

JANUARY 1911

# AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

Start the New Year RIGHT —

**E**VERY Carpenter, Contractor or Builder—as an enterprising man—is ambitious to get ahead in the world. Start the New Year right by putting yourself in the way of earning larger wages and taking on larger contracts. The more you know about your work the more money you will earn and the bigger positions you will hold. Use these long Winter nights for Home Study and so increase your earning powers. Radford's Cyclopedia of Construction will give you just the practical help you need. Let me send this wonderful Set of Books to you on approval as per Special Offer following page 98.

I wish you a Happy and a Prosperous New Year.

*Chas Radford*  
EDITOR-IN-CHIEF.

# He Likes His Atkins Saw

For thirteen long years, this Carpenter and his ATKINS SILVER STEEL SAW have been inseparable friends. It has gone to work with him each day and has been his tried and trusted friend all through the busy hours. Like its owner, this saw is a veteran, but he tells us that the same tough, even temper, that withstands the hard knocks, the constant filing and hard usage is there—now as always.

He would not part with it. It's been his true and tried friend. It has never failed him and he clings to it.

## That's the Kind of Saw to Buy

A Saw that will stand up to its work day after day—year after year—and never fail you.

### Someone May Tell You.

That other saws are "just as good." Because others are trying and trying honestly to equal SILVER STEEL—but they have not done it yet. In the effort to equal ATKINS SILVER STEEL, others have produced good Saws—that's true. But there are none so uniform in Quality. There are none who so seldom fail. That's why we can cover ATKINS SILVER STEEL SAWS by this

### Guarantee.

All SILVER STEEL SAWS, bearing the name of E. C. ATKINS & CO., are not simply guaranteed against imperfections—they are Guaranteed to RUN EASIER, CUT FASTER AND HOLD THEIR EDGE LONGER THAN ANY OTHER SAW. Order one from your dealer and if it does not prove more satisfactory than any other Saw you ever used, except an ATKINS—if you, for any reason whatever, have any fault to find with the saw—take it back to your Dealer and GET YOUR MONEY BACK. If he won't give it to you—show him this advertisement or report him to us. We'll see that you get your money-back mighty quick. We do not want a single man to own an ATKINS SILVER STEEL SAW unless he is convinced that it is the finest Saw he ever used.

### Why We Know.

We can cover our Saws by this Guarantee because we have discovered the only correct method for producing ABSOLUTE UNIFORMITY. We know better than any one else how to make one



Saw just like the other—how to protect ourselves against variation. And so we have established our standard and maintain it.

### This Is The Kind.

This is the kind of Saw you want to buy and try. Go to your Dealer—ask for an ATKINS SILVER STEEL SAW with our name on the blade and take no other. If he does not happen to have them in stock, he will be glad to order from his wholesale house. If he won't—just let us have his name and we'll fix you up quick. You love fine tools. Here is a chance to get the "Finest Saws on Earth."

### Here's Another Suggestion.

If you want to know more about ATKINS SILVER STEEL SAWS—if you are not convinced that we are telling you the facts—drop us a line and we will send you, FREE, our "Saw Sense" book on Saws with instructions for buying and fitting Saws.

### Here's Another.

If you send us ten cents, to pay postage, we will mail you FREE, a fine strong NAIL APRON, our "Saw Sense" Book and a package that you'll appreciate.

### Our Appeal.

We appeal to the best mechanics, who want the best tools, who appreciate quality. If you are in this class, now is the time to act. Try an ATKINS. BUY ONE NOW.—You'll never regret it.

## E. C. ATKINS & CO., Inc.,

The Largest Exclusive Manufacturers of Saws and Saw Tools in the World.  
INDIANAPOLIS, INDIANA.

# READ THIS LETTER

Cochrane, Alta., Canada, Dec. 5, 1910.

Having used your Portable Saw Rig now almost continuously for six months and in that period of time built several large residences and also a large wood frame Church capable of seating 500 people, we are in position to speak with authority on what your Rig really will do.

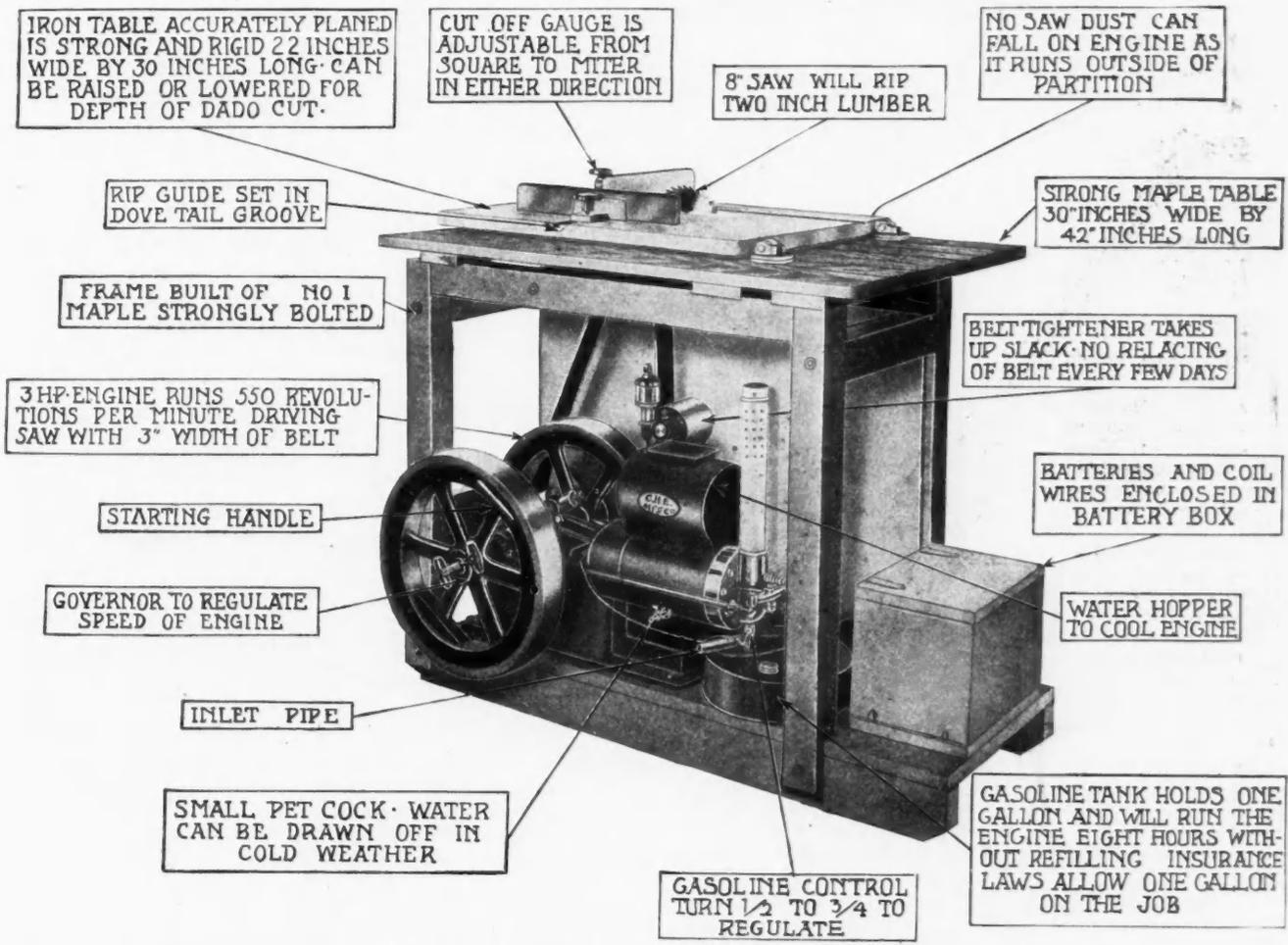
We are highly pleased with the machine; it fulfills all your claims for it and more, taking into consideration its absurdly small cost and the very small quantity of gasoline necessary to run it, we can only say that it is a wonderful money saver and no Contractor can really afford to be without it.

With the help of your machine, we have been able to figure so close as to secure every contract we have tendered on, since buying it.

We are, yours truly,

CHAPMAN BROS.,

Per A. C. Chapman



===== WRITE FOR OUR ATTRACTIVE FOLDER =====

## GEORGE D. SMITH

414 FISHER BLDG.,

CHICAGO, ILL.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

## The American Floor Surfacing Machine

is the original and only two-roll, self-propelling, dust collecting machine protected by U. S. and Foreign patents, and the only one that will satisfactorily surface any kind of a woodfloor. and has been in general use by contractors, hardwood floor companies and others for over 6 years.

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

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

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

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

The only one whose construction is guaranteed and sold on its merits.

Write for our book "Surfacing Floors as a Business."

Manufactured by

**The American Floor Surfacing Machine Co., Toledo, Ohio.**



## TRY BEFORE YOU BUY

Let us send you the "LITTLE GIANT" Floor Scraper—Freight Prepaid. Absolutely FREE of any expense to you whatever

A request from you brings the "Little Giant" Floor Scraper to your door—you send no money and we pay all expenses. After you have given it a fair trial and have tested it as thoroughly as you know how, and have found it satisfactory, pay for it. If you do not think it is the best floor scraper made, return it.

### TRY IT ON YOUR OWN FLOOR

You can try the "Little Giant" Floor Scraper on your own floor and the trial costs you nothing. All that we ask is that you give it a fair trial. You be the judge and jury. Every carpenter and contractor can afford to invest in one as the time and money saved will pay for the machine in a very short time. By using the "Little Giant" Floor Scraper you will be in a position to estimate much lower than your competitor and therefore have more work. Can you afford to be without this machine?

25,000  
"Little  
Giant"  
Floor Scrapers

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



Write us for our Special Price

## Hurley Machine Company

31 South Clinton Street, CHICAGO  
1011 Flatiron Building, NEW YORK  
246 Woodward Ave., DETROIT

## Only Perfect Floor Surfacing Machine

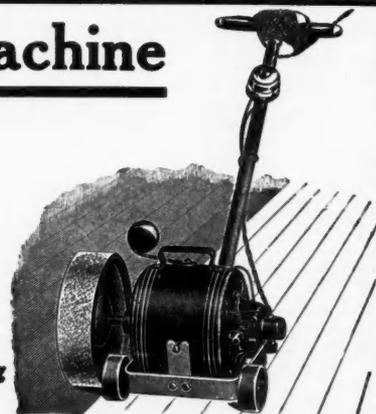
Will do perfect work on any kind of floor, whether even or uneven. Recommended by the best architects and contractors.

**A BOY CAN OPERATE IT.**

Sold on absolute guarantee. Price, complete with motor switch and 50 feet electric cord ready to connect with light socket, \$125.00.

Write for further information.

**MARSH COMPANY, 970 Old Colony Building**  
CHICAGO, ILL.



# 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.

# PUT THAT MONEY IN THE BANK

When you scrape a floor by hand you pay out money that you might have put in the bank.

This is the age of machine work, for the simple reason that hand work is too expensive. To keep abreast of the times you should avoid hand work wherever it is possible to use a machine. The **TRIPLE "A" SPRING DRIVEN FLOOR SMOOTHER** will put money into the bank for you.

Remember the **TRIPLE "A"** is a power machine. It has necessary adjustments that no other machine has. Our Automatic Sandpapering Attachment is years ahead of other devices of like nature. Awkward and impractical filing devices are not needed with the **TRIPLE "A."** The Blade is filed and the edge turned in the machine.

We are specialists in Scraper Blades and Sharpening Tools, and those furnished with our machine are unequalled.

In short, the **TRIPLE "A" FLOOR SMOOTHING OUTFIT** is complete in every respect and is a strictly high grade article. It is a necessary part of every up-to-date Contractor's equipment.

Write for our special offer; Good for 30 Days.

### An Unsolicited Letter

P. L. SCHULTZ,  
 GENERAL CONTRACTOR.

Jefferson, Ia., December 14, 1910.

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

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 any where near filling the requirements of a floor surfacing machine. I can clean a job up 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 any where near the Triple "A."  
 Enclosed find draft for amount of your bill.

Yours respectfully,  
 P. L. SCHULTZ.



In position for sharpening scraper blade.

Write for our special offer; Good for 30 days.

## TRIPLE "A" MACHINE COMPANY

114 South Clark Street

Chicago, Illinois

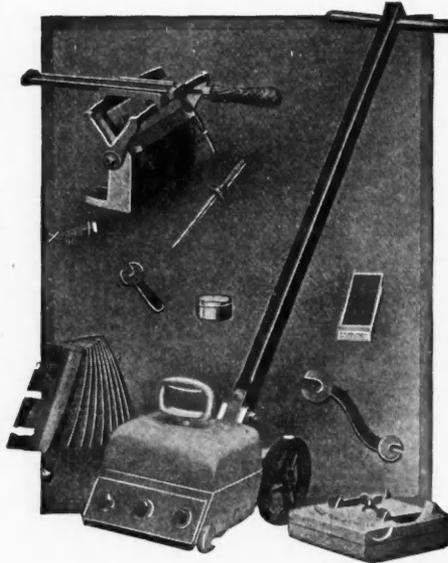
# A Contractor's Resolution

for the new year should be "To stop scraping floors by hand or with an inferior machine and use the **Acme Floor Scraping Outfit** instead."

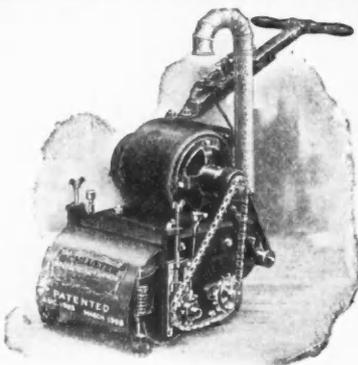
You, Mr. Contractor, do not have to adopt this resolution on your own responsibility or at your expense—I assume this until you are thoroughly satisfied that the **Acme Outfit** is just what you want.

Start the new year with a determination to cut down labor expense (at the same time make the work easier for your men) by investigating into the merits of my equipment for scraping your flooring. I will send the Acme Floor Scraping Outfit to you on **One Week's Free Trial**. Give it a severe test and if you are not convinced that it will save you many dollars and do the work better than you have ever had it done, then do not buy it, but simply send it back to me at my expense.

Let me mail you booklet and more details of my free trial offer. Drop me a line today.



**JOS. MIOTKE, 247 Lake St., Milwaukee, Wis.**



Made in three sizes:  
18 Sx16 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.

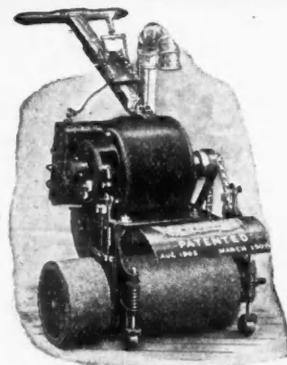
The **Schlueter** will remove all joints or warped edges, and oil, wax, lime stains, or the "muck" from skate wheels, in a most satisfactory manner.

(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 BOSS JUNIOR FLOOR SCRAPER

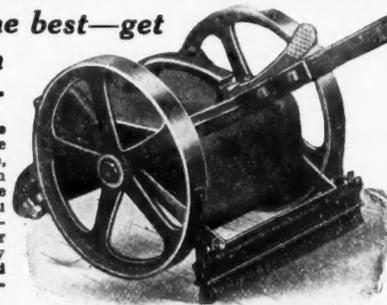
Has ball socket allowing knife to be set in any position. Gauge can be set for any thickness of shaving and keeps knife from making depressions in floor. Gives knife double support. The pear shaped wheel which is in the gauge and is attached to the gauge in front so that when you let the scraper down to take shaving, it lets the knife down gradually and prevents the knife from making a deep cut. With this gauge and wheel attachment, the knife will leave no mark. Impossible to do poor work. Adjustment simple and positive. Gauge can be removed instantly. Sanding attachment. Prices very low. Write for descriptive circular. Dept. A.

**George J. Kepplinger**  
Dwight, Ill.

## Sent on FREE Trial—anywhere

*If you want the best—get the Ackermann Floor Scraper*

The Ackermann is the best floor scraper. We guarantee it to do more, better and easier work than any other machine on the market. If it doesn't you get one free. Send for details of our offer under which any contractor may test the Ackermann Rapid Floor Scraper and Ackermann's New Knife Sharpener free at our expense.



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

# The WEBER DOUBLE ACTING Floor Scraper

## FLOOR SCRAPING WITHOUT WAVES or CHATTERING



**The Weber Automatic Sharpening Device**

It enables the operator to sharpen a blade, without removing it from the machine. The blade can't be sharpened at wrong angle—so simple a child can use it.

**PERFECT** work can be done with this scraper on any kind of flooring and with or across grain.

It acts precisely on the principle of hand work—the knives are held firm and true by a blade holder attached to a flexible frame by means of "half-ball-and-socket" joints. And either of the two blades may be quickly adjusted to any angle desired for any kind of flooring. The Weber Scraper scrapes every inch of floor space as smooth and even as a table top. It can't chatter or leave waves.

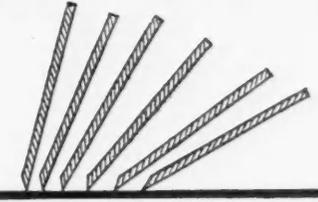
Floors may be scraped clear up to the very edge of the base board without feazing the wall with the sides of the machines. The handle and blades are so adjustable that they may be set to either side, allowing easy access for the body of the machine along the wall. Much time is saved by having two blades ready for use at all times.

**5 TO 10 DAYS' FREE TRIAL**

You can have this valuable aid to use in your own work for five to ten days absolutely **free**.

We make this generous offer to show you better than we can tell you just what the Weber Scraper can do.

**SEND FOR PARTICULARS AT ONCE**



Knives are adjustable to any angle

**This Contractor is Delighted with his Weber**

"The Weber is all that is claimed for it, and am well pleased with it. I scraped 1,200 feet Friday and expect to do that much more today. It does its work perfectly. I have seen lots of scrapers and used several, but will say the Weber is the best I ever saw or used, excepting none" (Signed) J. K. TOWSON, Towson Bros., Contractors, Mexico, Mo., Nov. 14, 1910.

P. S.—One sharpening or blade good for 200 square feet and your blade very simple to sharpen.

**John F. Weber, President, WEBER MFG. CO., 670 71st Ave., WEST ALLIS, WIS.**

**GOOD FOR ONE DOLLAR**

**ONLY SELF-SETTING PLANE**

**Introductory Offer**—During January—We will receive this Advertisement as \$1.00 if it is sent us from where the Self-Setting Planes are not sold, with a Money Order for the balance of the list price of any Beechwood Self-Setting Plane and 10 addresses of plane users to whom we can send circulars—no matter where they live. If in other places, so much the better.

**Highest in price. Highest in quality. Easiest to work. Quickest to set.**



If the plane is not satisfactory, return it to us at our expense, within 30 days of receipt and we will refund the amount of the Money Order sent us and \$1.00 more to pay for your trouble, etc. This shows the confidence we have in our planes.

If you send only the ten addresses, no matter where they live, we will send you circulars and a carpenter's hard, tough pencil. If you send a two-cent stamp we will send you another pencil.

**GAGE TOOL CO. - Vineland, N. J.**

**Insist upon "Ohio" Tools**

When buying Planes, Chisels, Drawing Knives, Gouges, Auger Bits, Hand and Bench Screws etc.

They are carefully made from best materials and fully warranted. Experienced mechanics have come to regard them as the most satisfactory and economical tools on the market.

WRITE FOR CATALOGUE

**OHIO TOOL COMPANY (Department A) Columbus, Ohio Auburn, N. Y.**



**THE FOLDING DRAW KNIFE.**

It's the Autocrat of Draw Knives And it bears the WILKINSON BRAND; It's the Draw Knife that they call for And it's standard in the land.



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.**

**THE FINGER RING LEVEL**

Patented Aug. 16-10



Worn on hand while at work. Carried in vest pocket while not in use. Absolutely accurate. This tool is invaluable for Brick work, laying cement blocks or setting forms for concrete.

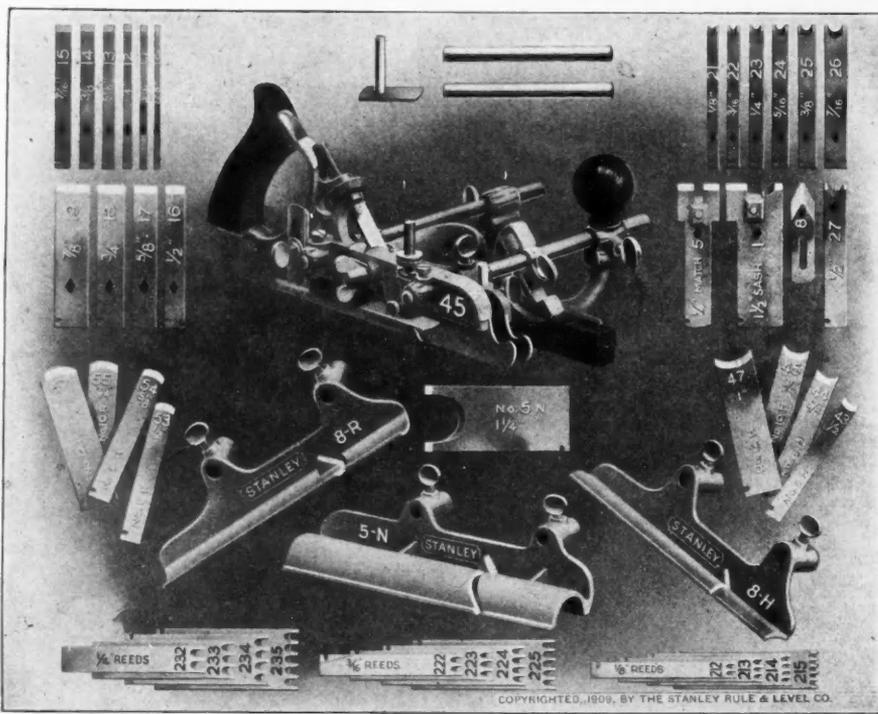
The value of this tool can not be appreciated until once tried. Buy one to-day, so you will have it when needed. Sent postpaid to any address in United States or Canada on receipt of \$1.00.

*Remember, if not entirely satisfactory money will be refunded on receipt of level. Write for free copy of our illustrated booklet, "How Jack Finnegan Saved His Job."*

Manufactured exclusively by the

**KOKOMO LEVEL CO., -:- Kokomo, Indiana, U. S. A.**

European Agents, LINDENTHAL & CO., Berlin, Germany.



COPYRIGHTED, 1909, BY THE STANLEY RULE & LEVEL CO.

## Stanley Tools

### "45" Seven Tools in One

- 1.—Beading and center-beading Plane.
- 2.—Rabbit and Filletster Plane.
- 3.—Dado Plane.
- 4.—PLOW Plane.
- 5.—Matching Plane.
- 6.—Sash Plane.
- 7.—Superior Slitting Plane.

Extra cutters may be used to advantage by substituting specially formed detachable bottoms.

Send for Catalog giving complete description.



## Stanley Rule & Level Co.

NEW BRITAIN, CONN. U.S.A.



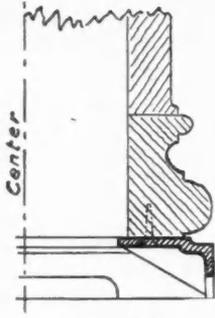
## Iron Plinths for Porch Columns

**W**OOD columns soon decay at base, caused by the warping of the floor boards and opening of the joints, allowing water to enter and keeping the base damp.

