycle the changes is as follows:



Mortar cared for with the foregoing principles in mind, will be eminently satisfactory and for plastering will make an excellent wall. FRANK P. PRITCHARD.

He Finds Our Advice Good

To the Editor:

Asbury, Mo.

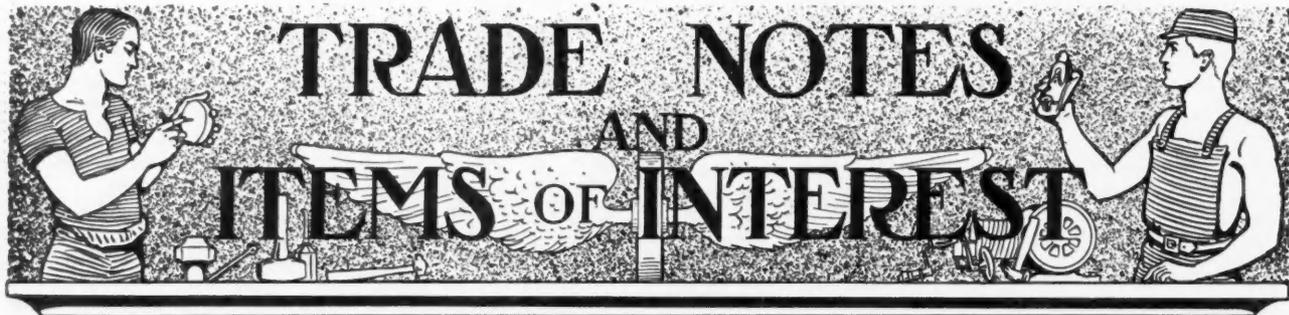
I wish to thank you for the blue print which you sent me of a truss roof for barn also for publishing same in the July number of the AMERICAN CARPENTER AND BUILDER. I wouldn't take what the journal costs me for the blue print.

Inclosed you will find picture of the frame work of a barn 40 by 62 by 18 feet, built after this advice for Jas. Fry, Asbury, Mo. Will say it has been in one of the severest storms this community has ever witnessed and is still O. K.

LESLIE L. HALL.



Barn Framed According to Advice in These Columns.



Polychrome Concrete

By ALBERT MOYER, Assoc. Am. Soc. C. E.

What is known as "polychrome" concrete is illustrated by the concrete vase exhibited at the Architectural League, New York, during February. The materials were Portland cement, crushed black and crushed yellow marble screenings, passing through a No. 8 screen ($\frac{1}{8}$ -inch mesh), and black and yellow marble chips passing through a half inch, but collected on a quarter-inch screen.

These aggregates were mixed medium wet and molded in a plaster mold. As soon as the concrete was hard enough to hold in shape, which took about 48 hours, the inside core was removed. Inspection would then show as to whether it was safe to remove the outside mold. If sufficiently hard



Black and Yellow
Concrete Vase

the outside mold was removed and the surface immediately scrubbed with a stiff house scrubbing brush and water. If this failed to remove the surface coating of cement, a wire brush was used. The concrete was brushed until the larger aggregates all appeared, and in order to obtain texture, the brushing was continued until they were thrown slightly in relief.

The vase was then cleaned off with water and kept damp for a couple of weeks, after which it was washed off with a solution of dilute muriatic acid 5 parts water. The acid was left on for a couple of minutes and then scrubbed off with clear water and a scrubbing brush.

The effect as to color, texture and form is permanent. The bonding material (Portland cement) is removed from each particle of stone, there being no artistic, practical or technical reason why the bonding material alone should be displayed to the eye.

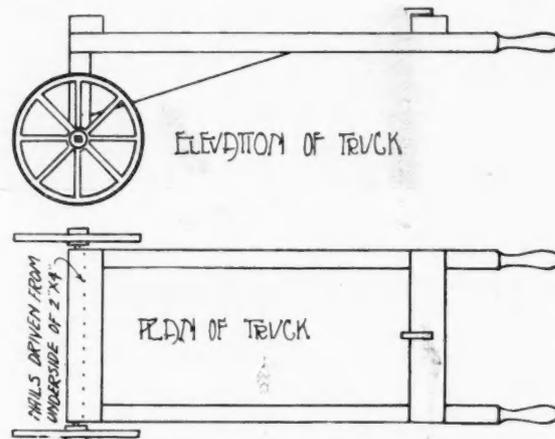
This opens up a wide field for garden ornaments, decorative panels and balustrades for bridges, etc. The method and effect undoubtedly comply with all the fundamental principles of art.

Handy Trucks for Barrels

A farmer often finds it necessary to move barrels filled with material from one place to another. Here is a little truck that makes it very easy to do this work. It is made as shown in the drawing.

Two straight handles are mounted on a pair of strong wheels. The wheels were taken from a boy's express wagon. The handles were made by ripping a 2 by 4 in the middle and rounding off one end of each piece. This forms the bed on which the barrel rests.

The crosspieces that connect these two handles are mounted so that the barrel rests in place easily. Along the bottom crosspiece are driven in small nails, afterward filing off the heads, making sharp points to catch into the barrel and hold it in place.



Useful for Handling Barrels

In loading a barrel onto this truck, the truck is placed upright against it. A small catch is arranged on the truck to hold the edge of the barrel while the truck is being picked up.

Filter for Drinking Water

In reply to a correspondent who asks how to make a household filter the *Scientific American* advises to use two stone pots or jars, as shown in the accompanying engraving, the bottom one being a water jar with side hole, if it can be procured; otherwise, if no faucet can be used, the top jar can be removed to enable the water to be dipped out. The top jar must have a hole drilled or broken in the bottom, and a small flowerpot saucer inverted over the hole. Then fill in a layer of sharp clean sand, rather coarse. A layer of finer sand, a layer of pulverized charcoal with dust blown out, then a layer of sand, the whole occupying one-third of the jar.



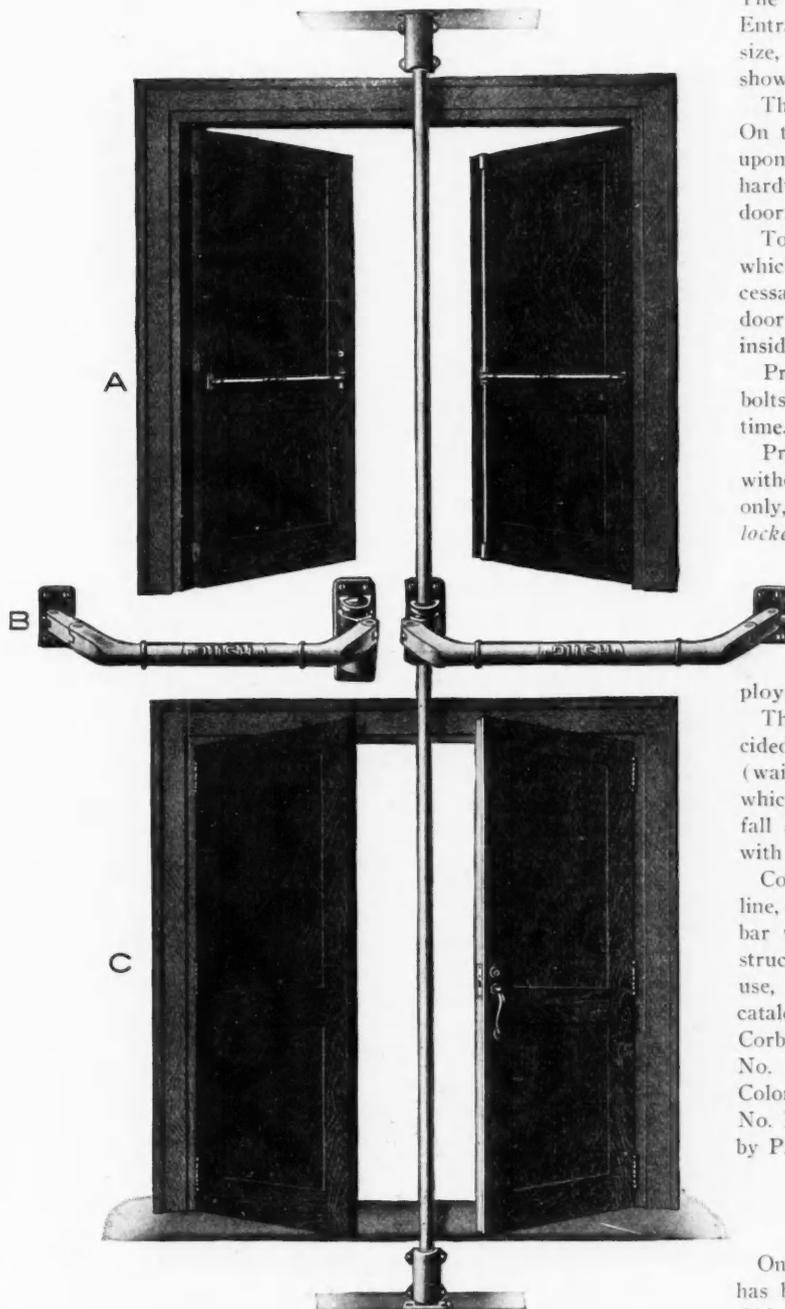
Drinking Water
Filter Made of 2
Stone Jars

To Remove Rust from Polished Surface

There are various chemicals that will dissolve rust (oxide of iron), and in this way remove it, but there is nothing that will remove or fill up the little pits caused by corrosion, and in this way restore the polish. The only remedy is to remove the rust by scraping and repolish the surface mechanically, if it is desired to be bright. If it is to be finished black the pits may be filled up with any hard varnish, applied warm, and when thoroughly dry and hard it may be repolished.

Anti-panic Door Fasteners

The time is at hand when every building in which audiences assemble or which contains large numbers of people will be required by law to have its doors equipped with quick-operating safety devices ensuring uninterrupted passage to the outside. Repeated holocausts and fatal disasters due to unreasoning fright in crowded auditoriums have awakened a demand for ready exit, and the mere suspicion that a building is not adequately equipped in this regard brands it as a



A. Double Entrance Doors, inside view
 B. Corbin No. 2359 x 2359 Anti-Panic Door Fasteners
 C. Double Entrance Doors, outside view

"fire trap" to be shunned, and regarded with disfavor by people and authorities alike.

The presence of numerous exits plainly marked is one of the best of guarantees against a panic. Let the public know that the exit doors are always ready to swing outward at a touch, and its confidence and freedom from alarm in emergencies are assured.

In the schoolhouse a ready exit is of the utmost importance. The presence of large numbers of little children whose instinct is to run home when trouble comes and who are easily frightened and thrown into panic makes it absolutely imperative to have exits unobstructed. Hundreds of lives needlessly sacrificed have taught us this lesson in a manner that will never be forgotten.

Realizing the full importance of this matter, P. & F. Corbin, have perfected their line of Corbin Anti-Panic Door Fixtures, with Automatic Release, for both single and double doors. The illustration herewith shows the arrangement for Double Entrance Doors, the Anti-Panic Fasteners being pictured large size, and views of both inside and outside of the doors being shown.

This set consists of a bar applied to the right-hand door. On the left-hand door a bolt is used. No hardware is used upon the outside of the left-hand door and any regular Corbin hardware can be used upon the outside of the right-hand door. No knob or handle is required for the inside.

To lock the door, the key is used in the inside cylinder, which stops the outside knob only. To enter, it is now necessary to use a key in the outside cylinder. Each time the door is closed it is locked, until the key is used on the inside to unstop the outside knob.

Pressure upon the bar on the left hand door turns the bolts at top and bottom and both doors open at the same time.

Pressure upon the bar on the right-hand door opens it by withdrawing the latch-bolt and opens the right-hand door only, the left-hand door remaining closed. *The door is never locked on the inside.*

Instantaneous release, easy operation, simple form, strong construction, adaptability to different conditions of service—these are the chief characteristics of the Corbin Anti-Panic Door Fasteners. Direct movements with an absence of friction-causing mechanism are employed and form one of the principal features.

The movement of the bar is horizontal. This gives a decided advantage. At the height at which the bar is placed (waist high for an adult) a horizontal pressure is the one which is naturally brought to bear upon it. A person may fall against the bar, back up against it, or come in contact with it in any other manner, and it yields instantly.

Corbin Anti-Panic Door Fixtures are easily applied. The line, sold by all dealers in Corbin Hardware, embraces the bar type illustrated, lever handle sets, bolts of special construction and adaptations of Corbin hardware for ready-exit use, covering requirements for all applications. A 56-page catalogue, No. BK 33, describes the different articles. Other Corbin booklets of value and interest to our readers are No. BK 16 Corbin Wrought Hardware, No. BK 17 Corbin Colonial Hardware, No. BK 53 Corbin Princeton Design, and No. BK 80 Corbin Specialties. These will be sent on request by P. & F. Corbin, New Britain, Conn.

Write for This

One of the season's most valuable and interesting catalogs has been received from the Union Metal Mfg. Co., Canton, Ohio. Finely printed and illustrated, it demonstrates convincingly the beauty and strength of Union Metal Columns. This is a practical book which every reader of the *AMERICAN CARPENTER AND BUILDER* ought by all means to have on hand for reference and for his own information. While the edition lasts they are mailing these out free to all requesting them.

Your close examination is invited of the photographic half-tone cuts in this book, showing Union Metal Columns in actual use upon a few of the hundreds of structures throughout the United States and Canada which are equipped with them. These show forcibly that Union Metal Columns are

suitable for all classes of buildings, from the modest cottages to the most elaborate mansions and public buildings, as well as for all climates and temperatures. These photographs are the strongest possible proof of the absolute practicability of Union Metal Columns, and evince the fact beyond question that they are in no sense experimental. The photographs show by the massiveness of most of the structures supported by the columns, that their load carrying capacity cannot be questioned, and further, that they are clean cut, highly ornamental and stately in appearance. When it is considered that all of these good qualities are permanent—in fact everlasting, you will readily appreciate the force and good foundation of the high claims for Union Metal Columns.

The manufacturers also advise that Union Metal Columns are rapidly coming into general use in many different parts of the country, for porch work on houses and cottages of moderate or even low cost and also for ordinary pergolas or arbors.

Milwaukee Corrugating Company

The accompanying illustration is a photograph of the exhibit of the Milwaukee Corrugating Co., at the Wisconsin Retail Hardware Dealers' Convention. The booth was all constructed of their products. The sides and ceiling of the interior were covered with Invisible Joint steel ceilings and side walls, nicely decorated, and indicating to a very clear degree, the perfect beads, pronounced embossing and the exclusive and beautiful designs for which the Invisible Joint steel ceilings are noted. The grill work shown at the ends was formed by using Milcor end pieces, flat crimp elbows and Kuehns Korreckt Kutoffs. The exterior sides were covered with steel brick and rock-face siding, and for pilasters

and corners they used sections of the new Crimpedge eaves trough. The roof was artistically and substantially covered with various styles of metal sheets, such as Corrugated V Crimp, Pressed Standing Seam and the different styles of Tite-lock metal shingles. Galvanized cornices and end blocks were shown, as well as several styles of special gutter.

In addition to the arrangement of all of these articles in the construction of the booth the representatives of the Milwaukee Corrugating Company had on hand a large supply of samples and were in a position to demonstrate to their customers the ability of this very progressive company to meet the demands of metal workers.

Valuable Sheet Metal Book

The American Rolling Mill Company, Middletown, Ohio, has just issued a very attractive booklet, entitled "The Proof—American Ingot Iron Rust-Resisting."

In addition to a very complete and lucid argument on the corrosion of iron and steel and its causes, it contains very valuable and useful tables on sheet metal work, black and galvanized sheets, roofing, siding, culvert construction, list prices, etc.

Unlike the ordinary catalog, it is terse, compact, and of a convenient size to fit the coat pocket; in fact, it is an encyclopedia of sheet metal and culvert information which will prove very valuable to those engaged in this business.

The popularity of American Ingot Iron as a rust-resisting product is growing rapidly, not only in this country but abroad, and the arguments on this metal contained in the booklet are so clear and perfectly self-evident that anyone who reads them must be convinced of its superior quality.

This booklet will be sent gratis to anyone interested.



Exhibit of the Milwaukee Corrugating Co., at the Wisconsin Convention

Tools for Carpenters, Builders and Retail Lumbermen

The many practical advantages of having a few woodworking machines in the carpenter shop or lumber yard are daily becoming more widely known and taken advantage of. Carpenters and builders as well as retail lumber dealers realize that the time has come when the possession of such machines determine the placing of many an order. It can be safely said that such machines will directly produce a revenue sufficient to make them pay for themselves in a short time and in addition, enable the progressive owner to turn out just what he needs and when he needs it, keep his men busy in bad



No. 77. Universal Rip and Cut-off Saw

weather and off season and increase his business by making it possible to take his contracts at a lower figure than his competitors who still depend upon the planing mill.

An indispensable tool for use among this class of trade is a small combination rip and cross-cut saw. This machine can be purchased for a very reasonable sum and it can be operated at a surprisingly low cost, with either an electric motor or a gasoline engine.

J. A. Fay & Egan Co., after a careful and exhaustive study of the needs of this class of trade, have designed a number of small tools especially to meet the requirements. Among the machines of that character is their No. 77 Universal Rip and Cut-off Saw—a machine designed for ripping, cross-cutting, paneling, gaining, jointing, boring, etc., in fact there is hardly any limit to the possibilities of this machine when in the hands of a skillful operator.

The rip and cross-cut saw will be found to be of great value in disposing of the "scrap piles" which has been subject for discussion both in conventions and through trade journals; and gratified, indeed, are carpenters, contractors, and retail lumbermen, if they can save the actual first cost. With Fay & Egan's No. 77 they are enabled to run the scrap into something for which there is a ready demand, thus making it possible to dispose of it at a profit.

There are many other practical advantages of having a rip and cross-cut saw. For instance, a supply of some particular dimension or length is entirely exhausted, either through an unusual demand, which could not be anticipated in advance or through delayed shipment; wouldn't it be a great convenience to be able

temporarily to supply the shortage by ripping some of the wider widths?

This No. 77 will rip 18 inches between saw and fence and with a 20-inch saw will cut through 7 inches thick.

Boring table adjusts 9 inches up and down by crank convenient to operator. It moves horizontally 7 inches and is provided with an adjustable fence for angle boring.

Table is fitted with an adjustable ripping fence and is grooved for mitre and cut-off fences. It is arranged with two sliding plates adjustable both vertically and longitudinally permitting the use of jointing heads, tenoning, rabbeting and gaining heads.

The No. 260 Variety Saw illustrated on this page is another Fay & Egan carpenter shop tool. It is constructed on lines distinctly different from any other variety saw and will be found a most convenient tool for carpenters and builders and retail lumbermen, who appreciate the value of quick and accurate adjustments.

This No. 260 is certainly worthy of the name "Variety," because of the great variety of work that can be done on it, such as surfacing, squaring, gaining, rabbeting, miter sawing, tenoning, boring, grooving, routing, ripping, cross-cutting, jointing, etc.

This machine with a 16-inch blade will cut through stock $4\frac{1}{2}$ inches thick. It will cut off 15 inches wide and take 24 inches between ripping fence and blade.

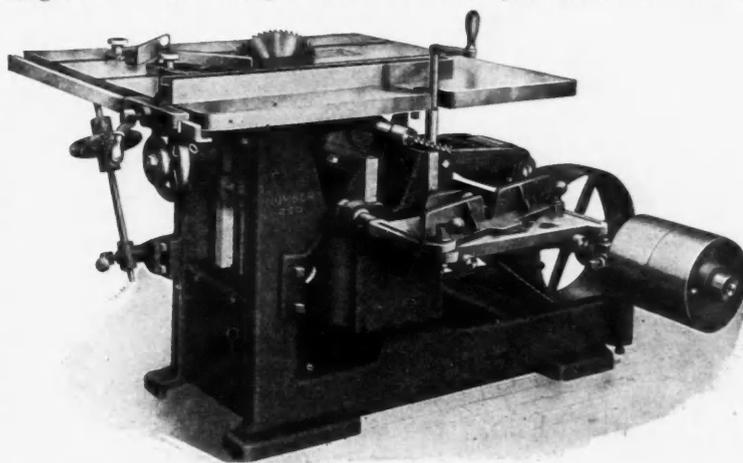
Frame is a substantial cast iron structure, heavy enough to support the working parts without vibration and has the countershaft mounted on stem yoke bearings, making the machine entirely self-contained.

Table angles 45 degrees. For very accurate work it has a micrometer adjustment by the hand wheel shown. There is a wooden throat plate

around the saw which is removable when desired to use gaining heads or grooving saws on the mandrel.

The ripping fence may be set to rip stock up to 24 inches wide to the right and 12 inches to left of saw and may be used either on the right or left side of saw; when used on the left side it forms a support for the stock when the table is tilted; an advantage when working heavy material. Two miter cut-off fences are provided which are adjustable to any angle up to 45 degrees either way.

The boring table has vertical adjustment of 9 inches and



No. 260. Variety Saw

horizontal movement of 7 inches. Fence is adjustable for angle boring.

The saw arbor is carried on a swing frame with sleeve

bearings on countershaft, maintaining even tension of driving belt at all positions and also is provided with adjustment for lining up and tracking the belt. It is raised or lowered by a hand wheel convenient to the operator and is locked in position by a smaller hand wheel at the same point.

This No. 260 Variety Saw, like the No. 77 rip and cut-off saw, is an inexpensive tool, and can be operated at a low cost with either an electric motor or a gasoline engine.

Every carpenter, contractor, builder and retail lumberman is expected to do his share in forest conservation by eliminating any unnecessary waste of building materials. If you will install one or all of the machines mentioned above and utilize the odds and ends around your premises, you will be deserving of equally as much credit for aiding in the real conservation of our forest products as is the wholesaler who insists on your relieving him of the short and odd lengths.

You are invited by the manufacturers, J. A. Fay & Egan Co., 545-565 W. Front St., Cincinnati, Ohio, to write for full information concerning the two machines illustrated here-with and many other useful machines designed especially to meet your requirements.

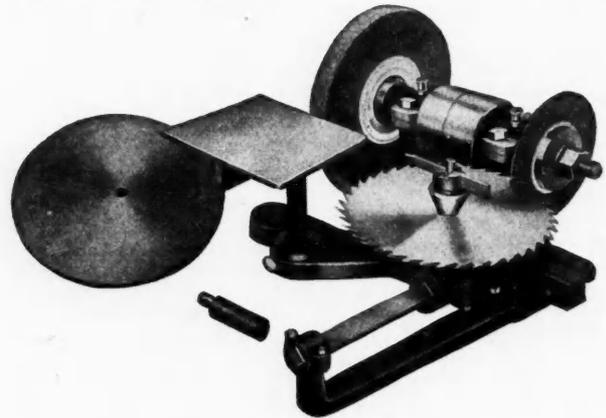
Saw Dresser, Tool Grinder and Sander

The R. B. McKim Co., Inc., 116 Pearl St., Boston, Mass., are offering an ingenious, labor saving machine that should be of great interest to AMERICAN CARPENTER AND BUILDER readers—a combination Saw Sharpener, Saw Setter, Tool Grinder and Sander; as shown in the accompanying illustration.

It is four machines in one, and will do as good work as if each machine was made separately. and the cost is nominal for such an efficient tool.

As a saw sharpener it will sharpen cut-off or rip saws 8 inches to 26 inches. Rip saws can be sharpened square or

with bevel, and same are kept perfectly round and ground even at all times. The saw rests on an adjustable collar and is held in position by an inverted cone, enabling operator to adjust to any thickness of saws. Saws sharpened on this machine will do more and better work than if fitted by hand,



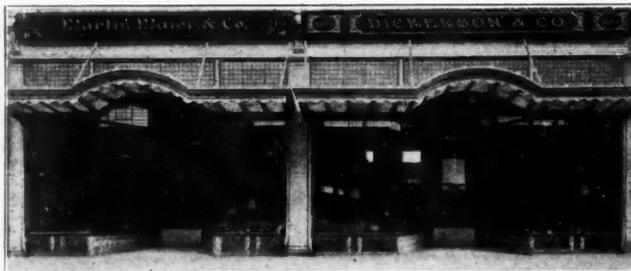
Four Tools in One

besides the saving in cost of labor and files. One 10-inch emery wheel for saws is furnished with each machine.

As a tool grinder, it is furnished with a 12-inch emery wheel and has movable table 10½ inches by 8 inches, which can be tilted so that small knives can be ground rapidly and accurately.

As a sander; the face plate is 14 inches in diameter and furnishes a convenient means for sanding and smoothing up stock. For shops not provided with a machine sander, this device is alone worth the price of machine.

This is claimed to be the only machine ever placed on the market that covers such a large variety of work, taking the



Kawneer System of Store Fronts

WHEN we conceived of a practical, solid, all-metal store front construction, we did not stop with simply a Corner and Division Bar—we developed and perfected a complete construction from side walk to I-beam, and our success is manifested by figures.

In 1910, 2,832,940 lineal feet of Kawneer Material was installed in every State in the Union.

The Kawneer System especially appeals to contractors, because of the simplicity of installation. Unless the different members were simple of construction and easy to install, we would be flooded with "kicks" because carpenters, and in a great many instances of very ordinary ability, are successfully installing the Kawneer System in every nook and corner of the country without previous experience in this line.

The Kawneer System is the only construction on the market that enables ventilation control. Simply a small V-shaped slide built in the gutter of the sash, which opens and closes the vent holes. Ventilation in Winter and a dust-proof sash in Summer.

Our Booklet No. 2 is compiled for you. It plainly describes the Kawneer System and contains good information on store fronts in general.

KAWNEER Manufacturing Co.

Factory & General Office.

NILES, MICH.

Branch in all large cities.

THE PERRY LUMBER RECKONER

2 x 4
1 x 8

2 x 6
3 x 4
1 x 12

2 x 8
4 x 4
1 x 16

2 x 10
4 x 6
2 x 8

2 x 12
4 x 8
3 x 8

3 x 6
2 x 9
1 x 18

3 x 10
2 1/2 x 12
3 x 6
2 x 15

4 x 8
2 x 16

6 x 6
3 x 12
2 x 18

6 x 8
4 x 12

8 x 8
4 x 16

8 x 10
5 x 16

10 x 10
12 1/2 x 8

10 x 12
8 x 15
12 x 12
9 x 16

2 x 14
3 x 14
10 x 14
12 x 14
D.T.

Lumber Mistakes Eliminated

An end to figuring, errors and wasted time

At one glance, you learn the number of feet in a given number of pieces of lumber—of any size. The answer is positive. It's impossible to figure wrong.

The Perry Lumber Reckoner is compiled by practical lumbermen, who used to make errors and waste time figuring, but who found a better way.

Only \$1.00 SAVES COST MANY TIMES

Thousands of lumbermen use it and save cost every week. Special cut index gives instant access to any desired size of lumber.

Money refunded to anybody asking, but not one book returned.

Write today, enclose \$1.00 bill. We pay the postage.

BENJAMIN L. JENKS
Sole Publisher
908 Williamson Bldg. CLEVELAND, OHIO



This Great Book of Plans
 Compiled at a Cost of Over \$5,000.00
 By Our Licensed Architects
Free to Carpenters and Contractors

Save Architect's Fees!

The Gordon-Van Tine Service for Contractors and Builders not only includes supplying Millwork and Lumber at inside prices, but provides complete, practical working plans and blue prints, drawn to architects' and builders' scale of one-quarter of an inch to the foot. *This saves all architects' fees and adds a handsome extra profit on every building erected.*

Houses, Cottages, Bungalows, Costing \$600 to \$6000

The Gordon-Van Tine **Book of Building Plans** is the most simple, practical, authoritative and up-to-date work of its kind ever published. It contains the latest and best ideas of the architectural world. It gives thirty-two designs for city and country residences, cottages and bungalows, ranging in cost from a few hundreds to several thousands of dollars. It has twelve plans for farm, dairy and cattle barns, granaries, poultry houses and various out-buildings.

Eminent architects prepared this monumental work for us at great expense. The central idea of the book is to enable our customers to build with utmost economy and at the same time secure the most artistic and beautiful effects and the greatest possible convenience.

By building from these plans and taking advantage of our bed-rock prices on material, you can save from one-third to one-half the usual cost. Every plan has been used many times and its practicability and economy of construction proved beyond question. The actual pictures of beautiful homes built from these plans speak for themselves. Get this great Book of Plans and save money.

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

Great Millwork and Lumber Catalogs Quote Net Wholesale Prices

We are supplying immense quantities of all kinds of Building Material to contractors and carpenters throughout the country. Our wholesale prices save our customers over a million dollars a year. One customer alone has built 150 houses from material furnished by us. Ask for the names of near by customers.

We Guarantee Quality, Safe Delivery and Satisfaction on Doors, Windows, Mouldings, Lumber, Etc., or Refund Your Money



\$766 buys all the millwork and lumber for this comfortable 6-room cottage. Cost, complete, \$1,960. Here we have a big house for little money. Outside dimensions are 26 ft. x 26 ft.

Gordon-Van Tine Co. 572 Federal St. Davenport, Iowa

Bank References We have been established here since 1865. Our financial responsibility is unquestioned. We refer you to the Scott County Savings Bank of Davenport, Iowa; the Iowa National Bank of Davenport, Iowa; the Bankers' National Bank of Chicago or any bank in America.

See our rating in Dun's or Bradstreet's Commercial Agencies.

Get Plan Book and 5,000 Bargain Catalog

Our stocks include everything you require. Our warehouse and quick shipping facilities enable us to fill largest stock orders within 48 hours. Our latest catalog cuts prices to the limit. Your copy is ready. In sending for Plan Book be sure to inclose 10 cents to cover cost of postage and mailing. (122)



\$739 buys all the lumber and millwork for this cozy home, including Blue Prints and Specifications. This house would cost you complete, \$1,841.

This house is 21 ft. x 32 ft. 6 in.



\$1,019 buys all the lumber and millwork for this beautiful stucco house. This house would cost you complete, \$2,373. This house is pleasing in appearance and practical.

Outside dimensions, 36 ft. x 24 ft. 6 in.

SIGN AND MAIL FOR PLAN BOOK

GORDON-VAN TINE CO.
 572 Federal Street, Davenport, Iowa

Name

Town

Address

State

Occupation

Please find inclosed 10c in stamps and send me your Plan Book

SIGN AND MAIL TODAY

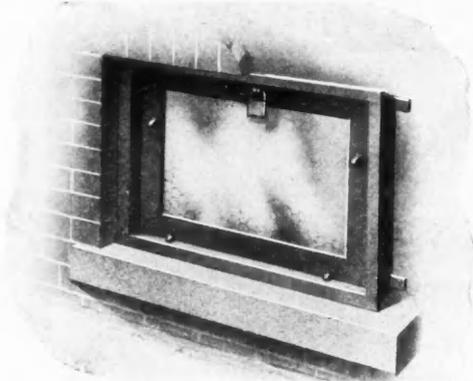
place of four machines, any one of which would cost nearly the price of this machine complete. All should be interested and write for full information.

Iron Coal Window

Here is a cast iron window frame and sash designed to be built into the foundation wall for the coal bin. In appearance it is just like an ordinary cellar window.

The sash is secured from the outside by a latch and lock and is taken out when coal is put in. You do not have to climb over the coal in the cellar to open or close it.

It is claimed that this is superior to the coal chutes, which are somewhat popular now, both in its appearance, and in its



utility, as it admits light and is very strongly made. The size of the opening is 21 by 16 inches. Lugs are provided to anchor the frame into the masonry.

This window is made and sold by the H. W. Covert Company, 164 Duane Street, New York City. Write to them today and order one of these coal windows.

Buying Wrong and Buying Right

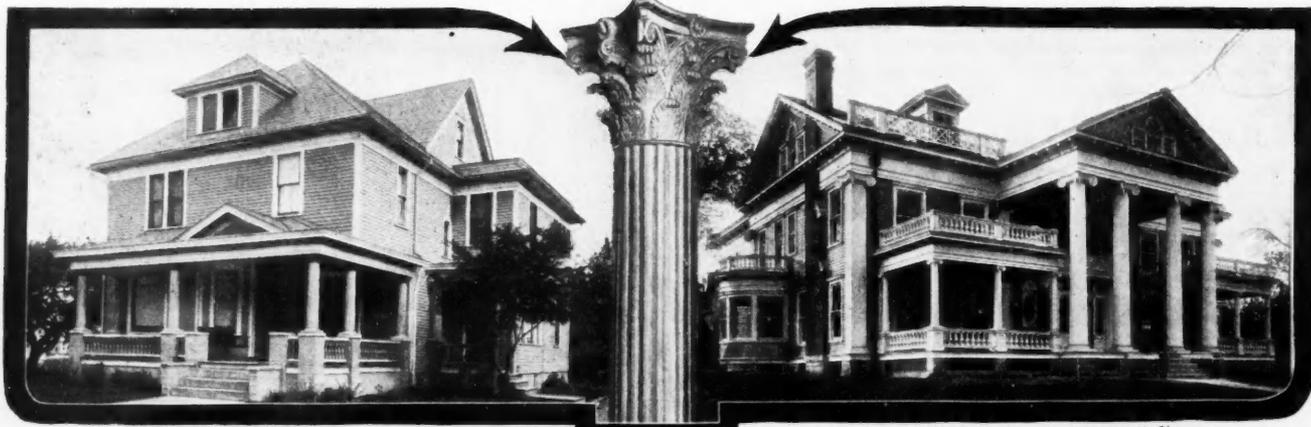
Nearly all tools look attractive in a show case. Their polish, their newness and their glitter attract the man who looks at them, and make him want to use them.