This can be averted by using Iron Plinths which allow the water to run off the floor without wetting the base of column, also providing thorough ventilation of the inside of column.

Should be used in all good work.  
The life of the column will be increased tenfold by the use of these plinths.

Provision is made for securing column to plinth and plinth to the floor by screws. The plinth is screwed to the wood base of the column before the column is set up.



Sectional View

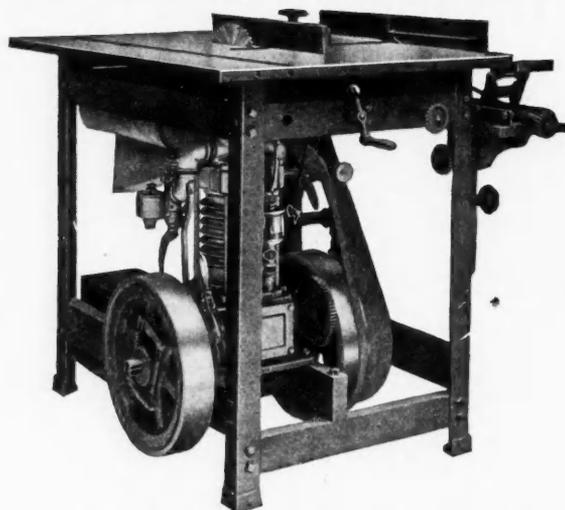
Send for our booklet showing also our iron coal window and replace dampers.

PRICE LIST	
8 x 8 x 1	.65
9 x 9 x 1	.75
10 x 10 x 2	.90
11 x 11 x 2	1.10
12 x 12 x 2	1.40
13 x 13 x 2	1.60
14 x 14 x 2	1.80
15 x 15 x 2	2.10
16 x 16 x 2	2.45
17 x 17 x 2	2.60
18 x 18 x 2	2.70
20 x 20 x 2	3.60
22 x 22 x 3	4.00
24 x 24 x 3	6.50

The H. W. Covert Company

168 DUANE STREET, NEW YORK CITY

## HAVE YOU INVESTIGATED The Grimm Woodworker?



Type A with Gasoline Engine. Weight 400 Lbs.  
Showing Rip Saw and Jointer Attached

NINE MACHINES IN ONE

8 inch Rip Saw	Moulder (8 pairs knives)
8 inch Cross Cut Saw	10 inch Sander
6 inch Dado Head	4 inch Jointer
Boring Machine (3 Bits)	Jig Saw (3 Blades)
	2 Emery wheels

Write for descriptive booklet and our attractive selling plans.

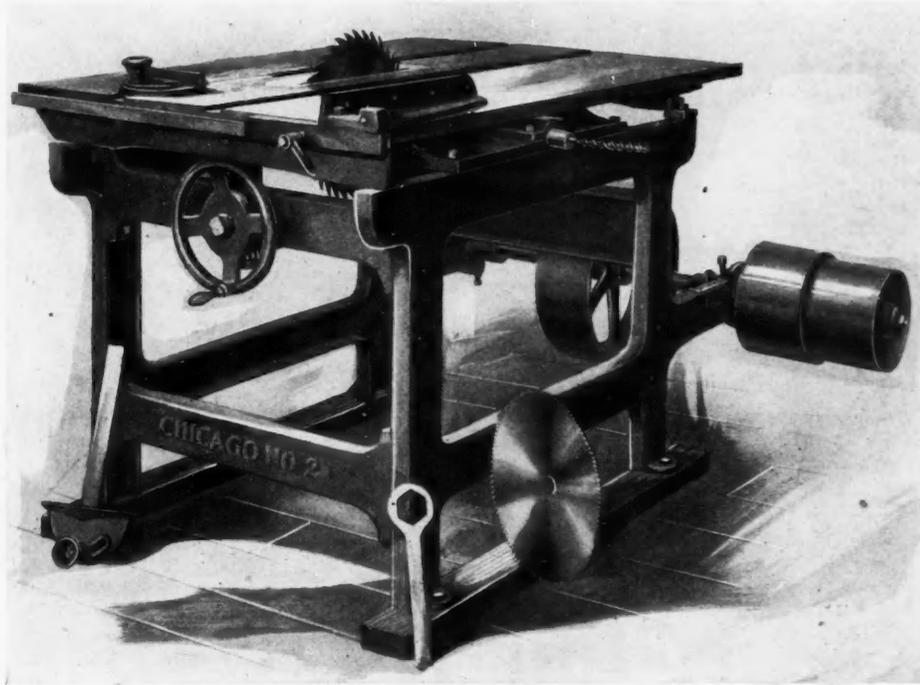
Grimm Manufacturing Company

46 ERIE STREET

BUFFALO, N. Y.

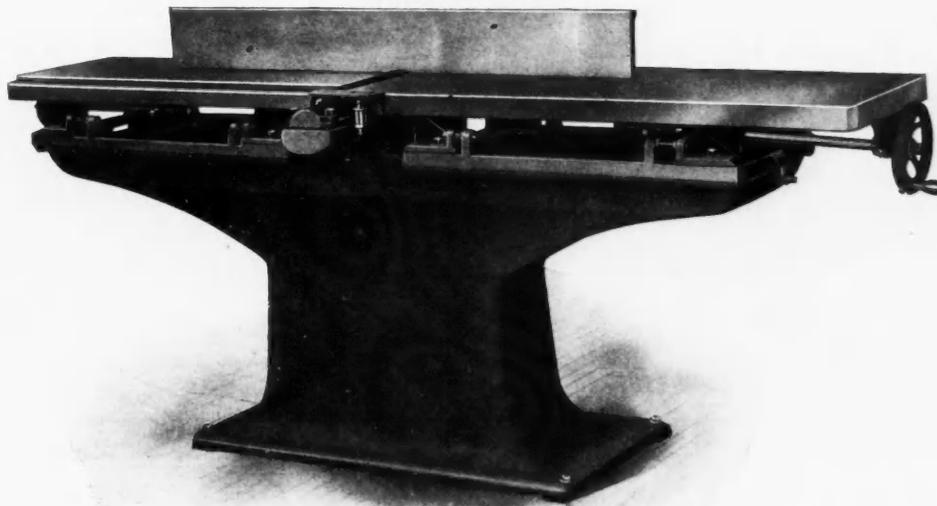
# Start With Two Machines

## MACHINE No. 1



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

## MACHINE No. 2



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

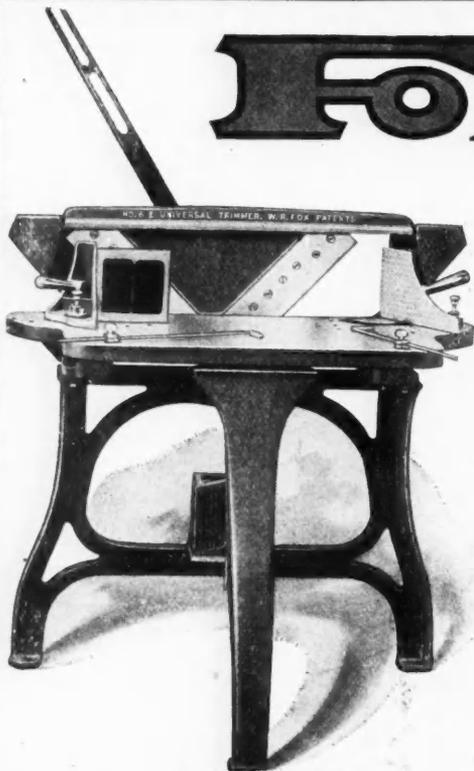
**These Two Machines** for \$180.00, including belt for saw arbor, countershafts, 1 14" rip saw, 1 14" cut off saw, 5 boring bits— $\frac{1}{4}$ ",  $\frac{5}{16}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ " and 1-inch pair of jointer knives. We will sell you one of them now and the other later on at the same price.

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

**Chicago Machinery Exchange** 159-161 North Canal Street  
CHICAGO, ILL.

# FOX

## Universal Trimmers



No. 6-E TRIMMER

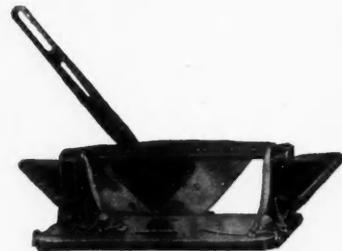
### No Pattern Shop Complete Without a Fox Trimmer

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. 4-A TRIMMER

# FOX

## MACHINE CO.

2211 FRONT STREET  
Grand Rapids, Mich.



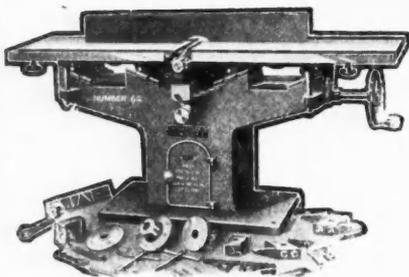
### A New Modern Up-to-Date Jointer of Unique Design

Made in 12-16-20 and 24 inches wide, with **Round Safety Heads**, long tables and frame **Cast Whole**. Equipped with Adjustable Fence and Counter-shaft. Cut shows rear side view. Full particulars on application. Address

**H. B. SMITH MACHINE CO.**  
SMITHVILLE, N. J., U. S. A.

Branches: New York, Chicago, Atlanta, Memphis

## YOU CAN BUILD A HOUSE WITH OUR No. 62 UNIVERSAL WOODWORKER



No. 62 Universal Woodworker.

Carpenters & Contractors, especially find this machine indispensable as it will shape practically any piece of wood entering into the construction of a house.

With this machine, you can plane out of wind; Surface straight or tapering; rabbet door frames; Rabbet and face inside blinds; joint; bevel; gain; Chamfer; Plow; Make glue joints; Square up posts, Banisters & Newels; Raise panels, either square, bevel or ogee; Stick Beads; Work circular mouldings; Rip; Cross-cut; Tenon; Bore; Rout; Rabbet; Joint and Bead window blinds; Work edge mouldings, etc.

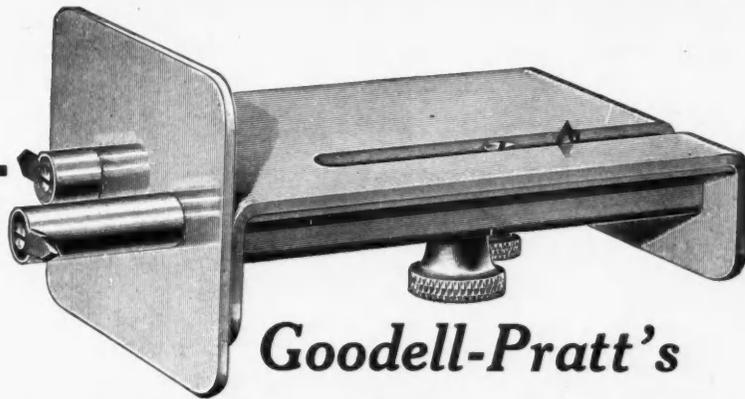
If you are a Carpenter, Builder, Sash, Door & Blind Maker, or Contractor, write us for **Large Illustrated Circular.**

**J. A. FAY & EGAN CO.,**

545-565 West Front Street

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CINCINNATI, OHIO



Goodell-Pratt's  
**BUTT GAUGE**

This Butt or Mortising Gauge should be in the possession of every carpenter. It is of ALL STEEL CONSTRUCTION and is shown a little less than full size. Handsomely finished in nickel plate. Catalog on Application.

**GOODELL-PRATT COMPANY**

*Toolsmiths*

**GREENFIELD, MASS., U. S. A.**

L. S. STARRETT SAYS:



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

*Send for free  
 Catalogue No. 186.*

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

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

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

**Established 1872**

Largest and Most Complete Stock of  
**Builders and General  
 Hardware—Cutlery—  
 Tools—Contractors  
 Supplies etc.**  
 in the Country

**High Grade Goods  
 and  
 High Grade Service**

AT

**Orr & Lockett Hardware Co.  
 71-73 Randolph Street  
 CHICAGO**



# "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

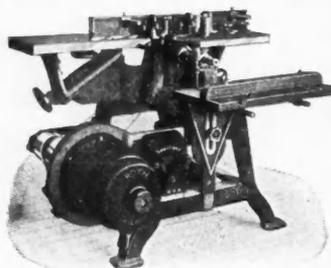
It will bore through any kind of wood in common use about twice as quickly as the best and fastest heretofore on the market. The worm has a double thread terminating in two cutting points.

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.

A	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**



NEW YORK OFFICE:  
136 Liberty Street

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,  
CHICAGO, ILL.

### You Can't Afford Poor Roofing



### "Mastic" Means Safety and Quality

A contractor cannot afford to stake his reputation on poor or cheap roofing. The best are none too good and nothing but the best should be used.

Mastic Roofing costs perhaps a little more, but it is better and more durable.

Ask to-day for samples and our proposition. It will make money for you.

**National Roofing Materials Co.**  
Office & Factory, EDWARDSVILLE, 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.

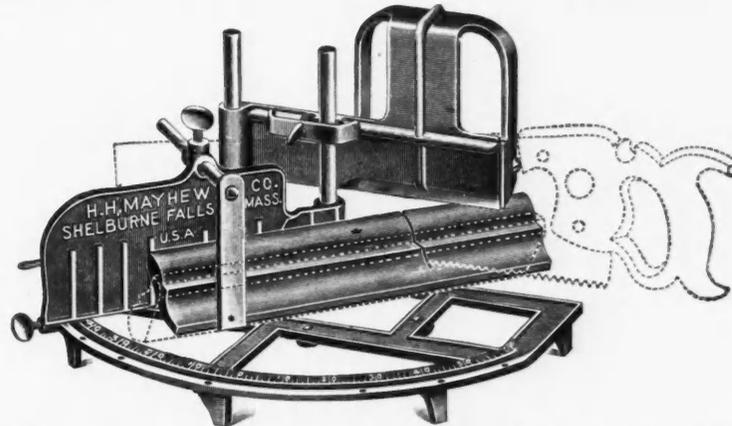
**We Can Save You Money** Both first cost and every day machine is used.  
SEND FOR OUR CIRCULAR.

**THE DOSCH MFG. CO. Bridgeport, Conn.**



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

# MAYHEW 60° MITRE BOX



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

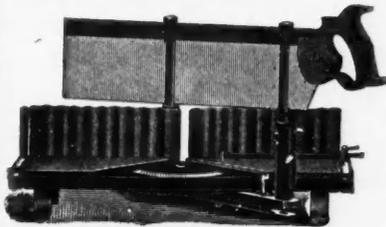
Extreme mitre to 60° without makeshift. May be used as a stationary or pivot box by use of the pin posts.  
 In mitering duplicate cuts there is no restriction on length.  
 Will cut compound mitre.  
 Parts take down into space 10x10x4 inches.  
 Weight 15 lbs. complete.  
 Box contains full directions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

PRICE EACH, \$10.00

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

## GOODELL MITRE BOX

Made of STEEL - Cannot Break



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

**GOODELL MFG. CO., Greenfield, Mass.**

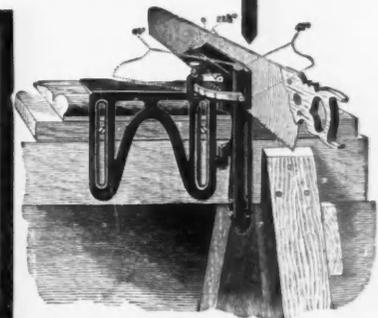
## "SEAVEY" MITRE BOX

Cuts Any Angle

Meets Every Requirement

### Special Offer

On return of this "Ad" and \$2.00 one of these Mitre Boxes will be shipped to any reader of "Carpenter & Builder." Offer good for 30 days from date of issue.



Portable — Can be carried in the Tool Kit

Weights 2

**SMITH & HEMENWAY CO.**  
 108 Duane St. New York City

Pounds

## LUFKIN Tapes & Rules

are Standards of Accuracy, Durability and Workmanship.

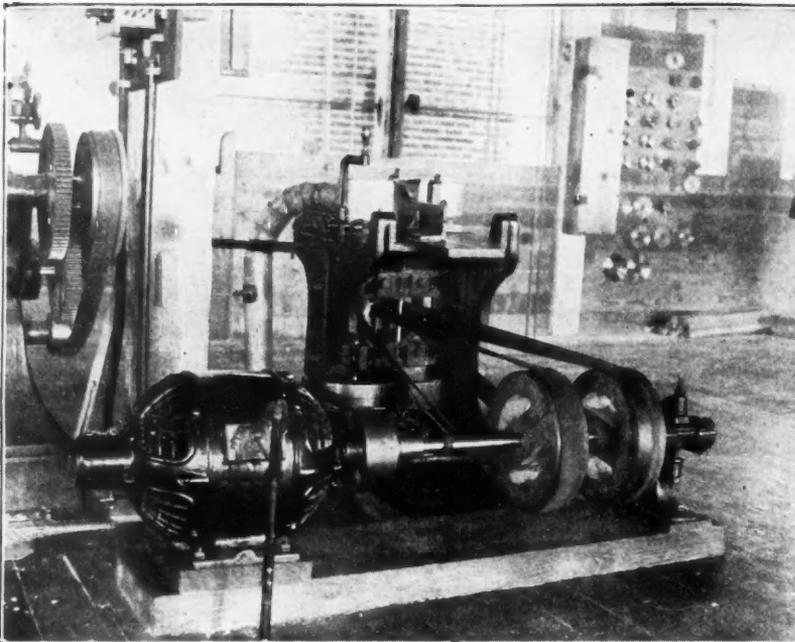


SEND FOR CATALOG

**THE LUFKIN RULE CO.**

SAGINAW, MICH.

NEW YORK LONDON, ENG. WINDSOR, CAN



3 H. P., 220 Volt, 150 R. P. M. Motor Direct Connected to Door Panel Raiser.

## The Ideal Power For Woodworkers

—Is—

**FAIRBANKS-MORSE**

## Electric Motors

They represent the highest efficiency in power and convenience for factories. The saving in fuel and in floor space alone is important. Our engineers understand your power problems. They will be glad to furnish accurate figures showing the actual saving of time and money effected by up-to-date motor drives in your factory.

Send for Bulletin No. 1409 FD

**Fairbanks, Morse & Co.**

481 Wabash Ave.,  
Chicago

30 Church St.,  
New York

Cincinnati, Ohio  
Cleveland, Ohio  
Milwaukee, Wis.  
Richmond, Va.  
Jacksonville Fla.

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New Orleans, La.  
Louisville, Ky.  
Detroit, Mich.

St. Louis, Mo.  
Indianapolis, Ind.  
Omaha, Neb.  
Kansas City, Mo.  
Canadian Fairbanks Co., Ltd.,  
Sole Agents for Canada

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Seattle, Wash.  
Denver, Colo.  
San Francisco, Cal.  
Los Angeles, Cal.

Bakersfield, Cal.  
Santa Maria, Cal.  
Taft, Cal.  
Coalinga, Cal.  
Portland, Ore.

### C. E. JENNINGS



### 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



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

## MILLER'S Lever Lock Mortiser

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

One builder wrote us last month: I was surprised, I did not think it would do the work so quick, when one gets use to it, he can cut an opening in two minutes.

### Think This Over Builder

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

Sent on trial to any reliable builder

**A. W. Miller Mfg. Co.**



Main Office:  
**CINCINNATI, O.**

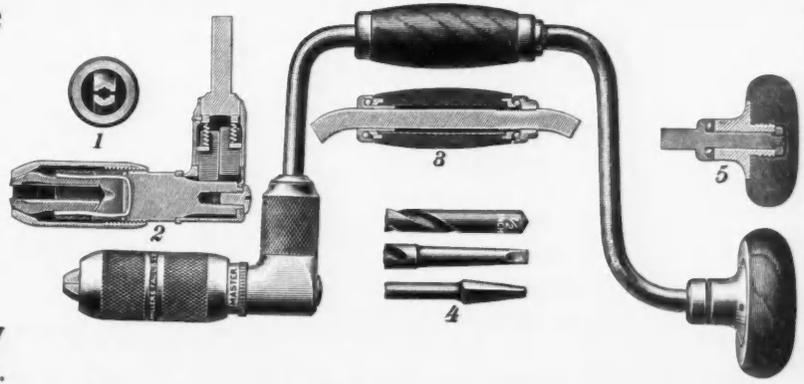
Western Office:  
**RIVERSIDE, CAL.**

## The Master Bit Brace

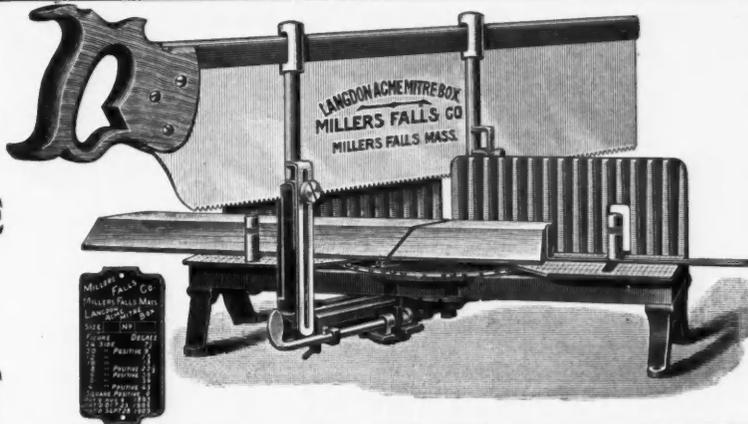
is our latest product in this line of tools. It has a ball bearing head, ball bearing center handles, covered ratchet, and chuck that holds securely all sorts of shapes. In producing this Brace we have endeavored to make it a perfect tool in every particular. Sample it and decide for yourself whether we have succeeded or not.

Our new catalogue describes this Brace in detail. Ask for one.

**Millers Falls Company**  
28 Warren St., New York, N. Y.



**THIS IS THE MITRE BOX YOU WANT**

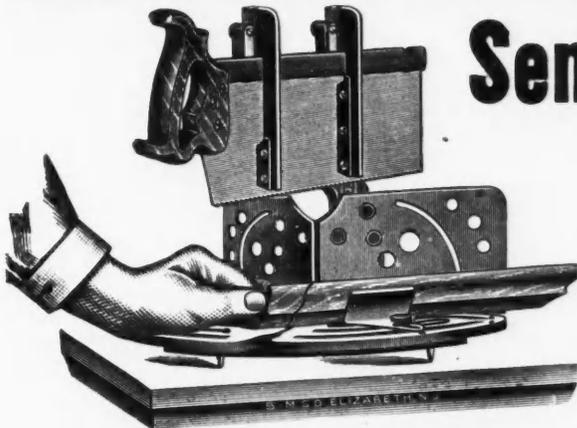


It's a LANGDON ACME and is made in three sizes put up with varying lengths of saws.

The advantage over other styles are too numerous to mention in this advertisement, but our pocket catalogue tells the whole story. You can have one of the catalogues by asking for it. It illustrates our full line of tools.

**Millers Falls Company**  
28 Warren St., New York, N. Y.

## Sent on 10 Days Trial



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"

### OUR "CHISEL" GUARANTEE

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

### SPECIAL OFFER

To further increase the number of carpenters who insist on having B. M. Co. Chisels we will sell direct to readers of the American Carpenter and Builder, express prepaid any chisel or set of chisels with privilege of returning after ten days trial if they do not prove to be the BEST EVER USED.