He stops, handles them, buys a few pieces and carries them to his shop or his home. He thinks of them as "just tools," and the initials stamped on the blade of a draw knife may mean a reliable concern as the maker or it may mean some obscure firm that has no responsibility. At any rate, A. B. Co. or X. Y. Co. means nothing to him.

He puts them into his chest or into a drawer until he needs them, and then he tries them. He does not know until then whether he has good tools or poor ones. He finds the draw knife doesn't hang right. It is hard to use. The blade won't keep its edge or work true. The hammer isn't properly balanced, and the head soon becomes battered and bruised. He goes to the dealer and the dealer shrugs his shoulders in answer to his complaint. He gets no satisfaction. It is his own fault. He bought "just tools."

This case only illustrates many similar occurrences of this kind, and it was for the purpose of guarding the buyer from just such happenings that the Simmons Hardware Company of St. Louis and New York first brought out their Keen Kutter line of tools, more than forty years ago, branded them with the Keen Kutter trade mark, told who they were and where they could be found, and sold Keen Kutter tools under a genuine guarantee of satisfaction or all purchase money returned without argument. Their method was a revolution. It took. Keen Kutter tools became famous for uniform quality, and every user of Keen Kutter tools knew there was a square deal back of every promise.

In this way a child can be safely sent for a tool and get the same quality his father would get. The Keen Kutter trade



Residence of I. G. Tolerton, Alliance, Ohio.

Residence of W. J. Maddox, Jamestown, N. Y.

UNION METAL COLUMNS (Patented)

Union Metal Columns are going to appeal to every man who is building a home because they architecturally meet all reasonable decorative requirements of this period.

They have durability that no other columns short of stone, marble or granite can approach. When you put them in place they are there to stay as long as your house can last—

They cannot split or rot; they cannot warp or open at the joints—

They cannot suffer any of the deteriorating

effects of climate or excessive weight to which wood columns are subjected—

Union Metal Columns are erected without the use of screws or nails and once in place cannot sag or get out of plumb.

Don't fail to write for the handsome new catalog with special proposition to builders and contractors.

The Union Metal Mfg. Co.

400 MAPLE AVENUE

Canton -:- Ohio

Furniture which had to be Sacrificed

3,021 Remarkable Bargains—Surplus Stocks From 180 Makers Sold for CASH or CREDIT at an Equal Price

Everything for the Home

Our Bargain Book No. 24 is the most remarkable book that we ever issued. Last season was dull with the furniture makers. The end of the season found them loaded with surplus stocks. They were ready to sell regardless of cost to turn those stocks into money.

This concern—the largest of its kind—was their biggest outlet. Our whole business is buying bargains—things that must be sold. And our combined capital of \$7,000,000 makes no stock too big for us.

This new Bargain Book shows the thousands of things we bought in mid-winter from makers who had to sell. And our selling price—as we sell by mail only—is very close to our cost.

Pay as Convenient

If you see what you want here you can get it either for cash or credit. The price is the same either way. About 600,000 homes have charge accounts here. They take on the average, a year to pay.

We shall be glad to open an account with you. There will be no interest, no security, no red tape. We gladly trust people who buy for their homes. We are glad to let them pay as convenient.

30 Days to Decide

Everything ordered is shipped on approval. You have a month to decide about keeping it. You have 30 days to examine and use it—to compare it with other bargains. If it isn't such a bargain as you expect, return it at our expense. We will pay freight both ways.

You buy nothing at all until you have seen it—until you have used it a month.

Bargain Book Free

This mammoth book pictures over 3,000 bargains. Each is quoted lower than any price you ever saw. Some are cut 50%. There are many things here which you want at these prices. And you will never again, in all probability, be offered such prices on them. Bargains like these don't come to us oftener than once in five years.

Cut out this coupon—now before you forget it—and send it to us for the book. The pictures are many times as large as we show here. The book is free.

On Credit

- Furniture
- Carpets
- Rugs
- Draperies
- Stoves
- Pianos
- Baby Cabs
- Silverware
- Chinaware
- Graphophones
- Washing Machines
- Sewing Machines
- Lamps and Clocks
- Refrigerators

At Factory Cash Prices

Cut Out This Coupon

Spiegel, May, Stern Co.
1484 35th Street, Chicago

Mail me your catalogs.

Name

Postoffice

State



No. KXX217—Remarkable Box Seat Leather Chair made of selected quarter-sawn oak in rich, high gloss, golden finish. A standard pattern sold everywhere up to \$3.75. 2,800 secured at closing out sale on account of death. Offered here at full 30% saving. **\$2.17**

Cash or Credit



No. LX485—English Folding Go-Cart Bargain. Newest 1911 design. We take the factory output at a specially low price. Has steel frame, fabricord leather upholstery and large rubber tires. The best collapsible go-cart on the market. Factory bargain price **\$4.85**

Cash or Credit



No. 30X1820—Steel Range Bargain. Made in our famous Empire factory. One of the grandest ranges ever built. We guarantee a saving of at least one-third on all stoves sold by us. This style, bargain price from **\$18.20** up, according to size.

Cash or Credit

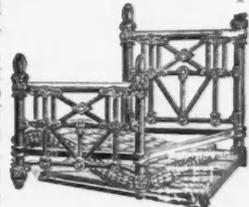


High grade 9x12 foot Rug bargains bought at auction from the largest manufacturer in the United States. A saving of 30 per cent is guaranteed on every rug. All patterns and colors. Bargain prices as follows:

- Tapestry Brussels Rugs,**
9x12 ft. **\$11.95 up**
- Velvet Rugs,**
9x12 ft. **\$13.95 up**
- Axminster Rugs,**
9x12 ft. **\$17.50 up**

Cash or Credit

No. RX1035 — Massive Colonial Iron Bed Outfit, includes a rich design, massively constructed iron bed, solid Bessemer steel angle iron spring and unusually well made cotton top mattress—each piece the acme of quality and value. Bought at an opportune time when the market offered extraordinary values and sold here at what would represent the actual manufacturer's cost in regular season. Complete outfit—bed, spring and **\$10.35** mattress, only.....



Cash or Credit

SPIEGEL, MAY, STERN CO., 1484 35th St., Chicago, Ill.

mark shows him that he is getting the right brand and that there can be no mistake. No knowledge of tools or of steel is required. Every Keen Kutter tool is like its mate, in quality.

A workman or a farmer equipped with a set of Keen Kutter tools is sure of having the best he can get anywhere at any price.

Even if Keen Kutter tools cost a very little more than you would pay for ordinary tools of unknown worth, you will get the difference in quality and service, so it is claimed, and you will be sure that every piece is dependable and equal to any emergency.

The best way is to buy a Keen Kutter cabinet, fitted with the tools you need. They range from household size to the carpenter's or cabinet maker's, a complete equipment with a work bench and vises included.

Your hardware dealer has both Keen Kutter tools and cabinets, no doubt; but if he hasn't, he will gladly order them for you if you so request him. If not, write to the Simmons Hardware Company, St. Louis, Mo.

Valuable Book on Spray Pumps and Spraying

We have received from F. E. Myers & Bro., Ashland, Ohio, their new spray pump catalog, which they are sending out to the trade and to all parties in need of spray pumps, nozzles, fittings, etc. This catalog fully illustrates and describes their complete line of hand, bucket and barrel spray pumps, also power spray pumps, nozzles, fittings, etc.; in fact, everything that is needed for spraying from the small bucket spray pump used in the garden or dooryard to the larger power outfits used by large orchardists and horticulturists.

There is also a very valuable section of this booklet in which are given the most important and necessary pointers

on spraying, together with a list of formulae for the proper mixtures to be used and a calendar giving the proper times for applications.

Real Broken Ashlet Work

The Hobbs Concrete Block Machine makes every stone in the wall shown on page 88 in any thickness from 3 to 12 inches. The largest face is 12 by 24 inches; the smallest is 4 by 4 inches. Just keep the mason supplied with the different sizes and every wall he lays will be different. No two houses, foundations or porches alike, for this machine's endless variety is at your command. The reason for this is that the face plates are moulded directly from natural stone. They are not of iron, but a composition hard and durable, though reproducing every line and grain of the natural stone on which they are moulded.

With these composition face-plates *snappy* blocks in infinite variety cost no more to produce with the Hobbs machine, so it is claimed, than regular course work on other machines. The only extra cost is for laying. Fractional blocks are made just as quickly and just as cheaply as if no dividing plate were used.

At the Cement Show this year, the Hobbs Concrete Machinery Co. scored a big "hit." Their machine was pronounced by veteran block men to be simple but with the greatest range of any machine they ever saw.

If the concrete block manufacturer wants to prosper, he must secure for his product the indorsement of architects and builders. To accomplish this, he must not only make a hard waterproof block, but he must produce a block that will be pleasing to the eye and conform to the general scheme of architectural design.

Plain-faced blocks are apt to be cold and uninteresting in appearance, and that is why many people prefer rock-faced

Quality Is
Economy

*Murphy Varnish, like
good plumbing, cuts out
a whole lot of expenses.*

Little difference what the cost of a plumbing or a varnishing job—if it *stays right* it's a mighty cheap job—if it goes wrong it's an expensive nuisance.

Murphy Varnish not only stays right, but saves money on the original job—does it with so many fewer gallons and so much less labor.

Write for our free booklet "*Transparent Wood Finish—Why and How*"

The Varnish
That Lasts
Longest

Murphy Varnish Company

FRANKLIN MURPHY, President

Associated with Dougall Varnish Company, Limited, Montreal, Canada

NEWARK,
N. J.
CHICAGO,
ILL.

Great Little Power Plant for WORKSHOPS!

Fuller & Johnson MULTI-MOTOR The "Right-Hand Man" of Carpenter and Contractor

Get this MULTI-MOTOR going in your shop. It makes machinery hum. It takes the place of *man-power* on many kinds of work.

Saves *treadle-pushing* and *crank-turning*. Saves time, money and muscle. Does a big day's work indoors or out for less than a cent an hour.

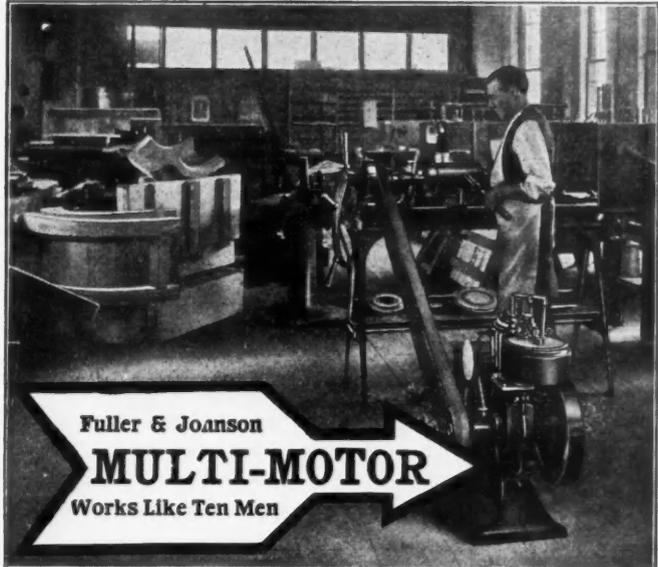
Little Engine—Big Power! Compact, Complete and Portable

The engine weighs only 250 pounds. It is an air-cooled, fool-proof Gasoline Engine—*complete in itself*. Important working parts protected by dust-proof crank case. Comes on its own base. Ready to run when uncrated.

Set it anywhere, fill the tank, oil up and start the engine! Cannot freeze or overheat. Needs no attention while running. The Multi-Motor is the handiest engine ever built. For *indoor* use has *outdoor* fuel tank, insuring perfect safety.

Take the Engine to the Work!

You can load the Multi-Motor on an ordinary wheelbarrow and take it to any building in process of construction. It will help rush the job to completion. Saves many trips to the planing mill or repair shop. Always ready for business. A turn of the fly wheel starts it.



Fuller & Johnson
MULTI-MOTOR
Works Like Ten Men

Runs All Kinds of Light Machines!

The Multi-Motor runs jig saws, lathes, grindstones, sanders and all other light machines used by carpenters and builders. Runs small electric lighting plants, water pressure systems, etc.

Power for Less Than a Cent an Hour!

This engine will quickly pay its cost in the saving of workmen's wages. *Think of having ample and instantly available power for less than a cent an hour!* Consider the great convenience of this little Portable Power Plant.



Patented in the United States, Canada and other foreign countries. Other patents applied for. (242)

Fuller & Johnson
MULTI-MOTOR
"Works Like Ten Men"

Built and Guaranteed by Fuller & Johnson

Sold by Leading Dealers in U. S. and Canada

The engine is as high grade in materials and workmanship as best automobile engines.

Fuller & Johnson Farm Pump Engine Fits Any Pump and Makes It Hump!

This engine has a pumping capacity of 400 to 1,000 gallons per hour. It fits any pump. No belts, arms, jacks, anchor posts or special platform needed. It is practically the same as the Multi-Motor, equipped for pumping service. Runs all hand-power or foot-power machines.

A Remarkable Engine Book FREE!

The Fuller & Johnson Engine Book gives full details regarding both the Multi-Motor and the Farm Pump Engine. Investigate the possibilities of one of these engines for your special uses.

Book is yours for the asking. Send today. Address

FULLER & JOHNSON MFG. CO.

4 Ames Street (Established 1840) Madison, Wis.

If interested in large engines, ask for catalog of our famous Double-Efficiency Engines.

work. The rock-faced block, as frequently made, however, is simply intolerable from an artistic or aesthetic standpoint.

This is owing to the use of cast-iron rock-face plates, and

If the blocks so made are laid in alternate courses of different height, or—better still—laid in a real broken ashler, the effect is so much better than the common, monotonous,



Real Broken Ashler Work Blocks Made from Composition Face-Plates

to the use of one size and style only of block in an entire building. It is practically impossible for cast-iron rock-face plates to produce a natural rock face. It requires a more plastic material, with which a cast can be taken directly from the natural stone. Rock-faced blocks made in this manner go far toward giving natural and pleasing effects. The grain and outline of the pattern stone are not lost, and the result is fine indeed.

and artificial looking block work, that the comparison is startling. It must be seen to be fully appreciated. The illustration shows real broken ashler block work made on the Hobbs machine from composition face-plates.

The Hobbs Concrete Machinery Co., Detroit, Mich., want to show the readers of the AMERICAN CARPENTER AND BUILDER how big money can be made, making and using these blocks. You will be interested. Write at once.

Your Success is our Necessity

We Want to Show You Why

CAN you afford to figure a job of Metal Ceiling unless you are sure the cost of erecting will not exceed your estimate? Your success is our necessity because you will not buy our ceilings unless there is profit in them for you and satisfaction for your customers. Most of your success depends upon the fit.

We Have Solved the Problem

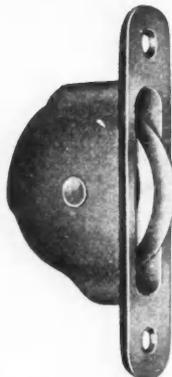
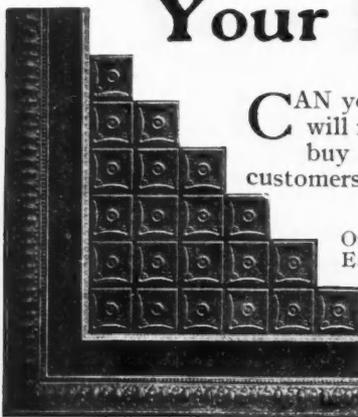
Our Double Bead Lap produces a thoroughly dust-proof and invisible joint. It is simplicity itself. Easy to fit, therefore cheapest to erect. This means profit and satisfied customers to you.

Another Secret

The great variety and high character of our Art Metal Ceilings and Sidewall Designs insure the customer's preference when shown our catalogue. Send us plans with all measurements and we will prepare drawings of appropriate ceilings, without charge, and name you low price on all material, F. O. B. your station.

Get our catalog right away.

The Tiffin Art Metal Co., Tiffin, Ohio
2nd & Broad Ave.



Headquarters For **Sash, Door and Blind Makers' Supplies and Special Machines**

WINDOW PULLEYS (Cast and Sheet Steel). All sizes and finishes. Write for Catalogue.

ENTERPRISE PULLEY MORTISER. Equipped with Four Bits. Cuts Full Stile in same time required for single mortise.

ENTERPRISE POCKET CUTTER. Makes a Pocket both wind and water tight.

PIONEER MOULDING SANDER. Finishes Mouldings and Interior Trim equally as well as handwork, and at one-tenth the cost.

Sash Cord and Chain, Glazier's Points (Standard and Machine), **Blind Staples, Wood Screws, Wire Nails and Dowels.**

125 Broad St., Boston, Mass.

AUSTIN & EDDY

805 Tacoma Bldg., Chicago, Ill.



UNDERFEED HEATING SYSTEMS End all Coal Bill Troubles

SEE the man. He's just eyed the big figures in his coal bill. He remembers the great price he pays for little heat. And he is jumping mad. Hundreds—just like him—took out unsatisfactory heating plants last summer, put in the Peck-Williamson UNDERFEED System, and enjoyed,

during the past winter, clean, even heat at least possible cost.

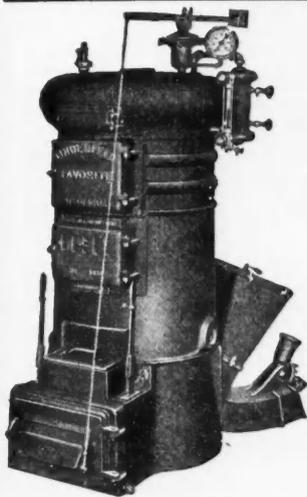
Carpenters, Builders and Architects will be interested in this system which adds to the renting or selling value of any building in which it is installed. Write TODAY for our proposition. Houses are kept delightfully warm and tempers serenely even by the Underfeed heating way. A saving of one-half to two-thirds of Coal Bills is certain when you adopt

The Peck-Williamson Underfeed HEATING SYSTEMS FURNACES - BOILERS

The Underfeed coal-burning way, is the logical, common sense way. Coal is fed from below. All fire is on top. Radiating surfaces are larger and kept hotter than in any other heater. Smoke and gases wasted in other heaters, must—in the Underfeed—pass thru the flames, are consumed and make more heat. Cheapest slack and pea and buckwheat sizes of hard and soft coal yield as much clean,

even heat as highest priced coal in other furnaces or boilers. Ask your dealer to give you the cost of each per ton. You save the difference. An UNDERFEED heating plant soon pays for itself and keeps on saving. The few ashes are removed by shaking the grate bar as in ordinary furnaces and boilers. Underfeed heaters require little attention. They add to the renting or selling value of any building.

This illustration shows the Underfeed Boiler.



The Gas Belt Land Co., at Pierre, S. D., chose Underfeed Boilers for the Armory of the Fourth Infantry, South Dakota National Guard. They write:

"They have proved extremely economical and fulfilled every claim made for them in the way of saving in coal bills; are easy to care for and require very little attention to develop the necessary amount of heat."

For homes, banks, churches or buildings of any sort, the results are happily the same. Let us send you an Underfeed Furnace Booklet and fac-similes of many testimonials or our Special Catalog of Underfeed Steam and Water Boilers both FREE. Heating Plans of our Engineering Corps are FREE. Write today, giving name of local dealer with whom you'd prefer to deal.

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



THE PECK- WILLIAMSON CO., 436 West Fifth Street, Cincinnati, Ohio

Pullman Sash Balances Make Good

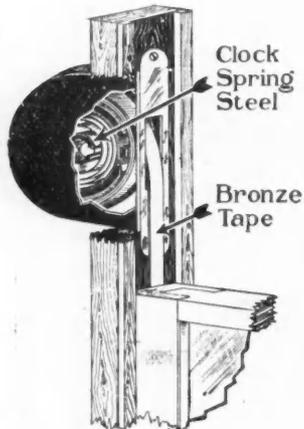
We are informed that the Pullman Mfg. Company, Rochester, N. Y., have made and sold over 5,000,000 of their Automatic Sash Balances, there are that many now in use.

The Pullman Sash Balance is so constructed that the tension of a spring exactly balances the weight of the sash. The window may be raised and lowered with the greatest facility. The sash will stay wherever it is put, with no more tendency to raise and fall of its own accord than with cord and weight.

Pullman Sash Balances cost practically the same to install as cords and weights. They are very much more durable, for the bronze tape which supports the weight of the sash is practically indestructible.

The Pullman Mfg. Company inform us that notwithstanding the fact that there are now over 5,000,000 of their Balances in use, and that most of the repairs must come from them, the total new tapes supplied do not amount to 100 a year, and most of these tapes are called for when some careless person in setting a sash or removing one, has accidentally put a kink in the tape.

Architects and builders who hesitated to use the Pullman Sash Balance when it was first put on the market, because of a feeling that it might not prove durable, have long since discarded this idea, for experience has shown that no other



Pullman Sash Balance

items of builders' hardware has more lasting qualities than the Pullman Sash Balance.

Shreveport Office for Smith Machine Co.

The H. B. Smith Machine Co. have made a change in their representation in the middle southwest, and hereafter will be represented in the sales of their wood working machines in Western Tennessee, Mississippi, Louisiana, Eastern Texas, Oklahoma and Arkansas, by Mr. L. D. Jones, who will establish headquarters at Shreveport and call upon the trade from that central point.

The Miller Lock Mortiser

The A. W. Miller Mfg. Co., of Cincinnati, O., have improved their lock mortiser; and today it is said to be the greatest time and labor saving tool on the market. The claim is made by this firm that their tool will cut an opening for a mortise lock complete in *three minutes*. Builders who repeatedly use the tool state that they can do the job in *two minutes*. This of course is when one man does the job. If the tool is handled differently, that is one man bore the two holes and another follow up with the cutting, the job can be done in *one minute*. There is probably no device operated by hand that can beat this time in lock mortising.

The A. W. Miller Mfg. Co. have made a study of lock mortisers for years; all kinds of methods and devices have been tested by them and after years of experiments and experience, they have settled on the machine that is now manufactured by them. It is a great time and labor saver and it does the job right, making a true mortise of any length desired. As it saves time, it is profitable to the builder.

Mr. D. H. Mintor of Panama City, Fla., in a letter to these people, under date of January 30, 1911, sums the whole matter from a builders viewpoint. He writes: "I have

THE Hobbs is a remarkable Concrete Block machine. It is scientifically constructed of a few simple parts, but it makes over 2,000 sizes of block.

It is a 16, 18, 20 or 24 inch machine, as you prefer, for making a wet two-piece, solid or hollow block.

Composition Face Plates are used, because the best iron plates ever made cannot produce a rock-faced block one-half as natural or as salable.

The Real Broken Ashlar than can be made so cheaply with the Hobbs is remarkably pleasing and profitable work. Do you understand why our customers are making money?

Our Catalogue explains. It will be a pleasure to send you a copy.



The Hobbs Concrete Machinery Co.

800 Ford Building :: :: :: :: :: Detroit, Mich.

Make this label your
sure and permanent
guide to **GOOD
VARNISH**

Don't let your customers
spoil your handiwork by
using anything less than the
best varnish.

Make it a part of your
business to recommend the
use of

**Berry Brothers'
Architectural Varnishes**

MEET ALL REQUIREMENTS FOR HIGH-
EST GRADE FINISHING IN BUILDINGS

TRADE
LIQUID GRANITE
MARK

For finishing floors in the most durable man-
ner possible. Its quality has made it the best-
known and most widely used of all varnishes.
There is no substitute.

WOOD
LUXEBERRY
FINISH

For the finest rubbed (dull) or polished finish
on interior woodwork. It has for years been
the standard to which all other varnish makers
have worked.

ELASTIC INTERIOR
FINISH

For interior woodwork exposed to severe wear
and finished in full gloss, such as window sills
and sash, bathroom and kitchen woodwork, and
stands the action of soap and water to an un-
usual degree.

ELASTIC OUTSIDE
FINISH

For front doors and all other surfaces ex-
posed to the weather. Dries dust free in a short
time and possesses great durability under the
most trying weather conditions.

SEND FOR OUR FREE BOOKLET:
"NATURAL WOODS AND
HOW TO FINISH THEM."

BERRY BROTHERS, Limited

Established 1858.

Largest Varnish Makers in the World.
Factories: Detroit, Mich., and Walkerville, Ont.
Branches: New York, Boston, Philadelphia, Baltimore,
Chicago, Cincinnati, St. Louis, San Francisco.
Dealers: Everywhere.



tested your lock mortiser and it is the greatest time saver I have ever seen. It is a complete piece of machinery, doing the work perfect in every respect. I fully recommend it to any builder who wishes to get his money at once."

When a practical builder talks this way, there must be something in this mortiser. A. W. Miller Mfg. Co., Cincinnati, O., the manufacturers, will send full information on request.

Drainage for Store Fronts

A new feature recently put on the market by J. W. Coulson & Co., Columbus, O., is the Coulson Patent Drainage Sill, which takes care of the condensation on the inside of the store window, or of the moisture occasioned by cleaning them. This runs down into the gutter on the inside and is carried out through the metal tubes, which are placed at intervals.

The gutter is so constructed at the miters that no water can get into the joint causing it to rot.

The miter is cut and fitted at the factory, providing the exact angle to which the glass sets, is given. At these intersections, the ends are held together by an adjusted rail-bolt, which can be tightened up so as to make a tight joint and held together firmly.

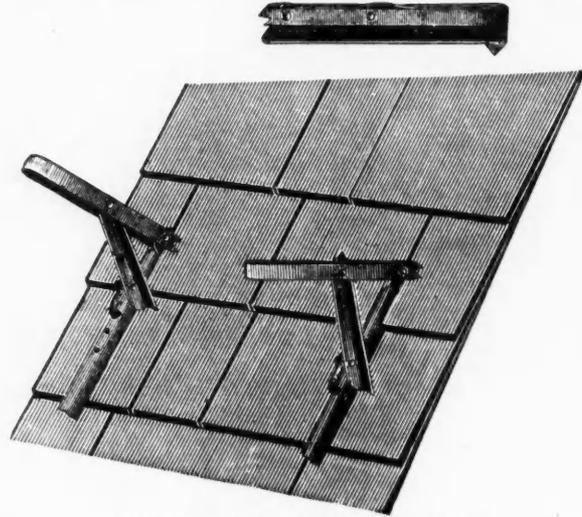
The metal covering can be had in polished brass, nickel plated, oxidized copper plated and polished copper, but the polished finishes are recommended in preference to the plated ones.

Griswold Adjustable Roofing Bracket

Carpenters, builders and painters will undoubtedly be much interested in the Griswold adjustable roofing bracket, which is designed as a time and labor saver for supporting stagings for shingling, repairing and painting roofs.

The Griswold adjustable bracket is said to be the only posi-

tively safe staging support, without nailing; it can be instantly placed in position or removed, and is adjustable to any angle, fitting roofs of any pitch. It is absolutely locked to two or more shingles on the roof and can not be accidentally removed. The use of these brackets will save much time, labor and material. They are particularly convenient in working around



Adjustable Folding Bracket for Roof Work

dormer windows, skylights and piazza roofs, as they can be adjusted to any pitch of roof in an instant and give a staging 14 inches wide to work on if desired. The Griswold bracket is made of steel, is very light and folds into a small space for packing.

Every carpenter, builder or painter should have at least a dozen or more of these brackets on hand. They can be

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.**

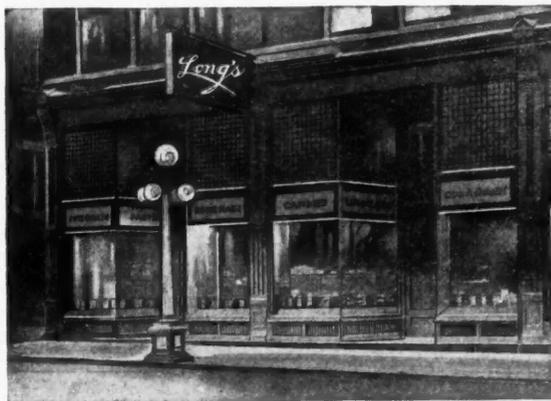
SEND FOR
CATALOG

When looking for
quality buy goods
with the "Swan"
trade mark.

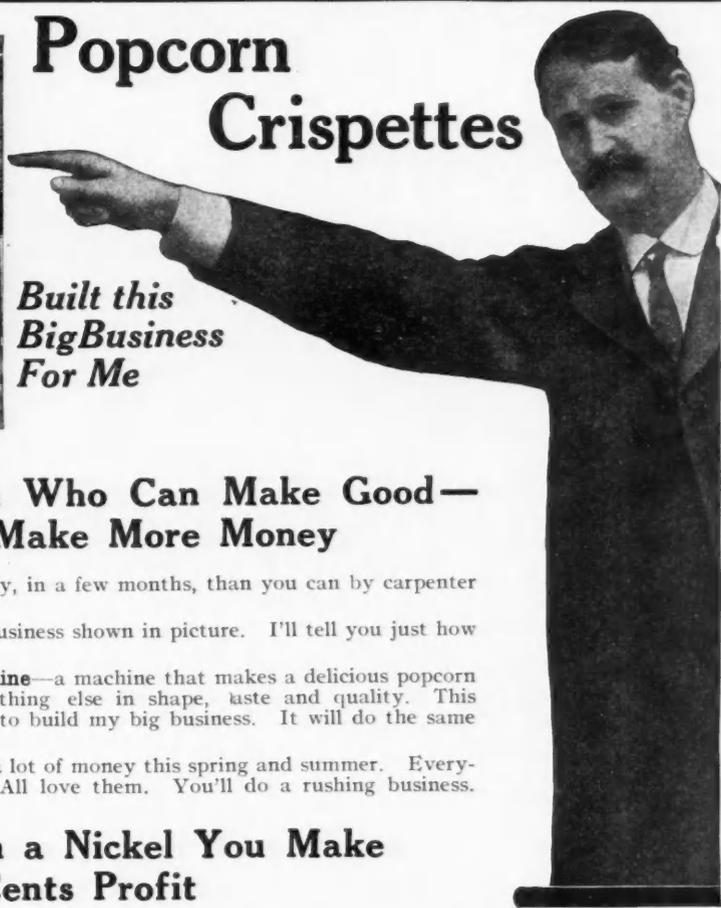
RUSSELL & ERWIN MFG. CO., Sole Agents,

**NEW BRITAIN
NEW YORK**

**SAN FRANCISCO
CHICAGO**



Popcorn Crispettes



*Built this
Big Business
For Me*

I Am Looking for Other Men Who Can Make Good— Who Are Anxious to Make More Money

I'll tell you how you can make more money honestly, in a few months, than you can by carpenter work in the next few years.

Write me today. I'll tell you how I built the big business shown in picture. I'll tell you just how I went at it—how you can do the same.

You can do it with a **Long Popcorn Crispette Machine**—a machine that makes a delicious popcorn crispette—a new, delightful confection—unlike anything else in shape, taste and quality. This same machine is what made my money—enabled me to build my big business. It will do the same for you.

The best season is just at hand. You can clean up a lot of money this spring and summer. Everybody buys Crispettes—children, parents, old folks. All love them. You'll do a rushing business.

Every Time You Take in a Nickel You Make Almost Four Cents Profit

Each day your business will grow—same as mine did. If you make and sell popcorn Crispettes in your town, you'll have a good thing all to yourself, too; because I furnish a secret formula for making Crispettes, and its different from anything else. Nobody but you can have it in your town.

So you escape competition. People buy and buy and buy

Long Popcorn Crispettes because of the taste. They're different from anything ever put out and folks want more and more of them.

In the literature I am going to send you, I tell you all about them; about men who have made big money with the machine, and the men tell you how they did it. It's very interesting reading.

A Straight-from-the-Shoulder Talk to Carpenters

Why plod along for a few paltry dollars a week—at the bidding of another who is no smarter than you are? **Why let some other fellow cash in on YOUR ability?** Why let the other fellow get the big money while YOU do the hard work that earns it? Why go on day after day, nailing, sawing, planing, for just so much and no more? Is there anything in that? No!—and no man with any spunk and spirit is going to stand it very long. Neither are you. You've got your future to think about. **You have been looking for a good chance and here it is.** To the right man in each community I've got a great proposition to make. Are you one of them?

Success is the result of work—energy—fight—the grasping of opportunity.

Andrew Carnegie started selling books. Now he's a multi-millionaire. It wasn't luck. It was push—hustle—initiative.

Practically all rich men were poor once—decidedly poor. But they were great on following fortune when she smiled and beckoned. They said "Lead on. We'll follow."

I was once a poor man. Now I'm rich. No kind, indulgent father started me in

business. I worked—hard and long. The result is the magnificent store you see in the picture.

Success is Yours if You Go After It.

A splendid opportunity faces you. It may never come your way again. Can you afford to pass it by? Decide now to gain success. Assert yourself—be independent—discover the hidden powers in your nature. Cut loose from irksome tasks—long hours—poor pay. Enjoy the fruits of your labor yourself. Reap the benefits of your efforts.

Buy a Long Crispette Machine and start making money in bunches—not in the long, slow, tedious way—but in a new, exciting, interesting, quick way. You can work all or part time—just evenings if you wish. At least investigate. Get full particulars—reports from users. See what others have done.

Judge what you can do. Act now! Write me today. Tell me about yourself. I am interested in your success.

I want to help you. Please send me full particulars about Crispette machine, and tell me how to start big paying business. Address me personally.



W. Z. LONG

238 High Street, Springfield, Ohio

W. Z. LONG
Springfield, Ohio

Name.....
Address.....
City..... State.....

obtained direct by addressing W. S. Griswold, 37 John street, Springfield, Mass. Mr. Griswold is also looking for good agents or jobbers to handle this bracket, and has a special proposition of interest to them. Write to Mr. Griswold for this proposition.

"Spot" Cord Wins in Test

A series of tests of interest and importance to carpenters and builders has been made at the Massachusetts Institute of Technology concerning the relative wearing qualities of Sampson Spot Cord and Metal Sash Chain.

These tests—which but confirm actual experience—show truly remarkable wearing properties for the braided "Spot" cord.

In these tests the wear was determined by pulling the weight up and letting it down over the pulley, the weight used being 25 pounds, and the pulleys 2½ inches in diameter, every lift corresponding to once opening and shutting a window. A summary of wearing tests is as follows:

MATERIALS	NUMBER OF LIFTS BEFORE BREAKING		
	Highest	Lowest	Average of All Tests
Samson Spot Cord No. 8	428,188	96,988	214,371
Best Metal Sash Chain	382,002	20,735	75,848

These tests are considered reliable since the conditions duplicated almost exactly the conditions of actual service to which sash cord is subjected.

Samson Spot Sash Cord is made of extra quality fine cotton yarn, is carefully inspected, and is warranted free from the bad splicings and rough braiding which destroy common cords so quickly. You don't have to waste any of it by cutting out rough spots. Write for a sample and examine it; you will see why it wears so well. Pull it to pieces.

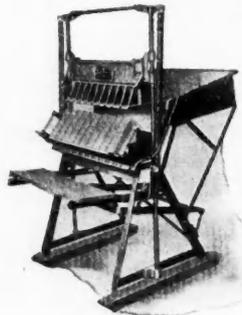
Note the fine yarn, the smooth, hard, even braid and finish. These are the points that count for durability.

Samson Spot Sash Cord can be distinguished at a glance by the trade-mark, the colored spots. There is only one grade of Spot Cord.

Don't ask your dealer for "Sash Cord." Ask for "Samson Spot Cord," and look for the spots. Better write to-day for free sample, addressing Samson Cordage Works, Boston, Mass.

"Crescent" Brick Machine

The Raber and Lang Mfg. Co. are offering a machine which they claim marks a wonderful improvement on and a radical departure from any other brick machine on the market. You may be conversant with the tamping method of nearly all machines of this kind. Unlike them the "Crescent" strikes a blow absolutely parallel to the bottom of the mold; thus the result is a uniformly tamped product, and one densely compressed. The impact of this tamper with the material is so intense that only two blows are necessary to produce a set of ten bricks. Note the speed that this would permit.



"Crescent" Machine

The tamper itself weighs nearly 100 pounds, yet it is so ingeniously arranged, with a double pivot, that any child can operate it.

This machine is so strong and mechanically built that it should last a lifetime without any repairs whatever.

Either wood or steel pallets are used in operating the "Crescent." You can make your own pallets locally at a very insignificant cost, or they can furnish steel pallets for a very



Color Fashions for 1911

Know what color schemes the best architects and decorators are using.

Write to-day for free portfolio of color combinations for exteriors and interiors in approved tints. We also want to send you color cards and literature describing the superior flat finish

MELLOTONE

For Interiors—Soft as the Rainbow Tints

Has the wearing qualities of best oil paint with beauty of water colors. Cheaper than most wall paper—more durable than Kalsomine. Washable, sanitary, fadeless, crackless. Gives best results. Saves the builder money. Write for full particulars.



The Lowe Brothers Co.

Makers of "High Standard" Paint—
"Little Blue Flag" Varnishes

450-452 E. Third Street, DAYTON, OHIO

Boston New York Chicago Kansas City

Builders and Contractors Who Want the

Best Steel Butts & Hinges

Should Look for This



Printed on the Labels
Stamped on the Goods

LITERATURE FREE

The Stanley Works

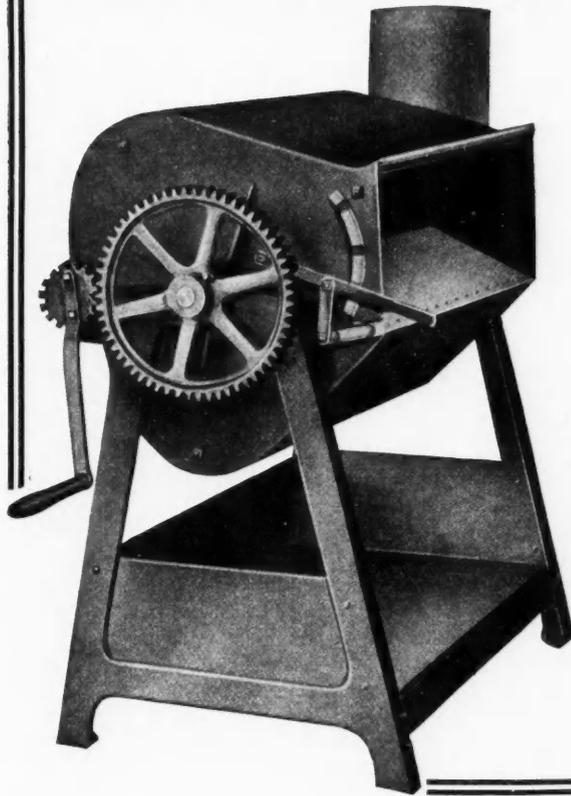
NEW BRITAIN, CONN.

New York

:::

Chicago

The Best Concrete at the Least Cost



You can get the best concrete with the "Northwestern" Hand Mixer quicker and at less cost than with any other. It does the work of six men with hoes—saves time, labor, money—makes a more perfect mix. Figure the difference in cost yourself. You can outbid your competitors and clean up big profits.

Our famous **triangular drum** thoroughly mixes a batch in one minute—delivers the most concrete in the shortest time. This "Northwestern" mixer is the most practical, thorough, speedy and handy batch mixer on the market. Easy to clean. It is **guaranteed in detail—No money down—Ten days' trial**. You are the judge of its worth. This mixer pays for itself in a few days. A trial will demonstrate that you can't afford to be without one. It will get you the business.

"Northwestern" Concrete Machinery

is made by experts in the largest factory in the world devoted to the manufacture of concrete machinery. You buy our goods by the pound at the lowest possible price—no fancy prices on account of patents or territory rights. You get the **biggest value** for your money. Whether you are a large or a small contractor we have a mixer adapted to your work and to fit your purse. **Don't pay more than our price.**

Big Illustrated 1911 Catalog 27—FREE

This valuable book describes everything required in concrete construction—block machines, brick machines, post machines, silo machines, ornamental moulds, pier moulds, tile moulds, gravestone and burial vault moulds, concrete workers' tools, cinder crushers, gasoline engines—everything in the concrete machinery line. It shows you how to **save a good many dollars**. It's free. Get it today. Let us know what you are interested in. We can help you build up a bigger business. **Write us now—before you forget.**

Northwestern Steel and Iron Works

940 SPRING STREET,

EAU CLAIRE, WIS.

Launch Complete \$94.50

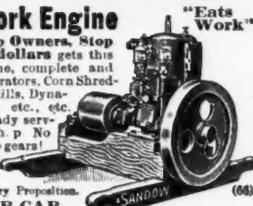


16, 18, 20, 23, 27, 28 and 35-footers at proportionate prices. Family Launches, Speed Boats, Auto Boats, Hunting Cabin Cruisers. **A New Proposition to Demonstrating Agents.** 64 different models ready to ship, equipped with the simplest motors made; boats and engines fully guaranteed; 12,500 satisfied owners. Write today for large illustrated Catalog, mailed Free. (108) **DETROIT BOAT CO., 125C Jefferson Ave., Detroit, Mich.**

Let SANDOW Run It!

Wonderful Work Engine

Farmers and Shop Owners, Stop Sweating! A few dollars gets this grand little work engine, complete and ready to run Cream Separators, Corn Shredders, Grist Mills, Feed Mills, Dynamos, Printing Presses, etc., etc. Gives a lifetime of steady service! All Sizes: 2 to 20 h. p. No cranking! No cams! No gears! Only 3 moving parts. Finest construction. Thousands in use. Guaranteed 5 years. Write for Special Introductory Proposition.



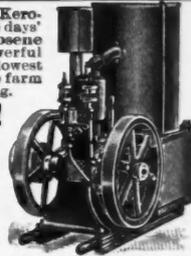
DETROIT MOTOR CAR SUPPLY CO., 125B Canton Ave., Detroit, Mich.

Use KEROSENE Engine FREE!

Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing.

Gasoline Going Up!

Automobile owners are burning up so much gasoline that the world's supply is running short. Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints of coal oil do work of three pints gasoline. No waste, no evaporation, no explosion from coal oil.



Amazing "DETROIT"

The "DETROIT" is the only engine that handles coal oil successfully; uses alcohol, gasoline and benzine, too. Starts without cranking. Basic patent—only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h. p. in stock ready to ship. Complete engine tested just before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric-lighting plant. **Prices (stripped), \$29.50 up.** Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate amazing, money-saving, power-saving "DETROIT." Thousands in use. Costs only postal to find out. If you are first in your neighborhood to write, we will allow you **Special Extra-Low Introductory price.** Write! **Detroit Engine Works, 125A Bellevue Ave., Detroit, Mich.**

Of Interest to Every Architect— Builder—Contractor

Beginning with the April numbers we continue our vigorous advertising campaign in standard periodicals of national circulation on behalf of the fundamental principles of successful warm air heating and more especially to push the ever increasing sale of

Jewel^{Warm} Air^{Furnaces}

This campaign is of vital interest to you—first because in a strong positive fashion it challenges the attention of every reader and points out the superiority of warm air furnace heating over every other method for heating houses, stores, schools and churches. Shows that the good warm air furnace is not only more economical, easier to install, but does more efficient work and is the only sanitary heating system.

Facts Are Facts

Second, these statements made over the signature of a concern which for almost fifty years has maintained supremacy in the stove business and operated continuously the "largest stove plant in the world," will be accepted as facts, and that is exactly what they are.

Specify the Best

Third, you want to give the purchasers of your buildings real satisfaction. You are naturally looking past the chink of the present dollar toward that bigger and more profitable future that is planned, built and reared on the foundation of solid satisfaction. In other words, you want to give your customers the best value money can buy.

"JEWEL" Warm Air Furnaces.



You will do this if you specify

Get The Proof

Send for This Book



This statement may require proof if you don't know "JEWEL" Furnaces. That is exactly what we want to place in your hands — convincing, positive proof that you serve your customers and yourself best when you specify and install "JEWEL" Furnaces. Give us the opportunity—we have the sizes—the quality—the reputation that spells S-U-C-C-E-S-S for those who co-operate with us. We want you. Will you write us today for further details?

Detroit Stove Works Furnace Department

"Largest Stove Plant in the World."

DETROIT, MICH.

CHICAGO, ILL.

low price. Two sample steel pallets are furnished with every machine, as well as detailed instructions in regard to the efficient manipulation of the machine, also hints on concrete brick making.

Write for catalog and all information, addressing Raber & Lang Mfg. Co., Kendallville, Indiana.

Traffic Department Established

The Edwards Manufacturing Co., "The Sheet Metal Folks," Cincinnati, Ohio, owing to their largely increasing business, have installed a Traffic Department and have secured the services of Mr. J. H. Blanton as Traffic Manager. Mr. Blanton was formerly connected with the L. & N. Terminal and the Nashville, Chattanooga and St. Louis Railway at Nashville, Tenn., and is well qualified to look after the intricate details of his department.

Sargent Hardware

Next to the architecture of the house itself the hardware on the front door conveys an impression. It ought to show good taste, harmony, solid worth. And so too with the hardware all through the house; it should be chosen with care, proportionate to its real importance. It has been truly said that high grade builders hardware adds to the beauty of a dwelling, makes it worth more to you if you live in it, and increases its selling value. Accordingly one ought to give personal attention to this feature when building or remodeling a house.

In this connection we want to call attention to Sargent Hardware. They say that a dwelling equipped throughout with Sargent Hardware is a better house to live in. Safe, smooth-working locks, door hinges that won't sag, casement adjusters that won't get out of order, latches that always latch. This kind of hardware is more economical in the long run and gives satisfaction all the time.

The illustration shows one of the special features of the Sargent line, the "Easy Spring" Lock. Sargent's Easy Spring enables the latch bolt to work very freely, so that the door does not have to be slammed nor stand ajar, but latches gently as it is closed. This is accomplished by using a good



The "Easy Spring" Lock—A Sargent Feature

CARPENTERS

These Ten Men
Have Made

**\$50 A WEEK TO
\$4000 A YEAR**

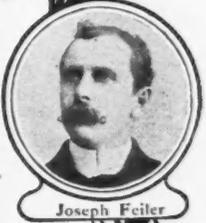


C. E. McNicholas



A. P. Peterson

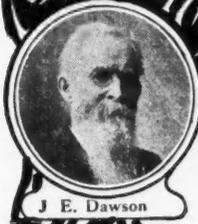
Why not do the same? Why work hard all day, hammering, nailing, lifting, sawing—all for a small salary—always the same—just so much and no more. Why not do as these men have—young and old alike—Listen to their own words. J. V. Brown, N. J., "First attempt—sold 5 in 1 1/2 hours." Wm. Simmons, Ill., "Sold 14 in 7 hours. Profit \$21.50." J. D. Williams, Okla., "Worked 13 hours—sold 21. Profit \$31.50." A. P. Peterson, Wis., "Six orders first day—seven second day. Profit \$19.50." W. C. Harvell, N. C., "Been working 5 hours—sold 15 Machines." W. J. Reynolds, Ind., "Sold 6 first evening." Joseph Feller, N. D., "Sold 5 in less than 2 hours." Albie L. Hale, Conn., "Sold 16 on way home from express office. Profit \$24." F. J. Kennedy, Iowa, "One fellow bought 6 in about 15 minutes." J. E. Dawson, Canada, "Got 6 orders yesterday and 2 in one hour this morning." C. E. McNicholas, Ill., "Sold 12 first day—17 next—12 next, and 6 next half day. Profit \$73.50." And so they run—letter after letter reporting big sales—repeat order after repeat order coming in. The extracts from testimonials are genuine—originals on file in our offices. Complete addresses furnished on request.



Joseph Feller

WANTED—MANAGERS—SALESMEN—AGENTS

We are placing honest, honorable, ambitious men in fine positions every day. We need more to help us supply the demand. No experience necessary. Just honesty and willingness to work. We cooperate—boost—push our men ahead fast—help them make fine incomes. Our representatives are the best paid, most contented workers in the world. Why? Because we treat them square—help them get more money than they ever got before. Anybody can have a position. Age is no barrier. Old men do as well as young men. Look at the pictures, see the old men—all making big money. There's a place for you—write for it. We are introducing a



J. E. Dawson

WONDERFUL NEW FIRE EXTINGUISHER

Marvelous action of mechanical and chemical forces. Puts fire out like magic—has created great sensation. Needed in every home, office, store factory, public building; and by automobile and motor boat owners. Used by U. S. Government. 150 per cent profit in each sale. Profits count up fast. Sale after sale is made in short time. Operates everywhere—instantly. No more homes destroyed because fire department arrived late. No more wives and mothers burned to horrible death from exploding gasoline stoves. Interests everybody. Could anything be easier—surer—quicker—money than supplying demand already created. We are advertising heavily. Our advertisements are read by hundreds of thousands of people. Extinguisher is known—sold before agent calls. He simply shows and takes the money.



J. D. Williams

READ ON

We are a reliable manufacturing company. We offer honest, ambitious men a chance to make thousands of dollars. Opportunities like this only come once in a life time. This is your opportunity—your chance to make good. Jump into the big income class. There isn't one reason on earth why you shouldn't get there—do as these ten men have done—make a great success. Anybody can sell this wonderful device. One minute demonstration does the business. You pocket 150 per cent profit every sale. Everywhere you find people eager to buy. Being a carpenter, you are in touch with building operations—factories, homes, schools, etc., you know the construction of building—how many are mere fire traps—how easy they can catch on fire. You can explain this with telling effect—double your sales.

This is Your Opportunity—Grasp It

Get the big, easy money. Break away from hard toll—be your own boss. Look at the pictures, young, middle aged, old men—all succeeding. They saw the light and acted. Will you? Will you accept this wonderful opportunity? Write now. Start toward success. Send no money—no letter—not even a postal. Just sign and mail the coupon.

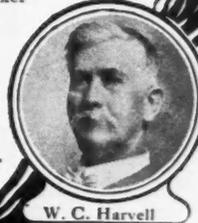
UNITED MFG. CO.
Mill Street LEIPSIK, O.
Reference: Bank of Leipsic.
Capital, \$1,000,000



W. J. Reynolds



Wm. Simmons



W. C. Harvell

**OPPORTUNITY
COUPON
SIGN AND MAIL
NOW**

**UNITED MFG. CO.,
Mill Street, Leipsic, Ohio.**

I'm ready to go to work making more money if you will show me how

Send big circular, records of results and proposition to me as your representative here.

Name

Address

County

State



ILLUSTRATION DRAWN FROM LIFE

Extinguisher acts instantly—harmless to everything but fire. Everybody dreads fire. Gasoline—oil—gas stoves explode—children play with matches—lamps tip over. Fires start in hundreds of unexpected ways. Before help arrives homes are ruined—property destroyed—lost. U. S. Fire Extinguisher prevents all this. Death to fire! no matter how started. When fire breaks out grab extinguisher, throw contents into center of blaze. Presto!—Fire Out—Property—Home—Lives Saved.



J. V. Brown

stiff spiral spring, with a long leverage for the latch bolt and a direct pull for the knob, thus producing the desirable combination of easy on the latch bolt, firm on the knob.

One of the most experienced architects in this country, who has used Sargent's Easy Spring Locks in his own house, writes: "The Easy Spring Lock made by your firm is simply perfection. The door will close as gently as a whisper without any resistance whatever from the lock." Architects everywhere are now specifying these locks and home-builders are insisting upon their use. They give satisfaction and they will last as long as the building stands.

Great security and a small key are desirable features in a door lock. These combined with the Easy Spring principle, produce Sargent's cylinder locks. These locks are made in different styles for the different classes of work, all using the same small key, so handy to carry.

Moreover, Sargent locks are secure. A building equipped throughout with them is as near proof against dishonest intrusion as locks can make it. Perfect in mechanism, assembled with exact precision and finished with most thorough workmanship, they work smoothly and surely through long years of service.

There are Sargent locks for every purpose, Cylinder Locks, Union Locks, Padlocks in all sizes.

Sargent's "Book of Designs" is a very attractive booklet illustrating many handsome designs for door fittings in various schools of architecture. Write for a complimentary copy and ask for their Colonial Book also, if you are interested in that period address Sargent & Company, 1149 Leonard St., New York.

New Diehl Catalog Ready

We have previously called the attention of our readers to the Diehl Novelty Company's line of hardware specialties, and we are now informed that their new catalogue for 1911

is ready for distribution. They will gladly mail one to any address upon request. The line of goods manufactured by them are not only novel but practical and durable, and up to date in every respect. Mr. Diehl being the inventor of these specialties, sees to it that they are made with great care and accuracy. They are putting out some specialties this season that ought to interest all carpenters and builders as well as the consumer. A great many difficulties may be overcome and time saved by using their goods.

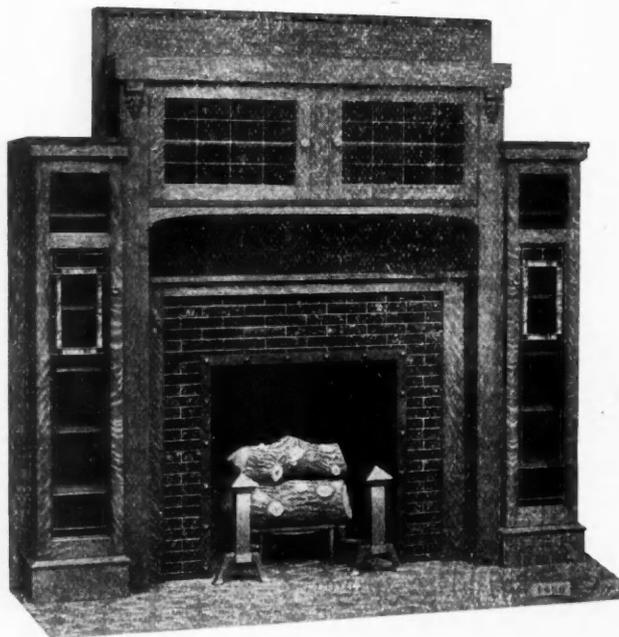
Cortright's "Advocate"

The Cortright *Metal Shingle Advocate* is out for April and as usual it begins the new volume with a new and very attractive cover design. This little publication issued by the Cortright Metal Roofing Co. of Philadelphia is devoted to roofing and roofing interest.

It is sent free to any of our subscribers who are interested in these subjects and will take the trouble to drop them a line.

Send for These

Readers of the AMERICAN CARPENTER AND BUILDER will be interested in two new booklets issued recently by Sargent & Co., 1149 Leonard St., New York. One of these booklets illustrates and describes Sargent's designs in artistic hardware, showing the goods in groups. Builders should send for a copy of this book, as it illustrates a line that is thoroughly complete. The second booklet referred to illustrates some pieces of hardware designed especially for the Colonial houses which are now so popular. Hardware trimmings for sideboards, dressers, book cases, etc., are also shown, and a full line of glass door knobs, which will appeal strongly to home builders.



**Wood Mantels
Grilles
Colonnades
Fireplaces
Mosaics Tiles**

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By Buying Direct From
the Manufacturer**

CATALOGS AND DESIGNS ON APPLICATION

CHAS. F. LORENZEN & COMPANY

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Proof Walls, Floors, Ceilings**

LINOFELT
Linen Felt made from Flax Fibre

Is the Only Good Building Quilt to Use in the Walls of Your House to Make Separate the Outside and Inside, the Heat and Cold, the Sound and Quiet

It is an insulating quilt—made from flax—the lightest quilt cubical contents considered—does more than what building paper is "supposed" to do—keeps residences and buildings warm in winter, cool in summer—saves 40% of fuel bills—is sanitary, odorless—the best sound deadener—same sound heard 200 feet through boards is heard only 2 feet through **Linofelt**—makes homes quiet and rest-

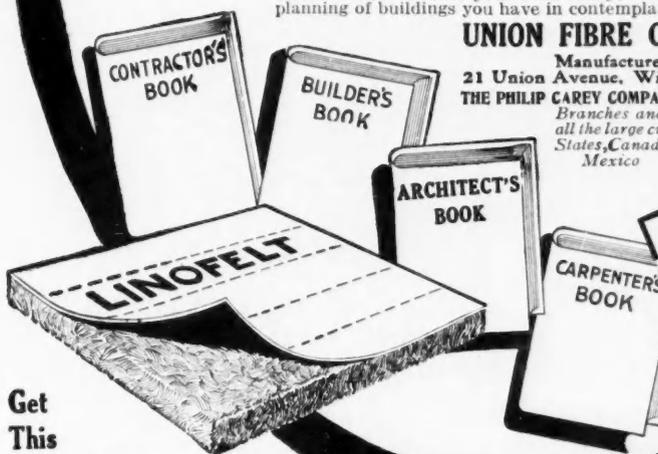
ful—equally valuable in Northern and Southern climates—no home is too small to afford **Linofelt**. **Linofelt** has been determined by hundreds of architects, builders, carpenters, property owners all over the continent to be best for insulating walls, ceilings, floors. All know **Linofelt** is more than 38 times as effective as building paper by test.

To Architects, Contractors, Carpenters

We have never failed to get the enthusiasm of architects, builders and carpenters who have become acquainted with **Linofelt**. All dislike building paper. Our beautiful FREE book is crowded with details, methods, plans, building and residence data, the results of tests—also information about Lith Board and Rock Wool. Send for your book today; and let us offer you our service covering planning of buildings you have in contemplation.

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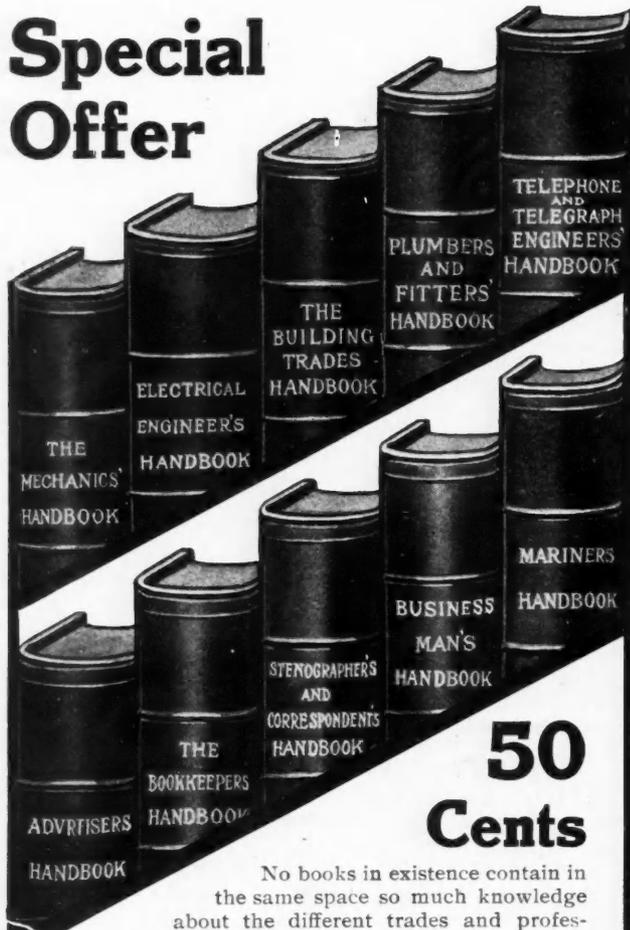
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Coulson Opens Texas Office

Announcement is made that J. W. Coulson & Co., Columbus, Ohio, manufacturers of the Coulson Patent Store Front Construction have opened a branch office in the Builders' Exchange, Dallas, Texas, in charge of Mr. J. T. Coulson.

A Folding Stairway

An invention that will commend itself at once to builders, is the Bessler Movable Stairway, illustrated herewith. It is a simple serviceable stairway which answers every purpose of the ordinary stair, besides being especially constructed for use in place where there is no room for a permanent stairway.

Can you reach your attic quickly in case of fire? Or is a ladder, which is seldom found in its place, the only means of access? Chances are if such is the case, that a fire will have made such headway by the time it is reached, that your house will either be badly damaged or totally destroyed.

Or perhaps you would like to put a rear stairway in your house, but there is no space available for a stationary stairway.

Or, you would like to use that unused space overhead in your shop or garage,



Stairway Opened and Ready for Use

but again you have no place for an ordinary stairway. In all of these places and many others the Bessler Movable Stairway will meet your wants exactly.

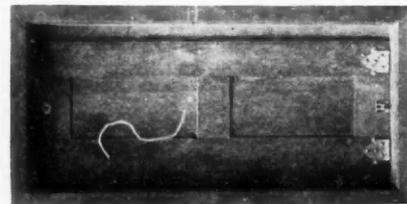
This movable stairway as the cuts illustrate, is operated through an opening in the ceiling, and being counterbalanced, can be raised or lowered readily as desired. A handsome



Ceiling Panel Showing Folded Stair

panel in the ceiling is the only part of the stairway visible when stairway is raised.

It costs less than a stationary stairway and people using it



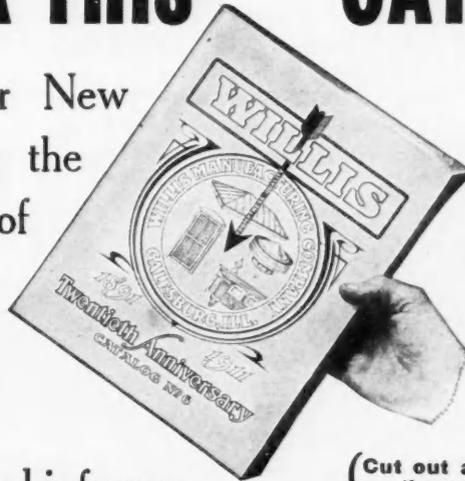
View of Ceiling Panel

now are enthusiastic in speaking of it. A handsome descriptive folder will be sent on request by The Bessler Movable Stairway Co., Ravenna, Ohio.

WRITE TODAY FOR THIS CATALOG

☞ We have just published our New Catalog Number Six illustrating the largest and most complete line of

ARCHITECTURAL SHEET METAL BUILDING MATERIAL



It is **FREE** for the Asking

(Cut out and send to us the coupon below)

☞ Here is 180 pages of good sound information on Architectural Sheet Metal and we want every Carpenter and Builder to have a copy. It makes no difference whether you are figuring on large or small contracts, it will help you estimate.

☞ Our facilities enable us to take care of orders promptly and our twenty years of experience insures quality which is unequaled, and makes a satisfied customer that always uses

WILLIS SKYLIGHTS, VENTILATORS, CORNICES, STORE FRONTS, ETC.

The WILLIS Wall and Veneer Ties

They make a perfect bond and are easily applied and effective.



Samples and Prices on Application

CUT SHOWING TIE FOR DOUBLE WALL

☞ Don't forget to send for this Catalogue today, as it will be of VALUE AND INTEREST TO YOU.

Willis Manufacturing Company, GALESBURG, ILLINOIS.

Originators of the Famous Willis Hip Shingle.

Estimates given from Architects' Details and Plans.

Dept. "A"

WILLIS Mfg. Co.
Galesburg, Ill.

Please send me free your Illustrated Catalogue No. 6 of Architectural Sheet Metal:

Name

Town.....

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"Willis" Quality

"It costs no more to have the best, and this is what you get." The foregoing motto is the slogan of the "Willis" Manufacturing Company, Galesburg, Illinois, manufacturers of almost anything in the sheet metal line, cornices ventilators, crestings, finials, etc.

Centrally located, the Willis company are in a position to give the promptest attention to your demands.

"Willis" Skylights are what you have been looking for, and every one is shipped with a guarantee against defects as to workmanship and material. It may be of interest to know that each skylight is first set up in the shops of the Willis Mfg. Co., and then knocked down for shipment. This



One of the "Willis" Skylights

materially reduces freight charges and insures safe delivery. They can be erected with a minimum amount of labor, inasmuch as a hammer and screw driver are the only tools required. Not even solder is necessary. This fact will appeal especially to the carpenter contractor. When erected, Willis Skylights are claimed to be absolutely watertight without setting glass in putty. This company have specialized in skylight construction for many years, and consequently are skylight experts, and they would be more than pleased to advise you regarding this line of work at any time. In other words, the result of all their years of study is at your disposal.

Not only in skylights, but in every other branch of the sheet metal industry does the Willis company claim to offer the very best quality at a cost no higher than you would pay for inferior goods. This seems like a broad assertion, but when you consider that every modern facility for manufacturing sheet metal goods is installed in their plant, you can readily understand why they can make this statement. Simply by reducing cost of production to a minimum they are enabled to give a maximum value for the minimum cost. Logical, is it not?

A representative of the AMERICAN CARPENTER AND BUILDER has, on various occasions, been through their plant, and has seen it grow very materially during the last three years. This growth is the natural results of a conscientious endeavor to give full value at all times to the buyer on the part of the manufacturer. Value received is what the Willis Manufacturing Co. offer. Already hundreds of readers of this paper have had dealings with this company, and during the coming year hundreds more will have dealings with them, and the writer of this suggests that you get in touch with this firm yourself. Get their literature which explains very fully their entire line, and when you are in the market give them a chance at your estimates. Just remember the slogan of the Willis Manufacturing Co., Galesburg, Illinois, is, "It costs no more to have the best, and this is what you get."

Blue Prints

The Power Wallace Co., 1219 Arch St., Philadelphia, Pa., are making a specialty of blue print work at a price that is designed to interest architects, contractors and builders. All orders are filled the same day as received. If you are in need of blue prints, write the company for quotations. This firm also make a specialty of drawing materials and type-writer supplies, at remarkably low prices.