BEVELED EDGE BUTT CHISEL



SOCKET BUTT CHISEL

**BRAUNSDORF-MUELLER CO., - Elizabeth, N. J.**

**"Last a Lifetime and Give Satisfaction To the End"**



**BUTT CHISEL**

TRADE MARK  
D. R. BARTON  
1832  
ROCHESTER, N. Y.

The celebrated Barton Planes and Edge Tools for carpenters and all other woodworkers are unequalled by any other made for keen, hard smooth cutting edges. If your hardware dealer does not handle

**THE CELEBRATED BARTON TOOLS**  
send direct for catalogue. Be sure to specify "CARPENTER'S CATALOGUE."

**MACK & COMPANY, 20 BROWN'S RACE, ROCHESTER, N. Y.**



**FREE TOOL BOXES**

Our standard auger bits and our quick-boring bits are put up in SETS of 32 1/4 quarters, 13 bits, 4-16 to 16-16 A finely finished hard wood tool box is furnished free with each set. The boxes are never sold separate from the bits

It pays to keep

**RUSSELL JENNINGS AUGER BITS**

in good condition by protecting them from moisture and accident. Sets cost no more in boxes or rolls. Sets other than 32 1/4 quarters are packed in paper boxes only.

**RUSSELL JENNINGS MFG. CO.**  
Chester, Conn., U. S. A. 21-14

**ASHLAND 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.



**DO YOU**

**Consider The COST of GRINDING**

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.

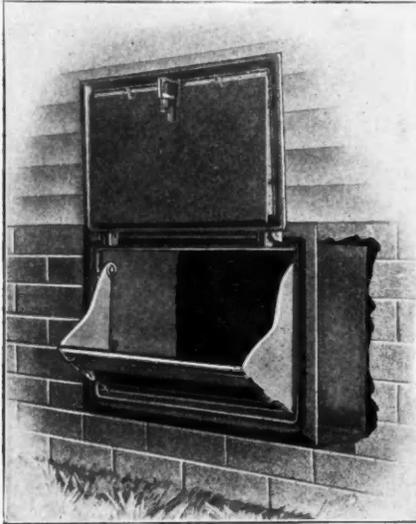
**The L. & I. J. WHITE CO**  
143 Perry Street, Buffalo, N. Y.

LOOK FOR IT  
DEMAND IT  
ACCEPT NO  
OTHER



TRADE MARK  
L. & I. J. WHITE  
1837  
BUFFALO, N. Y.  
MARK

# THE MODEL Foundation FUEL CHUTE



AND  
Cellar  
Window  
COMBINED

Protects the building just where the protection is most needed, above the opening.

The shield protects the rubber glass.

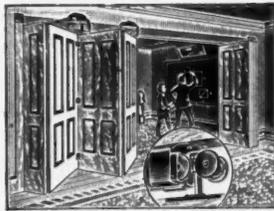
Our Majestic Chute has a solid cast door.

Both styles are made in 3 sizes.

SEND FOR CATALOGUE

**Majestic Furnace & Foundry Co.**  
121 Erie Street, HUNTINGTON, IND.

## What a convenience are folding doors.



They are properly applied when hung with Richards Ball Bearing Swivel Hangers specially made for this purpose.

Every builder should know about these.

Ask your hardware dealer.

Shall we send you our architects catalogue?

Richards No. 135 Swivel Hangers

It contains Hanger information you may require on special work



WRITE US TODAY.  
**RICHARDS MANUFACTURING CO.**  
AURORA, ILL.



## Quality Talks

We can furnish you with the best grade of builders hardware at wholesale prices.

No. 333 Lock Set (as per cut) Steel Dull Brass or Antique Copper Finish.  
Price per set..... **46c.**

**FREE** Our Illustrated Catalogue and Net Price List. :: ::

**REHM Hardware Co.**  
1501 Blue Island Avenue  
CHICAGO, ILL.

You can see at a glance what an advantage you have in the **Round Sharpening Stone**



You can use the entire surface of the stone. You get the rotary motion so necessary in the sharpening of chisels, planer irons and so forth—and, as it is made of Carborundum you get the fastest cutting, most efficient sharpening stone on earth

The Round Stone is a combination—medium coarse on one side, fine on the other. It is 4 inches in diameter.

Price, at your hardware dealer or direct. **\$1.00**  
In Oak Case . . . **1.50**

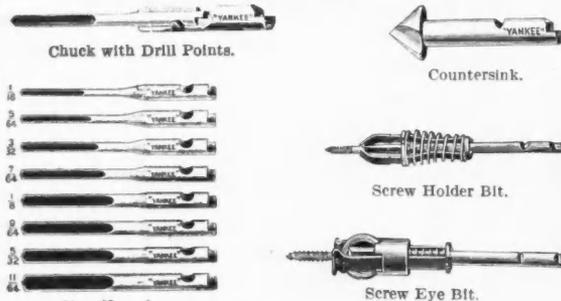
**The Carborundum Co.**  
Niagra Falls, N. Y.



The Satisfaction  
in using  
**YANKEE TOOLS**

cannot be computed in dollars and cents but must be experienced by actual use. If a good Carpenter can get along with poor tools think how much more he can do with a complete set of practical up-to-date time and labor-saving "Yankee" Tools. Oh yes, you say "I use them," but we doubt whether you have them all.

Attachments for Spiral Drivers



Let Us Show You

the full line. There are 35 styles and 75 sizes, (and more coming). Each one as slick as those you are now using.

Our "YANKEE" Tool Book

tells about them. A postal brings it. Write at once before you forget it.

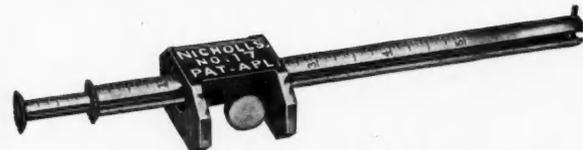
Your Dealer sells "YANKEE" TOOLS  
**North Bros. Mfg. Co.**  
Dept. A. PHILADELPHIA, PA.

Are  
You  
Disappointed

BECAUSE YOU  
DIDN'T GET A

Marking Gauge  
For Christmas?

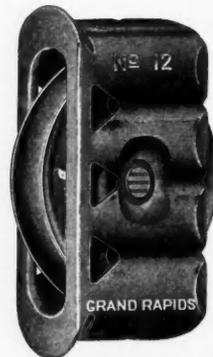
You will have to  
Buy yourself one



SAW TOOTH ROLLER WHEEL  
Makes it run true with edge of board. One rod inside the other  
White Metal Finish.....\$0.75  
Nickel Plated Buffed..... 1.00  
**NICHOLLS MFG. CO.**  
Ottumwa, Iowa

If You Have Power

You cannot afford to  
use any but the



**Grand Rapids  
All-Steel  
Sash Pulleys**

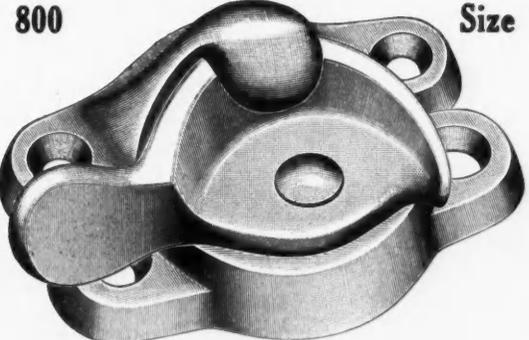


and the Grand Rapids Mortising Bit. Bores mortise at one punch. Used in common boring machines. We make boring machines too. Write for sample pulleys and prices.

**Grand Rapids  
Hardware Co.**

35 Pearl Street,  
GRAND RAPIDS, MICH.

800 Size



88-Page Catalogue Hardware  
Specialties Mailed Free

## The Crescent SASH FASTENER.

The Best Sash Lock Made. } Strong, Symmetrical and finely finished

Made in 5 sizes, and all builders' hardware finishes.

### THE H. B. IVES COMPANY

Sole Manufacturers  
NEW HAVEN, CONN., U. S. A.



## 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.

## MONITOR SASH LOCKS



(PATENTED)

### NEVER BREAK

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

If the upper plate drops, the Monitor "Never Break" Sash Lock will pick it up from a lower point than any other, adjust the sashes perfectly, prevent all vibration and lock securely, so it cannot be opened from the outside.

MADE IN TWO SIZES AND ALL FURNISHED BY

### The Champion Safety Lock Co.

Geneva, Ohio

Don't Ask the Dealer for Sash Cord. Ask for

## "SILVER LAKE"

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.

### PUMPS, DOOR-HANGERS, STORE L

The Pump That Pumps

SPRAY PUMPS

Double-acting, Lift, Tank and Spray

## MYERS

Glass Valve

PUMPS Store Ladders Etc. Hay Tools of all kinds Write for circulars and prices.

Myers Stayon Flexible Door Hangers

with steel roller bearings, easy to push and to pull, cannot be thrown off the track—hence its name—"Stayon". Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.

F. E. MYERS & BRO. Ashland, Ohio.

Noiseless Cushion Tire

## LADDER S





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.

**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.

**THE TAYLOR** No. 16

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

**HARGRAVE** **STANDARD CLAMP**



This clamp is thoroughly made of the best refined malleable iron, and is provided with a button tip. It has a very deep, square thread in both the screw and frame, and is in every way the strongest and best clamp in the market. Each size is numbered by inches the thickness of the work it will take in.

Cut one-quarter size of 8 inch

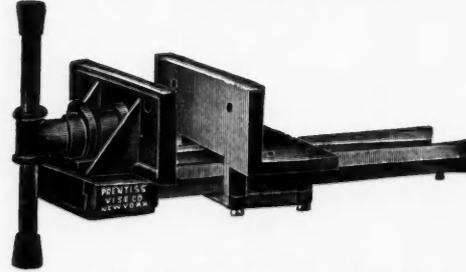
**THE CINCINNATI TOOL CO.,** - - - Norwood, Cincinnati, Ohio  
 Write for circular. Dept. H

**STANDARD HANDBOOK**  
 —OF—  
**ESTIMATING DATA**

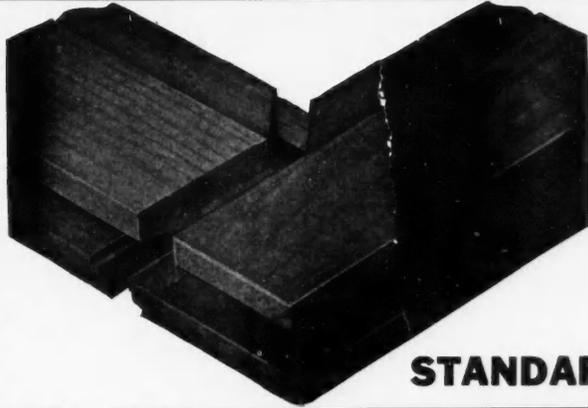
Every Man in the Building Trade Needs It  
**READ WHAT OTHERS SAY:**  
 It is a very handy book, not only valuable, but comprehensive. I think it the nearest correct, and the shortest cut to business, the busy man has yet found.  
 It fills a place that has been wanted for years.  
 Your Standard Handbook is the best book of its kind ever written.  
 For all the 30 years I have spent in estimating and building, I would not be without it for twice the cost.  
 Just what I want and well worth the money. Thank you for calling my attention to it.

**PRICE ONE DOLLAR**  
**The Builders' Auxiliary Co.,** 325 Old South Building BOSTON, MASS.  
 Ask for particulars of the "Builders Auxiliary" the latest and most efficient system of recording estimates and keeping cost accounts, for building contractors.

**BLAKE QUICK ACTING VISE**



For Cabinet Makers and Wood Workers. Simplest—Strongest —Cheapest—Best  
 Send for Catalogue of all kinds of Vises  
**PRENTISS VISE COMPANY, MAKERS**  
 106-110 La Fayette St., New York, 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**

**CUSTOM-MADE FLY SCREENS**

Our work is far superior to the usual output of local mills and has a style and finish not obtainable from those who do not make a specialty of fine screens. Our screens have waterproof coped joints and the frames are weather proofed before the finishing coats are applied. Best grades of Wire Cloth, enameled, galvanized, genuine bronze, fastened by the most approved methods. Intending purchasers may have free, by mail, samples of woods, finishes, wire cloth, and a copy of catalogue and price list. Agencies in nearly all large cities. Agents wanted in smaller cities. Special terms to Contractors and Builders.

**A. J. PHILLIPS & CO.**  
FENTON, MICH.  
25 Years' Experience 3 1/2 Acres of Floor

**Storm Sash and Screen Hanger No. 1**



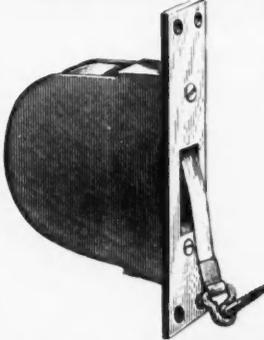
The time is drawing near at hand when carpenters and builders begin putting up storm sash and it might be well to say that the best and most convenient goods are always the cheapest in the end.

We make the only Ball and Socket Hangers on the market. One trial will convince you that they are the best.

Our No. 1 Fastener is made of the best steel wire. It holds the Sash firmly against the blind stop and prevents rattling.

MANUFACTURED BY THE  
**DIEHL NOVELTY CO. SHEBOYGAN WISCONSIN**

**CALDWELL SASH BALANCE**

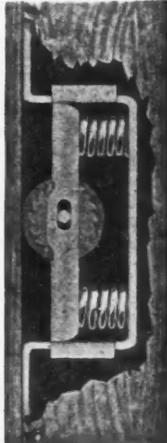


Does away with weights and cords, and VASTLY more durable. Makes sashes work perfectly. Permits greater window space in new work, as box frames are not necessary. May be applied to old windows without altering sashes or frames.

Write for circular to the  
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**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.

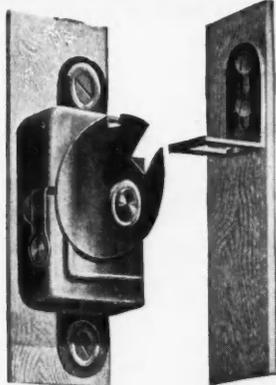
Prevent rattling and permit the window to be moved up and down with ease. Hold it safely at any point desired.

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

**Automatic Sash Holder Company**  
277 Broadway, New York City,

**The No. 21 Watrous Screen Door Catch**

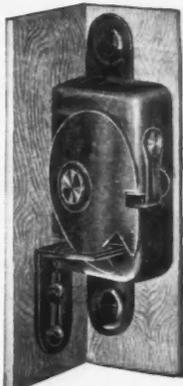
The Latest and Best Thing in Screen Door Catches  
**THE CATCH WITH THE POSITIVE LOCK**



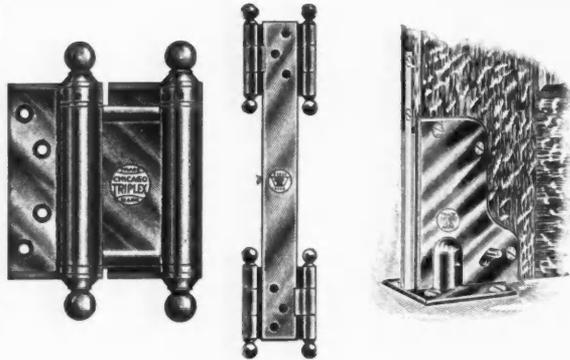
The case comes flush on door jamb. The strike is adjustable. Needs no templet. A child can set it without making a mistake. A light trip and a strong hold. Positive lock does away with necessity for hook-and-eye, or other fastener.

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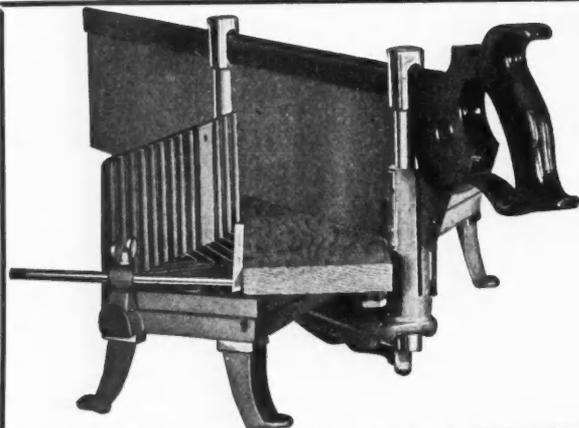


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**WE WISH** you all a happy and a prosperous New Year.

**BE FRIENDLY**—write occasionally. Make it your New Year's resolution to write us whenever you have a question to ask or a suggestion to offer.

### The Only Sure Way

**A** BUILDING contractor operating round and about St. Louis at last appears to have a sure-enough strangle hold on an old enemy of the building fraternity. He has discovered a sure and exact method of drawing plans so that they shall conform in detail and in cost with the completed work, and that with-

out the necessity of making any changes in the drawings.

According to a report in one of the local papers, this is the way he does it:

"Mr. and Mrs. S. P. Rhoades are building an artistic annex on the west side of their pleasant home on Monticello avenue. The lady says it is to be a pergola. Mr. Rhoades is of the opinion that it will turn out to be an open air sleeping porch, and the contractor, Mr. Hogg, who is building it, intimates that it may possibly be a fernery. He says: 'You can't tell until you see the plans. When I get the plans drawn, anyone can tell at a glance what it is. I shall not draw any plans until it is finished. Some builders draw their plans first, but, if you notice, they change them a whole lot. When it is all done I will draw my plans, and it will not be necessary to make any changes. They will all have been made. Then we will know whether it is a pergola or a sewing room.'"

### The Busy Little Ventilating Arrow

**N**EARLY everyone has had his laugh at the liberal use often made of arrows to show the course supposed to be followed by air in ventilating systems or hot gases through heating apparatus. A writer in the *Chicago Post* shows a keenness that would not ordinarily be looked for in a layman when he says:

"We have sometimes wondered if there was any exercise of the mind more purely speculative than the attempts to work out mechanical systems of ventilation. Given a hall or a public building, the problem is to trace a steady stream of graceful flowing arrows from the outside air through the place, including all the nooks and corners, and out again.

"The more graceful and enterprising the arrows, the better the system. A really good diagrammatic arrow has imagination, indignation, a sense of duty. It gets inside the room or hall and looks around and sees a lot of lowering carbon dioxide in a corner and sweeps straight at it. 'Out with you!' says the ventilating arrow, 'these precincts are mine.'

"Every architect has his quiver full of these arrows,

but very few of his clients ever succeed in getting a glimpse of them. Sometimes—it may be—it is their own fault. They don't meet the architect and his arrows half way. They complain of drafts down the back of their necks or around their feet. And in the case of most public halls and schoolrooms the carbon dioxide gets so heavy and inert that it takes complete possession of the place and the fresh air arrows scarcely get a peep within."



### No More Coal Bins of White Enamel

REPORT has it that no more bath tubs will be installed in the houses to be built for the foreign workmen employed by the various subsidiary companies of the United States Steel Corporation at Gary, Ind.

Early last month Architect D. F. Creighton of Pittsburgh made application for a building permit in behalf of the American Bridge Company, which intends to erect a score of concrete houses in the western part of the city. It was noticed that the plans called for all modern conveniences, with the exception of the bath tubs.

"Three years ago," said a steel corporation official, "we erected sixty well-appointed houses for foreign workmen and their families, and placed bath tubs in each one. A year later a report was wanted from New York as to how they were taking to the tubs. An inspection revealed the fact that not in one instance was the bath tub ever used. We found that they were being utilized as coal bins, etc. So we decided that it was best to omit the tubs."



### To Encourage Good Construction

THE secretary of the Minnesota Chapter of the American Institute of Architects, L. A. Lamoreaux, suggests that municipalities should encourage the construction of fire proof buildings by reducing the taxes on such buildings for a term of years. He holds that fire proof construction is so great a benefit to the community as a whole, because of its value as a fire stop in the case of a conflagration, that the municipalities can well afford to encourage it.

The saving in insurance rates, material as it is, is often not sufficient to induce owners to adopt the safest construction, but if the municipalities would add another inducement by the reduction of taxation, the number of such structures would be greatly increased.

Many towns make a practice of giving new industries free sites or building, exemption from taxation for a term of years, cheap fuel or free water as an inducement to locate. It would be quite as proper and as much a public benefit to offer concessions to secure superior construction, as in addition to the greater protection to life and property of tenants, every such building serves as a fire stop instead of a conflagration breeder.



WHAT you know is a club for yourself. What you don't know is a meat-ax for the other fellow.

### Sized-Up at Last

"Why don't you fix your dwelling?" asked the architect.

"It's a matter of pride with me," replied Mr. Corn-tossel. "Times are pretty good with me now, and I don't want these people comin' around sayin', 'Ain't that a neat farmhouse!' I want 'em to say, 'Ain't that a cute bungalow!'"

### As They Say in Siam

This is an extract from a Siamese paper that has an English column for foreign readers: "Shooting Outrage—O Fearful Agony.—Khoo Tong was a man of Langoon and on his return accidentally shot at by some miscreant scoundrels. Untimely death, oh fearful! All men expressed their mourn. The cowardice dogs is still at large."—*Everybody's*.

### A New One in Sylvics

The teacher had been reading to the class about the great forests of America. "And now, boys," she announced afterwards, "which one of you can tell me the pine that has the longest and sharpest needles?" Up went a hand in the front row. "Well, Tommy?" "The porcupine, ma'am."—*Chicago News*.

### Truth is Best

Farmer—Here is a letter from city folks anserwin' our ad., Mirandy. They want ter know if there's a bath in the house. What'll I tell 'em?

His Wife—Tell 'em the truth. Tell 'em if they need a bath, they'd better take it afore they come.

### You Couldn't Blame Him

Mrs. Bangs—Do you know, I'm afraid my husband is given to saying things behind my back?

Miss Bright—Well, dear, perhaps the poor fellow cannot get the hooks and eyes to match properly.