"Any beams strong enough for a roof of shingles, tin, or iron are fully strong enough to hold a roof of slate—a roof that never wears out."—*American Carpenter and Builder.*



Thirty-five Years' Service With Never a Leak or Repair

Read the following letters—all written from the town of Wilmot, Ohio, proving the economy of using slate for roofs:

Thirty-four years ago this summer I roofed my house with American Sea Green Slate. It has never leaked since and I never paid out anything for repairs. There is nothing equal to such a roof of durability and service.—*Uriah Messe.*

Twenty years ago the building occupied by the Farmer's Bank was covered with American Sea Green Slate. It has given very satisfactory service, has never leaked, and has never needed any repairing. I can heartily recommend American Sea Green Slate for roofing.—*Fno. Longenecker, Cashier.*

In the year 1876 I placed upon my house an American Sea Green Slate roof and the roof is just the same as when I put it on, has never leaked a drop, and has never cost one cent for repairs.—*A. Hurraw.*

It is thirty-three years since I put an American Sea Green Slate roof on my house, and it is as good as new today, has never leaked and has never needed repairing.—*Benjamin Gessaker.*

Take Up Slate Roofing in Your Territory—This Spring

Wherever there are roofs of private residences, churches, schools, public buildings, barns or factories to be laid—slate is stipulated in the contract.

Prepare now to get and hold this profitable business—by taking up slate roofing. It is easy to learn, can be conducted in connection with your present line with no extra trouble or expense and will yield sure and increasingly satisfactory returns.

If your territory is not already covered by a slate roofer—now is the time to establish yourself in this business and take orders for—

Sea Green or Purple Roofing Slate

the one roof that *never wears out*; can't rust or decay, crack or disintegrate; that never requires repairs, is fire and spark proof; that reduces insurance rates, affords clean, pure cistern water and is practically indestructible.

Wherever new roofs are to be laid or wherever there are worn out shingles, metal, tin or composition roofs *to be replaced*—there is business for you.

A few simple, inexpensive tools and a little capital is all that is necessary. If there is no Slate Roofer in your territory—write to us at once for delivered prices on slate, tools, supplies. We furnish all necessary instructions free.

Don't put off—write now—today.

American Sea Green Slate Co.,
Box 125, Granville, N. Y.

\$150.00 Cash For the 41 Best Answers

WE want to know *what you think*—in your own words—just as you would talk to a man or woman about a job.

We say—Johnson's Wood Dye is the best wood dye to be bought—it's the easiest to use.

We claim Johnson's Under-Lac to be far superior to any kind of varnish or shellac.

Now what we want to do is this—we want to furnish *you*—the man who knows a whole lot about woodwork and finishing—some of our Wood Dye and some of our Under-Lac to try out yourself and we want you to tell us in your own words—we don't care anything about fine writing—just *why you would recommend it*. To the 41 painters who send us the best reasons—in not over 150 words—for using Johnson's Wood Dye and Johnson's Under-Lac to finish or refinish woodwork, floors or furniture, we will send our checks for one hundred and fifty dollars (\$150.00) cash in the following amounts:

Best answer \$25.00, next 5 best answers \$10.00 each. Next 10 best answers \$5.00 each, next 25 best answers \$1.00 each, making a total of \$150.00 for the 41 best answers.

Here's a chance to make a good Cash profit in less than one hour's time.

Take the coupon printed below to your paint dealer and get from him—without charge—no obligations of any kind—samples of Johnson's Wood Dye and Under-Lac to make a thorough test on some piece of woodwork or furniture.

Johnson's Wood Dye

is not a mere stain. It is a genuine, deep-seated dye that penetrates the wood, giving a rich, permanent color that will not raise the grain in the slightest. We make Johnson's Wood Dye in fourteen standard shades. These are the shades and stock numbers:

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

Half Gallons—\$1.50 Each

Johnson's Under-Lac

is a spirit varnish. It will not chip, mar or scratch. Better than any kind of shellac or varnish. Can be easily applied, does not raise the grain, is not thick and sticky like varnish and **dries in half an hour.** Gallons \$2.50.

You try these goods. It will take you not more than half an hour spare time. Then give us your personal opinion. Write down your reasons. All you need do is to jot down, in pencil, if you like—Reason 1, Reason 2, Reason 3, and so on.

The 41 painters who give us the best reasons in not over 150 words—for using Johnson's Wood Dye and Johnson's Under-Lac for finishing and refinishing woodwork, floors and furniture will receive our checks for a total of one hundred and fifty dollars (\$150.00). *Do this today. Get the Wood Dye and Under-Lac at your dealer's FREE—no charge or obligation to you.*

Your answer giving reasons must be mailed to us not later than June 1st. Checks for \$150.00 will be mailed June 15, 1911. Don't pass up this chance to make some extra money. A nice contract couldn't be better, for this is *clear profit and short work.*

S. C. Johnson & Son, Dept. A C B-4 Racine, Wisconsin
"The Wood Finishing Authorities"

USE THIS COUPON

Good for 3 trial samples of Johnson's Wood Dye and Under-Lac—also Instruction Book, "The Proper Treatment for Floors, Woodwork and Furniture,"—at your dealers.

Your Name.....Address.....

Paint Dealer's Name.....

If your dealer hasn't these samples, mail coupon to us with dealer's name—we'll see that you are supplied.

S. C. Johnson & Sons, Dept. A C B-4, Racine, Wisconsin, "The Wood Finishing Authorities"



**A fireplace
will bring a
better price for the
homes you are building.**

Nothing adds to the attractiveness of a home like a fireplace with an appropriate Wood Mantel.

It takes away all the bareness of a room—gives it a finished appearance.

Write today for our book of designs and let us show you how the use of fireplaces and wood mantels in every room, will positively bring returns in better rentals, increased selling prices and preference for your houses.

Write today

**The Home Fireplace and
Mantel Co.**

Room 611 State Life Building

INDIANAPOLIS, -:- IND.

Patent Trussed Steel Wire Lath

The illustration herewith shows the use of Greening's Patent Trussed Steel Wire Lathing, and Grimm's Corrugated Galvanized Wire Lathing, manufactured by the Buffalo Wire Works Co., Buffalo, N. Y. It is a photographic view of the back face side of a wall using this wire lathing, showing the keys of plaster.

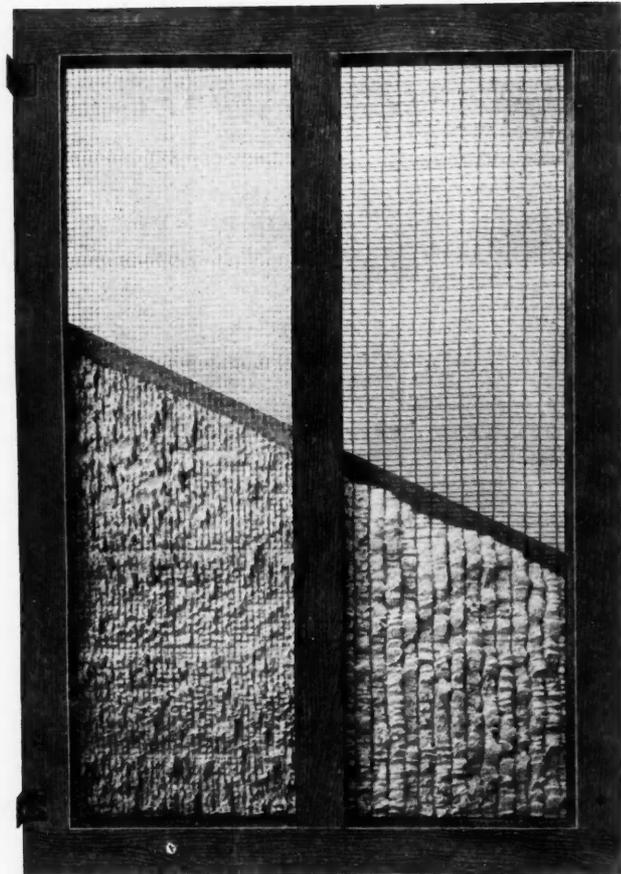
In their new Patent Trussed Steel Wire Lathing this company offer, so it is claimed, an article which combines within itself the best features of the better class of other wire and metal laths, and eliminates many of the objectionable features of the latter.

It is supplied in continuous lengths up to 50 yards, with a selvage on each side, and in widths to suit the spacing of the studs or joists. For example, if the studs are 16-inch centers, the lathing can be furnished 32 or 48 inches wide, thus avoiding the loss of lapping. 36-inch wide is mostly used.

In handling there is practically no danger of cutting or scratching the hands.

The selvages are stapled or nailed along the studs or joists, consequently there is no lacing.

Owing to the truss formation of the lathing, it may be



Two Styles of Trussed Steel Wire Lath Showing Plaster Keys

stapled or nailed directly along the studs, joists or sheathing without any furring—a feature of great importance—and the absence of the lapping, lacing and the furring largely insures the lowest possible cost in erecting.

The Trussed Lathing will be found to be particularly adapted to conform to any desired curvature and will also take the bends of sharp corners without requiring to be cut.

The truss principle applied to this lathing renders it so stiff that it gives a sustaining power of $3\frac{1}{2}$ times that of a square mesh cloth of equal weight per square foot.

When so ordered, they give the lathing a coating of spe-

The Big-Chuck Brace with the Tight Grip that Releases Easily

THE Ball-bearing Chuck that has bored ten-penny nails through solid oak, and that even a weak wrist can tighten and release with ease, is found only in the well-known **P. S. & W. SAMSON BRACE**

The Samson Brace also has the Alligator Jaw that parallels itself to the shape of any drill-shank, round, square or taper; and the Steel-clad Head with dust-proof ball-bearings—the head that will not split, work loose or come off.

Our Large Line of Guaranteed Hand Tools for Carpenters includes Braces, Auger Bits, Chisels, Gouges, Drawing Knives, Squares, Calipers, Hammers, Hatchets, etc., etc. Every one of our guaranteed Hand Tools is branded with

The MARK of the MAKER

Write today for our free "Mechanics' Handy List," a 165-page book, now in its third edition. Over 30 pages of valuable information and a catalog of over 200 Guaranteed Hand Tools for Carpenters, Machinists, Electricians, Tinsmiths, etc.

The Peck, Stow & Wilcox Co.

MANUF'RS of the Largest Line of Mechanics' Hand Tools offered by Any Maker.

Established 1819. Five Large Factories.

Address Correspondence to 22 Murray Street, New York City



REG. U. S.
PAT. OFF.

cially prepared rust-proof paint at a small advance on price of the plain. They also supply it made of galvanized wire before weaving, or galvanized after weaving.

Grimm's Galvanized Corrugated Wire Lathing is another product of the above company, it being a stiffened wire lathing without the added weight necessary for stiffening in most wire lathings. In this Corrugated Wire Lathing will be found the strength of most laths that are woven with a rod or other metal running the width of the lathing used for stiffening purposes without the necessary weight.

The Corrugations are V-shaped and embedded in the lathing at intervals of six inches, and when applied to walls or ceilings with galvanized staples, makes one of the best laths obtainable, and walls and ceilings plastered with this Corrugated Wire Lathing will never crack, the plaster being so firmly keyed that it will never drop or fall off. (Note the illustration.) Outside of these facts, walls or ceilings plastered on this lathing are also fireproof.

The secret of the durability of woven wire lathing is that the fabric is completely embedded in the mortar, and thus secured from the corrosive action of the atmosphere; and also to the fact that rust will not attack the smooth, round wire. This has been demonstrated in the recent wrecking of the Chicago City Hall, in which wire lathing was used in its construction over forty years ago.

This lathing is put up in rolls which contain about 150 linear feet, the usual width being 36 inches. Other widths, however, can be furnished upon short notice.

Anybody contemplating the erection of any building will be well rewarded by looking into the merits of this article before making his purchase for wire or other lathings.

For samples and prices of either of the above laths, address Buffalo Wire Works Co., 316 Terrace, Buffalo, N. Y.

Of Interest to Carpenters

Two articles that should interest all carpenters and builders are the combination bench hook and trimmer and the surface and flush blind hinges, both manufactured by R. P. Whipple & Co., 275 Main street, Springfield, Mass. This company has recently changed management, the old firm having been bought out by L. M. Meyer & Co., of Springfield. The business, however, will be continued under the old name of R. P. Whipple & Co. Both articles have been on the market for the past ten years and hundreds of satisfied users can testify to their good qualities.

The bench hook and door trimmer is a handy little tool that every carpenter should have in his kit. It is of particular value on an outside job, where it can be quickly attached to a temporary bench, although largely used on permanent shop benches.

For the Whipple surface blind hinges, the barrel and pad are made of the best malleable iron. The plunger inside of the barrel is of steel, and the coil spring is oil tempered steel. The following claims of superiority are made: Absolutely no slamming or rattling; impossible to blow off; no fastenings required to hold the blinds open, half open or closed; no catches on window stool to interfere with outside screens; outside windows put on without removing blinds or hinges; easy to put on, as you are not obliged to trim the blinds; can be made right or left by changing the pin; galvanized taper pin which will not rust in.

The company, under its present management, wishes to assure all old and new customers that it is now in position to promptly fill all orders. A large stock is kept on hand so that shipments can now be made on receipt of order.



OAK FLOORING

Every **builder, owner** and **investor** should insist on **OAK FLOORING**. Any truthful landlord will tell you that **Oak Flooring increases the renting and selling values** of any building.

There is no question of the superior advantages of **OAK FLOORING** over any other Hardwood Flooring.

OAK FLOORING $\frac{1\frac{3}{8}}$ " thickness by $1\frac{1}{2}$ " and $2\frac{1}{4}$ " faces make the most substantial floors and is adaptable for all sizes of rooms.

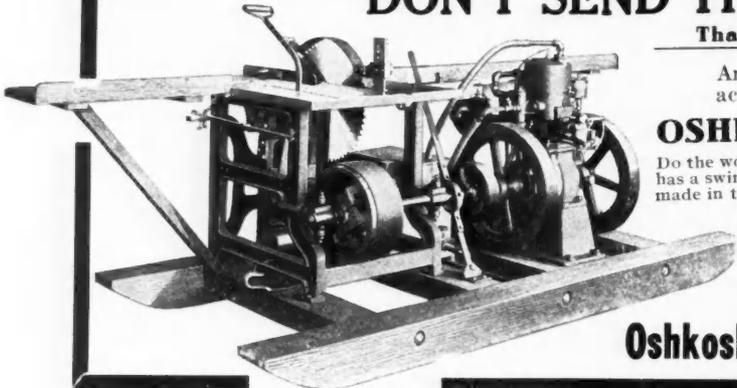
OAK FLOORING $\frac{3}{4}$ " thickness by $1\frac{1}{2}$ " and 2 " faces may be laid over sub-floors or over old floors very economically. When laid, it has the appearance of heavy flooring. Can be bought, laid and polished for about half the cost of a fair quality of carpet.

Write us for further information.

THE OAK FLOORING BUREAU.
822 Hammond Bldg. DETROIT, MICH.

DON'T SEND THE JOB TO THE MILL

That's the Expensive Way—the Wrong Way



An enormous saving in time and labor can be accomplished by installing practical machines

OSHKOSH PORTABLE SAW RIGS

Do the work of about 8 carpenters, and is the only saw rig known that has a swinging saw that can be held stationary for rip-sawing. It is made in two sizes.

Size No. 1—14" Saw, 6 H. P. Size No. 2—20" Saw, 10 H. P.

Bring the Mill to the Job

That's the Cheaper Way—the Right Way

Oshkosh Logging Tool Co., 316 S. Main Street
OSHKOSH, WIS.

"HE WHO USES CYPRESS BUILDS BUT ONCE"



SO MANY PEOPLE KNOW
so little about woods
(and their relative values — How is it with you?)



SO MANY PEOPLE THINK

that "LUMBER IS LUMBER"—(How often, Mr. Carpenter or Mr. Contractor, do YOUR CUSTOMERS specify the kind of wood they want you to use?)

SO MANY PEOPLE BELIEVE

That Frequent Repair Bills are "Necessary Evils"

that we believe we are doing a public service in informing both BUILDERS AND THEIR CLIENTS on

CYPRESS

("THE WOOD ETERNAL")

HERE IS CYPRESS VS. AN IRON PLUG:

About 110 years ago, when Louisiana was a French Province, the Water Mains of New Orleans were CYPRESS logs, 18 feet long by 22 inches diameter, with a 5-inch hole bored lengthwise. These were joined by short iron tubes, tapered at both ends. A few years ago these were replaced by the most modern system. Below is a photograph of a section of one of the CYPRESS mains just as it was dug up—as sound as ever after 100 years contact with wet earth.

Below is a photograph of one of the iron connections just as dug up—most of them rusted past all usefulness.



HERE IS CYPRESS VS. WEATHER:

A photograph of a CYPRESS SHINGLE from the Austen Homestead, Staten Island, N. Y., built in 1710, and at last accounts still occupied by descendants of its original builders, with the original CYPRESS roof practically intact.

"He who uses CYPRESS builds but once."



CYPRESS is in truth "the wood eternal." If you are putting up a palace or a pasture-fence, and want to build it "**FOR KEEPS**"—USE CYPRESS. USE CYPRESS. USE CYPRESS.

There is going to be a liberal education (and a wonderful INVESTMENT value for everyone) in this CYPRESS advertising—and in the detailed information and reliable counsel to be had promptly WITHOUT COST, if you will WRITE US YOUR OWN NEEDS (big or little), and ASK YOUR OWN QUESTIONS of the "ALL-ROUND HELPS DEPARTMENT" of the

Southern Cypress Manufacturers' Association

1216 HIBERNIA BANK BUILDING, NEW ORLEANS, LA.

Probably your lumberman sells CYPRESS; if not, Write Us, and we will tell you the dealer handiest to you.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Burmite

Burmite

Burmite

Burmite

Burmite

PRACTICAL DURABLE ARTISTIC INEXPENSIVE

Ready-To-Lay

Burmite

FLEXIBLE-CEMENT-BURLAP INSERTED

ROOFING

ALSO USED AS A SIDING FOR RESIDENCES, BUNGALOWS, SUMMER HOMES, GARAGES, ETC.



Roofed with "BURMITE"



Roofed and Sided with "BURMITE"

A big step in advance of anything heretofore attempted in a Material for

ROOFING AND SIDING

Residences, Business and Factory Buildings, Summer Homes, Bungalows, Barns, Garages, Churches, Plants, Warehouses, Depots, Etc., of Concrete, Brick, Stone, Frame, or other construction. Guaranteed 10 years without coating. Made to meet Extreme Weather Conditions—Sparks, Hail, Sleet, Sliding Ice, Rain, Snow, or the Extremes of HEAT and COLD do not affect the Storm-Resisting and Fire-Retardative Qualities of "Burmite," which is made in two surfaces, i. e.

BIRD-SAND and "Twolayr" SLATE-CHIPS (Patent Applied For)

2 PERMANENT NATURAL SLATE COLORS—

SLATE-RED and "Stoddard" SLATE-GREEN



Natural size of the Slate Chips

Uniform Solid Slate Surface. Requires no Painting. Kept Clean and Bright by the Rain.

THE BEST BY TEST

Sold on its Merits and Lasting Qualities

The First Cost the Only Expense

A practical roofer, with thirty years' experience in selling and applying other makes, recently used our BURMITE for roofing his own building—which, by the way, was a flat roof—although he had on hand at the time a large stock of the other kinds he had been selling. In speaking of the many advantages of "Burmite" he writes us:

"It is not necessary to take off your shoes for fear of damaging the storm-resisting and fire-retarding surface of a "Burmite" Roof—the strongest and most durable made."

FOR THE "Twolayr" SLATE-SURFACED MATERIAL, Natural Colored Slate of *Unfading Quality* is used, the Slate-Chips being embedded into the Pure Asphalt Composition so thoroughly—and put there to stay—that a smooth, even upper mineral surface (there being two layers of the Slate Chips) is the result, thus securing the well-known imperviousness and weather-resisting Qualities of Slate, at one-fourth the cost.

The resisting qualities of our Slate-Surfaced Material are such that it is especially recommended for, and is being largely used as a Roofing on PULP MILLS, CHEMICAL WORKS, ACID and FERTILIZER PLANTS, and other buildings used for like purposes, where the roofs are affected by Acids, Gases or Fumes.



This Illustration shows component parts of "BURMITE" with Chipped-Slate Surface.

As a rule, other grades must be coated at least three times in seven to ten years, and if the cost of paint and labor is added to the original cost of the material and applying, it will be at once apparent that "Burmite" will be found not only the Most Durable but More Economical than others.

Architects, Contractors, Builders, Roofing Experts, Owners and Occupants, will find our Samples and Booklet, "BURMITE QUALITY COUNTS," illustrated with buildings, beautifully printed in colors, showing effect of BURMITE MATERIAL applied as a Roofing and Siding, both interesting and instructive. Mailed free of all charges and obligation. WRITE TODAY.

Birmingham & Seaman Co.

ROOFING MANUFACTURERS
Gen'l Offices, 1208-26 Tribune Bldg. CHICAGO
Plant, 56th, Armitage & Grand Aves.

Distributors of BEAVER BOARD. PAINT for Structural Iron Work, and ROOFING BRUSHES.

Chicago, Cincinnati, Buffalo, Birmingham, Ala.; Dallas, Tex.; Detroit and Grand Rapids, Mich.; Green Bay, Wis. Memphis and Nashville, Tenn.; Oklahoma City, Pittsburgh, Richmond, Va.; St. Paul, Minn.

Name _____
Address _____
Business _____
BERMINGHAM & SEAMAN CO., Chicago
1208-26 Tribune Bldg., Chicago
Mail to address, as above. Samples and Booklet. This places me under no obligation whatever.
A. H.

Burmite

Burmite

Burmite

Burmite

strate that the trough will not clog with trash, and by pouring water on the lid will show that it will take all, regardless how hard it rains. Agencies for the "Ideal" are open, and undoubtedly an unprecedented opportunity is open to the live hardware dealer, sheet metal worker and tinner who takes advantage of it.

The Huber Cypress Columns

The Huber Builders' Material Co., 45-49 Vine street, Cincinnati, Ohio, offered a number of attractive bargains in last month's AMERICAN CARPENTER AND BUILDER. The line shown



Dowel Joint Used in Huber Cypress Columns

in their advertisement consisted of a front door, cottage window, yellow pine stairs and newel casing, base, quarter round, grille and a Huber cypress colonial column.

Many of our readers will be especially interested in the cypress columns at this time, when so much is being written in praise of "Cypress, the Wood Eternal," as it is called.

Mr. Gustav Stickley, the well-known craftsman, states that it is the best American wood for all exterior use, such as shingles, timbers, pergolas and all mill work subject to weather. Its slight natural oil makes it practically impervious to moisture, so that it does not shrink or swell like other woods, and it is very durable when protected by merely a coat of oil.

So in offering their carefully selected genuine Louisiana red cypress porch columns, the Huber Builders' Material Co. claim they are manufacturing and selling a column which will give perfect satisfaction for the longest time. They state that they "air-dry" their lumber for at least one year, eliminating the danger of contraction and expansion. It is this expansion and contraction that causes solid or other columns to sometimes split or open up badly at the joints. The Huber cypress colonial columns are built under the wooden dowel system, and dowels were used by our forefathers to hold the framework of the largest buildings in permanent position, and they are also used in the construction of high-class furniture, and today in fully 95 per cent of the doors manufactured in this country. The Huber cypress columns have special construction features in the staves, and waterproof glue is used. The smooth satin finish found only in Huber columns is obtained by a method distinctively belonging to the manufacturer of this line of

columns. These columns are primed with pure white lead and linseed oil, insuring protection from the weather and making the best possible foundation for further painting.

The manufacturers have just added a new and most important feature to these Huber columns. Two thick, round blocks of wood are glued on the inside several inches from



Kanneberg's ART METAL CEILINGS and SIDEWALLS

Our steel ceilings and sidewalls are suitable for all classes and styles of buildings.

Durable — easily and quickly applied, requires no repairs, will not crack, burn, nor absorb infectious germs.

Forms a permanent basis for decoration of the highest ornamentation.

Our plain instructions make measuring and erecting easy for the carpenter and builder; we also furnish detailed drawings showing just how to do it.

Send us a letter today, asking for catalog and special inducement to new representatives. We want one carpenter or builder to handle our products in each town, everywhere.

Let us figure with you and help you get the Metal Ceiling business in your town now.

THE KANNEBERG ROOFING & CEILING CO.
Canton, Ohio

Manufacturers of Art Steel Ceilings, and Sidewalls; Metal Roofing; Architectural Sheet Metal Work; Eave Trough and Conductor. Catalogs Free.

The IRWIN Bit Reg. U.S. Pat. Office

Imprint This Brand On Your Mind

And when you buy an auger bit be sure you find the "Irwin" stamp, as shown above, on the stem.

Because the Irwin Auger Bit is the only genuine solid-center-stem bit made in all sizes and styles, for every purpose—

Because imitations are not "just as good," or anywhere near as good—

Because the original superiority of the Irwin in use is as apparent today as before its appearance and brand were so widely imitated.

Every Irwin is guaranteed to give entire satisfaction or price is refunded.

All good dealers sell Irwin Auger Bits. If you have the slightest trouble in obtaining them, write us.

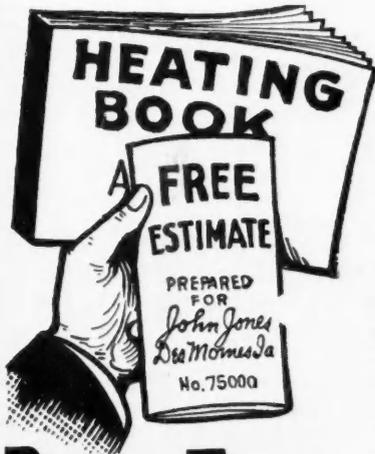
Largest in the World

The Irwin Auger Bit Company

WILMINGTON, OHIO

Station D-18

ANDREWS HOT-WATER HEATING



Mr. Contractor:

Here's my Heating Idea that will make money for you:

MY plan is the simplest for you to make money on. It eliminates all preparatory work on your part, as I do this for you. It takes the risk of the plant's success off your hands, as I take the responsibility in my guaranty bond. It enables you to make both the good commission and profit on the erection.



BOTH FREE

My plants are made, complete, in my factory and sent "knock down," freight prepaid, all ready to screw together.

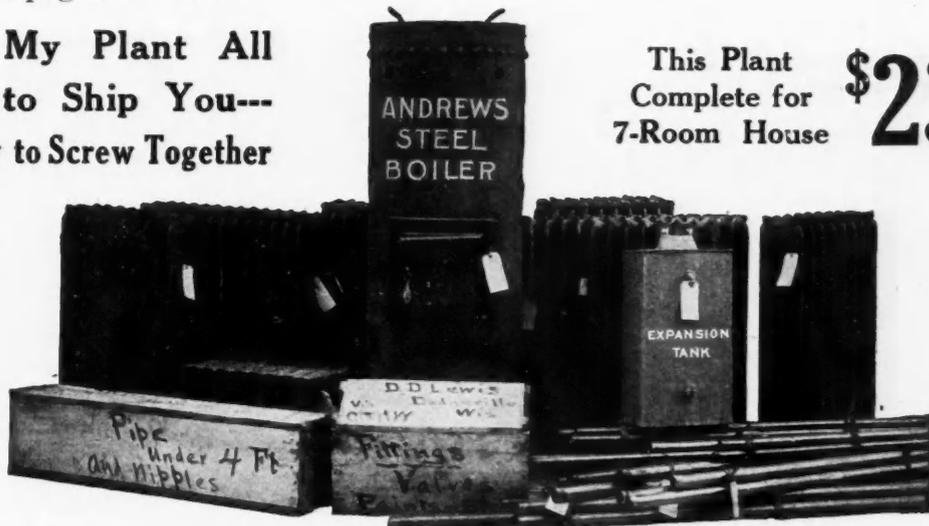
My steel boiler is much more economical of fuel, heats quicker, easier to clean and more durable. My regurgitating safety valve increases the heating power of piping and radiators. The directions with each plant are so complete and yet so simple that any carpenter's helper can easily do the work.

You cannot afford to delay learning all about my plan. It is making money for other contractors and can be for you. Write today for my special 1911 proposition, and big new 72 page free book.

Here's My Plant All Ready to Ship You--- All Ready to Screw Together

This Plant Complete for **\$239⁰⁰**
7-Room House

Buy Direct
and Take
the
Middleman's
Profit



360 Days
FREE TRIAL
Guaranteed
By Bond

We Do the Work of Designing and Make the Plant Fit Your Job—For Old or New Houses

You have nothing to do so far as fitting and cutting pipe or designing the layout of the plant. Our engineers do this work accurately, and furnish such complete and simple directions that any carpenter's helper or handy man can easily set the plant up as good as an experienced plumber. We figure out the size boiler, radiators and piping necessary for most efficient service, cut all pipe to fit and thread it ready to screw together.

FREE ESTIMATE

Just send us architect's plans or a rough diagram of each floor of the house to be heated, show size of rooms, windows, height of ceilings and construction of house and our engineers will furnish a free estimate of the complete job delivered at your station. No work for you and no obligation if you don't get the order.

What the Complete Plant Consists Of

Boiler, Piping, Fittings, Radiators, Expansion Tank, Regurgitating Safety Valve, Packing, Bronze and Brush—everything that is necessary to make a plant the best and most satisfactory. With the plant is sent complete and easily understood plans and directions for erecting so that anyone handy with tools can set up an average plant in one-half the time usually required the old way and do just as good a job as a skilled mechanic.

Big 72 Page Heating Book Free

Our new 72 page book is just off the press. It is complete in its information about our systems, beautifully illustrated, and should be in the hands of every contractor or prospective buyer of a heating plant. It shows our 360 Day Free Trial Guaranty Bond, lists thousands of users and describes also our other systems of Plumbing, Air-Pressure, Water Supply and Sewage Disposal. Write for it today and send diagrams for free estimate at same time if you can. When writing also ask for our new 1911 Agent's Proposition.

1184 Heating Building

ANDREWS HEATING CO.

Minneapolis, Minn.

The Great and Growing Use of Concrete and Stucco In All Buildings Demands That You Investigate These Superior Finishes For All the Cement Surfaces

Everywhere throughout the land are modern, artistic, sanitary, concrete, cement and stucco buildings replacing those of wood. Keep pace with the times—know and use Glidden Advance Finishes for protecting, decorating and damp proofing all modern concrete, cement and stucco buildings.

These products are classed among the most important building materials brought out during the past 35 years. They open up a new, rich and profitable field for the Contractor and Builder—a field that is growing greater every day. Ordinary finishes will not do for concrete and cement structures, they demand a special treatment of their own.

Glidden's



Advance Finishes

have been developed after years of study and experiment in our laboratories, and, are scientifically correct and in keeping with the best practice in modern concrete engineering. They produce results that are not obtainable with any other materials on the market.

GLIDDEN'S LIQUID CEMENT

renders the surface of a concrete, cement or stucco building, proof against the inroads of dampness, insures a uniform color, doing away with the blotchy or mottled appearance due to the uneven drying out of the concrete, which so often disfigures an otherwise handsome building.

It comes in a variety of shades including Colonial and Pompeian Buff as well as pure white. It is easily applied with a brush. Write for descriptive booklet and free working sample.

GLIDDEN'S CONCRETE FLOOR DRESSING

is another special product that offers you a big opportunity. Spread over a concrete or cement floor, it makes a surface that looks and wears like one of tile—an ideal basement floor covering because it keeps the cement dust from rising.

GLIDDEN'S WATERPROOF FLAT FINISHES

are especially intended for interior use upon plain, rough and smooth finish plaster, on cement, metallic ceilings and wainscoting and composition surfaces such as beaver boards. They are made in white and a variety of colors and produce a beautiful, sanitary, soft, flat, stone-like finish which can be washed without detriment. They are cheaper than wall paper, more lasting than water colors.

We have room here only for a brief description of these materials, but it should be enough to show you, as a builder, what it would mean to be in a position to intelligently quote on work for which they are being specified.

Let us give you this information. Write today for our free book on Advance Finishes for modern building construction. Address,

The Glidden Varnish Company

341 Glidden Bldg. --: CLEVELAND, OHIO

BRANCHES:
New York
and Chicago

FACTORIES:
Cleveland, Ohio
Toronto, Canada

each end, which protect them from being damaged by the rough handling usually given columns in shipping. Wooden strips are nailed on the outside, full length of column, insuring delivery in first-class condition. The Huber Builders' Material Co., 45-49 Vine street, Cincinnati, are getting up a new catalogue fully describing their Dowel Joint Colonial Columns and other millwork specialties. They take special care in attending to inquiries and orders, and claim that the prices quoted on their line are the lowest, when quality of material, workmanship, etc., are considered, that can be had.

"Burmite" for Roofing and Siding

It is generally recognized that "necessity is the mother of invention."

The demand for an up-to-date material for roofing and siding residences, summer homes, cottages, bungalows, churches, barns, garages, factory and business buildings, depots, warehouses, and other like structures, combining the elements of durability, practicability, and attractiveness, is said to have been very thoroughly met by the ready-to-lay "Burmite" flexible-cement-burlap inserted material, manufactured by the Birmingham & Seaman Co., Tribune Bldg., Chicago. The foundation of this material is a heavy sheet of wool felt, thoroughly saturated with pure asphalt; on the top of this is a layer of "Burmite" compound, consisting of pure asphalt and fibre, to even up the expansion between the lower



An Attractive "Burmite" House

sheet of felt and burlap, thereby preventing buckling. Next to this is an 8-oz. Calcutta burlap, thoroughly embedded into the compound for the purpose of adding strength to the material. On the top of this is placed a layer of "Burmite" compound, to even up the mesh in the burlap and to receive the extra heavy coating, so that when same is applied a uniform thickness is secured. On the top of this is placed an extra heavy layer of "Burmite" coating, into which is embedded—and put there to stay—finely screened bird-sand for the one, and slate-chips for the other style of storm-resisting and fire-retardative upper surface.

Among the many advantages claimed for "Burmite" are that it is artistic and attractive in appearance; durable and inexpensive, practical and easy to apply, with superior fire-retardative and storm-resisting qualities to meet extreme weather conditions—sparks, hail, sleet, sliding ice, rain, snow or the extreme of cold or heat. It is easily adapted to uneven, flat or steep surfaces and can be laid over old shingles or tin. It requires no paint to preserve it.

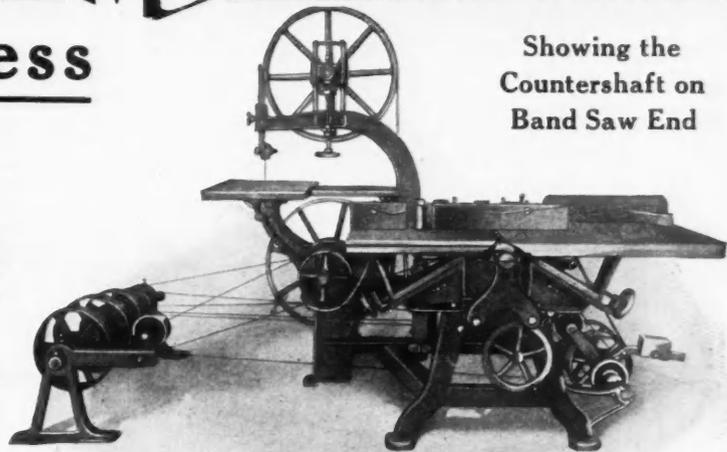
"Burmite" is guaranteed by the manufacturers that, when properly laid, it will last for ten years without coating.

To become acquainted with this up-to-date material for roofing and siding buildings of concrete, brick, stone, frame, tile, or other construction, it is only necessary to write the manufacturers for their samples and booklet, "Burmite Quality Counts," illustrated with buildings, printed in colors, showing effect of "Burmite" applied as a roofing and siding.

UNIVERSAL FAMOUS WOODWORKER

**Your Business
Needs a
FAMOUS No. 14**

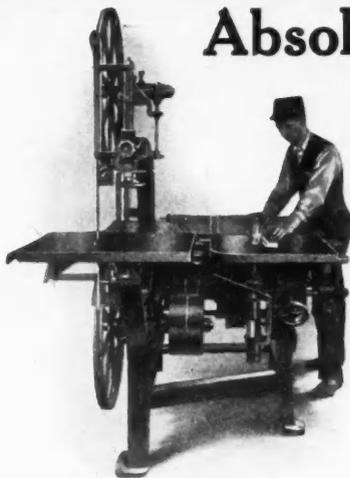
**Sixteen Complete
Woodworking Machines
In One**



Showing the
Countershaft on
Band Saw End

- | | | |
|--|---------------------------|---|
| 1 27" Band Saw, | 6 Pony Planer | 12 Knife Grinder |
| 2 12" Jointer | 7 Tongue and Pole Rounder | 13 Emery Grinder |
| 3 Saw Table, with raising and lowering arbor | 8 Hollow Chisel Mortiser | 14 Band Re-Saw |
| 4 Single Spindle Shaper | 9 Single End Tenoner | 15 Spoke Tenoner, Rim Borer and Wheel Equalizer |
| 5 Boring Attachment, arranged on special boring spindle. | 10 Drum Sander | 16 Adjustable Felloe Rounder |
| | 11 Disc Sander | |

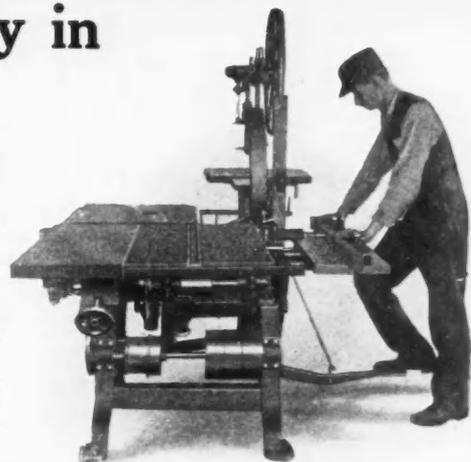
Absolute Simplicity in Operation



Single Spindle Shaper

(Illustration at left)

Just as easy, just as rapid, just as durable, just as economical as a machine that does nothing else.



Hollow Chisel Mortiser

(Illustration at right)

A machine built expressly for the purpose could not give greater satisfaction. But you can use the FAMOUS for fifteen other kinds of work besides.

Every carpenter, contractor and builder needs a FAMOUS Universal Woodworker — and can easily afford one. Better than paying out your profits to planing mills — better than installing a number of machines — better for your business in every way.

Write today for full particulars of the machine, of our free trial offer, and prices and terms to suit you.

The Sidney Tool Co. Sidney, Ohio.

TORONTO
The A. R. Williams Machinery Co.
Front Street

MONTREAL
Williams & Wilson
320-328 St. James St.

WINNIPEG
The A. R. Williams Machinery Co.
260 Princess Street

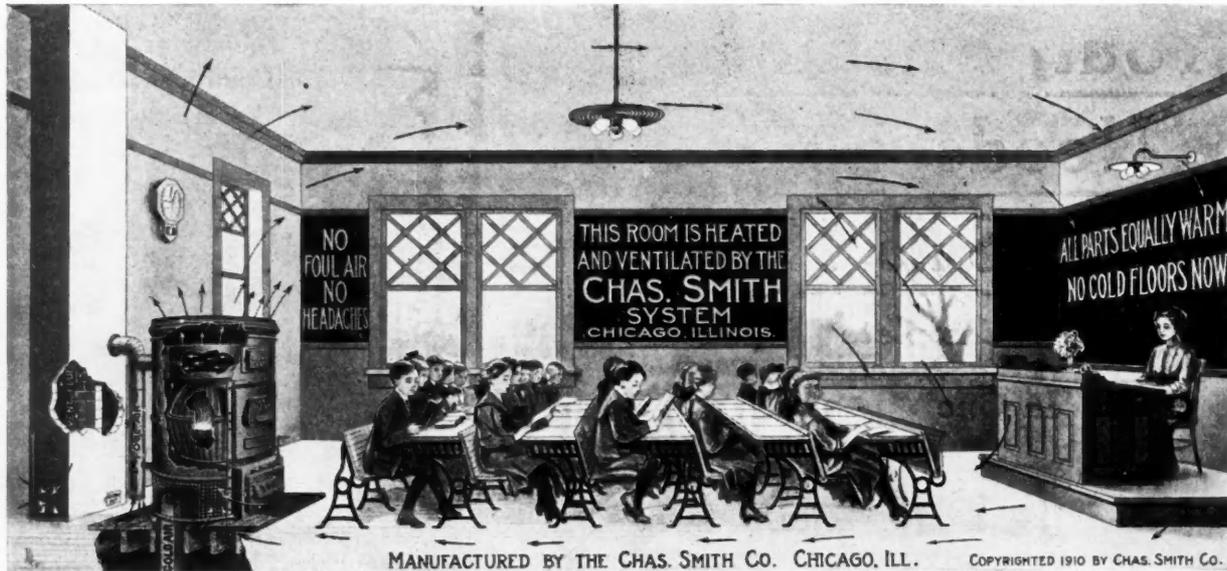
VANCOUVER
The A. R. Williams Machinery Co.
57-61 Alexander Street

Heating and Ventilating School Rooms

It is said that ninety-nine out of every hundred of our country schools are being heated now in the same manner that schools were heated one hundred years ago—and it

result has been coughs, colds, headaches, lung trouble and general loss of vitality.

In recent years, however, correct sanitation and ventilation have been receiving liberal attention, and the school room



seems a mystery that a condition so highly unsatisfactory should have been permitted so long to exist.

Perhaps the explanation lies in the fact that those who suffer (the children) have no choice in the matter—and, besides, children are not complainers. While one child is being toasted near the stove, another is freezing in a corner, and both are breathing stale and disease-laden air. The

problem has had some careful study.

Stale, stagnant, superheated air, varied by cold drafts from open windows is being done away with in favor of fresh, invigorating air, brought in through the heater itself, warmed to a moderate temperature, and distributed equally to all parts of the room.

The Charles Smith Co., of Chicago, have been the pioneers

Genasco

the Trinidad-Lake-Asphalt-Roofing

Consider Genasco from the three vital standpoints:

1. What it *does*
2. What it *costs*
3. What it *saves*

1. Genasco waterproofs your roof to last. Trinidad Lake Asphalt, used in making Genasco, is Nature's everlasting waterproofer that has resisted the influences of weather-changes for centuries. It carries into Genasco these same weather-resisting qualities, and makes it defy rain, snow, wind, sun, cold, and heat; and it makes it **permanently** water-proof.

2. Genasco costs about the same in the beginning as the so-called "asphalt composition" or the "special process" roofings which would be wonderfully good imitations of Genasco if they didn't crack, break, and go to pieces. But they can't stand the real test—the weather. They haven't the lasting life which **natural** asphalt gives.

Genasco is economical because it resists and lasts.
3. The saving in Genasco Roofing is plain. You do away with leaky roofs and the expense of repairing them; you prevent costly damage to rooms and furniture, and you save the cost of re-roofing. Genasco first-cost is last-cost.

Get Genasco Roofing—either mineral or smooth surface. Guaranteed, of course.

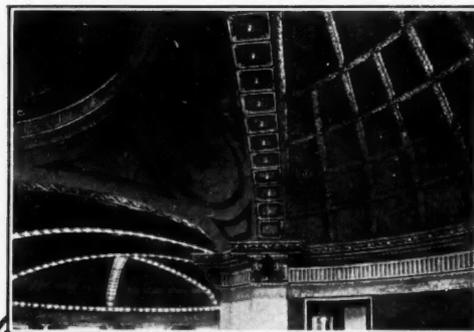
The Kant-leak Kleet for roofing-seams prevents nail-leaks, does away with dauby cement, and gives a fine finish to the roof.

Ask your dealer for Genasco with Kant-leak Kleet packed in the roll. Write us for samples and the Good Roof Guide Book.

THE BARBER ASPHALT PAVING COMPANY

Largest producers of asphalt, and largest manufacturers of ready roofing in the world.

PHILADELPHIA
New York San Francisco Chicago



A Theatre Ceiling

An Expensive Theatre Interior Or a Plain Storeroom

a church, a school, a residence—any type of building and any style of architecture can be furnished with an appropriately designed ceiling and wall covering from



We help you to make sales easy—the work is easy—profits are good.

Write for an Agency and Art Catalogue

New York Philadelphia Boston Atlanta
The Berger Mfg. Co.
Canton, Ohio
St. Louis Minneapolis San Francisco

ADDRESS NEAREST BRANCH OFFICE



A MEDIAEVAL CONDITION

Telephone Service— Universal or Limited?

TELEPHONE users make more local than long distance calls yet to each user comes the vital demand for distant communication.

No individual can escape this necessity. It comes to all and cannot be foreseen.

No community can afford to surround itself with a sound-proof Chinese Wall and risk telephone isolation.

No American State would be willing to make its boundary line

an impenetrable barrier, to prevent telephone communication with the world outside.

Each telephone subscriber, each community, each State demands to be the center of a talking circle which shall be large enough to include all possible needs of inter-communication.

In response to this universal demand the Bell Telephone System is clearing the way for universal service.

Every Bell Telephone is the Center of the System

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY
AND ASSOCIATED COMPANIES**

in this work; and they are now prepared to supply you with this modern system and it can be installed at a moderate cost. The system is not complicated, but is simple and easy to operate.

The requirements are graphically shown in the illustration and are as follows: A Hero heater of ample size; a safe base for it to stand on; a chimney with good draft; a fresh air duct of proper size fitted with damper; and a foul air vent sufficient to insure pure air.

For fifteen years the Charles Smith system of heating and ventilating schools and halls has been in successful operation. Their aim has been, not toward cheapness, but toward efficiency, safety and durability.

The jacket is made of polished sheet steel. This is lined with asbestos so that pupils can sit near the heater and enjoy the same temperature as those that sit farthest away. The top section of jacket is made not only to be attractive in appearance, but its shape adds great strength and durability to the jacket. A damper is placed in foul air duct below the elbow, and should be closed when starting fire. Where the chimney has a double flue, one of the flues can be used for smoke and the other for foul air as shown in illustration.

The fresh air is brought through the floor at a point inside the jacket of the heater. By this method it is impossible to have a reversed current of warm air, or to endanger the building by fire.

The fresh air duct is extended from opening under floor to either of the outer walls, and the opening in the wall is covered with wire screen.

Each heater is supplied with a vapor pan. When this is supplied with water, it maintains the normal humidity of the air in the room. This is a point very essential to health, and not obtainable with any other method of heating.

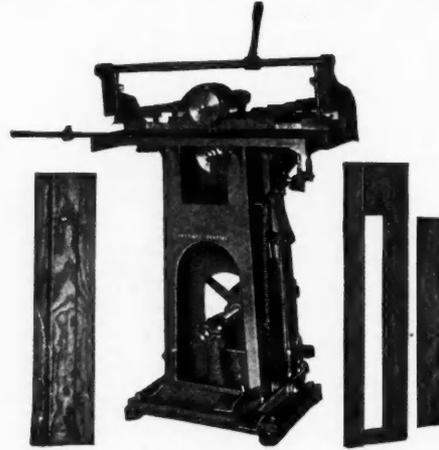
Besides the School Room Heater the Chas. Smith Company

have a complete line of furnaces and special heaters of great interest to AMERICAN CARPENTER AND BUILDER readers. Their furnace for low basements is a specialty, also the brick set furnace for school houses and churches; the gas ring furnace; and the combination furnace for warm air and hot water.

A very attractive catalog has been prepared giving full information. It is worth writing for.

"Enterprise" Pocket Cutter

This machine, handled by Austin & Eddy, of Boston, has been designed to reduce the labor—and therefore the cost—of cutting weight pockets in window sash; at the same time making a pocket that is wind and water tight. Both the ma-



"Enterprise" Pocket Cutter—A Labor Saver

chine and the work that it does are illustrated herewith.

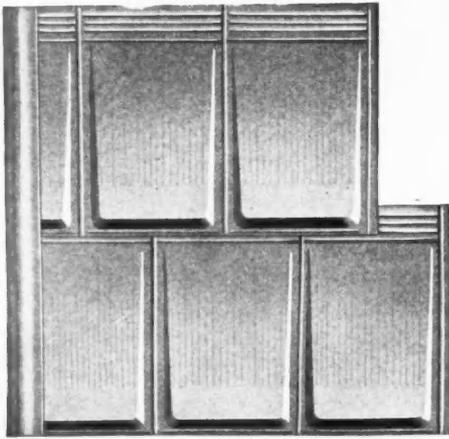
The machine is very simple in operation, requiring no skilled labor. The stile is placed on the table with the side against

**COVER YOUR
OLD ROOF WITH
Walter's
OR
Cooper's**

LASTING METAL SHINGLES

Put them right on over the old Wooden Shingles. Saves Time, Money and Work. Old Shingles add Warmth and Save Sheathing.

GET ESTIMATES



Cooper's Corinthian Tile



WALTER'S AND COOPER'S METAL SHINGLES

Were the First Metal Shingles Made. They Were The Best 28 Years Ago Are The Best Today

Made in many designs and of painted tin, galvanized tin and copper. The Original Side Locks invented by Mr. Chas. B. Cooper in 1882, are still the **Only** Locks which will positively exclude **All** moisture. Cheapest and **Best**. The Corinthian Tile here shown is fine for Colonial Residences. Need **Not** remove old shingle roof. Better to allow it to remain. Tin Roofers, Contractors and Architects, write to undersigned, sole manufacturers, for booklet and particulars. Samples on request, also price list, directions for measurement and laying with coat of paint, nails, etc.

National Sheet Metal Roofing Company, JERSEY CITY, NEW JERSEY

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

ASBESTOS SHINGLES

Infringement Suit

THE PRESIDENT OF THE UNITED STATES
TO

H. W. JOHNS-MANVILLE COMPANY, and its associates, directors, officers, servants, agents, workmen and employees, GREETING.

WHEREAS, it has been represented to us in our Circuit Court of the United States for the Southern District of New York, that Reissue Letters Patent of the United States No. 12,594, were issued to Ludwig Hatschek in due form of law on the 15th day of January, 1907, and that the Asbestos Shingle, Slate and Sheathing Company is the sole and exclusive owner of the rights to make, use and sell the inventions and improvements or discoveries of said Reissue Letters Patent No. 12,594, and that you, said H. W. Johns-Manville Company have infringed upon said Letters Patent, and upon claims 2, 3, 4, 5 and 7 thereof, which read as follows:

"2. The herein-described process of producing artificial stone plates, consisting of first mixing fibrous material and hydraulic cement in the presence of a great bulk of water, then forming therefrom a series of thin layers of the mixed cement and fibrous material superposed on each other until the required thickness is secured, then pressing the same and allowing the material to set or harden."

"3. The herein-described process of producing artificial stone plates, consisting of first mixing asbestos fibres and hydraulic cement in the presence of a great bulk of water, then forming therefrom a series of thin layers of the mixed cement and asbestos superposed on each other until the required thickness is secured, then pressing the same and allowing the material to set or harden, substantially as set forth."

"4. The herein-described process of producing artificial stone plates, consisting in mixing fibrous material and hydraulic cement in a bulk of water sufficient to render the

Injunction

cement colloidal, then forming therefrom a series of thin layers of the mixed cement and fibrous material superposed on each other until the required thickness is secured, then pressing the same and allowing the material to set or harden."

"5. The herein-described process of producing artificial plates, consisting of first mixing fibrous material and hydraulic cement in the presence of a great bulk of water, to render the cement colloidal, then forming therefrom a series of thin layers of the mixed cement and fibrous material superposed on each other until the required thickness is secured, then pressing the same and allowing the material to set or harden."

"7. A product of the invention herein-before set forth, being a composition containing hydraulic cement which has been rendered colloidal."

and upon the exclusive rights of the Asbestos Shingle, Slate and Sheathing Company thereunder.

NOW, THEREFORE, we do strictly command and enjoin you, the said H. W. JOHNS-MANVILLE COMPANY, your associates, directors, officers, servants, agents, workmen and employees, and each of them, from either directly or indirectly making or causing to be made, using or causing to be used, selling or causing to be sold, or disposing of in any way, or advertising for sale any Imitation Stone Plates, Slabs or Tiles containing or embodying the invention covered by said Reissue Letters Patent of the United States No. 12,594, issued to Ludwig Hatschek, and particularly specified in claims 2, 3, 4, 5 and 7 thereof.

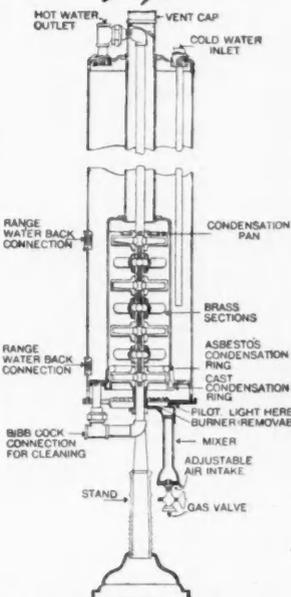
WITNESS THE HONORABLE EDWARD D. WHITE Chief Justice of the Supreme Court of the United States, at the City of New York, on the 18th day of February, 1911, and in the hundred and thirty-fifth year of the Independence of the United States.

JOHN A. SHIELDS,
Clerk of the Circuit Court.

(Seal)

KEASBEY @ MATTISON COMPANY, AMBLER, PENNA.

Electric Weld



Combination Boiler and Gas Water Heater

The self-contained storage system.

Illustration shows arrangement of enclosed Heating Chamber, Vent, and parts.

The advantages of this Type are many, in addition to the maximum efficiency thus obtained. Adapted to Large or Small requirements, without change in design of 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

Save Money

In Position



Use
**Wheeler
Safety Scaffold
Brackets**

No nails or lumber used—Pay for themselves on two houses—Last a life time—Self-locking—Safe—Fold compactly—Convenient to handle—No loose parts to get lost—Always ready for use—They carry 1500 pounds.

Write Today for Our Trial Offer

American Steel Scaffold Co.

Dept. A, 501 Woodward Ave.
Detroit, Mich.

Oldest and largest exclusive
makers of brackets

HAS MORE THAN PAID ITS WAY



Runabout \$750

F. O. B. Detroit, including three oil lamps, horn and tools. Gas lamps and tank or generator, top, windshield, etc., extra. Detachable doors, \$25 extra.

Touring Car for 4, \$900. With fore-doors, \$25 extra.

SCHMIED-SISMAN COMPANY BUILDERS

DETROIT, MICH., March 22, '11

Hupp Motor Car Company,
Detroit, Mich.

Gentlemen:

In my daily rounds with a Hupmobile, superintending a large number of building contracts for the Schmied-Sisman Co., I cover a radius of about fifty miles. The car has made as high as thirty-two miles on a gallon of gasoline and will average about twenty-seven miles to a gallon the year round.

I run this car every day in the year, regardless of weather conditions. I have already used three cars in the service of the company. They were larger cars with longer wheel bases, and I find the smaller car quicker to start and easier to drive through crowded traffic.

I find with the light weigh Hupmobile I can get through the entire season of hard usage with one set of tires. In fact I am using today one of the original front wheel tires after a season and a half of steady use.

The car has not missed a single day on account of repairs, and has more than paid its own way in the saving of time and money.

Yours very truly,

H. L. HURLBURT,
Building Sup't.

Mr. Hurlburt's experience is but one of the hundreds of similar cases in which the Hupmobile is actually made to pay its way by its saving of time and economy of upkeep in the contracting business.

HUPP MOTOR CAR COMPANY

DESK 32

DETROIT, MICH.

a gauge and bottom end of stile against a stop. Then the foot treadle, which controls the splitting saws (four in number, two below and two above the table) is pushed down by the foot, which brings the saws into the work. Then the stile is pushed ahead into a second stop, which gives the length of pocket, and the foot is raised and the stile brought back to a third stop, clamped down by lever over the table, and the second foot treadle is lowered and both ends of pocket are cut at once by four oscillating saws (two below and two above the table). This finishes the pocket, which is then ready to be knocked out at the lower end, and can be held in place by either one common screw or by a drive screw.

The number of pockets that can be cut on this machine depends largely on the operator and the stock being in a convenient place to be handled, but owing to the simple operation and the number of saws, each having such a small cut to make, it is claimed that more pockets can be cut in the same length of time on this machine than on any other on the market.

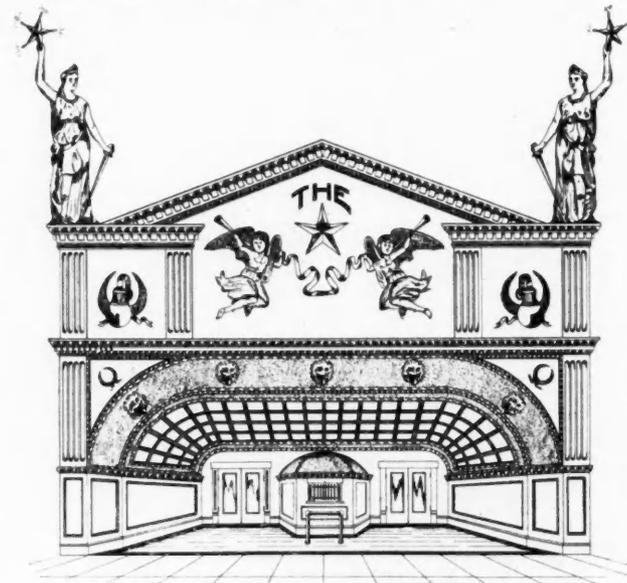
The floor space occupied by this machine is three feet by two feet, ten inches. Its height is three feet six inches, and its weight, five hundred pounds. For further particulars inquire of Austin & Eddy, 115, 117, 119 Broad St., Boston, Mass.

Art Metal for Amusement Places

The Kanneberg Roofing & Ceiling Co., Canton, Ohio, have issued a new catalog of particular interest to all engaged in building or remodeling the moving-picture theaters or other small amusement places which are now being put up on pretty near every street.

This catalog is very attractively gotten up, and presents a great assortment of neat and ornamental designs especially made for this purpose. It also describes the "Special Service" offered by this company in equipping amusement places with their patented stamped sheet metal.

This "Special Service" employs exclusively an expert designer, who builds from your suggestions or theirs the maximum artistic features afforded by your plans.



One of Kanneberg's Art Metal Fronts

Oftentimes an old building will present an unusually artistic appearance by applying this material. There is hardly a plan or specification which cannot be improved through their suggestions.

This company have sold decorative stamped sheet metal all over the world for many years past, and the demand has now come for special and exclusive consideration of art



MONTROSS METAL SHINGLES

LAST AS LONG AS THE BUILDING

Roofing troubles are ended when you lay Montross Metal Shingles. Made of standard full weight tin roofing plates, first class workmanship and every shingle is thoroughly inspected before leaving our factory. Offer you a fire, lightning and storm-proof roofing—suitable for any building. Have given continual service on many buildings from 15 to 22 years with little or no repair expense. Outwear wood shingles, iron, steel or composition roofings.

Read These Testimonials

"Montross Metal Shingles have been on my roof 14 years; and not a leak so far."—B. L. Blue, Lawrenceburg, Tenn.
 "I put Montross Metal Shingles on my home 12 years ago; are good today as when put on."—I. L. Hedges, Copake, N. Y.
 "I am highly pleased with Montross Metal Shingles. Our roof was struck with lightning, but charge was scattered and did no harm."—U. S. Moore, Lomax, Ill.
 "20 years ago I covered my roof with Montross Metal Shingles; are in excellent condition today."—C. A. Heldrich, (Architect) Schenectady, N. Y.
 "I have used over several hundred squares Montross Metal Shingles and have never had any trouble."—W. H. Kegerreis, Fannettsburg, Pa.

Montross Metal Shingles are embossed in practical designs, then heavily galvanized or painted. Will not leak, rattle, blow off, split or crack. Easily laid; no soldering. Have telescopic side lock. Lighter than slate or tile. Ornamental. Inexpensive.

LOCAL AGENTS WANTED.—An attractive proposition to good, live agents. Write for special offer.

Write at once for our illustrated catalogue, a valuable roofing booklet you ought to read.

MONTROSS METAL SHINGLE CO., 102 Erie St., Camden, N. J.

CONSOLES
Columns and Grilles



In quality and price our work is not surpassed

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

Send for 36-page Catalog
— No. 16 —

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

Northwestern Grille Works

Incorporated
CHRISTENSEN BROS., Managers. 1820-26 Milwaukee Ave., Chicago



Ten thousand trained men wanted

Every year over ten thousand **good jobs** are seeking **trained men** through the daily press.

You won't have to look for a good job if you have the necessary training to fill one—**the job will look for you.**

Read this special proposition which the American School of Correspondence has decided to offer every ambitious man:

If you lack the time and money to stop work and take a course in training, the American School will **lend you the cost of the training you need** and let you make your own terms about repaying us.

This is the greatest offer that has ever been made to men who have "got it in them to make good." We have studied this matter carefully and know that there are thousands of men who are capable and ambitious but simply lack the money necessary to pay for their training. These are the men we want to help.

We want you to check the coupon and send it to us today so we can explain fully our "**Deferred Tuition Plan**"—how we will lend you the cost of tuition and not ask you to pay us back until the increase in your pay equals the amount of the loan.

The American School is an educational institution. It does not employ agents, representatives or collectors. Signing the coupon will not place you under any obligations whatever or bring an agent to your door. All business will be carried on privately—by correspondence.

AMERICAN SCHOOL OF CORRESPONDENCE
CHICAGO, U. S. A.

OPPORTUNITY COUPON

American School of Correspondence, Chicago, U. S. A.
 Please send me your Bulletin and advise me how I can qualify for the position marked "X." **Am. Carp. & Blder, 4-11**

- | | |
|----------------------------|----------------------------|
| ... Draftsman | ... Bookkeeper |
| ... Architect | ... Stenographer |
| ... Civil Engineer | ... Accountant |
| ... Automobile Operator | ... Cost Accountant |
| ... Electrical Engineer | ... Systematizer |
| ... Mechanical Engineer | ... Cert'd Public Acc'tant |
| ... Mov'g Picture Oper'r | ... Auditor |
| ... Steam Engineer | ... Business Manager |
| ... Fire Insur'ce Engineer | ... Commercial Law |
| ... College Preparatory | ... Reclamation Engin'r |

NAME

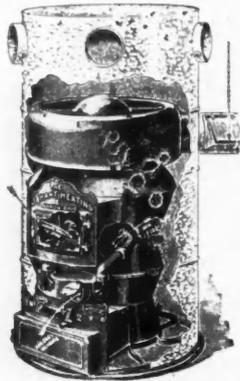
ADDRESS

metal in its connection with places of amusements. For this purpose their designs depart from the common-place or ordinary kind. They are classically adapted to this special use. They seem to believe in harmony of designs, those which embody all of the artistic features of display, at prices which reach the small as well as the wealthy theater manager.

They are adding new designs for fronts and proscenium arches right along, and feel confident that they have the very front that you need. Their decorative expert it as your service for suggestions. If you have a plan in mind which you wish worked out, let them hear from you.

Jahant Down-Draft Furnace

The accompanying illustration of the Jahant Down-Draft Furnace brings to mind the fact that in securing a heating system for any building, the best policy is to deal direct with the manufacturers and thus have them responsible for the results obtained and at the same time save the dealer's profit.



The Jahant Heating Co., of Akron, Ohio, manufacture and sell direct the celebrated Jahant Down-Draft Furnace. This furnace is so constructed as to give the maximum amount of heat at minimum fuel cost. This furnace combines perfect heating and ventilating.

By writing for their 32-page furnace book, which is sent free, and then sending them the required information as per instructions, you will receive a detailed description of the proper furnace outfit for your building, together with the exact cost to you for the complete outfit delivered at your freight station,

charges prepaid. The price named will include everything needed, including the tools to be used in setting up the furnace. The only thing you will have to supply is the small amount of labor necessary to install the outfit.

When your order is received, a detail plan showing the proper location of each fitting and pipe is prepared by one of their expert heating engineers. This plan and complete working blue prints are shipped with the outfit and make the work of proper installation an easy matter for any man handy with tools.

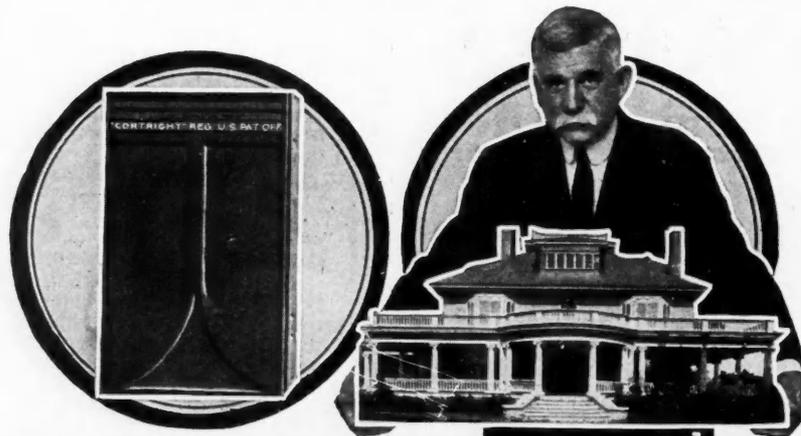
This company take all the risks and allow you one year's free trial at their expense. You can buy a furnace and complete outfit of them on monthly payments without additional cost. They guarantee satisfaction or money refunded, and back up their offer with a guarantee bond. Write today for their free furnace book. Address The Jahant Heating Co., 200 Howard St., Akron, Ohio.

Simonds New Steel Mill Finished

A complete new steel mill for Simonds saws has been built and is now in operation at Lockport, N. Y. The steel making part of the Simonds Mfg. Company's Chicago factory was entirely too small to meet the constantly growing demands for Simonds saw steel.

The problem had to be met. It was a question of more steel; consequently plans were at once made for a new mill. Lockport, N. Y. was selected as the location. Work of construction began early last summer. The first steel was rolled Monday, January 2.

At Lockport there is a separate rolling mill for band saw plates, cross-cut saw plates and circular saw plates. Ample room is also provided for plates for Simonds hand saws and steel specialties. One general building is located adjacent to



CORTRIGHT

SELLING TALK No. 12
The Handsome Roof

The most important qualities of any roofing material are that it be tight, fireproof and durable—all of which Cortright Metal Shingles are.

But—
Cortrights would still not be the ideal roof if they were not also more ornamental. Different styles of architecture require roofs in harmony but until the inception of Cortrights this was impossible. Neither wood nor slate possess this adaptability to various forms of architecture, so in the past every character of building has of necessity been adorned (?) with the same commonplace roof.