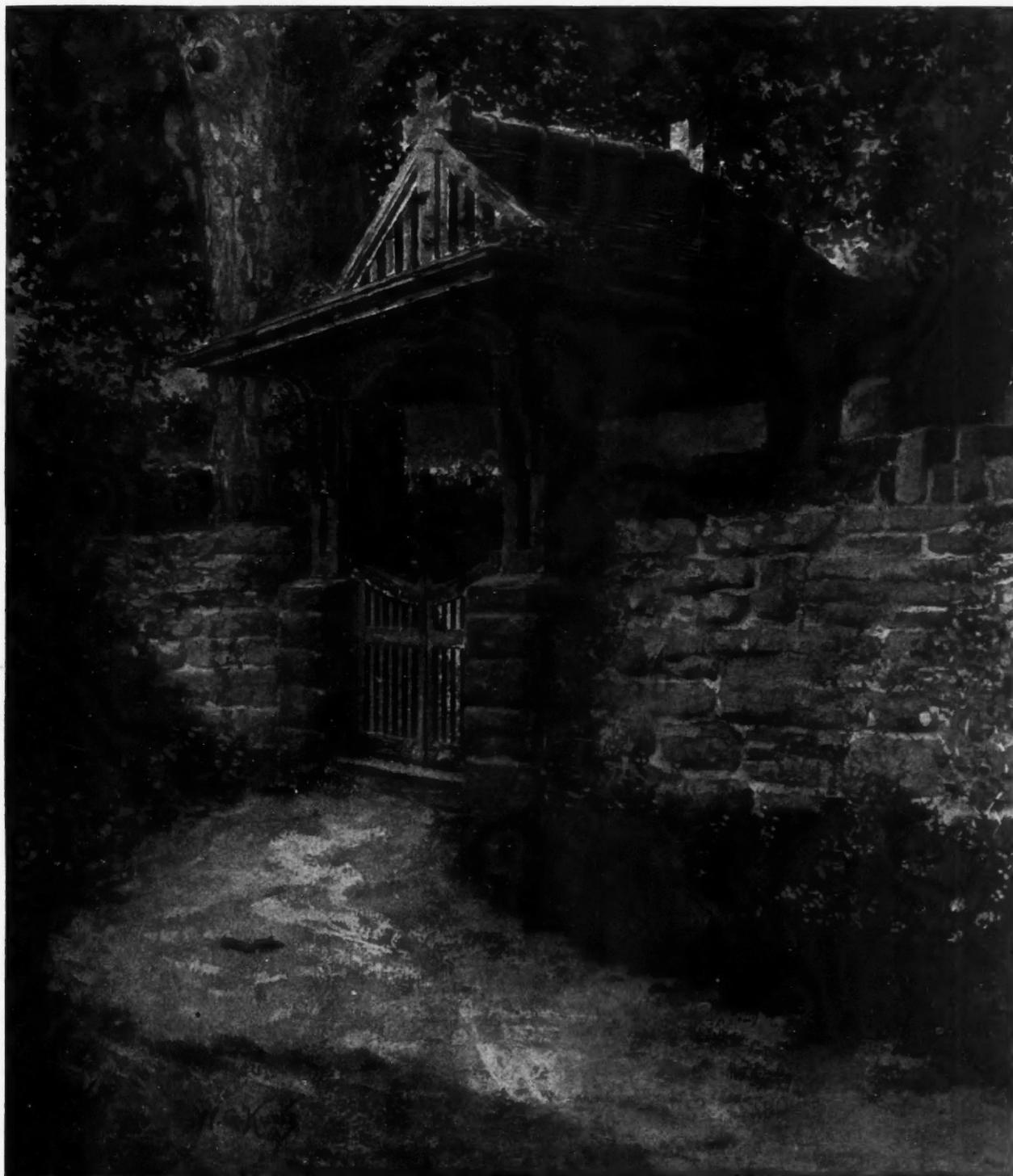
### The Second Fiddle

Todgers—Ah, Count, allow me to introduce you to Mr. Saton.

Count—It ees a great pleasure for me to meet a musician like you, monsieur. I hear zat you and your family play ze music.

Saton—Me?—why, I don't know anything about music!

Count—Non? Zey tell me all around zat you play second fiddle to your wife.



## A Garden Gate Architecturally Treated

**I**N THIS country we seldom appreciate the full artistic possibilities of gate ways. At least we make very little use of them architecturally, either for entrance gates of noble proportions and imposing character or for the more intimate yet no less attractive garden gate ways.

Back in England and in Germany these features have been employed with fine effect for many years. Every place, big and little, has one; and it is said that

one can tell not only the size of the estate but also the disposition and religion of its owner by the looks of the entrance gate

The illustration herewith is a half-tone reproduction of a very beautiful water color painting by a skilled artist. It shows a design especially worked out for a sheltered gate way in a stone wall. It would make an appropriate and striking adjunct to a suburban house of Elizabethan design.

## The Oldest Buildings in America

By George E. Walsh

Photographs By W. J. Harris

**I**F ONE were asked where the oldest houses in the United States could be found, he might at first think of the old New England towns and then possibly suggest the crumbling Missions of California or some old Dutch structure on Manhattan. But in all of these guesses he would be far from right. We must go South—far South—to find the oldest existing buildings. St. Augustine in Florida is not only the oldest city in the United States, but it has still in fair condition a number of the oldest structures in this country. St. Augustine disputes with Santa Fe, N. M., the honor of being our oldest continuously populated settlement. Founded in 1565, many of the buildings and fortifica-

with their miniature balconies and walled gardens, crowded close together in the narrowest sort of streets, stand the modern structures of the new St. Augustine—the palatial hotels of coquina rock! The fashion and wealth of a continent flock to this Southern winter resort, and all that modern architecture can do for a city is enlisted in the work of making St. Augustine a veritable city of beautiful houses and hotels.

But the typical resident of St. Augustine treasures most of all its ancient structures. It has the oldest postoffice building in the country, and despite its age of centuries it is a remarkably attractive building today. It was built in 1600; but it has been modified and re-



"Oldest House" in America—Though Kept in Repair it is Essentially the Same as When Erected Three Centuries Ago

tions erected by the Spaniards in the early days of the community are yet standing.

The old and new St. Augustine is a city of contrasts.

The old Spanish quarters are still untouched by the hand of the vandal so far as possible, and the relics of the earliest settlers offer attractions to the sight-seers. Alongside of these queer old Spanish houses,

paired a good many times since that date. Still the simple classical lines of the building are preserved. It is naturally one of the sights of the town. It was not originally built as a postoffice, and through its long period of existence it has witnessed many changing conditions. Sleepy old St. Augustine has always been a little outside of the great internal revolutions and

excitements that have disturbed the calmness of the country's life, and her buildings have not been injured or demolished by riots, wars or fires. The old post-office building is further enhanced in beauty by the tropical setting of trees and shrubbery.

The oldest Trinity Episcopal church in the United States is also located in St. Augustine. It is another one of the landmarks of the town. It is a remarkably



Catholic Cathedral at St. Augustine

fine example of early church architecture, and contrasts sharply with the first Catholic Church in America located in the same city. The latter shows its distinct Spanish or Moorish origin, and suggests the Californian missions, while the former is purely old English in its architecture. The shingled tower and steeple



Old Fort San Marco Started by the Spaniards Soon After the Founding of St. Augustine in 1565



Old Spanish Governor's House—Now the U. S. Post Office

are well proportioned and carry out simply the lines of the rest of the building. The whole building is suggestive of rest and simplicity, and its quiet grandeur is one of the features of its effectiveness. The Roman Catholic Cathedral, which is claimed to be the oldest Catholic church in this country, was built in 1793. The tower has four embrasures with bells hanging in them. The building itself is in excellent state of preservation, and the walls and foundations show great strength and durability. The church has been repaired and renovated at various times, but not rebuilt in the ordinary meaning of that term. All improvements have been made with the idea of preserving the original architectural lines.

The oldest existing house in the United States is a small two-story Spanish structure, with the lower half built of coquina rock and the upper part finished off with wood and shingles. This house has the reputation of being over three centuries old. Not far from it on another narrow Spanish street is the oldest frame



Trinity Episcopal Church—Oldest in America

house in the country. Neither one of these buildings has anything to recommend it except extreme age. They are interesting to those looking for very old things, but not to one interested in the early classical buildings of the country.

The other three structures, however, are quite different, and they offer fine studies in early architecture. The old postoffice building was originally the old Spanish governor's house, and was consequently built on generous lines and with considerable attempt at beauty. The old Spanish cathedral with its Moorish belfry was also the highest expression of the religious architecture

Marion) in the northern part of St. Augustine is an ancient and well preserved specimen of Spanish military architecture. This is undoubtedly the oldest fort in the country, for while it was not completed until 1756 it was commenced shortly after the Spanish settled on the site of St. Augustine in 1565. This old fort is constructed of coquina, a curious shelly conglomerate from Anastasia island, which is easily quarried, but which grows very hard from exposure. The old fort covered four acres, and it has a moat and outworks, walls 21 feet high, bastions at the corners, dungeons and subterranean passages. It overlooks the sea, and is a fine relic of the long ago. The walls in places have crumbled somewhat, but they still show the good work of their builders.

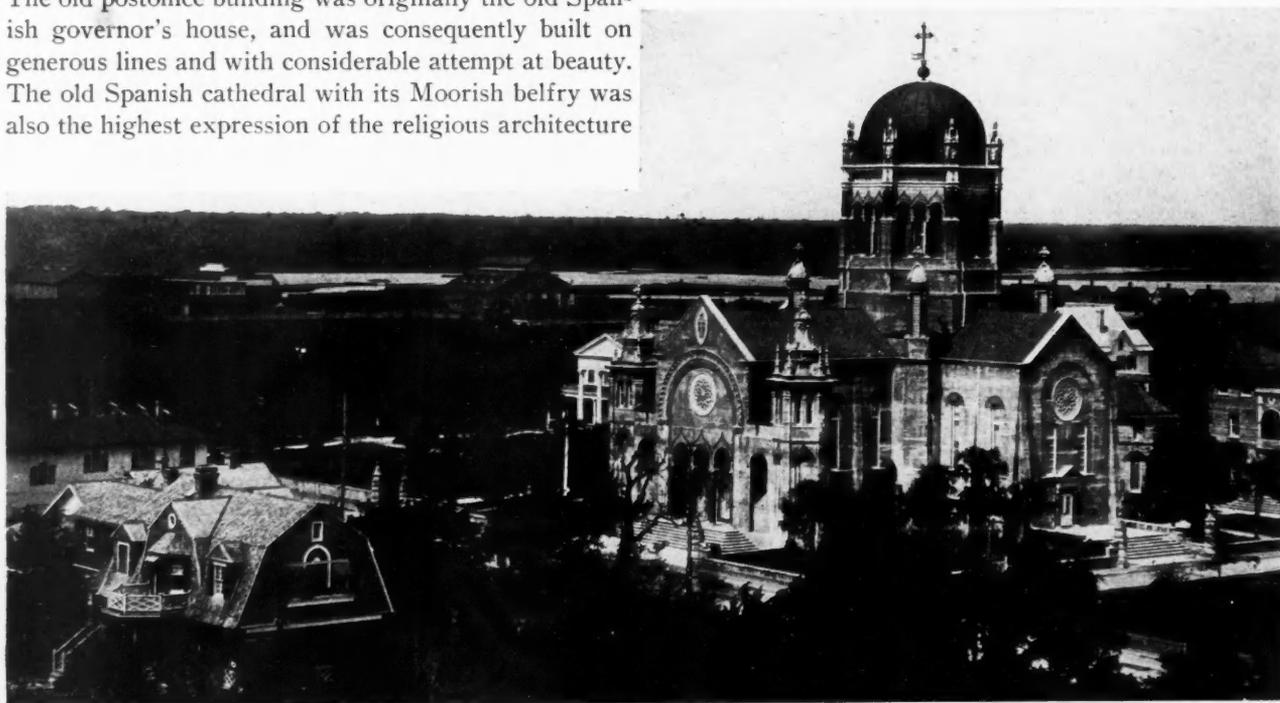


### Government to Build Workingmen's Houses

A recent dispatch from Vienna, Austria, states that the government has decided to devote \$5,000,000 to the erection of workingmen's dwellings in that city.

The money will be lent at 4 per cent interest to public bodies and building societies to the extent of nine-tenths of the value of the property owned by them.

It is hoped through the creation of this fund to relieve the present hardship suffered by the workmen,



One of the Modern Buildings at St. Augustine—The Flagler Memorial Church

of the day. The Episcopal church is of modern Gothic and represented the religious mind of the English settlers.

The old fort of San Marco (now called Fort

who are compelled to pay exorbitant rents for miserable accommodations and who frequently are unable to find any shelter, especially if they have families of children.

## Use of Tile in the Modern Home

THE ORNAMENTAL, SANITARY AND ENDURING QUALITIES OF BAKED CLAY TILE WHICH RECOMMEND A FREER USE OF THIS MATERIAL IN MODERN WORK

By F. W. Walker

ONE of the strongest indications of the material prosperity of this country at the beginning of the twentieth century is the extensive building of new homes in the outskirts of all our cities and in the suburban districts. What might be termed the average twentieth century home is a house costing only a few thousand dollars, the purchase of which is within the power of almost any hard-working American citizen who is willing to invest each year a part of his income to establish a home. Yet the average American house is today a far more substantial structure than that of only a few years ago. The building materials are usually stone, brick, cement or other inorganic substances, which are claimed to be more substantial and durable than the wood which they have replaced.

Modern conveniences and sanitary arrangements, which a few years ago were even unthought of, are to be found today in almost every new building. The extensive use of the tiled floor and wall is but one of the several indications of the gradual substitution of inorganic and sanitary building materials for wood.

It is not much more than a generation ago that tile was introduced as a floor and wall covering in the American home.

Its water-proof and sanitary properties made the tiled floor and wall especially appropriate for the bath room. As it was used almost exclusively because of its cleanliness, the first bath-room tiling in this country was nearly always white. Gradually, however, the ornamental possibilities of tiling, known for centuries in Europe, began to be realized also in this country. However unintentional it may have been, the American tiled bathroom, with its modern open plumbing fixtures, soon became in appearance one of the most attractive rooms in the house. The somewhat glaring monotony of the white floors and wall was relieved more and more by the use of colored tile, both glazed and unglazed and by the application of ceramic mosaic designs worked out in color.

In addition to cleanliness and beauty, one of the strongest points in favor of tiling as a floor and wall covering is its durability. The clay out of which it is made can be baked so hard that even a steel blade of a knife will not scratch it. This fact makes it especially good as a floor covering, because it is not injured by the nails of the shoe which are the most destructive agents of every other flooring material.

The appearance of the vestibule of a house is especially important because it is the first part which the stranger sees, while waiting for the door-bell to be answered. Consequently every house-keeper who takes pride in the appearance of her home should pay

proper attention to the vestibule. About the only material which always looks bright and clean, which can be easily rinsed off with the hose and which never shows signs of wear or age is clay tile. Its substantial appearance always makes it appropriate as a covering for the floor and wainscoting of the vestibule. As the clay tile can be molded into any shape and baked in almost any color, the decorative possibilities of tiling or ceramic mosaic are practically unlimited. Ceramic mosaic makes an excellent flooring for the

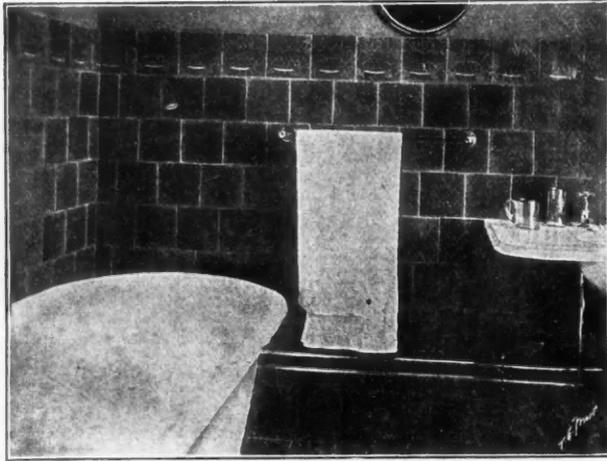


An Unusual Reception Room in Which Tiles Have Been Used on the Floor

vestibule and it is now being used also for the wainscoting.

The spread of modern ideas of sanitation and scientific cleanliness has brought about the adoption of tiling as the most suitable covering for the floors and walls of the kitchen. In culinary operations, the spilling of grease or food products of some kinds upon the floor is almost inevitable. If the kitchen floor is made of wood, this organic matter is absorbed by it, or passes into the cracks between the boards. Here it decomposes and breeds micro-organisms of all kinds. No amount of scrubbing will keep the wooden floor in the kitchen in a sanitary condition. It may be made to look very bright and clean, but that is all. The usual oilcloth, linoleum, or rubber tile covering which is laid over the wooden floor of the kitchen lessens the work of the domestic servants and prevents the wood from absorbing some of the organic matter that is

spilled upon the floor. Some dirt and moisture, however, works its way under them, cannot evaporate, and causes the floor to rot. The dirt between the floor and the covering remains there until the latter is replaced, owing to its having been worn out.



A Modern Bathroom

The tiled floor to the contrary is non-absorbent; and any dirt spilled upon its surface may be removed as easily and as thoroughly as from an ordinary dinner plate. These facts make tiling a most appropriate covering for the floor and wainscoting of the kitchen which according to modern ideas must be as sanitary

in all of its arrangements, as is the operating room of a hospital. The idea of a sanitary kitchen is fast becoming popular in this country and to those who are quite familiar with the subject, sanitation in the kitchen means a tiled floor and wall together with modern exposed plumbing. A truly sanitary kitchen can be quite safely flushed out with a hose.

In suburban dwellings, where out door life is a special feature, the porch is quite an important part of the house. The same arguments that favor tiling in the vestibule apply with even greater force to the porch floor. In suburban residences, the porch floor is beyond all doubt the most abused part of the house. During several months of the year it is covered with snow or rain; during others dried by a baking hot sun. The only condition under which wood or any other organic substance can withstand this action of the elements is where it is so slanted that rain water will run off of it. As the wooden porch floor cannot be sufficiently slanted it is always the first part of the house to show signs of wear and decay. The clay tile, however, is so durable that a tiled porch will outlast the building in which it is placed. If its design is selected with taste and made appropriate to the surroundings, the tiled porch will always be ornamental. It is likewise very easy to clean. Owing to the importance of the appearance of the porch a tiled floor is as appropriate here as in the vestibule.

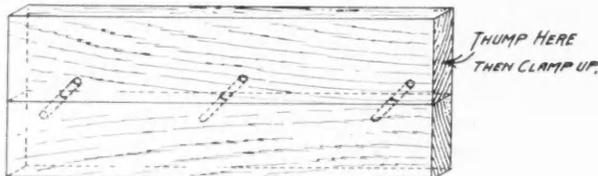
## Shop Kinks

A NUMBER OF HELPS, HINTS AND IDEAS ON MILL WORKING, CABINET MAKING, AND CARPENTRY WORK FROM THE EXPERIENCE OF A SHOP FOREMAN

By Wm. C. Jasbury

**O**FTIMES mechanics in ordering such material as stair strings, treads, counter tops, wide window stools and other pieces of considerable width, will reject the material when it is delivered to them and send it back to the mill because of its being warped. The best and only way to straighten or warp back a piece of wide stuff is to put, on the floor or other suitable place, a layer of wet saw dust (from soft wood) the same width and length of the warped board; then lay the concave side down and in ten or twelve hours it will be as flat as the proverbial pan cake.

Carpenters and cabinet makers when doweling two pieces together should try to put the dowels



Slanting Dowels Best

in on the slant so that the piece can be hammered on the end to make a tight joint; also such a joint cannot pull apart as easily as if the dowels were

placed in straight. This form of doweling can be used in many places to better satisfaction than the straight dowel.

A friend of mine (I haven't many) told me that yellow locust posts in the ground would last forever; he knew it to be a fact for his father had tried it.

In doweling hard wood together where strength must be assured, rip a slot or kerf through the

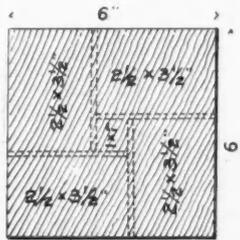


Dowel with Groove for Particular Work

dowel lengthwise to let out the air; this also gives the glue a better hold. (See the illustration. It is not a cigarette; it is meant to represent the dowel.)

I once heard of a shop that had a job of panel work for quick delivery. Not having good stuff at hand for the panels some sound knot stuff was used; and the knots covered with thin canvas, then painted white. (They were to be finished in white enamel later.) How is that for taking a long shot? The backs were painted lead color to help out the fake.

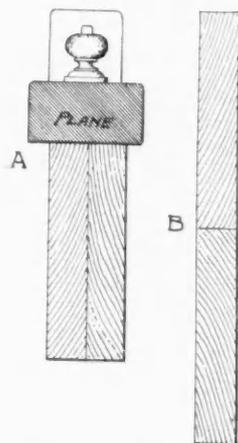
I have seen this done many times in getting out rail. The sawyer would cut up a 6 by 6 inch square timber into four pieces, 2½ by 3½ inches in size, out of the one piece and have a 1 by 1 inch piece to spare.



Ingenius Resawing

The proper way to put paper veneer on a round column, pillar, cylinder, etc., is first to wet the outside of the veneer, then spread the glue on the inside, care being taken not to get it on too thick, then wrap, letting the ends pass over each other, as shown in the sectional drawing. Mark on each end of the column, where the joint is wanted; then cut through both thicknesses with a sharp knife, or thin chisel, then use a flat pean veneering hammer to rub the joint briskly until the glue adheres properly.

A very good way to make a joint with two or more boards, such as a table top, sign board, drawing boards, etc., is to joint them together while clamped in the vise face to face. It matters not whether the joint is square across or not. Then take them apart and flop them apart and put edges together. The illustration at A shows the position of the boards when making the joint and at B shows them put together.



Making a Glue Joint

Some mechanics say that by putting soap on a nail in order to make it drive easily will also let it pull out easily. Others say that the soap will be scraped off as the nail finds new pasture. Who is who? It is a well-known fact with cabinet makers that glue will not stick stuff to end wood, because the end fiber, or cells, take up the glue. I've seen men overcome this by taking a piece of blacksmith's coarse rasp and placing it on the end of the piece and hitting it several times with a hammer to make indentures; some make saw kerfs for the same purpose.

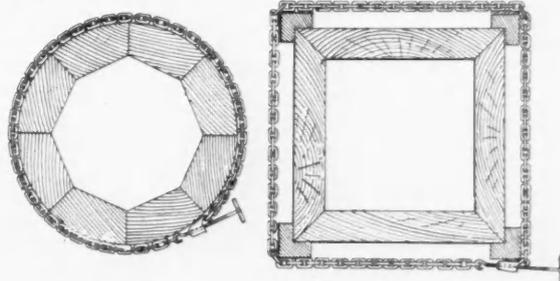
What would you think of a man of means like this? After starting to dig a cellar on his place for a residence, he did not like the looks of the dirt and had the hole filled up again and bought elsewhere, where the underground was more to his liking. Say! he must have been some kind of a ground hog prodigy. Eh?

Let me say something about the odd uses I've



A Veneering Trick

made and seen made of chain clamps. I have used them to hold columns together, large caps, bases,



The Proper Use for Chain Clamps

etc. I saw a millwright hook six 5-foot chains together in order to help hoist a machine from one story to another, also to hold up a line shaft while the hangers were being changed or replaced. Also for dragging a log out of the shop with the yard team attached.

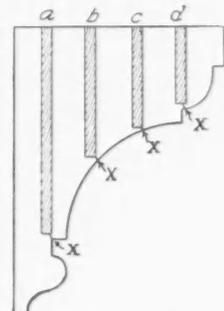
Very few carpenters and cabinet makers know how to kerf a piece of stuff to make the kerfs close up properly, or in other words, the proper spacing of the kerfs. Thus,—say the diameter of a circle is 4 feet. Take the radius (2 feet) on a rod measured back from one end, cut kerf the same depth as in the real piece and with the same saw that the real kerfs are to be cut with. Hold the opposite end of the rod down on bench and spring the 2-foot rod end up till the kerf closes, then meas-



Kerfing a Stick to a Circle

ure from it (the end) down to the bench and the distance, whatever it may be, is the proper distance apart that the kerfs should be to close up properly. The trial piece, or rod, should be of the same thickness as the material to be used.

Here is one. I know this was never in print, for I think I am the inventor. In bending moulding around a curved corner, porch or such places, run the moulding over a circle saw cutting the kerfs from the back, cutting nearly through; then rip edgings to fit the kerfs, then take a thin-bladed pocket knife and run along the face of the moulding through the thin shell in a member if possible. Tack the whole together and pull out the nails just before nailing the mold in place. The parts will creep a little when putting on but that will not matter. Referring to the illustration, "X" is where the knife cuts are to be made; a, b, c and d show the strips set into the kerfs before the knife is used. I have used this method with good success.