That's the beauty of Cortrights.
We design them in several styles which make them adaptable to very artistic architectural effects. Cortrights are therefore handsome enough for the most elaborate building and economical enough for the most unpretentious structure.

So you could see how suitable to any condition Cortrights are and how well they look on all kinds of buildings we have filled 2 books with photographs showing them in actual use under all conditions.

We have two of these books here for you, just waiting for you to send your name and address. Send them now.

CORTRIGHT METAL ROOFING COMPANY :: Philadelphia and Chicago

Gentlemen: You may send me the two free books offered by you in the April issue of the American Carpenter and Builder.

COUPON
NAME.....
STREET.....
CITY.....
BUSINESS.....

New York Architecture and Building Show

First Annual Exhibition and Conference

of American Architectural, Building, Contracting and Engineering Interests.

To be held in the **New Grand Central Palace**, Lexington Ave., 46th to 47th Streets, New York City.

May 6th to 13th, 1911, inclusive, except Sunday
10 A. M. to 1 P. M. for the trade
1 P. M. to 11 P. M. for the trade and public
Space is rapidly being applied for in Exhibition Halls

Conventions, Conferences, Technical and Trade Talks every day and evening under the auspices of Leading Societies and Associations and an Advisory Committee of Architects, Engineers, Builders and the Trade Press.

This will be the first exhibition in the newest, largest and handsomest exposition building in the world, and located in the heart of the great development now contemplated in the Grand Central Terminal Section.

To our prospective exhibitors we desire to state that a Complimentary Season Pass will be furnished by the management to every architect, engineer, builder and contractor. Complimentary tickets will also be provided for draughtsmen and students, who are the architects of the future.

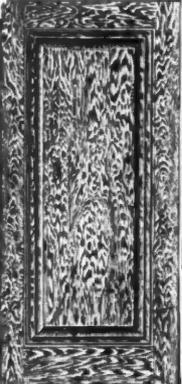
A liberal co-operation in this respect in the matter of Complimentary Admission Tickets will also prevail, exhibitors being provided with an abundance for distribution to their trade.

Full particulars on application to General Manager.

New York Architecture and Building Show

110 West 34th Street

NEW YORK CITY



*Beauty
Endurance
Economy*

These are the three great factors entering into the present success and the future of

Chehalis Fir Doors

Architects specify them; builders ask for them; all dealers alive to opportunities handle them. They cost less—keep in stock better—are better made than other doors, are moreover adaptable to practically all hardwood finishes. Chehalis Fir Doors are made of Old-Growth Yellow Fir and nothing else. They are built with vertical stiles and rails and slash grain panels—the only doors where the grain of wood in all five panels is picked to match.

STRENGTH—UNIFORMITY—BEAUTY
A perfect match for yellow pine trims.

Don't delay in finding out all about these doors. It will cost you one penny to investigate. The penny may save you many dollars. Send the card requesting catalog **F** tonight.

IT'S FREE

CHEHALIS DOOR CO.
CHEHALIS, WASHINGTON

"We Save the Children"



By using our
**Ventilating
School
Room
Heater**

For
CHURCHES,
SCHOOLS
and
RESIDENCES

Any Size

Send Plans
for Estimates

CHAS. SMITH CO.

102 Lake Street, Chicago

the ends of the rolling mills for the making of steel ingots.

A considerable proportion of the iron used is the famous Dannemora iron imported direct from Sweden, on which there is a high duty. Nothing that bears the name "Simonds" has ever been made from anything but the very best of materials and in a crucible furnace.

Uniformity is Simonds constant watchword. To make sure of this desired uniformity, careful chemical analysis is made on every heat turned out of the mill. The physical properties of the steel are also tested out.

A modern gas producing plant is in operation next to the crucible furnace building and there is produced the great amount of gas used in the furnaces. The machinery of the Lockport mill is thoroughly modern. All that is latest and most up-to-date in scientific crucible steel making is made use of here. New machinery and new methods enable them at once to double their former steel production.

Direct from Niagara Falls to the Simonds Steel Mills, high voltage wires carry current sufficient for four thousand horsepower, and an electric plant of no mean size is required to house the transformers and necessary switch boards.

At the entrance to the grounds at Lockport, a substantial two-story brick building has been built to accommodate the office force and the laboratory. The laboratory has always been one of the chief points of interest around Simonds Steel Mills, as experts make careful tests of every lot of steel produced for saws that bear the name Simonds.

For passenger traffic an electric line has half-hour fast service direct to Buffalo. All trains stop at the Simonds station. The New York Central Railroad has freight connections with the Simonds private switch track, which has four spurs, running right into the buildings of the Steel Mill, so that raw material may be unloaded and finished plates shipped with the least possible delay.

Smith & Hemenway Co., in New Quarters

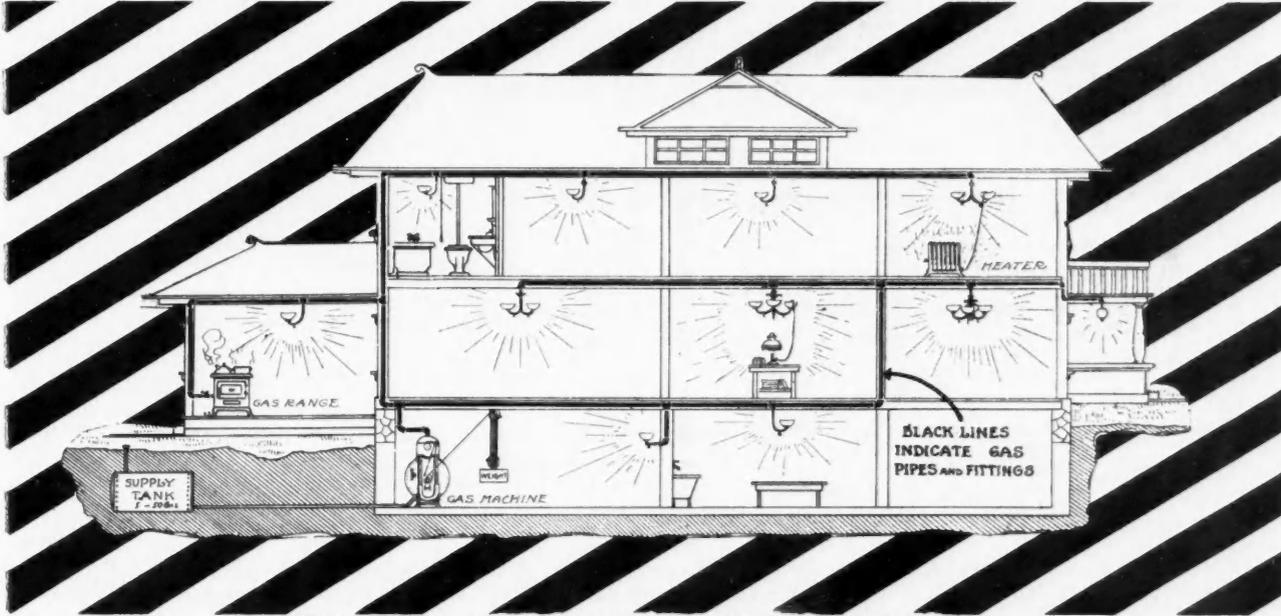
Smith & Hemenway Co., manufacturers of the "Red Devil" line of hardware specialties, whose store at 108-110 Duane Street, New York City, was destroyed by fire on the evening of January 11, are now located in their commodious new quarters at 150-152 Chambers Street, New York, where they will be pleased to receive their friends and patrons. They are now in a better position than ever to meet the demands of the trade, for their new store is larger and more commodious than the old one. The company have been engaged in the high-grade tool business for the last sixteen years, and they have shown unusual progress in the specializing of small tools for the hardware, electrical and supply trades. Their "Red Devil" line of hardware specialties has met with great success since its introduction, and the company are continually adding to it as the demand warrants.

The company advise that the fire which destroyed their Duane Street store, and which broke out about 10:30 p. m., on January 11, proved to be quite stubborn, and was not extinguished until about 6 o'clock in the evening of January 12. Their entire stock was destroyed by water and fire. While the fire was still in progress, however, the heads of the company were in direct communication by wire with their various factories, urging extra efforts to duplicate the New York stock for immediate shipment, and requesting more stock to be put on the shelves in the shipping rooms at the factories for directions. Shipments from the factories were not delayed more than 24 hours, as the company immediately arranged for new quarters at 150-152 Chambers Street, New York, and on the morning of January 13, the stock began to arrive at their new warerooms, duplicating that destroyed. The well-known Seavey Mitre Box, advertised in this issue, is one of their specialties.

AIRGAS—LATEST INVENTION NOT EXPLOSIVE. NOT ASPHYXIATING. NOT POISONOUS. NOT DANGEROUS.

ACME OF SIMPLICITY AND ECONOMY (1,000 Candle Power for One Hour for One Cent)

The Standard Vacuum Gas Machine has revolutionized Gas Production by means of a Vacuum Cold Process. Airgas can be used for Lighting, Heating, Cooking and Industrial Purposes. Airgas is made without the application of any heat and consists of 97 per cent of air that you breathe and 3 per cent of Gas. Machines are made in different sizes, for small homes, big residences, large buildings, or can be made to supply gas for entire towns up to 20,000 people. Gas made automatically throughout. No cleaning. No work filling machine. It runs itself. Uses Gasoline, Benzine or Naptha, also called Petrol, or Motorspirits of any grade. Standard Vacuum Airgas can be made for 15 cents per 1,000 cubic feet. 32 times cheaper than electricity, 25 times cheaper than acetylene. 12 times cheaper than common kerosene oil lamps and 10 times cheaper than Coal or City Gas. Machine make gas only when needed, otherwise stands idle. It is always ready. Gas produced instantly. No waiting. All conveniences of city gas, with none of its dangers and its disadvantages.



The illustration above shows an entire Standard Vacuum Gas Plant for a Private Residence

Agents Wanted: We want a representative in each town or community. Agents will be fully protected. No experience of any kind required. Plants can be delivered ready for any location and for any country or climate. Systems will last a lifetime. Always satisfactory. No trouble. No worry. Contractors & Builders visiting the coming Cement Show in Chicago are cordially invited to call on us where we have a Machine on demonstration.

THE STANDARD-GILLETT LIGHT COMPANY, 89 W. Michigan St. Largest Manufacturers of Cold Process, Hollow Wire and CHICAGO, ILL. Portable Hydrocarbon Lighting Devices. Write for particulars.

Huther Bros. Patent Groover or Dado Head

Will save it's cost in three days' time

Can be used on any Circular Saw Mandrel

For cutting any width groove from 1/4" to 2" or over. Will cut a perfect groove, either with or across the grain, and leaves edges smooth. Will ship to any responsible firm on ten days' approval; if not satisfactory you are at liberty to return as our expense. We also make a specialty of concave ground, smooth cutting circular Mitre Saws, for either rip or cross cut; Grooving Saws for all kinds of special work; Lock, Corner Cutters, Concave Saws, etc.

Showing Arrangement of Cutters

Try our Scraper Blades and you will use no others:

HUTHER BROS SAW MFG. CO.
1000 University Ave. ROCHESTER, N. Y.

Griswold Adjustable Roofing Brackets

TIME, LABOR AND MATERIAL SAVERS.

For supporting stagings for shingling, repairing and painting roofs. Only positively safe staging support without nailing. Instantly placed in position or removed. Adjustable to any angle. Made of steel, light and fold to small space for packing. They are particularly convenient in working around corner windows, skylights and piazza roofs. No carpenter, builder or painter should be without a supply of Griswold roofing brackets. Send for circulars and agents' proposition.

W. S. GRISWOLD
Agents Wanted 37 John St., Springfield, Mass.

CASSENS IDEAL EAVES TROUGH

TAKES WATER ONLY

The Ideal completely overcomes the disadvantages of the old style open gutter. It satisfactorily catches and carries away the water that falls on your roof. Its use insures clean, healthful cistern water. Leaves, trash, gravel, etc., cannot enter it. Neither can birds build nests in it. Therefore it is never clogged.

Ice Will Positively Not Break Down the Trough

A unique and important feature of the IDEAL is that it will not fill with snow and ice. When it sleets the small opening (about one-eighth inch) is quickly closed. This prevents the bursting of the trough, also of the down spout. When it thaws the ice melts, and the entrance opens automatically before the water from the roof reaches it.

The Ideal can now be erected with a Wire Hanger if face-board has mouldings

Special Propositions to Contractors, Builders and Architects

Write for free booklet

CASSENS MFG. CO. **Edwardsville, Ill.**

Protection of Concrete Surfaces

One of the most important questions that presents itself today to the contractor, engineer and architect is that of taking care of cement surfaces along protective, decorative and dampproofing lines. Cement surfaces dry out with an unevenness of color and they often set ununiformly, causing a variation in texture and hardness of the surface which causes disintegration in cement floors, due to frictional wear.

Due to the fact that cement construction has assumed such enormous proportions, in keeping with the progressive spirit which has been the keynote of the success of the Glidden Varnish Company, of Cleveland, Ohio, about three years ago, they turned over to their research and chemical laboratories the investigation of suitable materials to be blended for the purpose of producing perfect mediums for the treatment of cement surfaces along protective, decorative and dampproofing lines.

After exhaustive tests conducted by the best research chemists, assisted by practical cement workers, they have brought out a most excellent line of materials, covering every requirement of the architect, contractor and engineer for the treatment of concrete surfaces. The products which make up their line are briefly as follows:

Concrete Floor Dressing, which is applied to cement floors by means of a brush, protecting the floors from dusting and abrasion due to frictional wear, preventing absorption of water, grease, oil and disease germs. Two coats were used, applying the material over a clean, dry surface. The product is made in light and dark drab, terra cotta and tan colors, also transparent. For factory floors the Transparent Concrete Floor Dressing is very much preferred, while for floors of schools, hospitals, office buildings, and similar buildings, the colored Concrete Floor Dressing is mostly used. Glidden's Liquid Cement is especially intended for uniform-

ing the surface color of concrete, cement stucco, brick and stone. This material also dampproofs the building, and besides producing a pleasing decorative effect, insures a damp-proof building. This material is applied by means of a brush—the same as any paint or varnish.

Another product that is being used very largely is Glidden's Transparent Waterproofing, which is intended for dampproofing brick, concrete and cement construction without changing the color or texture of the surface. They also make a material known as Liquid Rubber, which is especially intended for use upon exterior surfaces of substructural work with the view of preventing the inroads of dampness into basements. This material is applied by means of a brush, two coats being used. Liquid Rubber is also used upon interior surfaces of exposed walls applied directly to the brick or wall construction, previous to plastering, thus affording a perfect waterproof bond between the plaster coat and the wall proper. Liquid Rubber thus applied prevents the inroads of dampness through the plaster and protects the wall decorations from disintegration, staining and injury. *

One of the most successful products which the company has brought out is known as Glidden's Waterproof Flat Finishes, especially developed for the interior treatment of rough and smooth plastered walls, interior cement and composition surfaces. These flat finishes produce a washable, sanitary finish in soft, rich tones. The Glidden Varnish Company has just issued its latest booklet on "Advanced Finishes for Modern Building Construction," which fully described the above products and the other materials which they have developed as pertaining to modern building construction, covering concrete and steel structures, and it will be an unusual pleasure for the company to forward, without charge, a copy of their booklets to all who are interested.

If you have any unsettled questions in your minds relative



Formed Metal Roofing and Siding
Apollo Galvanized Sheets
Corrugated Sheets



Also, American Old Style Terns
American Numethod Terns
Continuous Roofing Tin

32 POUNDS COATING ROOFING TIN

Assures you a roof of good service and lasting protection; while the little spark that often kindles a great conflagration, will never be heard from if it falls on an MF roof. Fireproof, light, clean, durable—this is the best roofing material obtainable. If you want your roof to attain an honorable old age, insist that it be made of MF. Send for full information and booklet. Every builder should have our Pocket Reference Book.

American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

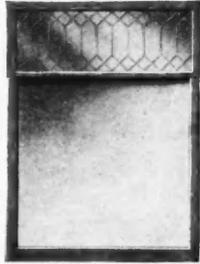
DISTRICT SALES OFFICES:

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh Portland San Francisco St. Louis

Low Prices : Quality : Quick Shipments
(Our Headliners)



CYPRESS
Colonial
Column
8 in. x 8 ft.
\$2.10
With cap as
shown add 65c.



COTTAGE WINDOW
1 1/2 in. Thick.
Glazed Clear - - - \$3.75
With Leaded Top - - 4.50



FRONT DOOR
2-8 x 6-8 1 1/2 in.
thick, Glazed, \$3.07

SURROUNDED

By EXTRAORDINARY Bargains which are only a few of the many Money Savers shown in our new Catalog of High Grade Sash, Doors, Frames, Blinds, Mouldings, Inside Trim, Grilles, Colonnades, Stair and Porch Work, Mantels, Grates, Tiling, Art Glass, Roofing and Building Papers, Wall Boards, Hardware, Paints, Hardwood and Parquetry Flooring, Rolling Partitions, Screens, Steel Ceilings, Gutters, Shingles, etc.

Write Today for Free Copy
The Huber Builders
Material Co.

45-49 Vine St., Cincinnati, O.



Front Door Set
Antique Cop-
per \$1.60
Inside Door
Set, 49c



CASING—Yellow Pine 4 1/2 in.
\$1.89 per 100 lin. ft.

BASE
Yellow Pine
1 1/2 x 7 1/2 in.
\$2.77
per 100 lin. ft.

CLEAT
Yellow Pine
1 1/2 x 1 1/2 in.
35c
per 100 lin. ft.

Quarter Round Yellow Pine, 1/2 in.
30c
per 100 lin. ft.



**Ornamental
Theatres**

Plaster Relief Decorations
Theatres Designed Everywhere

Write for illustrated Theatre Catalog. Send us Sizes of Theatre for Special Designs.

—The—
Decorators Supply Co.
2525 Archer Ave., CHICAGO, ILL.



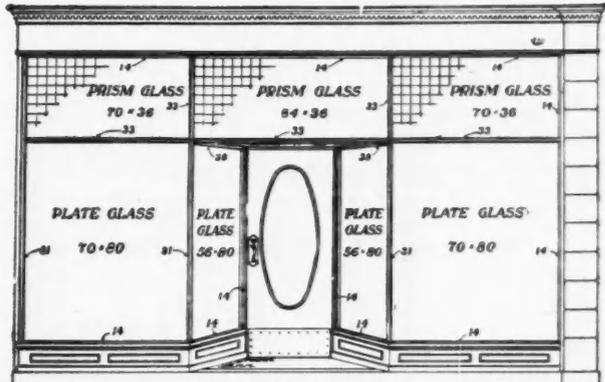
KEES-GOSSETT DETACHABLE HINGES
SUSPENSION

Try a pair on one of your own window screens.

After that you'll always use and recommend them.

Ask on your letter-head and we'll send you a sample set free if you mention your hardware dealer.

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



**Get a Store-Front
that will Stay**

☑ Select a bar for the new Store Front that you will not have to replace in a few years. The Petz Bar has years of satisfactory service to its credit, with some of the largest stores in the country.

☑ These concerns found by investigation that the Petz Bar offered the best combination of lightness, strength, ease of installation, safety and beauty. It draws trade, because it gives a maximum of light and display space in the window.

☑ Find out about the Petz System by writing at once for our booklet on "Modern Store Front Construction." It contains descriptions, illustrations, prices and opinions of prominent users.

DETROIT SHOW CASE CO.,
491 West Fort Street, Detroit, Mich.

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tells all about the different systems of artificial heating for homes and business structures and tells how you can buy the famous



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TRADE MARK

ROOFING



SIX INCH SOLID LAP

SAFEGUARD

A six inch lap is better than a three inch lap. It gives better satisfaction against leaks and permits nailing down on the under sheet only, so that no nail heads appear on the surface. Otherwise this is the same Granite Roofing that we have sold for 26 years for use on great factories. It is immune from damage by coal smoke or cinders, and it has a sea grit surface which makes painting entirely needless. Behind it is a reputation that has Passed the Quarter Century Mark.

EASTERN GRANITE ROOFING CO.
 Chicago 19 Battery Place, New York Pittsburg

to the treatment of cement and plaster surfaces, either exterior or interior, you will be well repaid by taking up such subjects with the Glidden people, whom we feel assured can be of great value to you in determining the best methods of treating such surfaces along protective, decorative and damp-proofing lines.

Weaver's Adjustable Level and Plumb

A new tool that will appeal at once to all practical builders is the Adjustable Level and Plumb which has been perfected and patented by Mr. J. B. Weaver, Jacksonville, Ill. It is said that this level, used by the carpenter, will pay for itself on one job, in time alone; for the bricklayer, who often needs an adjustable level for building walls and smokestacks on a batter there is nothing better, as with it he can get any desired angle; and for the farmer, who quite often uses a level and needs the best for finding a decline or running a



The Old Way



The New (Weaver) Way

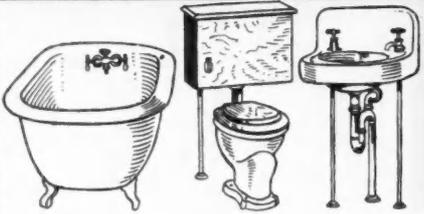
ditch the Weaver Adjustable Level and Plumb is claimed to be the handiest thing on the market. With it he can instantly get any fall he may desire, whether it be level or 45 degrees. Will be found very useful, as the ditcher must use a straight-edge, and just as useful to the plumber, who usually puts a block on his level to get a fall in his soil pipe; in fact, it is useful to any mechanic who uses a level or plumb.

The illustrations show methods of plumbing a timber—the old way and the new way, using the Weaver tool. One photo shows how the mechanic usually uses the straight-edge in one hand with his foot at the bottom to assist him to keep it in place, and with the ordinary spirit level in the other hand. This nearly all mechanics have seen; especially in plumbing the corner posts of a frame house. This takes both hands and one foot, which is very inconvenient. The other photo shows the use of the Weaver Patent Adjustable Level and Plumb used in connection with the straight-edge, which requires but the one hand, leaving the other hand and both feet free, which he needs for assistance in nailing-braces and holding the post steady. Do you not think this second method the more sensible? The straight-edge is invaluable in setting door jambs and window frames, and the Weaver level is just as useful there as in the frame work of the house, as the door jamb and the window casings are frequently very crooked, and when this is the case the straight-edge should be used.

This tool is guaranteed to be as accurate as any level on the market. Complete information concerning it may be had by writing to the Weaver Patent Adjustable Plumb and Level Works, Jacksonville, Ill.

\$38.95

BUYS THIS COMPLETE BATHROOM OUTFIT

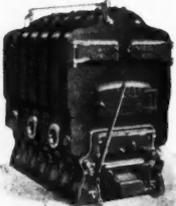


MODERN BATHROOM FOR EVERY HOME

Modern Plumbing at 1/2 Ordinary Cost
 Plans and instructions free with every plant

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M.J. GIBBONS

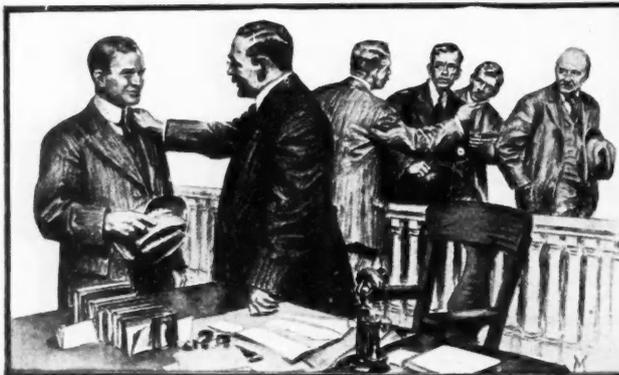
ARCADE DAYTON, O.



Sales of nearly one-half million barrels of Universal Portland Cement to one railroad in a single year indicate the satisfaction which Universal gives the engineers of this road in their extensive and varied improvements involving every type of plain and reinforced concrete construction.

Universal Portland Cement Co.
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Annual Output 10,000,000 Barrels



"You Get the Job"

That's what the trained man, the expert in his line, hears today from the man that hires.

Training lands the job—training that means high-grade work and a short cut to results. And training wins quick advancement to still better jobs.

The day of the "Jack-of-all-trades" is passed. This is the time of the specialist. No concern can afford to place a high-grade equipment in the hands of low-grade men. Competition forces employers to meet skill with skill.

The business of the International Correspondence Schools is to supply training; to give job-getting and job-bettering ability; to raise salaries.

Every month upward of 300 I. C. S. students write to Scranton to tell of positions secured or bettered—of earnings increased and prospects brightened—through study of I. C. S. Courses. Last month the number was 416. The letters came from every section and from all sorts and conditions of men.

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If you wish to make sure of the job you want—there is an I. C. S. way for you. To find out all about it, mark and mail the coupon. Doing so will commit you to nothing, place you under no obligation, and may prove to be the turning point in your career.

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Structural Draftsman	Mechanical Drafts.	Stenographer
Plum. & Heat. Con.	Stationary Engineer	Advertising Man
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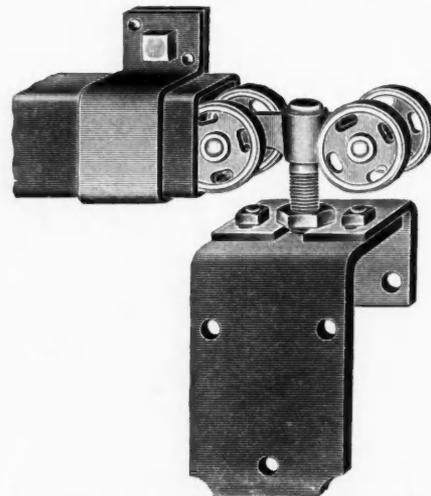
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State _____

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Richards-Wilcox New Ball-Bearing Hanger

The Richards-Wilcox Manufacturing Co., Aurora, Ill., is placing on the market a full line of ball-bearing sliding door hangers embodying features which are likely to interest architects, builders and contractors. These hangers have been brought out especially to meet the various requirements of garage door propositions, the hangers having both vertical and lateral adjustment, cast wheels with a bevel to assure a free travel for the sliding doors, while the forged steel trucks give excellent strength for the support of the heavier doors, the axles running on ball bearings insuring ease of operation. The point is made that the doors can be hung parallel or to slide in any direction. An idea of the mechanism of the hanger, with a section of the track, may be gathered

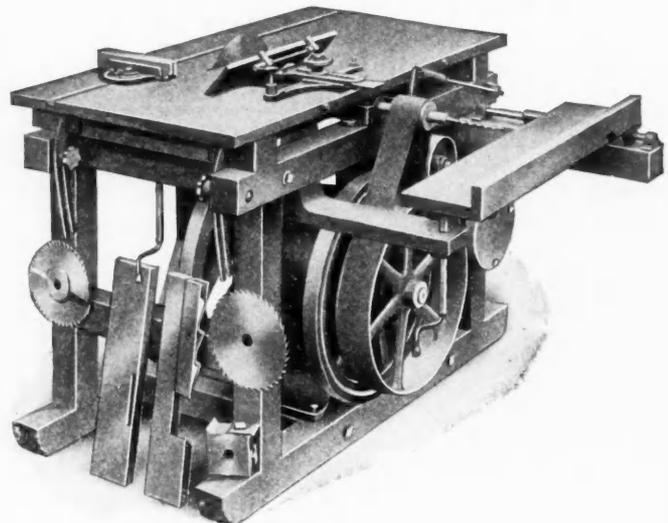


The Richards-Wilcox New Ball-Bearing Hanger

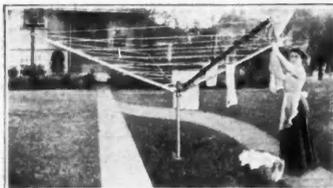
from an inspection of the illustration. Those architects, contractors and builders who are interested in goods of this character can obtain a copy of a catalogue relating to them by addressing the company.

A Money Maker

This is the day of "portable" power equipment for progressive carpenters, builders and contractors who want to make money fast. These will be interested at once in the American "Contractors" Portable Saw Bench and variety wood-worker, a machine, manufactured by the American Saw Mill Machinery Company, Hackettstown, N. J. This is particularly adapted to the use of general contractors, concrete



"Contractors" Portable Saw with Gasoline Engine

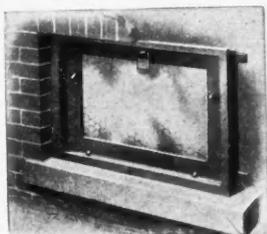


CHICAGO-SUN CLOTHES DRYER FOR LAWN USE

Eliminates Clothes Posts.
Is portable and can be removed when not in use. Holds 165 feet of line. Excels all others in strength, durability and convenience in handling. Each arm operates independently. When opened, arms lock in position and stretch lines. When closed, arms lock automatically. Send for one today. Price \$10.00 complete, including steel post and metal-lined socket. If not satisfactory, return and we will refund money. Write for descriptive and illustrated free folder No. 62. Do it now.

THE CHICAGO DRYER CO., 383 South Wabash Avenue, CHICAGO, ILL.

IRON COAL WINDOW



Opens and is locked from the *outside*. Admits light through heavy wire glass.

Cast iron frame and sash, cannot become battered and broken like wood.

Is not unsightly like the "chutes" now so widely advertised. Price *Seven Dollars* and we allow freight east of Mississippi River. Send for our booklet.

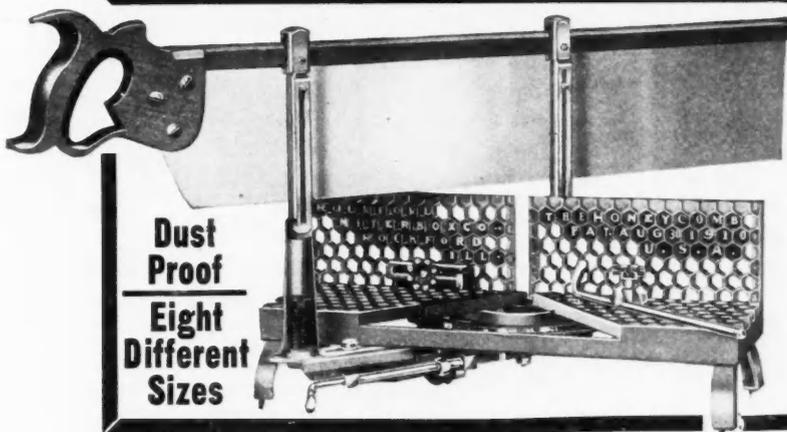
The H. W. COVERT, CO., 164 Duane St., New York



To Prove to You the high, standardized construction and composition of Carey's Roofing, we want to send to you Booklet and Sample FREE and give you practical information regarding Carey's Roofing based on 25 years' actual time-proved tests. Carey's Roofing is equally adapted to flat or steep surfaces, wood-sheathing, tile or concrete. Whether your contract is large or small, we want to show you the advantage of using a standardized roofing material.

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58 Wavne Avenue 50 Branches Cincinnati, O.

"FAMOUS FOR DURABILITY"



HONEYCOMB MITRE BOX

Combines greatest strength with extreme lightness. **Back Detachable**—the only way in which boxes can be made mechanically perfect for all time.

Lever can be adjusted off square if necessary for filing or other exceptional requirements.

There is an intermediate gib to take up the wear, thus keeping **THE GIB ALWAYS FLUSH WITH THE BED PLATE.**

The index is conveniently placed for accurate adjustment.

THE LEVER LOCKS AT ANY DEGREE OR FRACTION OF DEGREE. The lock is positive, working on the principle of an eccentric—no springs used. As shown in cut, the length and clamp gauges are subject to thousands of variations, always assuring a perfect clamp on the material.

Easily moved from place to place, and will stand securely without fastening.

ALL BREAKABLE PARTS MADE OF MALLEABLE STEEL.

Rockford Mitre Box Co., Rockford, Illinois

We Manufacture the Latest

Saves Time and Money

Over 1000 in use in the City of Chicago



BUILDERS' DERRICKS

CIRCLE SWING
Hand and Horse Power

The only practical hand power circular swing derrick for hoisting timber, joists, flooring, door and window frames, stone, concrete blocks, terra cotta, etc.

Price Complete, \$35 F. O. B. Chicago

If band brake is desired add \$1.00.

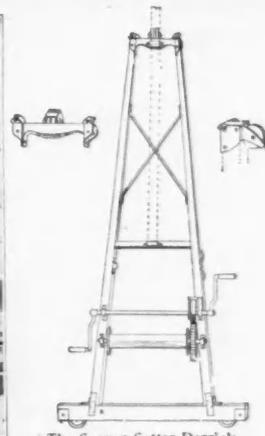
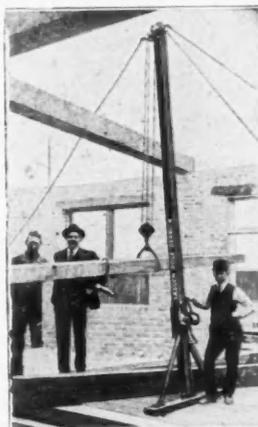
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POLE, SETTER BOOM AND "A" FRAME DERRICKS

SASGEN BROS.