Kerfing Mould to Fit Curve



## The Trick of Putting Up Inside Trim

SOME PRACTICAL IDEAS AND SUGGESTIONS FROM AN OLD TIME CARPENTER CONCERNING THE SUPPOSEDLY DIFFICULT TASK OF WORKING ON FINE INTERIOR FINISH

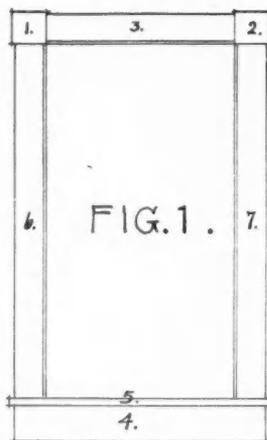
By D. L. Stoddard

**T**HOUSANDS of good mechanics go through this world and make fine outside workmen able to do all kinds of outside work including the most difficult roof work and framing, but never feel as if they are finished mechanics enough to put up interior finish, or do not think their tools are in sufficient trim to tackle putting up trim.

We see in the papers article after article on roof framing. Every year there appear articles on how to frame roofs with the steel square; also all kinds of articles on all kinds of framing and other kinds of rough outside work. But who ever saw an article on finishing, or how to put up trim?

Many good mechanics work all their lives on rough work—and much of it of a difficult nature too—and do not realize they are doing anything difficult, yet if you should ask them to put up some real fine trim they would get scared out and think that was something too fine and difficult for them.

Some years ago I was at headquarters and there came in a call for carpenters. Work was at the time pretty scarce; and one good mechanic there, who had grown gray in the service, looked very cheerful at the prospect of work; for he was needing money bad. But my how his countenance did drop when he learned



But I would not let him off that easy and told him to come on, I would put his tools in good shape so he could do the work. Not being able to get out of

it he came—and at a good old age learned that finishing was not a difficult job at all! He soon saw how foolish he had been all his life, and learned to have confidence in himself until today I know of no mechanic that I would trust with a real difficult and nice close job of finish as I would trust him, even if he is well along in years. He isn't one of these fellows who know it all; but he has learned to know that he can put up any ordinary finish just as well as most any of them and he can thoroughly be depended on.

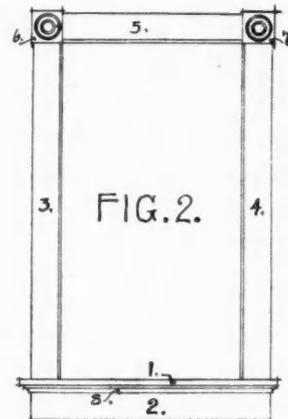
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and was not very long about it either; and I never knew whether that was the way they put up trim in the part of the country where he came from or not; but I just took it for granted that it was simply his style. However, I noticed after he saw we were laughing at him he noticed how we were getting at it, and he worked on more like the rest of us.

Now any careful mechanic who can saw to a line and drive a nail without missing it and knocking the wood work all to pieces can put up finish; and there's no great difference whether he puts it up like this carpenter or as some other carpenters do.

Fig 2 illustrates the way I case a window. Put in the stool, then the apron, left side casing, then the right and the head casing; and then put in the corner blocks and finish with the little mould under the stool.

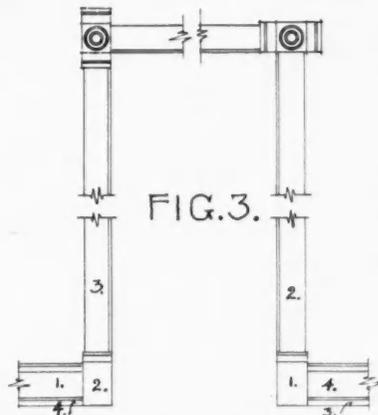
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material difference; but I think the best mechanics will agree with me that it is a little more the convenient way to get at it than the method first described.

Fig. 3 shows the casing for a door. You will note the corner block at the top is not square as in the first illustrations, but is longer than wide, a style that is used now and used to be used a great deal. Now you will note the left-hand one is put on up and down, or in other words put on right, while the one at the right is put on cross ways, or you might say put on the wrong way. I will admit that I never remember of seeing one actually put on that way, yet how often we see some one foolish enough to put square ones on the wrong way and contend with all kinds of argument that it is put on the right way.

I have come to the conclusion that, regardless of all argument, corner blocks should be put on with the grain of the wood running up and down and never running the other way, I care not what other say. And while I am perfectly willing to hear any one's different opinion and suppose every one has a right to his own opinion, the only excuse I am going to offer at this time is the simple reason that that's the way the



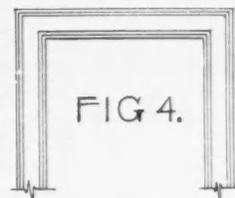
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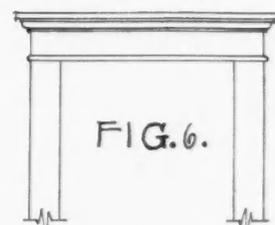
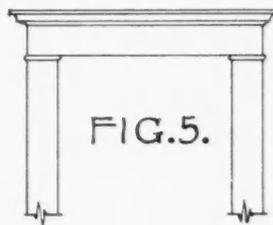
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Now while I have found this way a good one for a simple, one-piece casing, as illustrated, the same rule would naturally apply for all mitered casings, I care not how many members there might be.

Most casings with heads that extend across the side casings as in Fig. 5, are generally made on a bench and then nailed in place after the side casings are put up. This only shows a two-piece casing. A regular stock moulding and head casing is all there is of it. The little piece (pilaster finish) is nailed on the top of the side casings. Care should be given that the side casings are cut to line up with the head; and if you are casing a double or more windows together it is well to put your head casing up and mark the top of your casings so you will get them all cut in perfect line and exact length.

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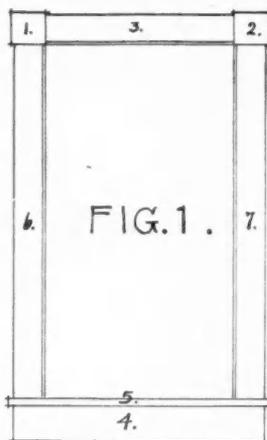
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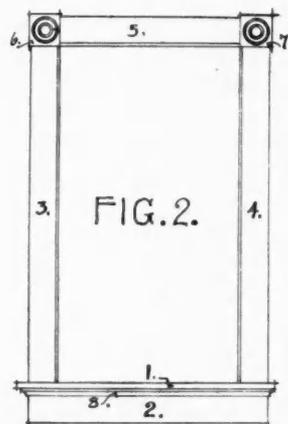


they wanted them to put up hard wood finish, and he said his tools were not in shape! So he was not one of the lucky ones that time; and no one was to blame only himself, who had worked all those years afraid of a good job of trim.

I felt sorry for him and one day when the opportunity came I took him with me and put up some fine finish. He at first begged off, saying his tools were not in shape.

But I would not let him off that easy and told him to come on, I would put his tools in good shape so he could do the work. Not being able to get out of

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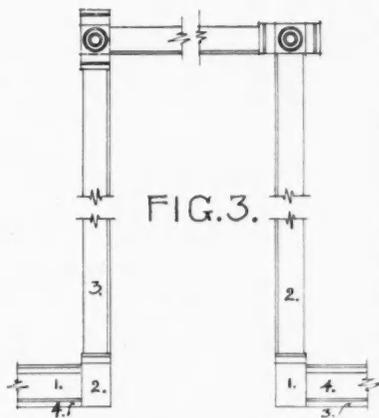
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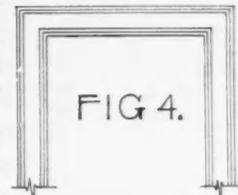
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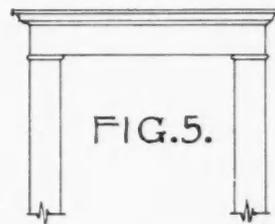
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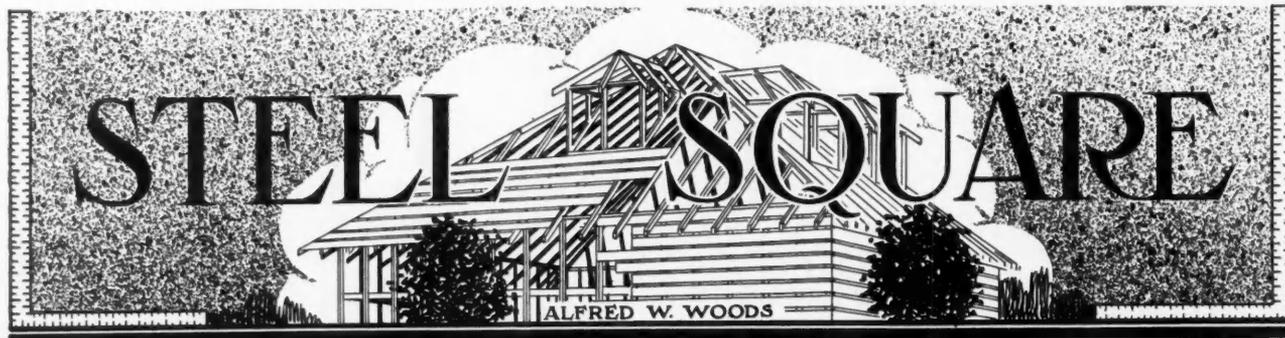
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## Problems of Roof Framing Solved

THIRTEENTH ARTICLE—FRAMING FOR STEEP ROOFS AND TOWERS—A SIMPLE METHOD OF FINDING THE PRINCIPLE CUTS FOR ANY ROOF BY SCALE

**W**E HAVE been asked by one of the readers of this magazine, to illustrate steep framing in a plain, simple way, showing what parts to take on the steel square, and that too without any given size for the base or the steepness of the pitch.

To begin with, we trust it is understood that there can be no difference between a low or high pitch, as far as the parts to take on the steel square are concerned, though it is necessary to use different scales to obtain the cuts with the aid of the steel square. The most convenient scale to use is to let one inch on the square represent one foot, which can be done for all ordinary pitches used for the general run of residence work. But for the very steep pitches, such as those used sometimes for steeples on church buildings, etc., it becomes necessary to reduce the scale so as to bring the work within the range of the steel square; that is, by letting the half inches on the square represent one foot. Thus the blade of the square being twenty-four inches long, would represent a forty-eight foot rise. For roofs steeper than this, it would be necessary to reduce the scale still more. This requires very accurate work, however, in placing the steel square to main-

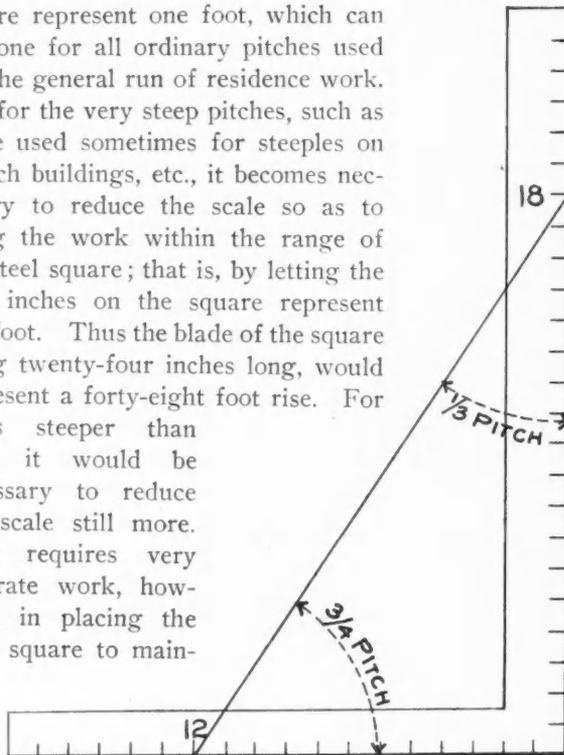


FIG. 37.

tain the proper lengths, as the least variation from the correct placing of the square will be magnified many times in the actual work. In fact, it would be well nigh impossible to place the square so as to be sure of obtaining absolutely correct lengths.

Did it ever occur to you that in cutting rafters for a steep pitch, you are also at the same time cutting rafters for a lower pitch? For example, 12 and 18 give the seat and plumb cut for the  $\frac{3}{4}$  pitch, they also, by reversing the run and rise, give the same cuts for the  $\frac{1}{3}$  pitch. See Fig. 37. Therefore, when the square is set for a very steep pitch, it also answers for a very low pitch. Twelve and 24 give the cuts for the full pitch; they also give the same for the  $\frac{1}{4}$  pitch. Working from both ways of the quadrant, 90 degrees, the pitches become more and more equalized till they come together at the meeting, or half-way place (45 degrees) when the cuts are the same on either side of the square.

But back to the question. In Fig. 38 is shown the plan and elevation of a moderately steep pitch. No dimension figures are given, simply the terms or names are given for the different parts of the roof. By these parts we will illustrate the parts to take on the steel square as follows:

The run and rise of the common rafter taken on the steel square, will give the seat and plum cuts. A line diagonally across from one member of the square to the other from these parts, will represent the length of the common rafter. The same parts as given for the hip will give the cuts and length, as mentioned above, for the hip. (In the illustration, the lengths of the rafters are illustrated to scale.)\*

The seat and plumb cuts for the common rafter also answer for the jack; but as the jack must rest against the hip, the plumb cut cannot run square across the back of the rafter but must be at an angle, which is generally known among carpenters as the "Side cut of the jack." A more proper name would be "top cut"; but custom rules, and we will call it side cut. To find this cut, take the distance from the foot of the jack to the corner and the jack's length, to scale on the square; and the side on which the length is taken will give the proper angle for the cut. Having found the angle for one, it answers for all of the others.

This is a general rule and applies to any building, square or out of square.

For the side cut of the hip, take its run and its

length to scale on the square and cut on the latter.

In the case of a tower, as in the illustration, the side cuts would run to a feather edge, which is not practical, as the ends do not have direct bearings against each other.

A better plan is shown in Fig. 39. The first pair, as in No. 1, rest square against each other. The second pair require a reduction in the length of the rafter, which is found by measuring square back from the plumb cut as found for the full length of the rafter and laying off another plumb line for the cut. The common rafters will also have to be reduced from their

across the back, of course, is the same as that of the jack.

For the backing of the hip, take the length of the hip and its rise and the latter will give the proper bevel; this, however, applies only to the square corner. The proportions taken for the side cut of the jack will also give the cut across the face of the roof

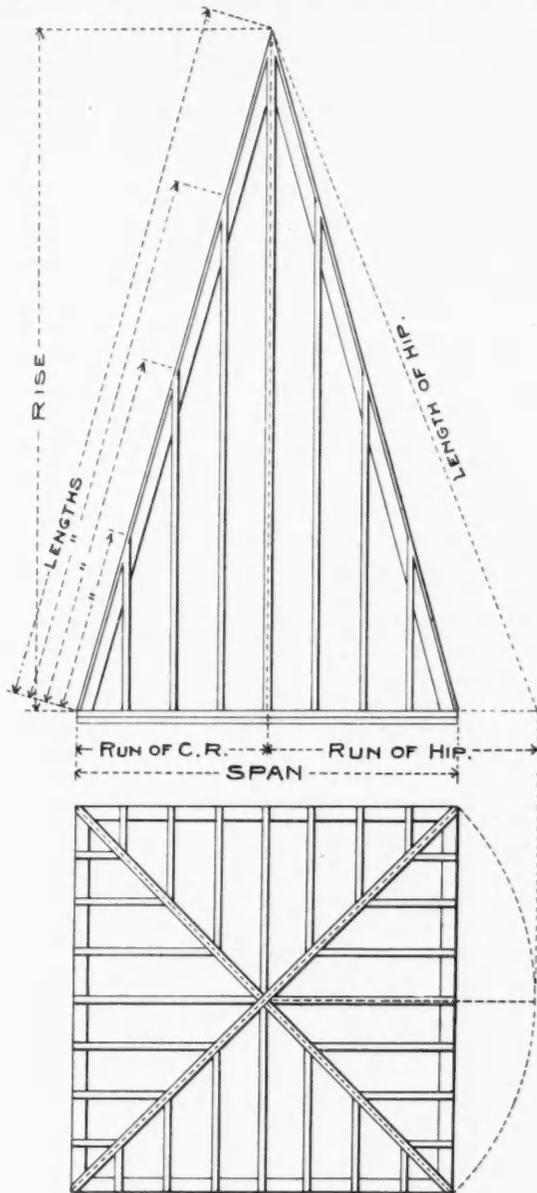


FIG. 38.

original lengths to fit in the angle formed by the angle of the hips, which is found by measuring square back from the plumb cut one-half the diagonal of the hip's thickness, which will give the proper length at the point. To obtain the plumb line, however, on the side for the proper cut, it is necessary to measure back still further, one-half of its own thickness. The angle

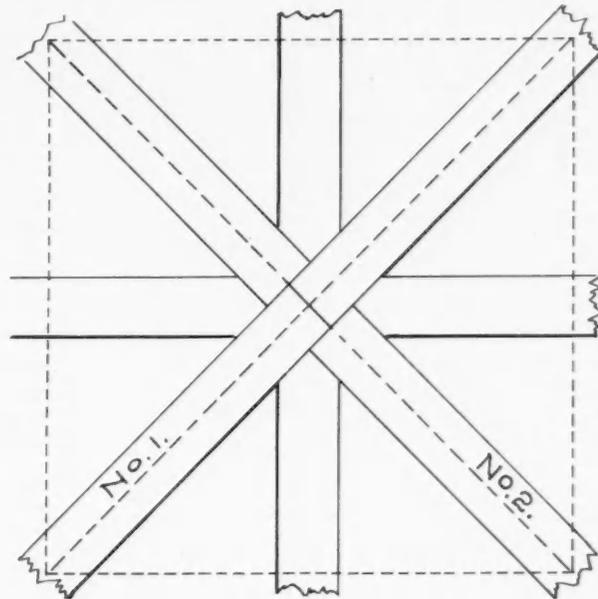


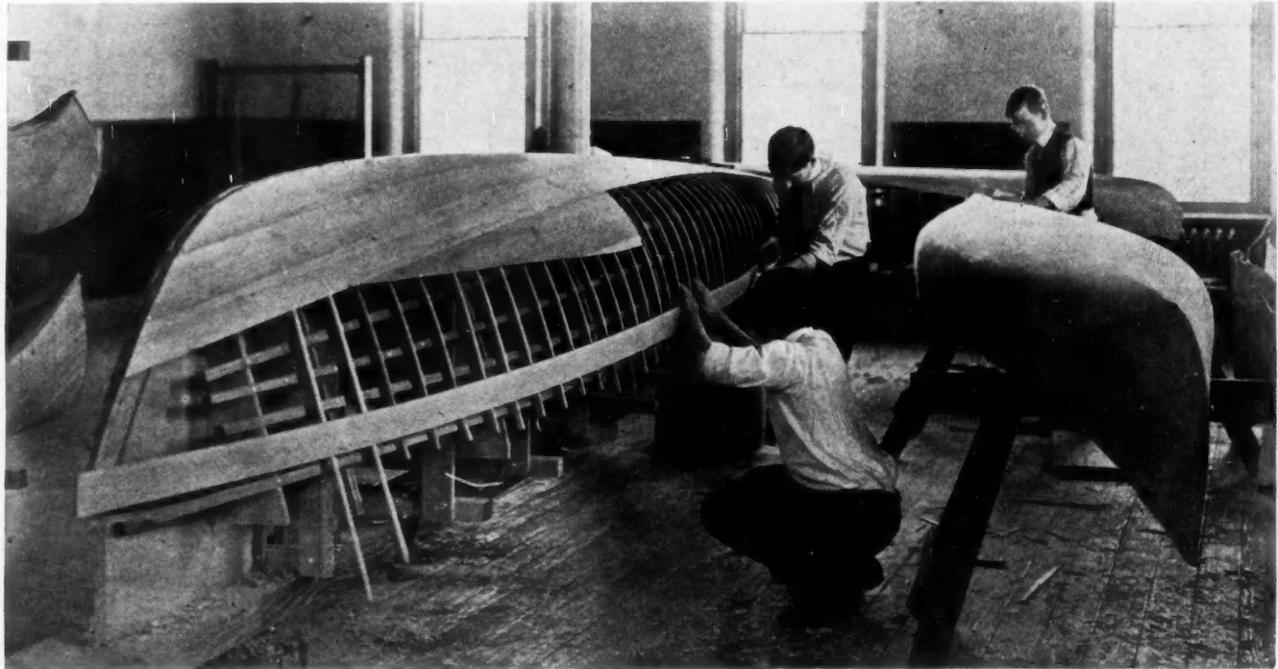
FIG. 39.

boards to fit over the hip, but the cut is the reverse on the square. For the miter for same, take the length of the common rafter and its rise and the cut will be found on the latter.



**Machine to Paint Under Side of Flooring**

Numerous architects have long appreciated the advantage of protecting flooring on the back, and some have specified that it be painted before being laid, the object being that after the flooring is laid at the building and the top surface filled, the porous wood is protected both top and bottom from the effect of moisture. The principal difficulty up to the present has been the expense of labor in handling so many short pieces incidental to end-matched flooring, and the time required to paint each piece separately without daubing the face side. An ingenious machine has recently been perfected, according to the *Woodworker*, which consists of mechanism for feeding flooring through the machine and spreading paint evenly on the under surface of the stock. This is done at the rate of 100 feet in length per minute. In connection with the machine are a conveyor and dryer. The flooring, in coming from the machine, is received by the conveyor and is moved automatically to the dryer, which receives it and delivers it after an interval thoroughly dry and ready to bundle. The flooring is not touched by hand from the time it is put into the machine until it is received from the dryer, thoroughly dry. In this way the danger of daubing the face side by handling is avoided.



## How to Build a Canoe

TIMELY POINTERS CONCERNING THIS ENJOYABLE AND PROFITABLE EMPLOYMENT FOR THE WINTER SEASON—AN APPROVED METHOD CLEARLY DESCRIBED

TO THE average boy or young man there are few enterprises more fascinating than the building of a canoe. Our innumerable small inland lakes and rivers furnish the required watery setting for this sport in almost every locality; and with the natural love of boating that every young fellow has, it is not strange that the building of boats and canoes should be such a popular undertaking for both the amateur and skilled workman during the dull winter season.

Carpenters, especially, take to this kind of work, building canoes sometimes for their own use, sometimes for others; their skill with fine tools and the care they are accustomed to use in their work making it very easy for them to turn out canoes to be proud of. As this is the season of the year when home and shop work of this kind is in order, the practical suggestions for canoe building presented here will be especially interesting. The methods are those employed in the manual training work of a well-known eastern preparatory school, and are to be recommended. It is through the courtesy of the *Manual Training Magazine* that both the illustrations and the text of this article are presented here.

Mr. Egbert S. Cary in describing the methods used writes as follows:

Our construction is quite different from that usually seen in that we use a narrow three-ply rib instead of the thin broad rib of the common type. This makes a light and exceedingly rigid boat, but is open to the objections that better wood must be used and that a grating in the bottom is more necessary than in the usual form.

The following specifications cover the most important features of our canoes:

Length, 15, 15½, and 17 feet; beam, 31 inches; depth amidships, 12 inches; planking, 3/16-inch white cedar; ribs, 3-ply, 2 cedar, 3/16-inch by ½-inch, 1 elm, ¼-inch by ½-inch, half round; stem and stern pieces, ¾-inch by ½-inch, elm; nails, 1-inch, No. 15, copper; inwale, 1-inch by ¾-inch, spruce; canvas, No. 10, finished with one coat filler, two enamel, one spar composition; woodwork finished one coat oil, one No. 1 preservative, two spar composition; decks and seat frames, oak or mahogany; rubbing and cap strips, ¼-inch by ¼-inch, spruce; bang irons, ⅜-inch, half round, brass; keel, flat, ½-inch by 3 inches at center, tapering to 1 inch.