2053-57 Racine Avenue :: CHICAGO

:: NEW YORK OFFICE, 103 PARK AVENUE ::



The Sasgen Setter Derrick



The Chief Floor Hinge

YOU MR. CARPENTER

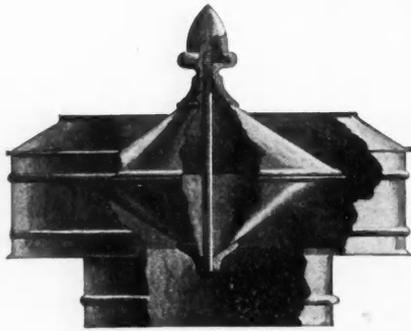
No doubt are looking for hinges that are the easiest and quickest applied, and that will also give the best satisfaction to the builder.—Here they are—The Shelby "Chief," the original and only genuine double-acting ball-bearing surface floor hinge, and the Shelby Double and Single Acting ball-bearing Spring Butts. Insist on using these hinges. Ask your dealer, or write us to tell you more about them.

THE SHELBY SPRING HINGE CO., - - Shelby, Ohio



Spring Butt

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Ventilators THAT VENTILATE

Improved Metal Ceilings with Punched Nail Holes and Repressed Beads

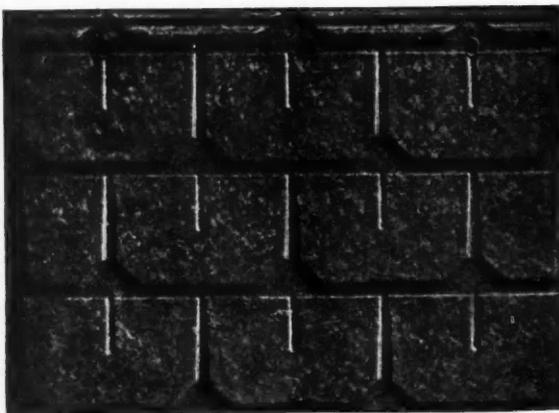
Those particular features that saves so much time in the erection and increases your profits. They produce a nicer job.

METAL SHINGLES

in two sizes, 10 x 14 inches and 19 x 26 inches.

Metal Hip Shingles Sheet Metal Goods

of all kinds for interior and exterior of buildings.



The Canton Art Metal Co.

"Quality Products"

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ADDRESS FACTORY No. 1

EASTERN BRANCH
Cor. 11th Ave. & W. 25th St.
New York

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workers, contractors and builders, and engineers. It is portable, compact, self-contained and very substantially built throughout so as to stand the hardest kind of service. It is intended to be taken right to the job where it will do in a most satisfactory manner a large variety of light and medium mill work. No contractor's equipment is complete without one or more of these machines.

It consists of combined rip and cut-off saw bench with boring attachment, jointer and dado heads, with a gasoline engine and ample power mounted on the frame directly under the table and belted direct to the mandrel.

These people are prepared also to furnish this machine equipped with electric motor to suit any current or voltage, when so ordered, at extra cost.

For further information and prices address the American Saw Mill Machinery Co., Hackettstown, N. J.

Hardwood Flooring

Have you ever glanced down the columns of your local paper, under the caption of "Residence Property for Sale"? If you have, you must have noticed how owners, investors, and real estate dealers feature the most important parts of the construction. If oak flooring is used, they always draw particular attention to that fact. There are good reasons why they do this. Oak flooring is a most important factor when it comes to renting or selling a residence, as there is no other part of the construction that helps more to beautify a home. Its colors are soft, rich and cheerful, and it tones up a home the same as fine furniture. It gives an air of refinement and elegance to a home, whether it be in a humble cottage or a mansion. There is no question of the superior advantages of oak flooring over any other hardwood flooring. It is referred to by authorities on flooring as the "king of flooring."

The standard thicknesses of oak flooring are 13/16 and 3/8-inch thicknesses. The 13/16-inch thickness makes the most substantial floor, and usually is about 35 per cent more expensive than the 3/8-inch. The 3/8-inch oak flooring can be laid over old floors very economically, taking the place of carpets, without in any way interfering with the woodwork of a room. When laid it has the appearance of heavy flooring, and not even an expert could detect its thickness. The highest quality of clear quartered oak flooring 3/8 by 2-inch wide, can be bought, laid and polished for half the cost of fair quality of carpet, which proves that carpets are an expensive luxury, as compared with oak flooring.

The following is a general outline of the uses that are generally made of the various grades of oak flooring: Clear quartered-sawed, or first grade; for high class residences, hotels, apartment houses and club houses. Sappy clear quartered, or second grade; an economical substitute where a dark finish is desired. This grade is as durable a floor as the clear grade. Clear plain sawed, or first grade; for high-class residences, hotels, apartment houses, churches, and club houses. Select plain sawed, or second grade; for medium-priced residences, hotels and apartments, schools, office buildings and stores. No. 1 common, or third grade; for dwellings, tenements, stores, high-class factories and manufacturers' buildings. Factory, or fourth grade, for warehouses, factories and cheap tenements.

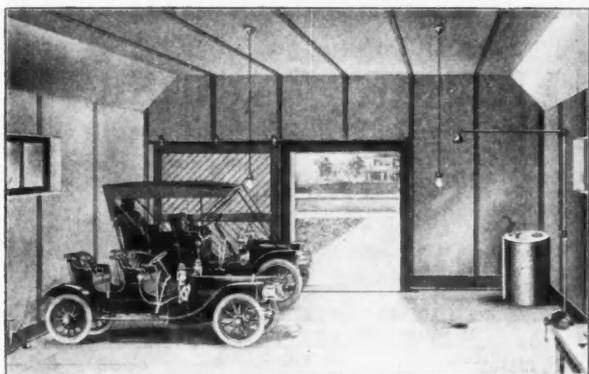
Weber Double Folding Scaffold Bracket

This bracket has supports for two standing planks, 22 inches apart, which makes it ideal for putting up cornices. By adjusting the top support, it can be used on any kind of a building—frame, brick veneer, or cement block. It is excell-

UTILITY WALL BOARD

A FIBROUS WATER-PROOF BOARD MADE IN CONVENIENT WIDTHS AND LENGTHS

To be Used Instead of Lath and Plaster in New Building or Repair Work



Make your Garage Warm by Lining with **UTILITY Wall Board**

Mr. Contractor: This is your chance to make more money and finish your jobs quicker. **UTILITY WALL BOARD** is right in quality and price. It has come to stay and is rapidly taking the place of lath and plaster.

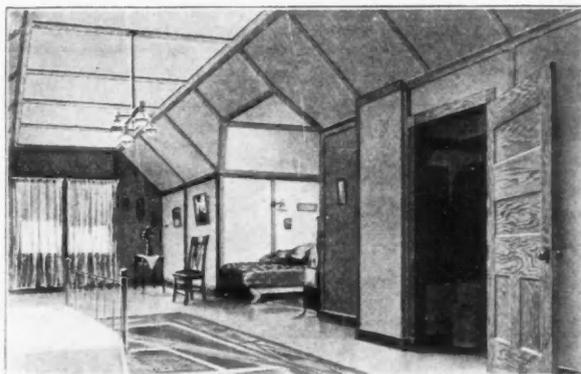
Every up-to-date contractor and builder should get samples of **UTILITY WALL BOARD** at once. There are hundreds of places it can be used with a profit to you and satisfaction to the owner.

Remember that all delays of the plasterer are a thing of the past for those who use this modern building material.

Mr. Dealer: Territory open for live dealers. Detailed information on request.

Utility Wall Board can be applied by the carpenter—nailed right to the studs—easy and clean to handle—cuts with a saw—fits any space and can be put on in winter or summer—no waiting for plaster to dry—no cracked walls—no dirt—no ruined decorations—warm in winter and cool in summer.

Utility Wall Board is better than lath and plaster. It saves the user a lot of money besides giving him a handsome, durable job. **Utility Wall Board** can be painted and decorated with the finest results. **Utility Wall Board** is being used in both small and large buildings. Everyone likes it. Ask your dealer for **UTILITY WALL BOARD**.



This shows how an Attic looks after being finished with **UTILITY Wall Board**

Write Now for **FREE** Sample and Prices

THE HEPPE'S COMPANY, 4503 Fillmore St., CHICAGO, ILL.



Perfect Ventilation



Secured Through the **IDEAL SASH VENTILATOR**

Pure Air in All Closed Rooms

THE IDEAL SASH VENTILATOR—a simple, scientific device that admits fresh air in a room and expels carbonic acid gas or air from which the oxygen has been exhausted. It takes up no room nor does it disfigure a window it insures fresh air without draughts and dust, expels all foul air. Just the thing for the toilet or sleeping room.

Handiest, Neatest and Best Sash Ventilator

THE IDEAL SASH VENTILATOR is designed to fit any window sash (old or new) top or bottom rail and has an opening of 8 square inches. Is made of sheet brass throughout (a non-rustable material) is simple in operation, and the easiest ventilator on the market to install.

THE IDEAL SASH VENTILATOR may be used in any sash 1 1/2 inches or more in thickness.

Send today for full details, and special discount we are quoting American Carpenter and Builder Subscribers to sort of celebrate this our first appearance before them.

IDEAL SASH VENTILATOR CO., 1101 ERIE, PA.
State St.

lent for putting on siding, sheeting, etc., as it can be attached anywhere without injuring the surface. It also fastens into any window frame.

Many Scaffold Brackets seem sound enough when first put into use, but soon work loose and develop "side swing," one of the most annoying and dangerous of defects. Great care has been taken to eliminate any trace of "side swing" in the Weber Double Folding Scaffold Bracket.



Weber Double Folding Scaffold Bracket

Without loosening a single bolt, it can be quickly folded into a piece so small that 12 of them will not take up any more room than the ordinary tool chest. This feature will appeal to every contractor, as it greatly lessens the haul to and from jobs, and saves the time of the workmen.

While the sales on these brackets are just now assuming their greatest proportions, they have been in use ten years. During that time the inventor, a man who has devoted the major part of his life to perfecting such devices, has spared no pains to put them to the most exacting tests. And, while the principle has not been deviated from, many important changes were made, each one for the better.

Contractors and others can purchase these brackets complete, wood parts and all, or the castings separately. By sending a postal to Weber Mfg. Co., 670 71st Ave., West Allis, Wis., complete information and prices on these brackets and on numerous other labor saving devices can be had. The Weber Double Acting Floor Scraper alone is well worth knowing about.

Riding and Exercise

The new North-Western depot, Chicago's latest \$20,000,000 improvement, will be in operation early in 1911, and with the work practically completed, the busy Western metropolis is treating the matter as a thing accomplished and turning its attention toward a similar railway terminal project by the Pennsylvania Railroad Company that is in, as yet, the initial stage only, but will ultimately harbor several other trunk lines, also at a cost of many millions. The exact site of the new terminal is somewhat in doubt, but the writer, who made a recent trip over the probable territory, was surprised to discover that operations are already under way, two-thirds of a city block having been purchased by the Pennsylvania Railroad Company and the buildings torn down to make room for new tracks and terminal facilities.

The balance of the block is occupied by a progressive bicycle

SIX MONTHS FREE TRIAL

Diamond Tool
LUTHER GRINDER

25 Times Faster Than the Grindstone

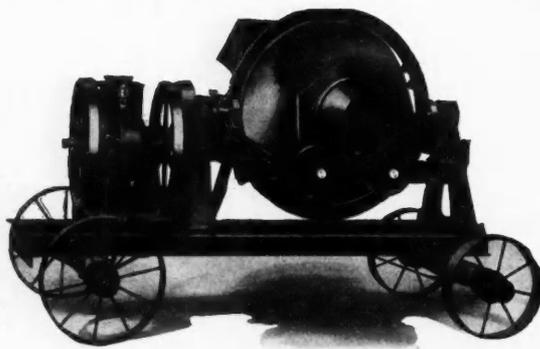
This tool is absolutely guaranteed for five years. It will NOT DRAW temper from steel and never needs cooling by water.

IT IS NOT AN EMERY GRINDER
FITTED WITH CARBORUNDUM

Write Us Today

Luther Grinder Mfg. Co.
56 Madison Street

MILWAUKEE, WISCONSIN



The POLYGON CONCRETE and MORTAR MIXER

THE FASTEST PERFECT MIXER

Mixes Quicker
Mixes Better

A BATCH A MINUTE. READ IT:

"Have owned a POLYGON MIXER for three years and am satisfied in every respect. Have had no repairs to make. As to speed, will say the POLYGON handled 30 sacks of cement in one hour. The sacks were cut in two, making 60 batches per hour, or a batch of six cubic feet per minute."—Elmer James, Madison, Kansas.

Write for New Catalog describing the Polygon Mixer. Polygon Contractors' and Builders' Hoist, Block Machines and complete line of cement working machinery.

SPECIAL INFORMATION ON POLYGON HAND MIXER

WATERLOO CEMENT MACHINERY CORPORATION

103 Vinton Street, WATERLOO, IOWA

**FOREMAN
\$ 1900 A YEAR**

**SUPERINTENDENT
\$ 2500 A YEAR**

**CONTRACTOR
\$ 3 000 A YEAR**



Learn to *Fill* **BIGGER SHOES!**

Don't be satisfied with merely pushing a saw and driving nails. Be a **master** of your craft. Learn to **plan** as well as to work—to use your **brain** with the **same skill** that you use your hands.

Learn to fill a **big-salaried** job—the kind of a job that hundreds of other men, with no more natural ability than you, are filling with ease and success.

HOW YOU CAN DO IT

You can **master every detail** of your line of work, **every branch** of building construction, **every angle** of architecture and carpentry—can do it in your spare moments and at almost no expense at all. You can have the knowledge and experience of over **four score experts** at your command, ready for instant use whenever you want it—can fit yourself to **fill any first class position above you that you desire**—simply by allowing us to place in your hands this great ten volume set, **without you sending us one cent in advance.**

THIS CYCLOPEDIA OF

Architecture, Carpentry and Building

is the most exhaustive, comprehensive and **practical** work of the building trades that has ever been published. It covers **every detail** of building construction from common carpenter work to reinforced concrete and steel; from masonry to heating and ventilation; from specifications and estimates to building laws and superintendence. It covers all the **practical** things that you **want to know**, all the things that you've **got to know** if you're going to be a success. It contains over 3,000 drawings, full page plates, diagrams, etc., has 4,670 pages, is bound in handsome half morocco and printed on special paper in large clear type—10 massive volumes—titles engraved in 23 carat gold. No **Carpenter, Contractor or Building Owner** can afford to be without it a single day.

Get These Books And See For Yourself

just what they are **before you send us a single cent.** Look them over carefully at your leisure. Keep them for **five days** before you decide whether you want them or not, and then if you don't believe that **each volume** is actually **worth more to you** than the price of the **entire set, send them back, at our expense and the transaction won't cost you one penny.** If you do decide to keep them, our charge will only be \$24.00, spread out thin in easy payments of only \$2.00 a month. We don't ask you to buy these books on our description of them. We don't ask you to trust our judgment. We simply ask you to **get the books and see for yourself.** Sign the coupon now. It will bring the **books, not an agent. ORDER PROMPTLY** and we will include for one year, as a monthly supplement, the Technical World Magazine. This is a regular \$1.50 monthly, full of Twentieth Century scientific facts, written in popular form. Also contains the latest discussions on timely topics in invention, discovery, industry, etc.

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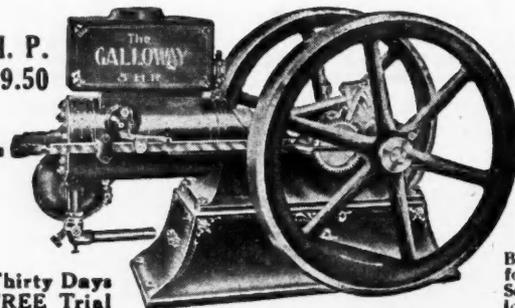


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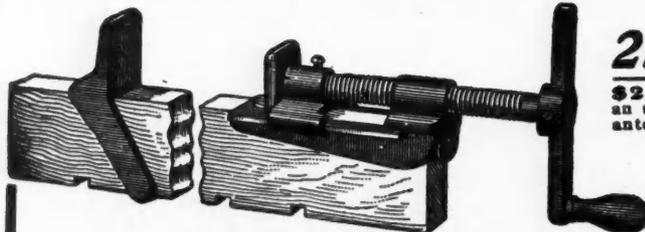
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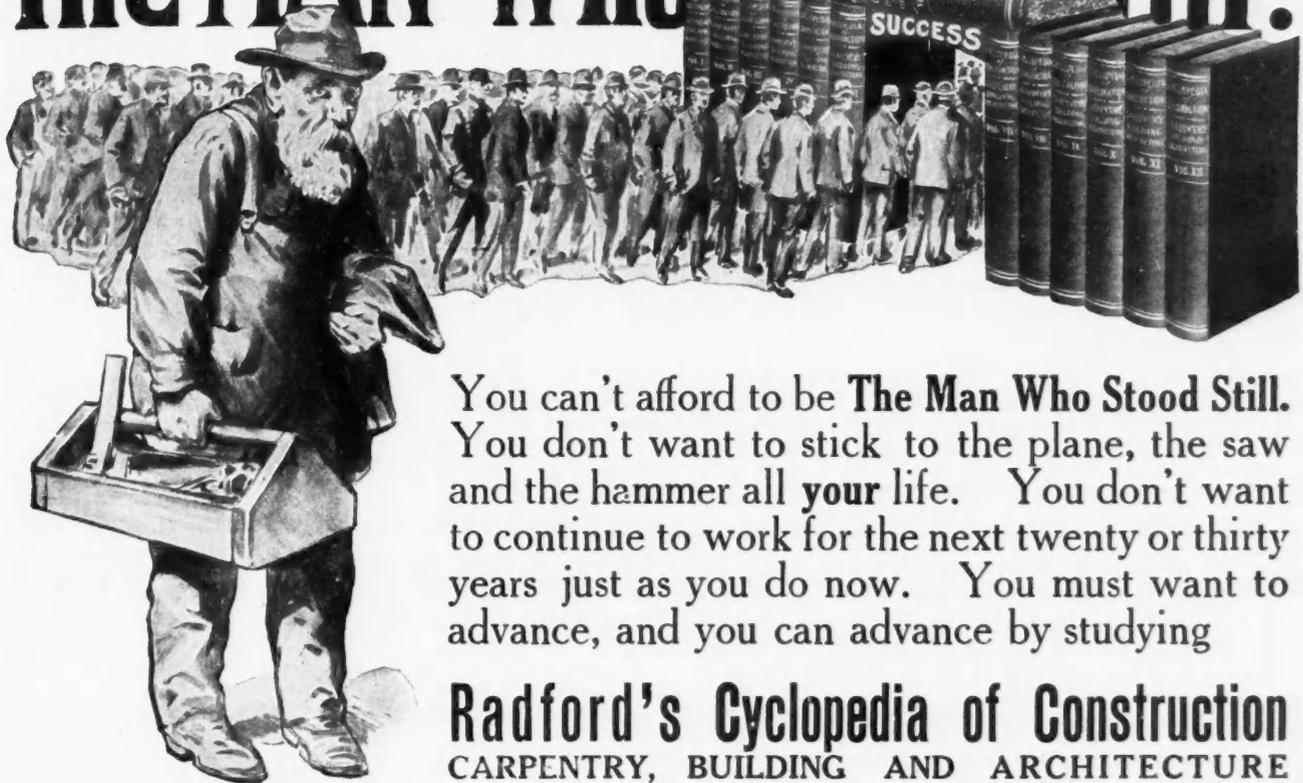
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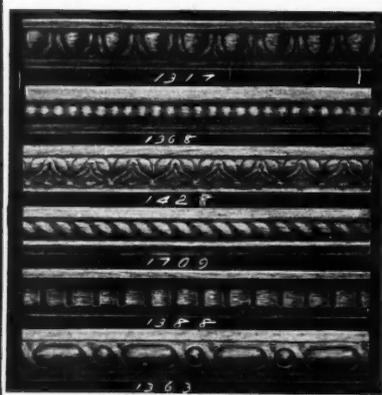
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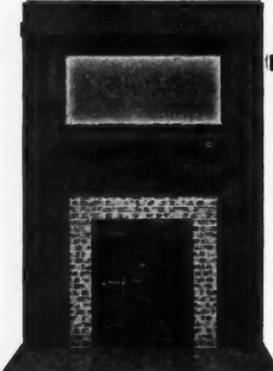
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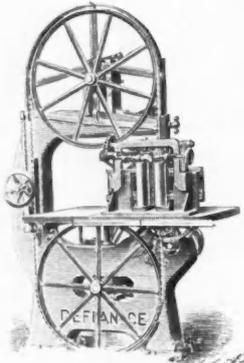
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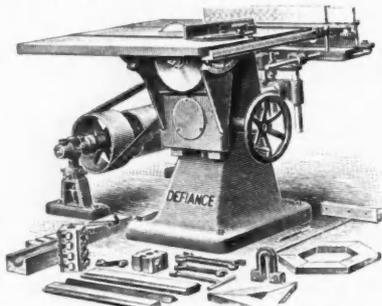
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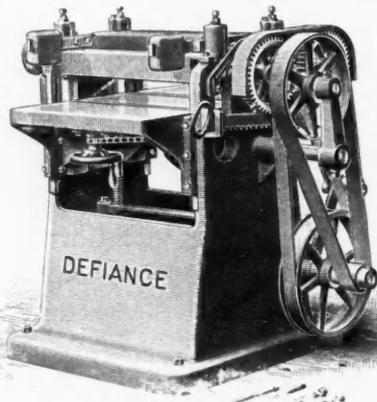
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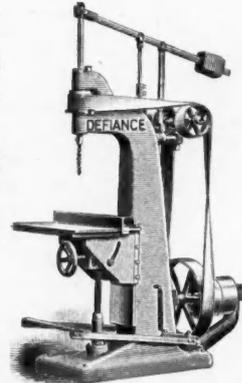
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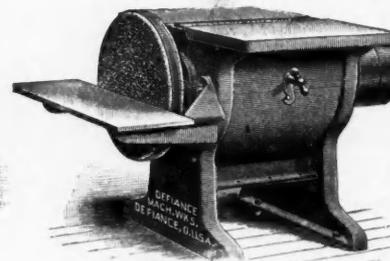
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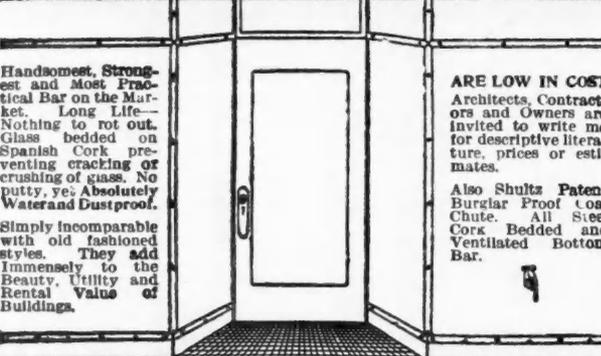
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" "	9.00 p.m.	" "	7.01 a.m.	" "	9.00 p.m.	" "	7.00 a.m.
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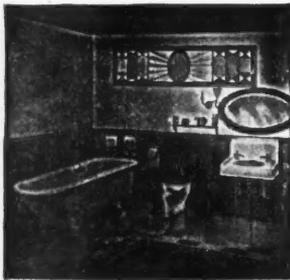
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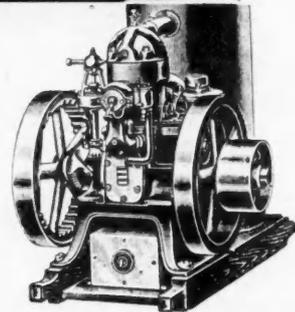
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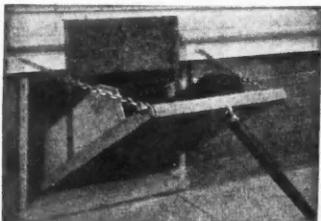
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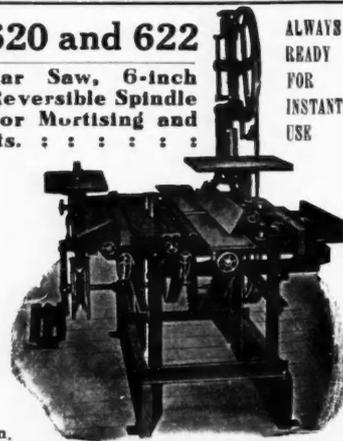
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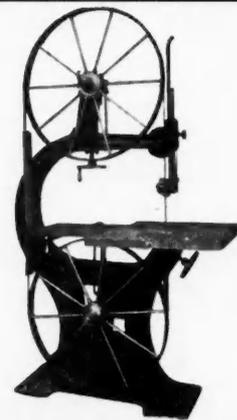
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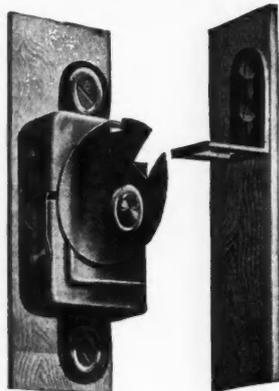
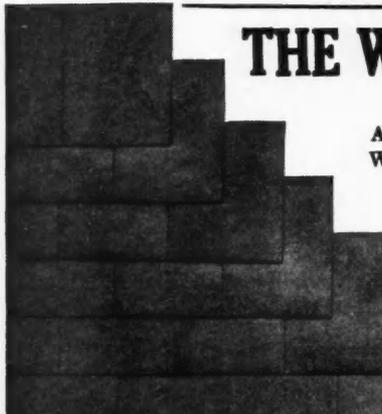
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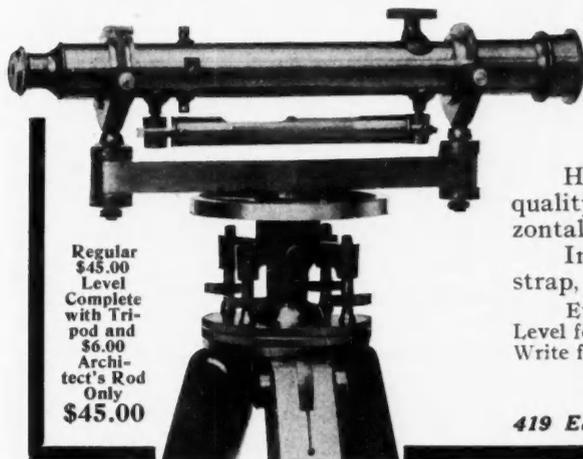
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Has a telescope 12" in length. Lenses of the best optical quality. Magnifying power 25 diameters. Object glass 1 1/4". Horizontal circle 4 1/2" in diameter, graduated from 0-90 each way.

Instrument complete in a polished hard-wood box with strap, plumb-bob, sun-shade, adjusting pins and trivet.

Every Instrument guaranteed. We offer this regular \$45 Improved Level for the next month at \$40 or complete with \$6.00 Rod at \$45.00. Write for Circular "C" for full information.

DAVID WHITE COMPANY

419 East Water Street,

MILWAUKEE, WIS.

HESS MEDICINE SANITARY CABINET LOCKER

The only modern **Sanitary** Steel Medicine Cabinet or Locker.

Handsome beveled mirror door. Snow white, everlasting enamel, inside and out.

FOR YOUR BATHROOM

Costs less than wood and is better. Should be in every bathroom.

Is dust, germ and vermin proof and easily cleaned with warm water.

Made in four styles and three sizes. **Price \$7.00 and up.** Send for illustrated circular.

HESS, 920L, Tacoma Bldg., Chicago

Makers of the Hess Steel Furnace.
Sold on Approval. Free Booklet.



WHIPPLE'S AUTOMATIC BLIND HINGE



Write Today For Full Particulars

Reasons Why THEY ARE THE BEST

Cannot slam or blow off. No fastening required. No blinds to trim or catches to interfere. Will hold blind—open, half open, or closed.

We also manufacture a flush hinge, constructed on same principle. Two styles, for brick or wood buildings.

R. P. WHIPPLE & CO.,

275 Main Street

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SPRINGFIELD, MASS.



MULLINS METAL TILE ROOFING

is simple in construction — secure — durable—absolutely storm and water tight. As expansion and contraction are provided for, it is guaranteed, when put on according to directions, to remain perfect for years.

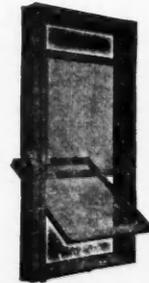
This handsome metal tile roofing is used on many of the finest buildings in the United States. It is beyond question the most attractive and satisfactory roofing made.

Mullins Fire Proof—Storm Proof—Dust Proof Windows

are made with the idea of turning fire. They are entirely of metal, lock-seamed throughout with no soldered joints in frame, sill or sash. Heat does not affect them in any way, and a Mullins was never known to warp, buckle, contract or expand. Mullins Windows are famous for durability, and will outwear any other feature of the building.

Mullins Fireproof Windows are manufactured under supervision of *Underwriters' Laboratories, Inc.*, according to the latest specifications of the *National Board of Fire Underwriters*, and *every window is inspected, approved and labeled* with their official label.

We have catalogues showing our various lines of product. Please specify the particular class of sheet metal work you are interested in and we will send you the proper catalog for same.



W. H. Mullins Company

214 Franklin Street,

Salem, Ohio.

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

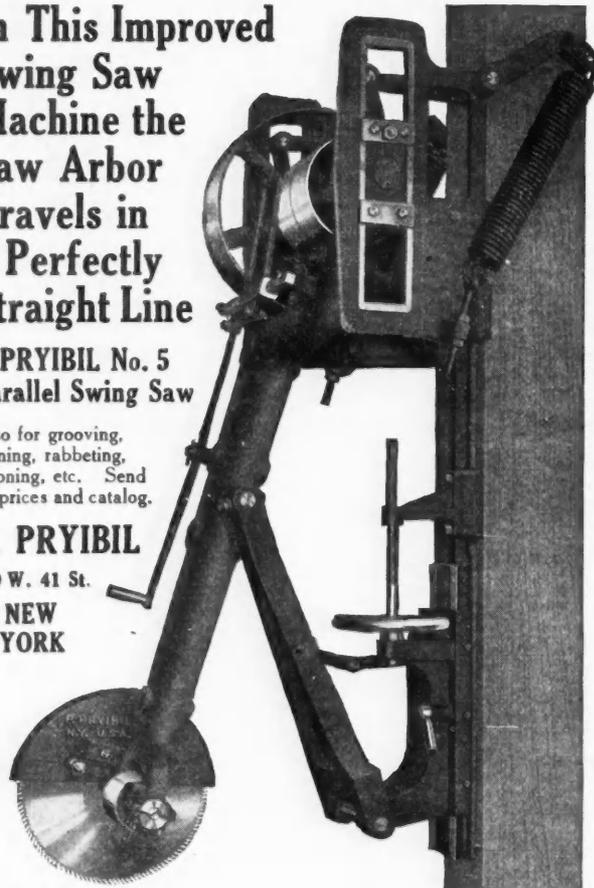
**PRYIBIL No. 5
Parallel Swing Saw**

Also for grooving,
gaining, rabbeting,
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for prices and catalog.

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

Established 1872

Largest and Most Complete Stock of
**Builders and General
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High Grade Goods
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Honeywell Hot Water Heating

THE HONEYWELL SYSTEM

It is not only the cheapest system to install, but by far the most sightly, efficient, responsive and economical s stem on the market it contains one-third less water and heats one-third quicker, with a resultant saving in fuel. The water circulates from the boiler to the radiators from *three to five times faster* than in the old style system, hence quick results from firing with a minimum loss of heat in transmission. No large, unsightly piping through the rooms with this simple system. Owing to the very rapid circulation of the water $\frac{1}{2}$ " pipes are amply large to supply any sized radiator on the upper floors.

Every Radiator heats perfectly with the water at a temperature as low as 85 degree, which can be increased to a temperature of *240 degrees without boiling* inside of a *few minutes*, giving the system the efficiency of steam at 10 lbs pressure to meet extremely cold weather, while retaining all the valuable features of the mild temperatures of hot water.

45,000 SYSTEMS IN USE

Endorsed and Sold by the Leading Manufacturers of Heating Materials.

Free engineering advice given the trade on all installations. Failure absolutely guaranteed against.

If you have an unsatisfactory job of hot water heating, we can cure it at a very small cost and without remodeling.

Write us for full information regarding this eminently successful system that has revolutionized hot water heating.

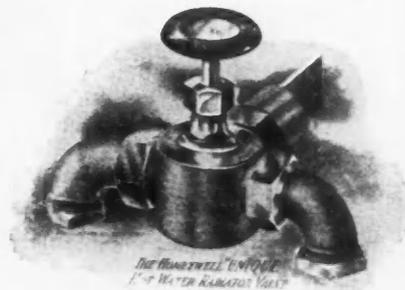
In use throughout the U. S., Canada and Foreign Countries.

Honeywell Heating Specialty Company

Plant and General Offices

WABASH

INDIANA



"Reputation and Quality Count"

columns, full length or double as shown in cut; Dealer's price not less than \$40.