We use the lines as shown in the drawing for all lengths of canoes, spacing the patterns proportionally. The following table gives the dimensions for making full-size drawings in the different sizes:

TABLE OF OFFSETS.

HEIGHT ABOVE BASE-LINE	DISTANCE FROM CENTER VERTICAL LINE AT PATTERN			
	1	2	3	4
2"	1 5/16	7 7/16	11 3/4	12 15/16
4"	4 5/16	10 9/16	14 5/8	15 11/16
6"	5 3/8	11 11/16	15 5/8	16 3/8
8"	5 7/8	12 1/16	15 11/16	16 3/4
10"	5 15/16	12	15 1/4	16 3/8
12"	5 7/8	11 7/16	14 5/8	15 3/4
Sheer	5 1/4	10 7/8	14 1/4	15 3/4
	HEIGHT ABOVE BASE-LINE AT PATTERN.			
	1	2	3	4
Keel	1 13/16	1 3/16	3/4	7/16
Sheer	17 1/4	13 1/2	13	13

The patterns are made by drawing the cross-section lines full size and then making a companion line inside of each at a distance depending upon the thickness of the planking, ribs and mold battens. In our case, using ¾-inch battens, this distance is 1 5/8



at the sheer line there are but two strips. This is done to avoid using an excessively thick inwale. Allowance is made on the pattern for this bevel which is shown in the section drawing of the gunwale.

The following points are observed in putting on the boards:

1. Use full length strips when possible.
2. Splice under ribs using  $\frac{1}{2}$ -inch bevel joint. (With wide rib construction use butt joint.)
3. Do not force boards to position. Cut them to fit.
4. Remember that it is the inside that shows when done.
5. Drill holes for all nails with a drill but little smaller than the nail and space about 1 inch apart.
6. Fasten boards to the stern pieces with  $\frac{5}{8}$ -inch F. H. brass screws.
7. Most important of all, as the planking proceeds remove the nails with which the ribs were fastened to the battens.

It is our practice to use an oak strip,  $1\frac{1}{4}$  by  $\frac{3}{16}$  inches, for the last board or sheer strake, which is soaked and bent into place. This makes a strong and neat finish and gives a hard wood into which to drive the tacks for the canvas. There are no nails placed below the middle of this strip because the ends of the ribs are cut off at least  $\frac{1}{2}$  inch below the top edge of the completed canoe. (See gunwale section.)

After the sheer strake is in place the ribs are sawed off below it and a little careful effort, pulling outward and upward at successive points, lifts the canoe from the mold. To prevent spreading, the gunwales are tied across in a few places and as soon as possible, the nails, beginning at the center, are clinched with light strokes turning the points along the grain of the rib.

Two extra ribs are now put in at each end where there is quite a space, the ribs for which could not easily be bent on to the mold.

The inwale, which is usually put in before stretching the canvas, is made of straight-grained spruce soaked and bent on a form. When dry it is clamped in place while the positions of the ribs are marked, after which the holes are bored and cut out "U"-shaped and the strips beveled so that water and dirt will run out freely from the completed canoe.

A cap strip of  $\frac{1}{4}$ -inch elm is next bent around the stem and stern to give a good holding for the canvas tacks; then the outside is rasped to remove all inequalities and the boat is given a coat of raw oil.

The canoe is now ready for the canvas which is first stretched lengthwise as much as possible and kept under tension while stretching and tacking the sides. With carpenter's pincers and the edge of the canoe as a fulcrum the canvas is stretched to its limit and fastened with  $1\frac{1}{2}$ -ounce tacks spaced  $\frac{3}{4}$  inch apart. Beginning in the center, a few inches on each side alternately are tacked until near the ends there develops a tendency to wrinkle. The canvas is then cut on the middle line from the end to the point where it is under tension and after coating the surfaces to be joined with white lead, it is pulled around the end and tacked. Alternately working at the end and edge completes

the stretching without a wrinkle.

After many experiments we have settled upon the ordinary quartz paste as a canvas filler, although, if properly seasoned, white lead putty does very well. The filler is mixed with oil and japan drier to a consistency that will work easily with a brush, and a heavy coat is applied to the canvas. After standing for an hour or more the excess of oil is absorbed and the filler can then be rubbed down with a leather glove to a smooth finish.

Canoe enamel can be purchased at sporting goods stores, but we make our own by straining through cheesecloth a mixture of japan, ground color, and spar varnish.

No description of the finishing touches seems necessary except to mention that the rubbing strip is soaked and bent on the form used for the inwale, and that the keel is fastened from the inside with R. H. brass screws in copper washers, all holes through the canvas being treated with white lead.

A few years ago we made a small canvas-covered motorboat which proved quite satisfactory in spite of its rather crude design. Profiting by this experience we have obtained from the board of G. F. Crouch, naval architect, plans for an 18-foot runabout. These are well adapted to our construction, and the two boats in course of building give promise of being staunch and speedy little craft.

### Keeping Putty Soft

The question was recently asked a reader of *Brush and Pail* as to how to keep putty soft. He replied that the following will do the work all right:

Knead the putty to the consistency used for general use, then dip it in linseed oil, and cover it over with soft water (rain water is the best) and keep it air tight in a bucket. This trick might save a great many painters several nickels and dimes for fresh putty.

### To Estimate Weight of Castings

The following table is very useful for determining the weight of any casting before it is made by simply weighing the pattern. It should be noted that the weight of the core prints, if any, should be deducted.

Proportionate Weight of Castings to Weight of Patterns

A Pattern Weighing One Pound Made of	Cast Iron	Brass	Copper	Bronze	Bell Metal	Zinc
Pine of Fir	16	15.8	16.7	16.3	17.1	13.5
Oak	9	10.1	10.4	10.3	10.9	8.6
Beech	9.7	10.9	11.4	11.3	11.9	9.1
Linden	13.4	15.1	16.7	15.5	16.3	12.9
Pear	10.2	11.5	11.9	11.8	12.4	9.8
Birch	10.6	11.9	12.3	12.2	12.9	10.2
Alder	12.8	14.3	14.9	14.7	15.5	12.2
Mahogany	11.7	13.2	13.7	13.5	14.2	12.1
Brass	0.85	0.95	0.99	0.98	1.0	10.8

# DETAILS of CONSTRUCTION AND FINISH



CHARLES P. RAWSON



## Dining Room with Buffet—Colonial Stairway

CLEARLY DRAWN WORKING DETAILS TO SCALE SHOWING THE DESIGN AND CONSTRUCTION OF A BEAUTIFUL ARCHED CEILING DINING ROOM WITH BUILT IN BUFFET— ALSO ARRANGEMENT OF COLONIAL STAIRWAY

**M**ANY dining-rooms are now being built without the plate rail. In order to keep the room from being too plain many schemes have been proposed, one of the most effective being similar to that shown and detailed in the accompanying plate. This room has an arched ceiling, easily constructed by simply nailing 1 by 12 inch boards, sawed to the curve, to the regular joists before the lathing is done. An unusual and attractive effect is thus obtained at small cost. Directly below this arch the head casing of the doors and windows is continued entirely around the room, and forms the top also of the buffet.

Every room should have some structural or built-in feature as the center of interest, and in this case it is the buffet—low and broad in design and worked out in perfect conformity to the rest of the room. There are numerous mirrors and ample shelf, drawer and cupboard space. The adjoining closet fitted with shelves will prove a great convenience to the house-keeper.

The plan of the dining-room is given in the illustration at a scale of  $\frac{1}{8}$ -inch equals 1 foot. There are also two half-room elevations, one showing buffet, and one the outside wall; two sections and two plans of the buffet are shown, all at the scale of  $\frac{3}{8}$ -inch equals 1 foot. Details of all portions of the trim and construction are shown at the scale of  $1\frac{1}{2}$  inch equals 1 foot.

All woodwork is plain and without moulding of any sort. Almost all of this work could be done, if desired, by the carpenters on the job with but little help from the mill, and probably at a saving in cost. For this work we would suggest oak, stained a dark brown and finished dull as being the most appropriate wood.

A tinted ceiling in light yellow, and lower wall in dark yellow grass-cloth, a narrow frieze in yellows and browns just below the head casing would make a beautiful and home-like room.

### A Colonial Stairway

In the smaller cities there are erected a great many good residences, so-called Colonial in style; and it is common in these houses to give the hall a prominent place and something of its old time dignity as one

of the important rooms of the house. This is as it should be. However, in the small house there are often many considerations which prevent the use of the large hall, and many people object to the waste of the room and heat entailed by the open stairway, and prefer a living room containing a secluded stair or one entirely closed in and having merely a small entrance hall. In this case it is preferable by far to do away with the Colonial style entirely, and to have the house designed in a manner more appropriate to the requirements of the owner.

That the interior features may be carried out in the same general style as the outside, and as an assistance in the planning and building, we illustrate this month a simple Colonial stairway for use in a Colonial house with a central hall.

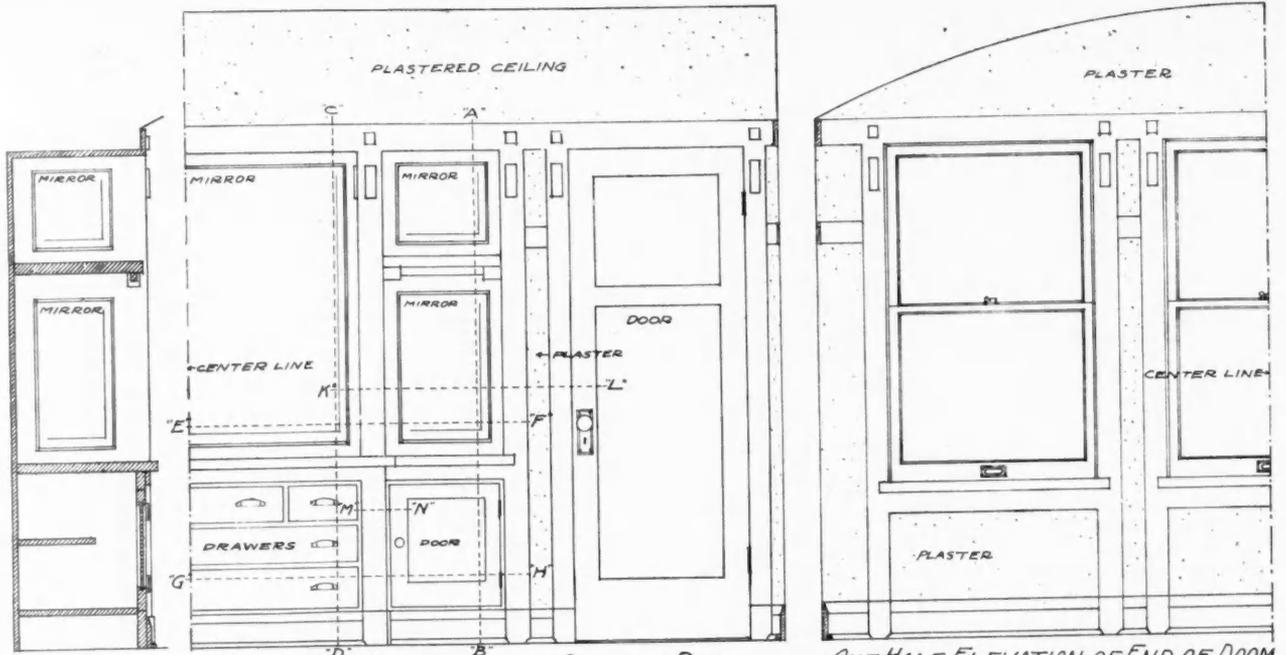
Two plans and two elevations are shown drawn to the scale of  $\frac{3}{4}$ -inch equals 1 foot. Every essential part is detailed one-half full size.

This entire stairway, as well as the hall which contains it, should be done in red birch. All treads, and the hand rail and all doors should be stained mahogany, varnished and rubbed, and all the balance of the woodwork should be finished in white enamel. Many ways in which the stair wall might be decorated could be described; one attractive way being to finish the plastered ceiling and cornice in white enamel, and paper the side walls, either in a forestry design in green or in a narrow yellow stripe with a narrow white "cut-out" as a finish at the top below the cornice.



### To Avoid Damage from Leaking Pipes

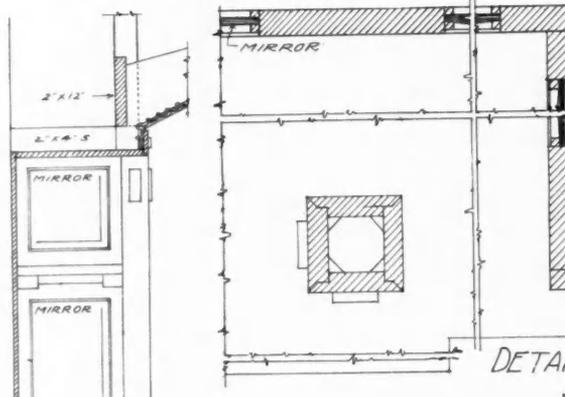
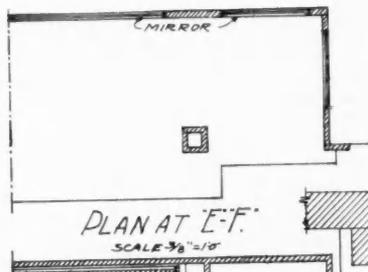
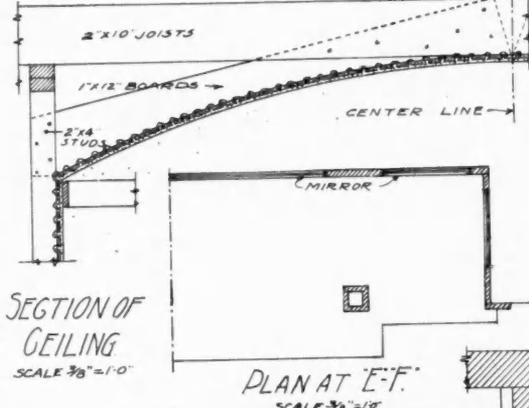
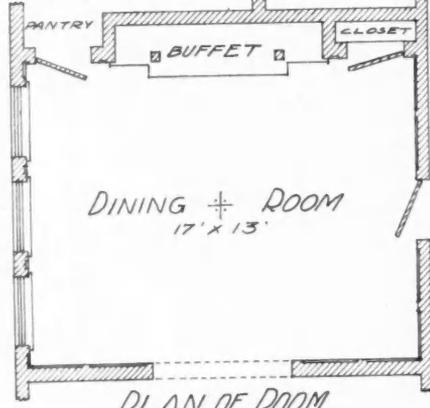
In most houses, if a water-pipe happens to leak somewhere between the partitions, the water runs down, soaks through the ceiling, causes the plaster to fall and ruins the rugs. No such catastrophe is possible in the house of an Evanston, Ill., man, however, for there is a drain surrounding each pipe, so that if a break should occur, the waste water would be carried through the laundry, where there is a valve, so that the water in each pipe may be shut off when repairs are required.



SECTION A-B SCALE 3/8"=1'-0"

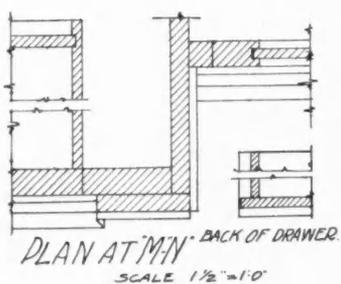
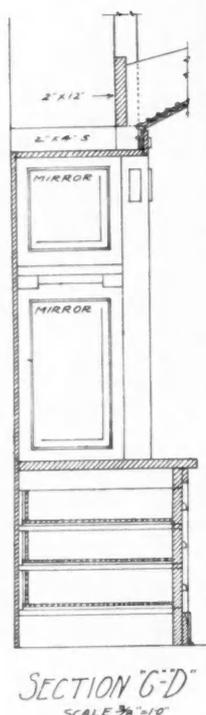
ONE HALF ELEVATION OF SIDE OF ROOM SCALE 3/8"=1'-0"

ONE HALF ELEVATION OF END OF ROOM SCALE 3/8"=1'-0"

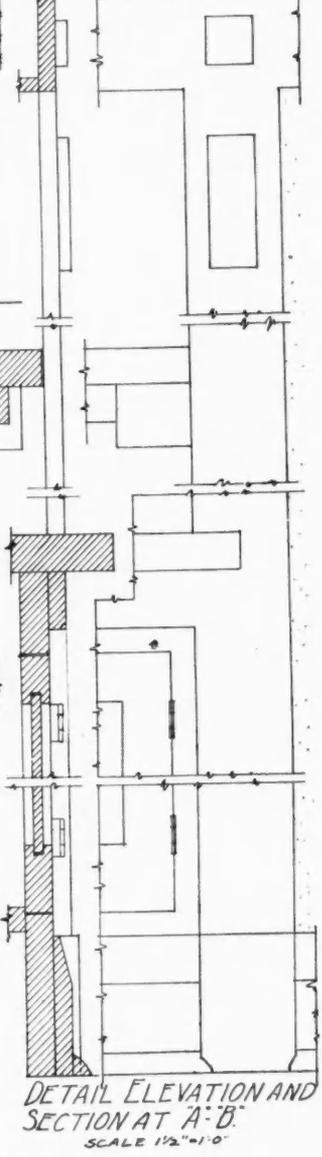


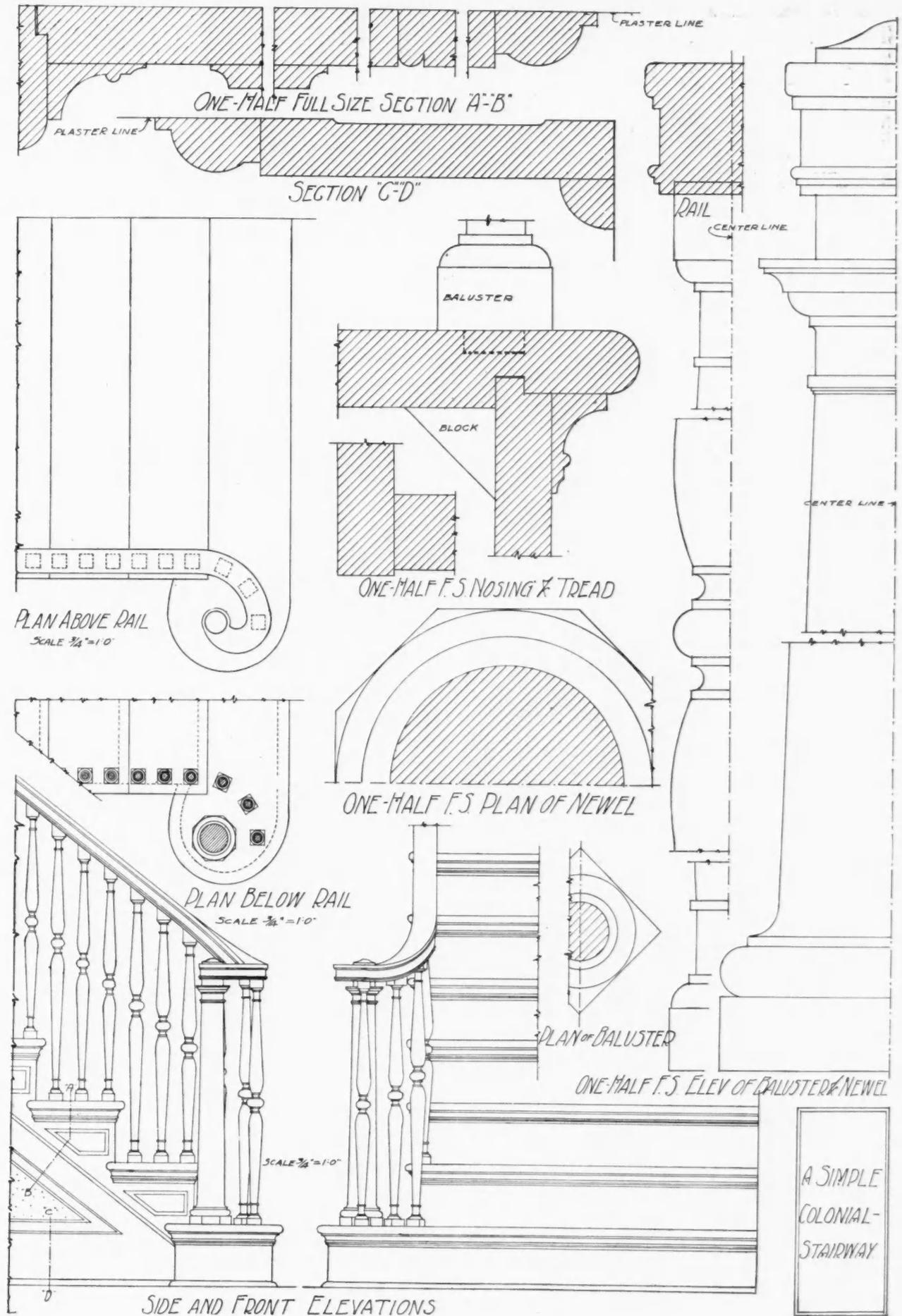
DETAIL PLAN AT K-L

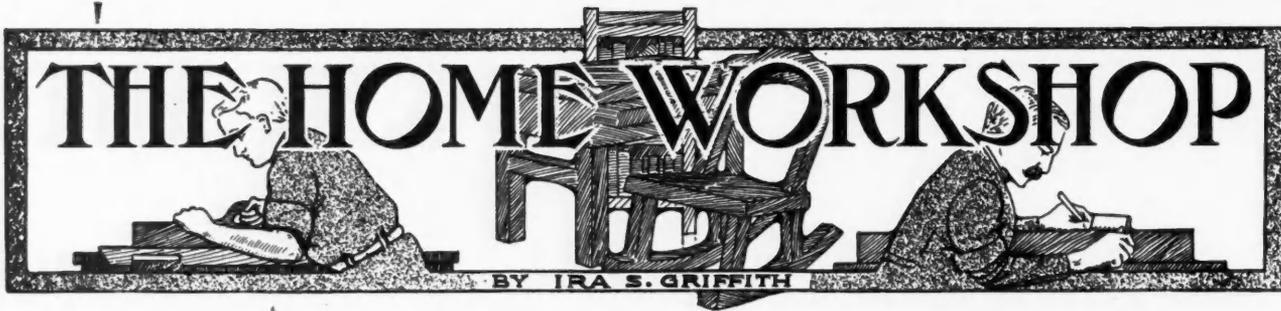
SCALE 1/2"=1'-0"



DETAILS OF DINING ROOM AND BUILT-IN-BUFFET







## Library Table and Piano Bench

COMPLETE DETAILED INSTRUCTIONS WITH WORKING DRAWINGS SHOWING HOW TO MAKE THESE TWO VALUABLE AND INTERESTING PIECES OF FURNITURE IN THE HOME SHOP

**T**HE first piece shown this month is a general utility table. It may be put to various uses. It is not difficult of construction. While the drawing shows no drawer, one may be made and inserted if so desired. If the table is to be used in the living portion of the house, it should be made of some hard wood, such as oak, so that it may be given a suitable finish. The following pieces will be needed:

### STOCK BILL FOR TABLE.

All stock except the posts is of  $\frac{7}{8}$ -inch thickness.

Top, 1 piece,  $24\frac{1}{2}$  by 43 inches, S-2-S.

Side rails, 2 pieces, 4 by 35 inches, S-4-S.

End rails, 2 pieces, 4 by 17 inches, S-4-S.

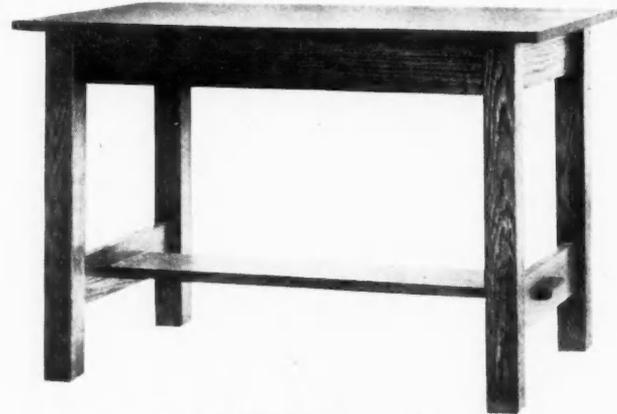
Lower end rails, 2 pieces, 4 by 17 inches, S-4-S.

Stretcher, 1 piece, 5 by  $37\frac{1}{2}$  inches, S-4-S.

Posts, 4 pieces,  $2\frac{3}{4}$  by  $2\frac{3}{4}$  inches by 29 inches, S-4-S.

If possible, it will be found advantageous to have the top built up at the mill. The surfacing of a piece as large as this can be more easily and cheaply done there. In this day of scarce lumber it is possible that the legs or posts may best be got of veneered stock. A post of this size made by veneering a hard wood of selected grain on a soft pine core has its advantages. The difficulty in seasoning large pieces of oak in a short time without the wood checking makes solid pieces expensive as well as hard to get. The lighter weight, too, of the veneered stock is in its favor.

Begin work by planing the edges and ends of the top so that it shall have the length and width specified in the drawing. Next square up the ends of the posts so that they shall all have the same length, twenty-nine inches. The top rails may now be cut to length. The



A Favorite Project for Home Craftsmen

ends need not be planed, merely sawed square; they are to be tenoned.

Since these rails are to rest within a small distance from the outer edges of the posts, it is best to shoulder them on one side only, the outer side. In shouldering the edges it will be well to give the upper edge a pretty

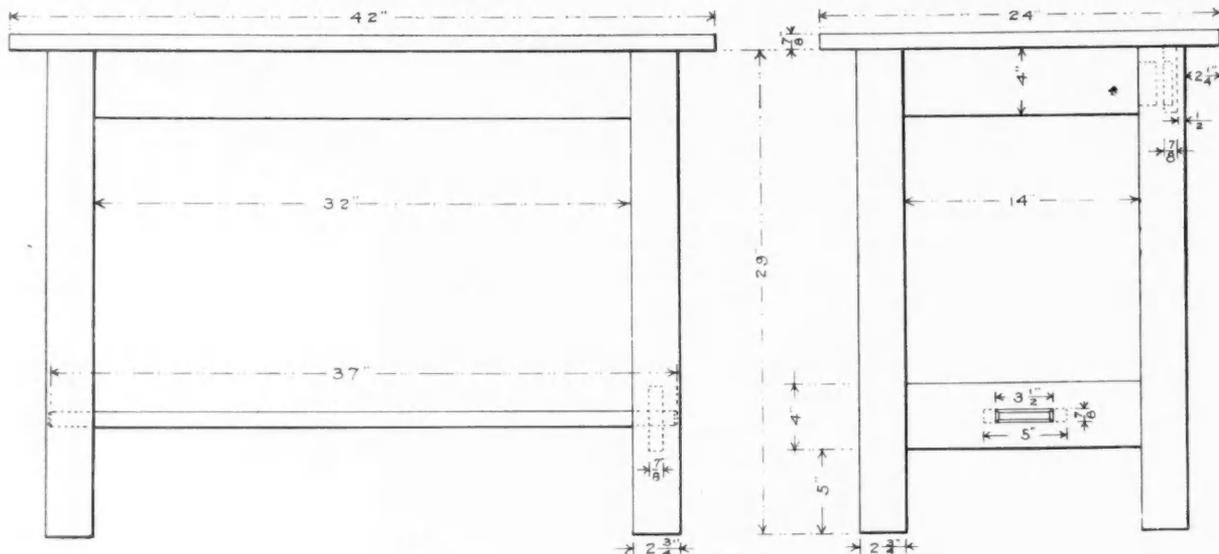


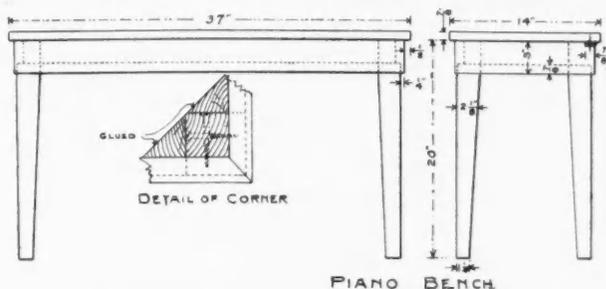
TABLE.

good shoulder to prevent any danger of its splitting out the end of the post when fitted.

The lower end rails are to be fitted in the center of the post and may, therefore, be tenoned with shoulders on all four surfaces.

The stretcher is to be tenoned with shoulders on the two edges only. The ends of the stretchers are to be chamfered as shown.

Lay out and cut the mortises in the posts, taking care to locate them properly. Beginners may aid their vizualizing by setting the posts upright in the positions



they are to occupy in the finished table and marking roughly as with penciled circle the locations of the mortises. The posts may then be taken down and laid on the bench side by side, their ends evened and the cross lines laid out accurately with rule and trysquare.

Thoroughly scrape and sandpaper all the parts and then assemble them, using good hot glue. Cabinet makers bar clamps will be needed to hold the parts together until the glue has set. Cold glues are often used, but they soften in moist atmosphere and loosen the joint. Put the ends of the table together first and after the glue has had time to set, place the stretcher and the side rails. The rails should make right angles with the posts; use the trysquare. The frame should square itself. To tell whether the frame is square or not, use two sticks and measure the diagonals. If they are not equal in length, saw a stick of length equal to the average length of the two diagonals and force it in place on what was the shorter diagonal.

There are various ways of fastening the top to the frame. An examination of any table that happens to be at hand will show how this can be done.

The table shown in the picture was made by a high school boy.

#### How to Make the Piano Bench

The piano bench is constructed plainly and with a receptacle for holding the music. The stock needed is as follows:

##### STOCK BILL FOR PIANO BENCH.

- Top, 1 piece,  $\frac{7}{8}$  by  $14\frac{1}{2}$  by  $37\frac{1}{2}$  inches, S-2-S.
- Bottom, 1 piece,  $\frac{7}{8}$  by 13 by 36 inches, S-2-S.
- Side rails, 2 pieces,  $\frac{7}{8}$  by  $3\frac{1}{4}$  by  $36\frac{1}{2}$  inches, S-2-S.
- End rails, 2 pieces,  $\frac{7}{8}$  by  $3\frac{1}{4}$  by  $13\frac{1}{2}$  inches, S-2-S.
- Legs, 4 pieces,  $2\frac{1}{8}$  by  $2\frac{1}{8}$  by  $20\frac{1}{2}$  inches, S-4-S.
- Corner blocks, 2 pieces,  $1\frac{1}{2}$  by  $1\frac{1}{2}$  by  $2\frac{1}{2}$  inches, S-4-S.

The top may be made first. After this, shape the posts. The outer surfaces are straight but the inner are to have a slanting surface. Lay out and rip the

tops of the posts so they may receive the rails, as shown in the drawing.

The rails are to be cut to length, mitering both ends of each rail. A miter box will be convenient.

Scrape the parts and assemble by affixing the rails to the legs with screws as shown in the detail drawing. It will be best to glue and fasten the mitered joints of the rails before placing the legs. Next fit and place the bottom. Before the side rails are placed they should have their lower edges rebated as the drawing shows, so that the bottom may be set therein.

After setting the bottom place the corner blocks as in the detail, using glue to keep them in position. These blocks help to stiffen the frame and also serve to do away with sharp corners that would catch and hold dust.

Place the top and hinge it as shown. Ordinary butt hinges are used—not loose pins—and they are set entirely in the rail. A lock and key might be added if desired. Ordinarily this is not necessary.

#### Best Method of Finishing

A good finish for both the table and the piano bench which is described herewith, is obtainable as follows: If the wood is coarse grained, such as oak, mahogany, walnut, etc., put on a coat of stain of whatever tint is desired. Water stains are best as they penetrate hard woods better than oil stains. Oil stains



Two Views of Piano Bench with Hinged Cover

if used are applied with a brush and then wiped off clean with old clothes before they become set. Otherwise the grain of the wood would be obscured. The stain will want to be lighter in color than what is desired for the final color. Stain is used to color the highlights, the close grain; the filler, which is much darker, forms a background by filling the pores of the open grain. If the water stain is too dark for the effect desired it can be lightened by the addition of water.

After the first coat of stain has dried, sand it lightly and apply a second diluted by the addition of an equal volume of water. Allow this to dry and sand lightly. Apply a thin coat of shellac. This is to keep the coloring matter in the filler which follows from discoloring the highlights just stained with the water color. Being thin, it does not interfere with the filler entering the pores of the wood.

Apply a coat of filler colored to match the satin but darker. After the filler has flatted, that is, after the gloss has disappeared, rub off the surplus filler, using

excelsior or wood shavings. Finish by polishing with an old cloth. Rub across the grain at first.

On the filler, after it has hardened, put a coat of orange shellac. On this shellac put two or three coats of some good quality rubbing varnish. The first coats should be rubbed down, after they have hardened, with steel wool or hair cloth. Rub the last coat with pulverized pumice stone and water and wipe clean with a sponge. Finish with furniture polish and a little pulverized rotten stone applied with the palm of the hand or with soft felt or flannel.

## Do Gable Dormers Increase the Roof Area?

By A. W. Woods

**T**O FIND the area of a gable roof having gable side dormers is a problem that puzzles many carpenters who are not up in figures. They think since the roof is broken up with hips and valleys, that it must certainly contain more area than the plain gable roof, but such is not the case. The broken roof will of course take more lumber, because of the waste to frame it, but the area remains the same.

For example, let us take a building 26 by 32 feet and with a  $\frac{1}{4}$  pitch (12-inch rise to the foot) and with

$18\frac{5}{12}$  feet, multiplied by the length of the roof (32 feet) gives the number of feet in one of the sides, thus  $18\frac{5}{12} \times 32 = 589\frac{1}{3}$  square feet. This multiplied by 2 gives the total number of feet in the roof, which is  $1178\frac{2}{3}$  square feet

This is simple enough and we trust so far everyone at all interested in such problems, fully understands it.

But the question is, does a similar roof containing a side gable, contain any more area than the plain straight roof? Let us see. Taking the same example with the side gable, it would show as in Fig. 1. We have found that the side of the plain roof contains  $589\frac{1}{3}$  square feet. Now, we will consider the side containing the gable of like pitch. In the illustration it will be seen that the mean of the main roof, is  $9\frac{1}{2}$  feet and of the gable  $6\frac{1}{2}$  feet, a total of 16 feet. This multiplied by the length of the common rafter ( $18\frac{5}{12}$ ) will give the number of square feet to the ridge of the gable as  $16 \times 18\frac{5}{12} = 294\frac{2}{3}$  feet. Now, since the gable is in the center of the roof, by multiplying the above by 2, it will be found to contain  $589\frac{1}{3}$  feet which is just the same as found for the plain side of the roof.

Perhaps this might be made more clearly understood by showing the same in pattern form, something that can be cut out and folded up, so as to form the roof in miniature shape.

In Fig. 2 is shown the layout for such a pattern and when properly folded, the points at like letters will come together and form a perfect model of the roof.

For proof of this example, lay out a pattern as per the diagram on light weight paste board, then trim to the outer lines and fold, and it will be seen that the roof will fit to the valley lines, as shown on the main roof.

What is true of this, is also true of any other example that we might use provided the main roof and gable are of the same pitch.

The consciousness of a day's work well done is a mighty good thing to take home to supper and to sleep on.

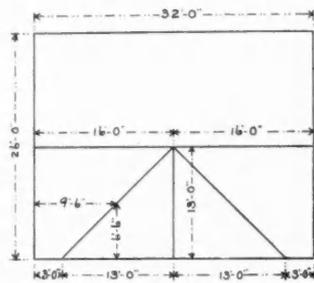


FIG. 1.

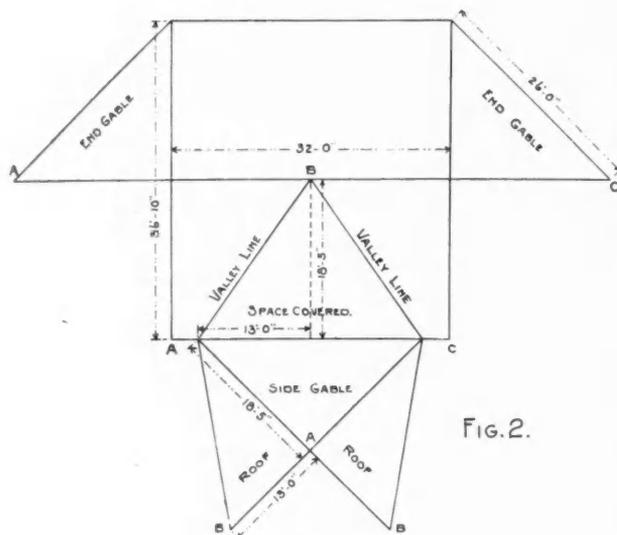
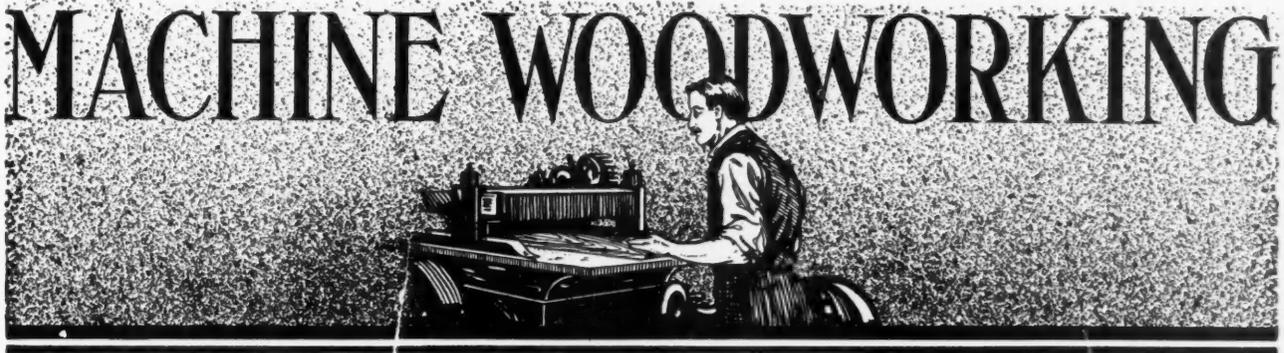


FIG. 2.

a plain gable roof, as shown in the upper half of Fig. 1. The common rafter would be practically 18 feet 5 inches long and represents one-half the width of the stretchout of the roof; this being equal to



## Rip Saw and Scrap Pile

THE USEFULNESS OF A SMALL POWER SAW FOR ANY CONTRACTOR OR CARPENTER SHOP OWNER—  
HOW SUCH A MACHINE PAYS ITS WAY ON ALMOST EVERY JOB

By J. Crow Taylor

**T**HE rip saw is undoubtedly convertible to more uses than any other one machine. Other machines are useful and worth while, but it is doubtful if there is any other one machine that covers as wide a range of usefulness for the same amount of initial cost as the rip saw.

Take the rip saw and the scrap pile, for example. Every carpenter that builds a house has left over something like a wagon load of scrap of one kind and another. He probably has a certain amount of good stock that can be put back or piled away and saved to be used on the next job; but generally there is a wagon load of scrap pure and simple. This is often left in the cellar as a present for the owner of the house. Often, also, the builder's profits—or a good portion of them—are given away right in that scrap pile.

Have a rip saw, even if you have no other power driven shop equipment; and if you have no shop put it under a shed out in the yard where you store your left overs. Then when you finish a job haul all of your scrap to that rip saw and see what you can make of it.

You will find that there is no end to its usefulness. In the first place, if you are going to start another new job somewhere, the first thing you will want can be made right from this scrap pile.

You will want almost a wagon load of stakes and stubs of one kind and another before your foundation is completed, if it is a house of much size. You will probably take some of the lumber sent out for the new job, cut it up and make these, some of the framing and some of the sheathing; or you may order a lot of bridging and work it up. All of this costs money.

Now, generally you can take the scrap pile and not only get these stakes and things from the material in it, but you can do the work of making them. Instead of having to chop them with a hand ax at the job you can take an ordinary table rip saw and rip your scraps into dimensions for the stakes and then taper the stakes to a point; and there you are. You can prepare more in an hour with a rip saw than you can in a day with a hand ax and prepare them from

scrap which you would otherwise give away, and be that much ahead of the game.

And the best of it is that that is only a start. Some of these scraps can be made into bridging, which is always useful, many of them can be trimmed into short stock for use in form making in the concrete work. Some can be converted to one use and some to another. You can take a few minutes off and make a lot of shims and wedges and thus save lots of time on the part of carpenters when they are at work. If you don't know just how to do this, go into some sash and door factory and watch a boy making wedges for doors on a little rip saw and see how he makes thousands of them from pieces of scrap, then you will understand how you can make everything from a little short wedge to a long keen shim out of your pile of scrap.

Another thing you can do is refine some of your cull lumber and rough sheathing and get some clear dimension stock. Some of it can be ripped into narrow widths and cut up into short lengths; and thus from No. 3 boards you may be able to get high grade finish for the cornice and finish around dormer windows and something of that kind. By this means you make cheap lumber, that might go to waste, into stuff that will save your buying some high grade, high priced stock in short lengths and narrow widths.

In speaking of the rip saw here, it is meant the combination table saw, carrying both rip saws and cross cuts. Such a machine as can be had in various prices anywhere from \$50.00 up to \$250.00, depending on just what it is that you may choose in the way of a machine. And no matter what you get, if you use them and develop their possibilities you will find that out of the scrap pile alone the rip saw will pay you more in the way of returns than can be gotten out of any other investment of the same amount of money.

+

Cork floor slabs, compressed from an original thickness of 14 inches to less than  $\frac{1}{2}$  inch, are being tried on one of the new steel dining cars of the Pennsylvania Railway.



## Pure White Lead—What it Is and How Made

THE PLACE OF PURE WHITE LEAD IN MODERN HOUSE PAINTING—THE "OLD DUTCH" PROCESS AND THE MODERN PROCESS OF MAKING DESCRIBED

By Roger I. Cuyler

**A** GREAT many people have a hazy idea as to just what white lead is and how it is used. Not long ago the writer had occasion to consult with an artist about some illustrations to be used in connection with a series of white lead advertisements and the artist had absolutely no conception as to what white lead really was.

He asked the writer if white lead was used in connection with machinery. When told it was paint he admitted his ignorance and seemed very much interested in knowing the facts about this wonderful paint product.

The story so interested this particular gentleman that the writer feels it may be of interest to others and it is hoped the following facts about pure white lead, the great standard paint pigment, will prove interesting to the readers of THE AMERICAN CARPENTER AND BUILDER.

Recently a writer of some reputation after delving into the subject of white lead and tracing it back through history gives the following very interesting facts:

"Closely related to the house beautiful is the white lead that makes it so. We have often heard about the house ceiled with vermillion being beautiful and desirable, still the house that is painted with pure white lead and pure linseed oil is not only beautiful but is well protected and the paint will prove durable, and will successfully brave the sun, wind, rain and the combined bitterness of the winter months with resources of fairly infinite capacity.

"Pure white lead is to the house painter, and for that matter to the sign painter, the bulletin board painter, yea even to the painter of fences, what a rich and kindly soil is to the husbandman. Pure white lead is the alpha and omega, the first and last of all house paint, worthy to be distinguished as such.

"You may go back into the young age of the world—back, if you will, to the days of Pliny and the golden age of Athens—and find white lead consumed not only as a decorative and protective medium, but as a cosmetic indispensable to the dainty and classic maids of the no less classic city. In all generations from

that far-off time, when it was variously called cernsa, cerosa, psimuthion and so on, white lead has been fluctuating in point of quality from bad to good and better to best, and is indispensable as a paint pigment."

The manufacture of white lead is, therefore, an old and reliable industry. The Dutch are credited with perfecting white lead corrosion to a commercial basis some two hundred years ago, although history tells us the Egyptians used white lead in the early days.

### What White Lead Is and How It Is Made

Hydro-carbonate of lead, commonly called white lead, is produced from pure metallic lead, acetic acid (vinegar) and carbon dioxide (carbonic acid gas). These are the only materials from which a white lead can be produced, combining at the same time body, easy working properties and great durability. While there are several processes by which pure white lead is made, most of the white lead used in this country today is produced by either the "Old Dutch" or the "Carter" process.

The Old Dutch process derives its name from the place where it was perfected and from its age. The pure metallic lead is melted and cast into perforated disks called "Buckles." These disks are placed in pots containing a small amount of weak acetic acid and surrounded by tan bark. The tan bark ferments and gives off carbonic acid gas, the disks are slowly oxidized or corroded and changed, by the absorption of the carbonic acid gas from the tan bark, into white lead.

The corroded white lead is next separated from the core of the disk, it is washed thoroughly and ground and is mixed with a small amount of pure linseed oil and is then ready for the painter.

The Carter process is a modern and more scientific application of the old principle. The chemical construction of the white lead produced by the process is identical with the lead produced by the old method of corrosion, which has been a standard for so many years. There is nothing crude or primitive about this modern process. It represents the highest development in white lead manufacture. With it the corrosion is under perfect control at all times, and the

result is a more uniform and perfect product.

In the Carter process the pure metallic lead is first melted. The molten lead is made as fine as flour by a jet of steam which strikes it as it passes through the pipe from the melting pot. The atomized metallic lead is then placed in cylinders, 10 to 12 feet long and 6 feet in diameter, which make six revolutions an hour.

Purified carbonic acid gas flows into these cylinders constantly, while at intervals trained men spray the contents with a weak solution of acetic acid and water. As the cylinders slowly revolve the lead is constantly shifted so that every particle is exposed to the corroding agencies. The progress of corrosion, therefore, as well as the composition of the finished product, is under absolute control. By this modern process it is possible to thoroughly corrode white lead in about fifteen days because an atom is the unit worked upon rather than a pound disk as in the old process. The old Dutch process requires a much longer time and the finished product is absolutely the same in chemical construction, although it is claimed that the white lead produced in the modern, more scientific way is whiter and finer; and this has its advantages.

#### Use of White Lead

Pure white lead reaches the painter in the form of a thick paste. It has been thoroughly ground and the pigment is extremely fine. All that is necessary is to thin the white lead paste down with pure linseed oil and necessary thinners, and color to suit any particular purpose desired.

Pure white lead has a natural affinity for pure linseed oil. The linseed oil and white lead combine into one perfect product—paint—just as sugar and water combine into syrup. Because of this perfect combination of linseed oil and white lead the house painted with a pure white lead mixture is certain to be well protected; and a beautiful job results. When pure white lead is used there is an entire absence of cracking and scaling paint.

Pure white lead paint wears long and evenly, no burning or scraping of the old paint is required when a new coat of paint is applied over the old white lead coat. Pure white lead has been the standard of paint excellence for hundreds of years and will continue as the best paint material because of its ability to give the most exacting service and to maintain under the most violent elemental disturbances a fabric of undiminished depth and surface solidity.