CENTRAL MANTELS

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.

CATALOGUE FREE—Will send our 112 page catalogue, the finest ever issued, free, to carpenters builders, and those building a home.

CENTRAL MANTEL COMPANY

1247 Olive Street,

\$25.85

For this elegant, massive, selected oak or birch, mahogany finished mantel.

"From Factory to You"

Price includes our "Queen" Coal Grate with best quality enameled tile for facing and hearth. Gas Grate \$2.50 extra. Mantel is 82 inches high, 5 feet wide. Furnished with round or square

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Periection Colonnade

A colonnade like the above will add \$100.00 to the value of any home. Our catalog will give you the price and will be mailed free upon request. Let us quote you on anything in the line of Grille work, Columns, Consols. We are manufacturers.

Established NINETEEN YEARS.

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IMPERIAL "SPIRAL" "AMERICAN" INGOT IRON LATH

THE MOST SUPERIOR RUST-RESISTING

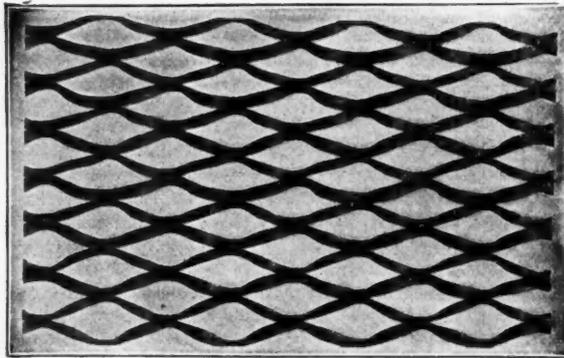
**Government Approves It---Architects Specify It,
Contractors Demand It.**

RUSTPROOF

Made From
**"AMERICAN
INGOT IRON"**

The Attainment
of the
Highest Purity
in Iron

99.94% PURE



Imperial "Spiral"

FIREPROOF

Equal Distribution
of the Metal
Giving Maximum
Rigidity

Is unequalled by any expanded lath made, NOTE that "Spiral" Twist
SAVING of THREE to FOUR cents Per Yard IN labor AND Plaster.

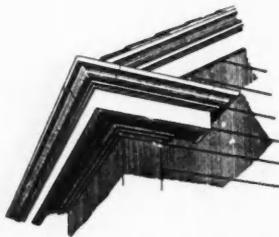
MADE IN ALL GAUGES, ONE STANDARD SIZE 16½ INCHES x 96 INCHES

Samples and Prices Furnished on Request.

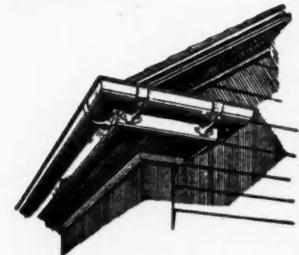
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THE AMERICAN ROLLING MILL CO. - Middletown, Ohio

Cast Iron Gutters Last

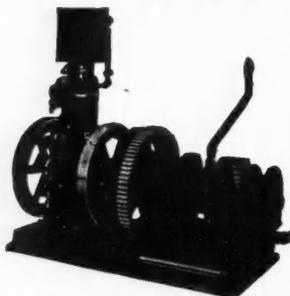


Easily put up. Once up, always up. Do not bend or break by pressure of ladder against them. Will stand treater weight of snow or accumulation of ice than any other gutter. Not affected by acid fumes that in some vicinities play hob with all other metal gutters. They are adaptable to any kind of building or type of construction. Cast with moulded face to form part of cornice, or rounded to serve as a hanging gutter. Used almost exclusively in England and all over Europe. Supplied in 6 feet lengths. Joints fitted ready to erect. No soldering required. Send at once for circular and prices.



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should know about our Hoist direct connected with Gasoline Engine for use with Double Platform Material Elevators. We furnish Hoist and Elevator complete ready to run. This outfit will elevate more building material at a less cost than by any other known method. Our Bulletin No. 5 will give you all particulars.

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Quickly and easily applied. We are the only manufacturers who cut the heads in the dies after casting. Result—Square and accurate plates—which will save you time and labor in cost of erection.

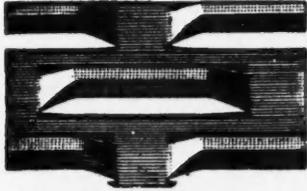
Send for Catalogue No. 2 which shows 200 new and original designs.

Manufactured by

Wm. Foster & Son Co., Inc.
Springfield, Illinois

All manufacturers of Radiator Shields, Fire-Proof Window Frames and Sash, Galvanized Iron Fronts, Hip Shingles, Cornices, Skylights

SYKES METAL LATH



The lath that is positively different to anything else made; different because it combines more good features.

Cup lath is the only Expanded Metal Lath

that can be plastered on either side—cannot be applied wrong because both sides

are alike.

We make two kinds—Sykes Expanded Cup Lath, and Sykes Trough Lath. Both are supreme for their own purpose.

The top illustration shows Trough Lath, bottom cut depicts Cup Lath.

NO PICKLED LATH

Sykes Lath is absolutely guaranteed not to have been pickled in an acid bath. This means that the weight and thickness is not reduced and is less susceptible to rust.

Requires no furring out from studs because it is self furring.

It has been approved by U. S. Government and by leading architects, carpenters and builders throughout the country.

In fact, when we say it is the best ever made we are simply stating a proven fact.

Samples and prices mailed upon request.

Sykes Metal Lath & Roofing Co.
NILES, OHIO

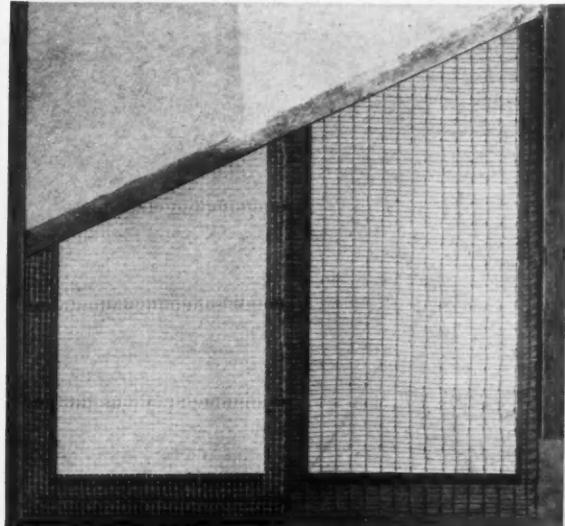


WIRE LATHING

The Secret of the durability of the woven wire lathing is owing to the fabric being completely embedded in the mortar, and thus secured from the corrosive action of the atmosphere; and also to the fact that rust will not attack the smooth round wire as it does the thin cut edges of a metal fabric.

"Why not use the proper kind of lath that lasts?"

Before building, write for our Booklet No. 6 A and Prices



Grimm's Galvanized Corrugated Wire Lathing
"Patent applied for"

Greening's Patent Trussed Steel Wire Lathing

BUFFALO WIRE WORKS CO., BUFFALO, N. Y.



Made in all sizes and styles, for use with brick or concrete block walls or with wooden or steel beams

TRUS-CON Joist Hangers

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.

Shaft Hanger Supports for Concrete Buildings

TRUS-CON SLOTTED INSERTS are imbedded in the concrete during construction and furnish a simple, adjustable attachment for shaft hangers, sprinkler systems, etc.



Supplied in various sizes in either rolled steel or cast iron; also Trus-Con Socket Inserts to receive threaded bolts.

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

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Adaptable to All Seasons

Pearson's Nailer overcomes all weather conditions in shingling. It works as well in one season as another. Rain or shine, snow or ice, you can drive more nails than you ever did. Stop using your mouth as a nail pouch.

10,000 Shingles in Ten Hours is the Experience of Mr. Connell

"**The Nailer more than meets my expectations, and has more than paid for itself on one job of thirty thousand shingles. With my boy of fifteen years of age, I carried up and put on ten thousand shingles in one day of ten hours. Would not take \$10.00 for it if I could not get another.**"—P. M. CONNELL, Greeley, Neb.

Your experience should be just as good.



Circulars Sent Freely. Agents Wanted.

The Blue Nailer is for common 3d No. 14 wire nails and the Red Nailer is for the galvanized 3d No. 13, 1 1/4 in. wire nails. Order from us direct, being careful to state the nailer wanted, according to the kind of nail to be used.

Price. \$5.00, express prepaid. Money cheerfully returned if Nailer is not as represented.

PEARSON MFG. CO.
Robbinsdale -- Minnesota



SAMSON SPOT SASH CORD

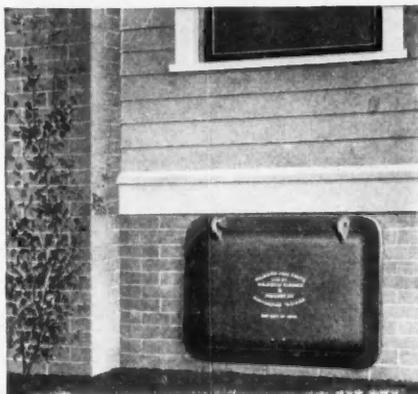


TRADE MARK

Be sure that the cord you buy has SAMSON AND THE LION on the label, and that the braid is marked with the COLORED SPOT. You may be sure you'll get the best.

WE'RE GLAD TO SEND SAMPLES AND FULL INFORMATION.

SAMSON CORDAGE WORKS, BOSTON, MASS.



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THE MAJESTIC Coal-Chute

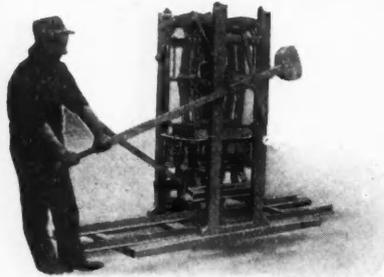
Protects the building just where it is most needed, above the opening. Made in 3 sizes. Rubber Glass in the door is light if desired.

Majestic Furnace & Foundry Co.
HUNTINGTON, IND.



Chicago Office, 1102 Monadnock Block

PRESSURE means PROGRESS



BE PROGRESSIVE

MORE Blocks, BETTER Blocks, CHEAPER Blocks, can be made by the use of the

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than by any other known method. We substantiate every claim—others don't. Drop us a card and we will send literature.

SOMERS BROS., URBANA, ILL.

SARGENT'S IMPROVED STEEL SQUARE

The difference between good and indifferent Carpenters' Squares lies in something more than excellence of material and workmanship, which are, of course, among other "Sargent" features—it is in the qualities that increase its all-round efficiency. That is why the practical "Sargent" Standard Steel Square is the universal favorite wherever Squares are used. Our latest model has the scales and markings which enable the carpenter to lay out all kinds of work and to calculate quantities with an ease and accuracy never before thought possible. "A practical treatise on Steel Square" is what several recipients have declared our little publication. Copy free simply by mentioning you saw this ad in the American Carpenter and Builder.

Sargent & Company

1149 Leonard Street

New York

Champion Quick Action Vise Strongest, Cheapest, and Best Vise for Wood Workers Ever Invented



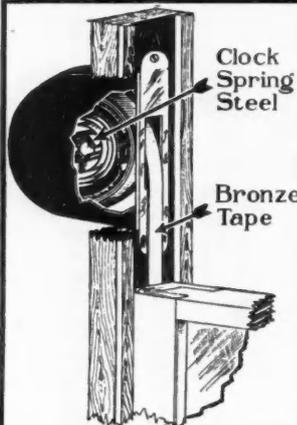
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No Springs, Screws, or Pins in its construction. It is so simple, being composed of only 4 pieces, nothing can get out of order.

It has 9 inch jaws, and will open 12 inches. Weight, 35 pounds. \$5.00 net F. O. B., Boston.

At the low price we offer this Vise, Carpenters, Cabinet Makers, Pattern Makers, and Wood Workers of all kinds cannot afford to be without it. It is warranted to give satisfaction to all wanting a good and durable vise. Write for price and circular.

R. B. McKIM CO., Inc., 116 Pearl Street, Boston, Mass.



5,000,000 PULLMAN SASH BALANCES

in daily use and less than 100 repairs on all of them in a year. Do you know of anything that is used at all that wears as well?

No more expensive than cords and weights, far more modern, neat and smooth working. Can be installed anywhere. Carry any weight window.

Sold by dealers everywhere. Send for circular.

PULLMAN MFG. CO. 13 Allen St., ROCHESTER, N. Y.



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

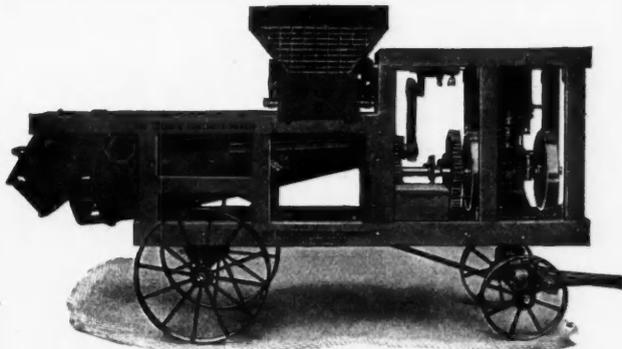
Inferior furnaces are not built that way. Cemented radiators always open after a while and give trouble. It's impossible with the HESS

HESS 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

"THE MIXTURE IS ABSOLUTELY PERFECT AND THE SAME AT ALL TIMES"



No. 12 COLTRIN MIXER

Yonkers, N. Y., October 27, 1910.
N. Y. Purchasing Agency,
New York, N. Y.

Mr. Herbert Noale,

Dear Sir: — The No. 12 Coltrin you sold us recently is giving entire satisfaction. In fact, we wonder that we have gotten along without one for so long a time.

The mixture is absolutely perfect, and the same at all times. You may use our name if you care to, as being perfectly satisfied patrons of the Coltrin.

Yours very truly,
CHARLTON & WESTON,
90 Ash Street, Yonkers, N. Y.

SIZES SEVEN SIZES

Steam — Gasoline Engine — Electric — Hand Power

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has been proven times without number to be

The most SUCCESSFUL and ECONOMICAL MACHINE

The Peerless tamps (does not press) every brick and will turn out 12,000 perfect bricks in 10 hours, making 10 bricks at each operation.

R U A DEALER IN CEMENT? MAKER OF CEMENT BLOCKS? CONTRACTOR OR BUILDER?

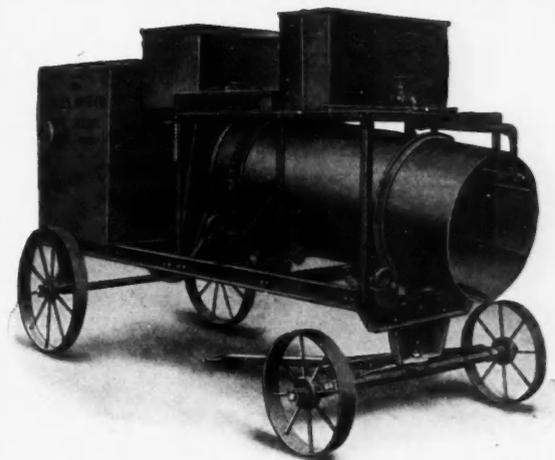
If you are, our machine will appeal to you, as it makes perfect brick at minimum cost.

OUR 1910 MODEL IS A WONDER

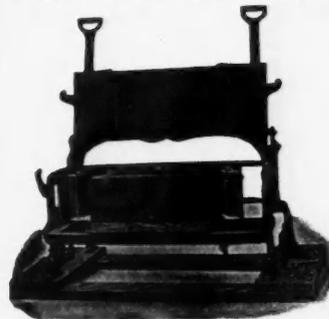
Write us so we can tell you more about it

Peerless Brick Machine Co.

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THE MILES SIMPLEX MIXER



Continuous Feed, Batch Mix, Low Down Steel Frame, 3 Hoppers, Positive Feed, Attractive Price

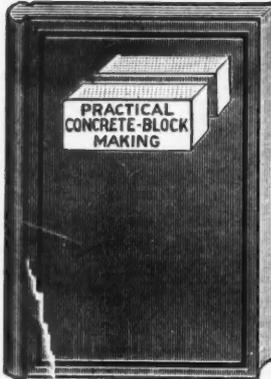
"The Miles" No. 5, Down Face, Wet Concrete Block Machine

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.

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PRACTICAL Concrete Block Making



A Simple Instruction Book for the Use of the Practical Workman

By **CHARLES PALLISER**

75 Pages, (5x7 inches)

Elaborately Illustrated and Handsomely Bound in Cloth

Only 50 Cents Postpaid

Money Refunded if Not Satisfied

THIS new, practical book, written by a well known expert, gives reliable directions in simple language about every step necessary to make good, substantial concrete blocks. The book will be especially valuable to the beginner in this line of work, as the hints about how to avoid faulty work will save him the loss of many dollars.

The book tells about cement, concrete, blocks, molds and machines. How to select sand, gravel, crushed stone, how to find the right quantity of cement and sand to use, how to mix the aggregates, how to make the blocks and bricks, curing and seasoning, placing in wall, coloring, how to make wood molds for special ornamental work, rock facing, together with many practical hints and suggestions on how to obtain the best architectural effects, the standard specifications, and directions for testing the strength and durability of blocks.

Industrial Publication Co.

178 Fulton Street, . . . NEW YORK

An Unusual Opportunity For Manufacturers of Safety Appliances

TO assist the manufacturers, merchants and employers generally of Illinois toward prompt compliance with state laws regarding "health, safety and comfort of employees," the Chief Factory Inspector, Edgar T. Davies, is compiling a list of makers of all appliances used for such purposes.

Manufacturers of Safety Appliances

Clutches and Power transmission on safety controlling devices—
Belt shifters— Laundry Machinery guards—
Stamping press guards— Hydro-extractor guards—
Wood Working machinery Ventilation and Sanitation apparatus—
Elevator Hatchway guards and Disinfectants—
gates— Guards for all moving parts, set-screws,
Elevator Locks for shipper rope—
Rubber mats, stair treads and other safety equipments—

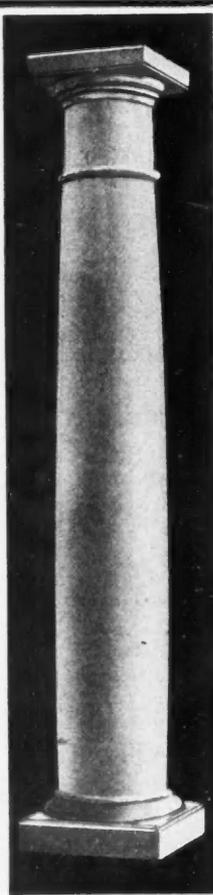
should send in their names, addresses and list of their appliances. This information will be published without discrimination of display or position, and with absolutely no expense to any manufacturer represented. The expense is borne by the state.

SEND INFORMATION TODAY

to EDGAR T. DAVIES, Chief Factory Inspector.

Illinois Dept. of Factory Inspection

1103 Security Building. - CHICAGO, ILL



White Cement Porch Columns

A more beautiful column cannot be made of any material at any price. Will not warp, check or rot like wood columns.

Last Forever

The **HOOSIER COLUMN MOLD** makes this beautiful porch column, with top and base all in one solid piece. Any one can operate it. No flutes or sections to cause imperfections in removing mold. Columns either 4½ or 5 feet in length and can be made in white or gray cement.

No **CONTRACTOR, LUMBER DEALER, or CEMENT WOKER** should be without the "Hoosier" Column Mold.

Catalog, porch views and testimonials from Contractors Free.

HOOSIER MFG. CO.

GOSHEN, Dept. C. INDIANA

MONEY MAKING CONCRETE

Mr. Block-Maker

Wet Process is Right.
Face down is Right.
Three blocks at a time is Right.
Triple Tiering is Right.
Damp Curing is Right.

The Mogul Invincible Block Machine

COMBINES ALL THESE

IT IS RIGHT

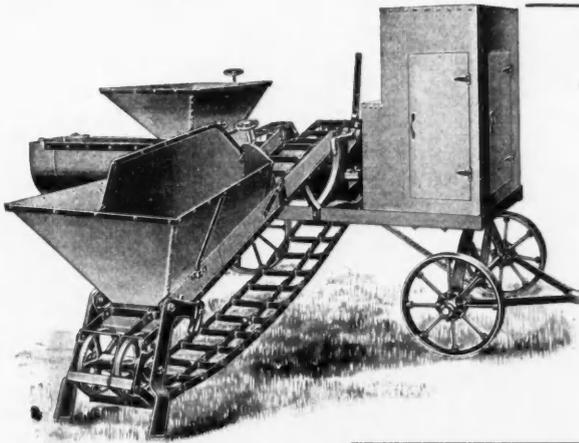
It is 46 inches long and will make three 16" or two 24" blocks at one operation. It makes sills, caps, copings, rails and steps, faster and better than a special sill machine. It has every adjustment that any other machine has and many that no other machine has.

PRICE—Machine and Outfit, \$75.00

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THE PETTYJOHN COMPANY

634 No. 6th St., TERRE HAUTE, IND.



Reducing the Cost of Mixing Concrete One-Fourth

can be done by use of the **Low-Down, Force Feed, Concrete Mixer**. It feeds with absolute accuracy, sand, cement and crushed stone. The ingredients are forced into the mixing trough, wet or dry. It has a sight feed so that you can see at all times the proportions desired.

The paddles in the mixing trough are easily cleaned because they are not covered up with hoppers. The low-down hoppers enables one man to do the work of two. We do not depend on gravity to feed.

ELITE MFG. CO., 110 Ohio St. ASHLAND, O.

THE LITTLE GIANT CONCRETE MIXER

Two things---accuracy and speed

--which a contractor *must get*, together with economy and convenience, which he *should get* are features thoroughly incorporated in the LITTLE GIANT Concrete Mixer---the recognized leader for the past five years.

Each machine is properly made and assembled, each part does its full work without loss of power, and one machine can be profitably used on both large and small jobs.

Exact proportioning of cement, sand, gravel and water, thorough mixing and big capacity, proved by every known test on all kinds of concrete work have won hearty endorsement from USERS---accompanied BY THE REAL PROOF---REORDERS.

Simplicity, Durability and low first cost are exclusive features of the 4 types of Little Giants of which the power machines are equipped with the famous "Brown Marvel" Non-heating Gas Engine---OUR OWN MAKE.

Our catalog is ready for you---and you should have it before you decide on ANY concrete mixer.



GET THE CATALOG TODAY

Ballou Mf'g Co.
102 HIGH ST.
BELDING, MICH.

Try Them And Then—Buy Them

One Set of Molds Makes
25 Sizes of Concrete Blocks
— PRICE, \$25.00 —

YOU would never do without these molds if you used them once or twice in your work. Order them on a 15 days free trial.

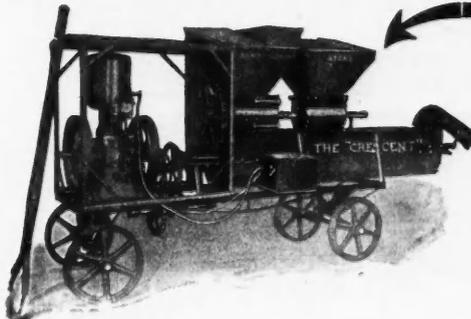
SIZES OF BLOCKS THAT CAN BE MADE.

8x8	10x10	12x12	14x14	16x16	20x20
	8x10	10x12	12x14	14x16	16x20
		8x12	10x14	12x16	14x20
			8x14	10x16	12x20
				8x16	10x20
					8x20

SEND FOR A CATALOGUE.

This and other combinations are shown which you should know about. You'll be surprised to see how convenient they are and how much better work you can turn out. Send to-night—don't delay—don't forget—don't put it off.

W.E. Dunn Mfg Co.
4132 FILLMORE ST. CHICAGO ILL.



TWO BIG WINNERS

At the Cement Shows the "Crescent" line of concrete machines again carried off all honors. We show in this ad two machines that all builders should own.

The "Crescent" Continuous Concrete Mixer will make you money, absolutely. It is so simple, yet very durable, accurate and efficient. You will never go back to the shovel if you get a glimpse of this machine.

The "Crescent" Vertical Tamping Brick Machine is in a class of its own. It is perfection itself. Over a dozen distinct features.

WRITE FOR OUR FREE LITERATURE.

We manufacture Pipe and Tile Molds, Elevators, Conveyors, Fence Post Molds, Etc., Etc.

RABER & LANG MFG. CO., Kendallville, Ind.

::

810 Mill Street





SIMONDS SAWS

IT takes especial steel and unusual temper to give the cutting edge that meets our standards — an edge that holds its sharpness longer than was considered possible in less advanced saw-making. To ensure an abundant supply of steel that would be uniformly and always of such quality, we were forced to build and conduct our own crucible steel mill. This fact indicates the thoroughgoing care that goes into the making of

Simonds Saws

(Pronounced Si-monds)

You should own a saw. It's a handy thing to have about the house. Simply owning it tends to make your home neater and in better repair, just as a piano makes it more musical.

Above all things, don't suffer the annoyance of a poor saw. One of ours costs only a little more than the bad ones, and it is worth incomparably more. Simonds Saws are ideal in hang, in ease of using, in true cutting, and in lasting sharpness. They are all guaranteed perfect in every detail.

Send for "Simonds Carpenter Guide"—FREE. It tells how to sharpen and care for a saw, and is full of other practical information.

We manufacture disks and other flat steel specialties, either black or ground and polished, shaped or die-stamped, as required, for industrial purposes.

SIMONDS MFG. CO.

Fitchburg, Mass.

Chicago

Portland (Oregon)

New Orleans

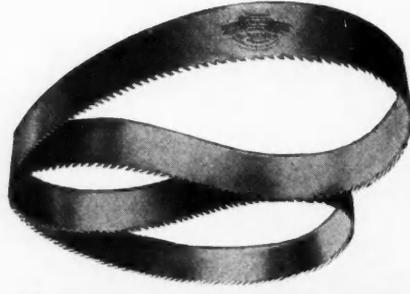
San Francisco

New York

Seattle



A handy thing to have about the house



SIMONDS MFG. CO. Fitchburg, Mass.

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NOTICE TO ADVERTISERS

Forms for the May number of the American Carpenter and Builder will close promptly on April 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 to insure attention.

AMERICAN CARPENTER & BUILDER CO.

BISHOPRIC WALL BOARD AND SHEATHING

ANY WEATHER is "Good Building Weather" when you use *Bishopric Wall Board* as a substitute for lath and plaster. It is cheaper and better and does away with all delays in building. It is nailed to studding dry, ready for immediate application of paper, paint, burlap, or any other kind of decoration.

FOR WALLS AND CEILINGS



Bishopric Wall Board Easily Applied

This substitute for lath and plaster is made of kiln-dried, dressed lath, imbedded in hot Asphalt Mastic surfaced with sized carboard and cut at the factory into 4x4 feet sheets, which are easily and quickly nailed to studding, ready for immediate application of wall paper, paint, burlap, or other decoration.

It is applied dry, is guaranteed not to swell, shrink, warp, crack, flake or blister; is clean, sanitary and odorless; is proof against moisture, cold, heat, and vermin; saves fuel in winter and keeps out summer heat; also deadens sound.

It is suitable for dwellings, factories, new partitions in old buildings, finishing attics, porches, laundries, cellar ceilings, garages, etc.



Applied Dry Winter or Summer

Shows Construction of Bishopric Wall Board

PRICE OF WALL BOARD AND SHIPMENT—Crate of 16 sheets, covering 256 sq. ft. of surface, \$6.40 per crate, or \$2.50 per 100 sq. ft., f. o. b. New Orleans, Cincinnati, or Alma, Mich. We ship from nearest point.

Bishopric Sheathing is Cheaper than Lumber; saves 75% in Labor; does away with Building Paper

BISHOPRIC SHEATHING

Ideal Material for Cement Buildings or Stucco Exteriors. Proof against Dampness, Heat and Cold

Bishopric Sheathing is made of same materials as Wall Board, but finish is not necessarily so fine, therefore costs less. It is of uniform thickness, insuring a perfectly even surface when applied.



Bishopric Sheathing Construction.

Bishopric Sheathing is nailed to studs, with lath and asphalt side exposed. Over laths weather boards are nailed or cement applied.

Bishopric Sheathing makes a more solid and substantial wall than lumber. There are no gaping joints; no widening cracks due to shrinkage; no knot holes.

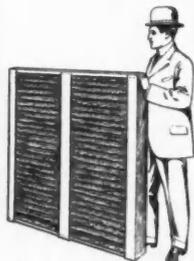
The Asphalt Mastic in Bishopric Sheathing is a non-conductor, moisture cannot penetrate it. It is proof against vermin. The pests cannot bore through the tough, gummy Asphalt Mastic. In applying weather-boards over laths, dead air space is left between the laths; forming splendid insulation. Does away with the expense of building paper and cost of its application.

One wagon load of Bishopric Sheathing covers an area from six to ten times as great as one load of lumber—a tremendous saving in hauling. Five thousand feet can be hauled in an ordinary wagon.

The cost of applying Bishopric Sheathing is but \$2.50 per 1,000 feet—A SAVING OF ABOUT 75 PER CENT. Furthermore, 1,000 square feet of wood sheathing covers but 750 feet of surface, 20% less being due to tongue and groove. In Bishopric Sheathing 1000 sq. ft. covers 1000 square feet of space.

In applying ordinary lumber, heavier scaffolding, more tools and greater scaffold floor-space are required. In applying Bishopric Sheathing, one man drives a few nails in each sheet; a common laborer or boy can finish the nailing.

Bishopric Sheathing insures comfort during the construction of the building. As soon as the building is closed in with Bishopric Sheathing, the men may work in comfort on the inside during bad weather, finishing the outside on suitable days. This insures continuous work, without loss of time, enabling the contractor to hold his men and complete the work in the least possible time.

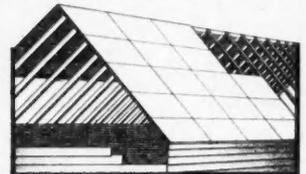


Wall Board and Sheathing are shipped in crates

Bishopric Sheathing is used with equally splendid results under flooring and as a substitute for roofing boards. Used under floors, it serves as a sound deadener and keeps out dampness; used under the shingles, it keeps out cold and summer heat.

ITS MANY USES—Bishopric Sheathing also is used with excellent results as a lining for dairy barns, ranch houses, poultry houses, driving stables or any out-door building where protection from the elements, Summer or Winter is desired.

Bishopric Sheathing is the ideal material for cement exterior or stucco work. Cement firmly adheres to the laths and Asphalt Mastic and makes a solid, smooth exterior. For factory or residence this form of concrete or stucco construction is the cheapest and best known.



The above cut shows Bishopric Sheathing over rafters ready for Bishopric Roofing, also Weather boards over Bishopric Sheathing.

An Ideal Bishopric Home



Ideal home showing Weather-boards over Bishopric Sheathing, lath side exposed, also Bishopric Roofing over Bishopric Sheathing. (smooth side of sheathing exposed)

PRICE OF SHEATHING AND SHIPMENT—Crate of 16 sheets, covering 256 square feet of surface, \$6, or \$2.35 per square of 100 square feet, f. o. b. New Orleans, La., Cincinnati, or Alma, Mich. We ship from nearest point.

Write for Descriptive Booklet and Samples of Bishopric Wall Board, Sheathing and Roofing—All sent FREE.

THE MASTIC WALL BOARD AND ROOFING MFG. CO., 24 E. Third St. Cincinnati, O.



You Never Used a Saw File as
Slim as This, Unless it Was an
E. C. S.

KEEN KUTTER
Special Slim Taper File

The workman who uses an E. C. S. Keen Kutter carpenter's special slim taper file uses the very best file that money will buy—perfect in temper and perfect in finish. Then, there is the advantage of its shape. The taper is not so pronounced as you find in ordinary saw files, but slimmer than any other files made, and smaller in the centre; a feature that has made a great demand for them by mechanics who have occasion to file fine tooth saws, such as back saws, tenon saws, meat saws, etc. Every E. C. S. Keen Kutter file is tested in blank for quality of steel and temper, and every mechanical motion is followed by a rigid inspection for quality of workmanship. No file can leave the factory until it is proved right by test. That's why Keen Kutter files bite down between the finest saw teeth and work better and smoother than any other saw file under any name. Like *all* Keen Kutter tools, Keen Kutter files are the last word in quality and efficiency and a single using will *prove* it. Guaranteed as represented—or your money back on demand.



"The Recollection of Quality Remains Long After the Price is Forgotten."
Trade Mark Registered. —E. C. SIMMONS.

If not at your dealer's, write us.

SIMMONS HARDWARE COMPANY (Inc.), St. Louis and New York, U.S.A.

We Initiate—Never Imitate

A Good Tip

**Exclusively
“National”**

The tip is threaded and
screws into the Butt

It is also slotted for a
screw driver making it
easy to remove the tip and af-
fords ready access to the pin

The slot also indicates instantly
which is the bottom of the Butt

Good selling features and of
practical value to the carpenter

Send for booklet “Ornamental
Ideas” and give dealer’s name

***National Mfg. Co.,
Sterling, Illinois***

*The Greatest
Improvement
In Butt Con-
struction in
Recent
Years*