Pure white lead wars defiantly against such enemies as unseasoned wood, prevailing gases, if any, and a great multitude of forces inimical to its appearance and durability. While it is not always successful in resisting the advances of these untoward and disturbing conditions, it invariably wages a good fight and surrenders without discredit.

## COURT DECISIONS AFFECTING BUILDERS



### Where Architect's Decision is Binding

Where a building contract makes the architect arbitrator between the parties to determine practical questions of construction that arise under the plans and specifications in the execution of the work, his decision is binding.—*Bros. v. Lewis Roofing Co.*, 116 N. W. (Iowa), 711.

### Recovery for Breach of Contract

Where contractors who have agreed to perform the carpenter work on a house for \$155, are not permitted by the owner to do so, they are entitled to recover the difference between the contract price and what they are able to earn otherwise during the time required to build the house.—*Womble vs. Hickson & Findley* (Supreme Court of Arkansas), 121 Southwestern, 401.

### "Red Tape" Compliance Immaterial

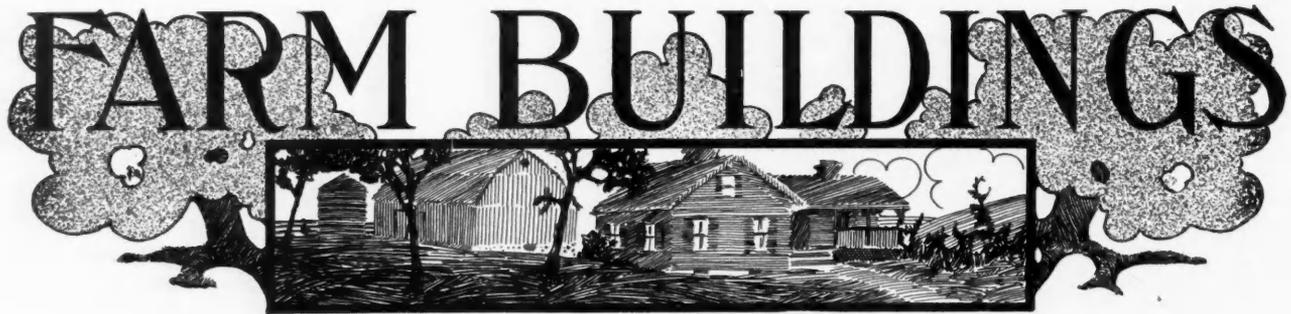
Where a house was contracted to be a duplicate of a certain other house in the town, with certain specified exceptions, a provision that a drawing and specification of the house were to be attached and become a part of the contract was not a condition of the contract, and a failure to so attach them, through no fault of the contractor, was immaterial.—*Womble vs. Hickson & Findley* (Supreme Court of Arkansas).

### Excuse for Delay on Building Contract

Where the work to be performed by a building contractor cannot be performed until the other work provided to be performed by the owner or his employees is finished, the failure by the latter to complete their work within the time limited by the contract is a sufficient excuse for his delay beyond the agreed period.—*Murphy v. No. 1 Wall Street Corporation*, 119 New York Supplement, 693.

### Recovery for Partial Performance

To entitle a builder to recover on a building contract, there must be such an approximation to complete performance that the owner obtains substantially what was called for by the contract, though there may be omissions and imperfections necessitating a reduction from the contract price. It is not essential that the work should be complete in all material respects, nor that there should be no omissions of work that cannot be done by the owner, except at great expense or risk to the building, where such omissions do not affect appreciably its value. Where the building contract requires the work to be done to the entire satisfaction of the owner, and the contract is not performed because of the owner's failure to be satisfied with that which ought to satisfy him, there may be a recovery on the quantum meruit. *Handy v. Bliss* (Massachusetts Supreme Court), 90 Northeastern, 864.



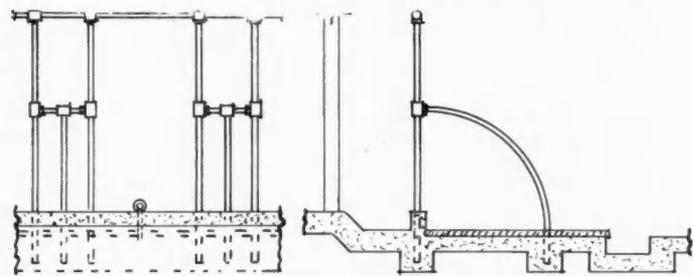
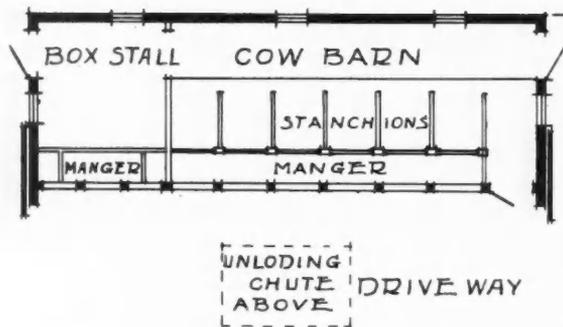
## Prize Plans for Stock Barn

VERY DESIRABLE DESIGN FOR A GAMBREL-ROOF BARN PLANNED TO STABLE WORK-HORSES AND DAIRY COWS ON THE FIRST FLOOR WITH HAY STORAGE ABOVE

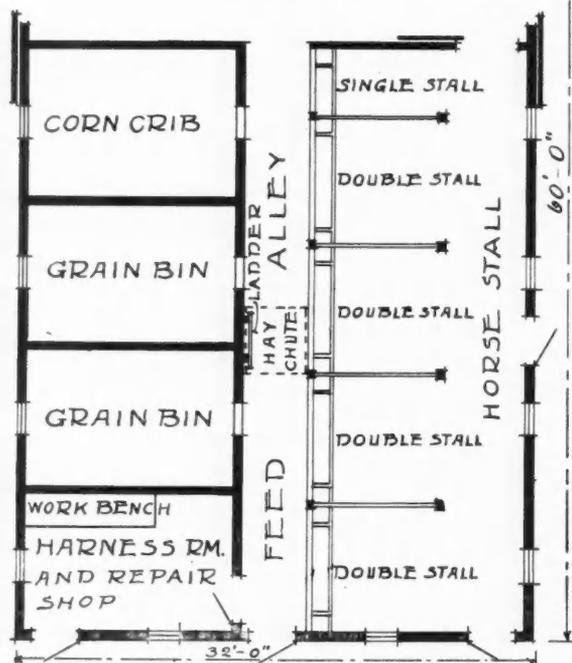
THE design for a small stock barn, which has been awarded first prize for convenience and general desirability in a contest recently conducted by one of the leading western farm journals, is illustrated herewith. The design was submitted by a farmer of Farlington, Kansas, where this barn stands. His description is as follows:

"This is a sketch of a barn I know of that is the most convenient for taking care of stock I have yet seen. There is a 14-foot shed attached to the south side, with a large manger along the side next to the

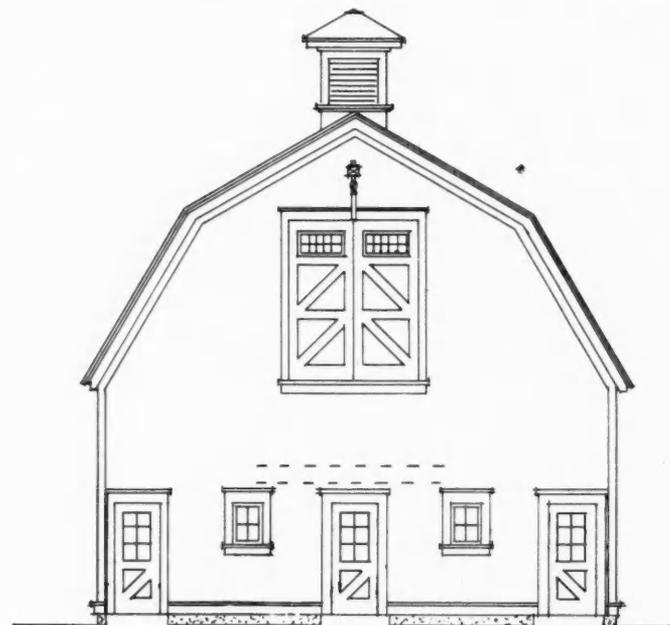
barn that can be filled from a wagon driven through the shed, or from the driveway door in bad weather. I cannot give the cost as it has been built several years, the sills, posts and joists having been hewn out of native timber. This barn is 32 by 60 feet and is 20 feet high to the eaves. It has what I call a double pitch or gambrel roof. The hay chute in the feedway is four feet square, boarded solid on two sides from mow floor nearly to the comb of the roof, the other two sides being fitted with loose boards which can be put on or removed as the amount of hay requires."



STANCHIONS IN COW BARN



BARN PLAN



END ELEVATION

The readers of the AMERICAN CARPENTER AND BUILDER will find a great many points in this design that will help them in planning barns for a similar purpose.

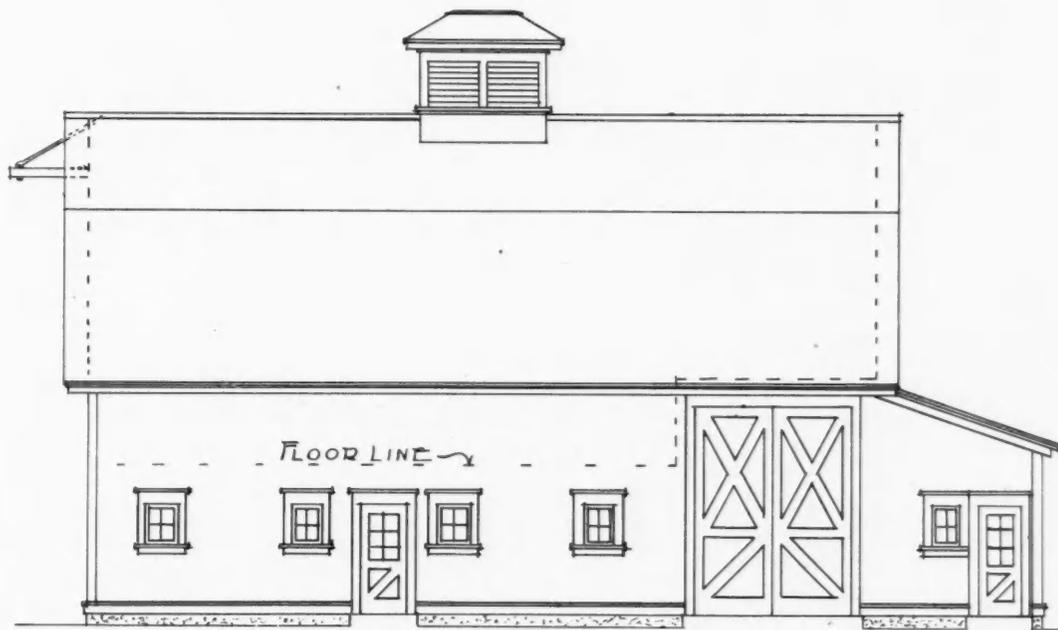
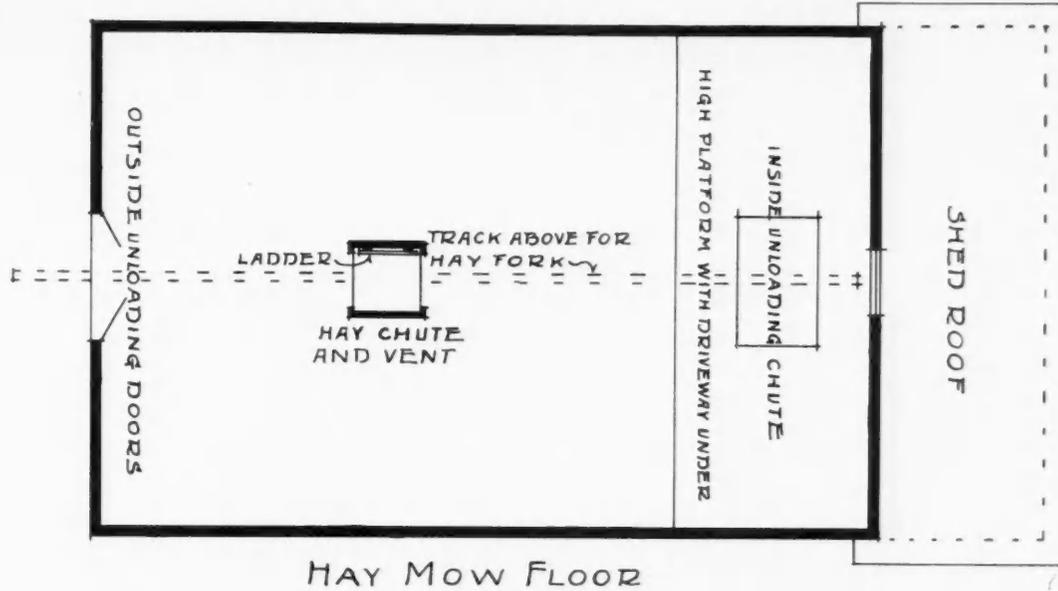
**Raising a Ladder**

When you raise a ladder, do not raise it with one leg alone resting on the ground, but see that both legs are resting there. This will prevent strain on the

**A New Size for Damp Walls**

A California architect a reader of *Brush and Pail*, contributes a good idea:

Whenever a wall is damp, or loaded with lime enough to "burn" tints, or where a wall simply "burns" and stains tint through pure cussedness, I have a remedy, one that is inexpensive to apply, dries very quickly and is positively effectual. My remedy consists in making a solution of rubber in carbon disulphide, solution almost as thick as cream. This dries very quickly

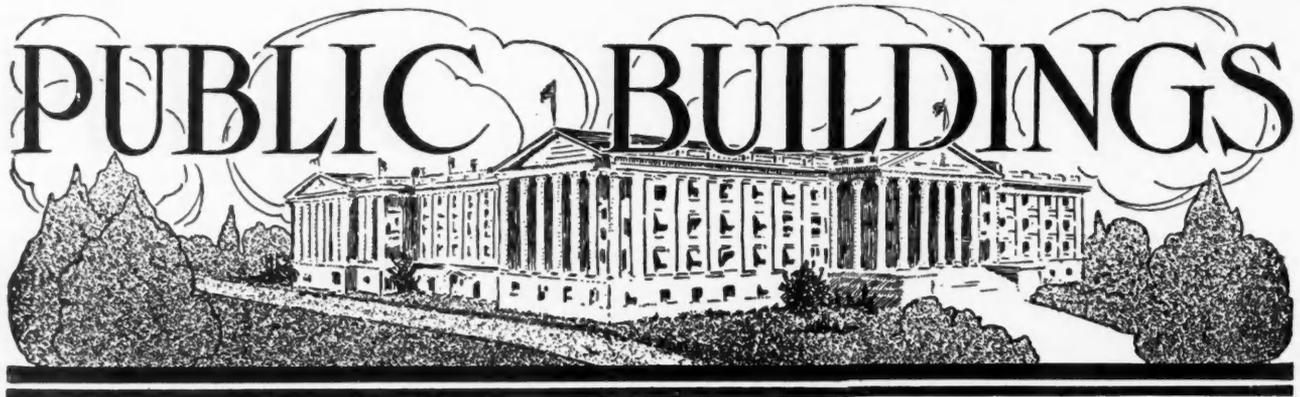


SIDE ELEVATION.

ladder, which in turn causes the rounds to become loose. Also, in taking the ladder down, be careful and do not take it down on a strain, remembering that there is a right and a wrong way for doing even so simple a thing as this. A little care of this kind is often the means of preventing serious accidents.

and coats wall with rubber, which effectually seals over all dampness, etc. We use old rubber boots, old hose and old tires to make this and it don't come high. I have used this on a wall so damp that it was mildewed, yet the tint put on never spotted or stained.

When you get stuck with a bad wall try this.



## High School Building of Modern Design

PERSPECTIVE, FLOOR PLANS AND BRIEF DESCRIPTION OF A SCHOOL BUILDING HAVING LARGE ASSEMBLY HALL ON THE MAIN FLOOR

**T**HE requirements for a modern high school building are essentially different from those of a primary or grammar school. High school life centers around the general assembly room, all of the students being seated there and going to the various class rooms for their class periods. The assembly room is therefore the general meeting place and study room. Lectures, concerts and entertainments are also held there. All school authorities agree that safety demands that the assembly room or hall should be located on the main floor, so that in case of fire it could be easily emptied without danger of loss of life. For an assembly room of considerable size it is also desirable to have a good high ceiling, making the central

laboratories, one each for physics, chemistry and biology, besides a general science lecture room.

To provide these necessary accommodations in an economical and satisfactory manner is the special problem of high school designing. The accompanying perspective and floor plans of the new Proviso Township High School, located at the corner of First avenue and Madison street, Maywood, Ill., show a very interesting solution of this problem. The design is by Architect G. W. Ashby, of Chicago.

Conforming with the best modern ideas for safety in large public school buildings, the structure is but two stories in height. There is also, however, a high basement well lighted which furnishes just the proper ac-



Proviso Township High School Being Erected at Maywood, Ill., Cost \$60,000

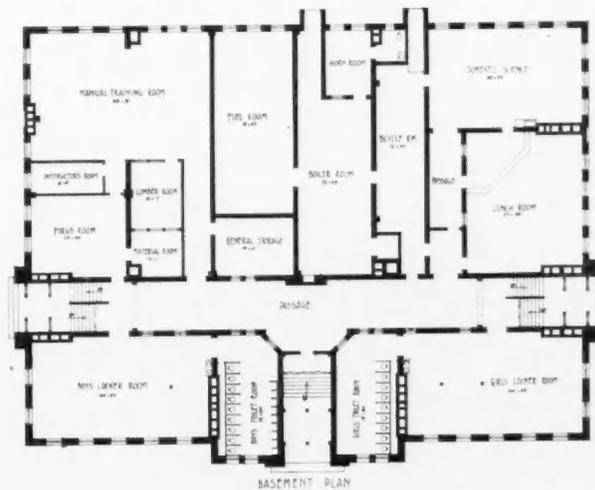
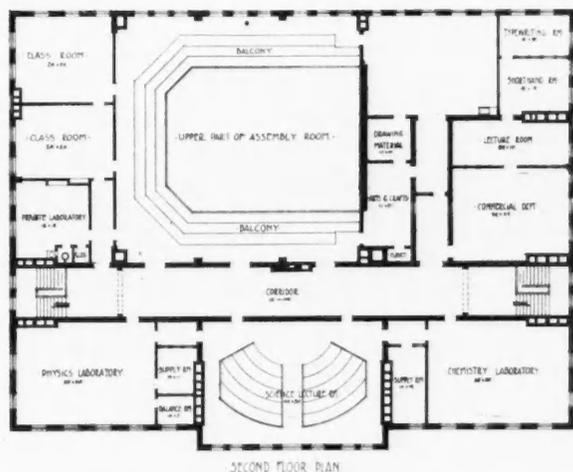
part of the hall equal in height to two stories. This permits a good balcony around the hall, accessible from the second floor, greatly increasing the total seating capacity of the room.

In a high school building there are also special rooms required for the science work. There should be three

accommodations for the manual training workshops and domestic science department.

The building is of simple, dignified design, constructed of brick with trimmings and basement courses of light colored stone. It is a conservative design with nothing in the way of over-ornamentation to become

delapidated. The appearance is of solid efficiency, being typical of the high school work to be carried on within its walls.



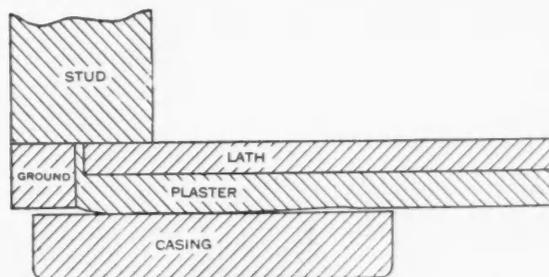
A study of the floor plans which are here reproduced will show many interesting and desirable features of arrangement and planning. Especial attention is called to the way the rooms for each department of the work or branch of studies are grouped together. The library and principal's office are conveniently placed on the main floor near the entrance. A special feature is the open fireplace in the main hall.

**Reason for "Hollow Backing"**

A mild discussion has been going on in the *Woodworker* as to the reason for "hollow backing" interior trim, flooring, etc. To this W. D. Graves offers the following:

It may be that cutting away the back would tend to somewhat lessen the ill effects of dampness, but I do not think that was the primary reason for making finish in that way.

In plastering up to a ground or frame, the plaster, almost invariably, is left slightly projecting or rounding outwards, as shown, somewhat exaggerated, in the accompanying sketch. It would thus be practically impossible to so nail a straight-backed casing as to make it come down on both edges. Whether this fullness of the plaster is avoidable or not, deponent sayeth not; but it is very rarely absent. Well do I remember hearing, in my boyhood days, the grumbling of joiners



Hollow Backing Needed Because of Uneven Plaster

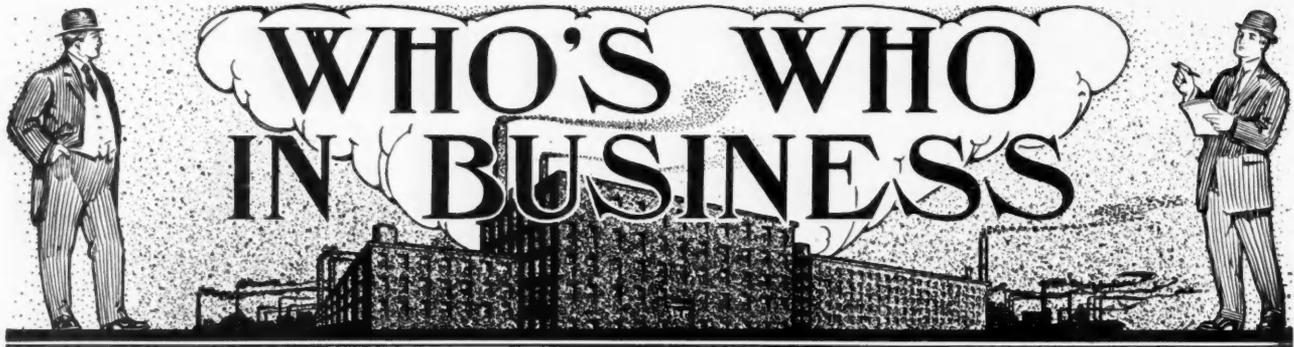
who had to gouge out the backs of their casings by hand; and I have often seen some such hand work necessary on modern casings. Modern plasterers, it is true, do somewhat better than of old, but still casings could but rarely be properly put on unless the back was hollowed in some way.

The hollowing out is not quite as essential in the case of baseboards, but it often saves a lot of work and bother. In the case of flooring, one cannot shift all the responsibility to the shoulders of the plasterer, nor can it be successfully argued that the necessity is quite as great; but, as the lower floor is apt to be somewhat uneven, the hollow-back generally tends to a better job.

**Painting Materials**

Mixtures of color are of three kinds and may be termed, oil, flattening and distemper. The first is bright and glossy, the second is perfectly flat or dead (without gloss) and the third is like the second in effect, but without its durability.

The chief body in oil and flattening color is white lead, but in distemper or water color whiting is substituted. The three ordinary vehicles in mixing are oil for oil color, turpentine for flattening, and water for distemper. In addition to these for ensuring the drying of the mixtures patent dryer is used in oil color, Japanner's gold-size and varnish in the flattening, and glue size in distemper.



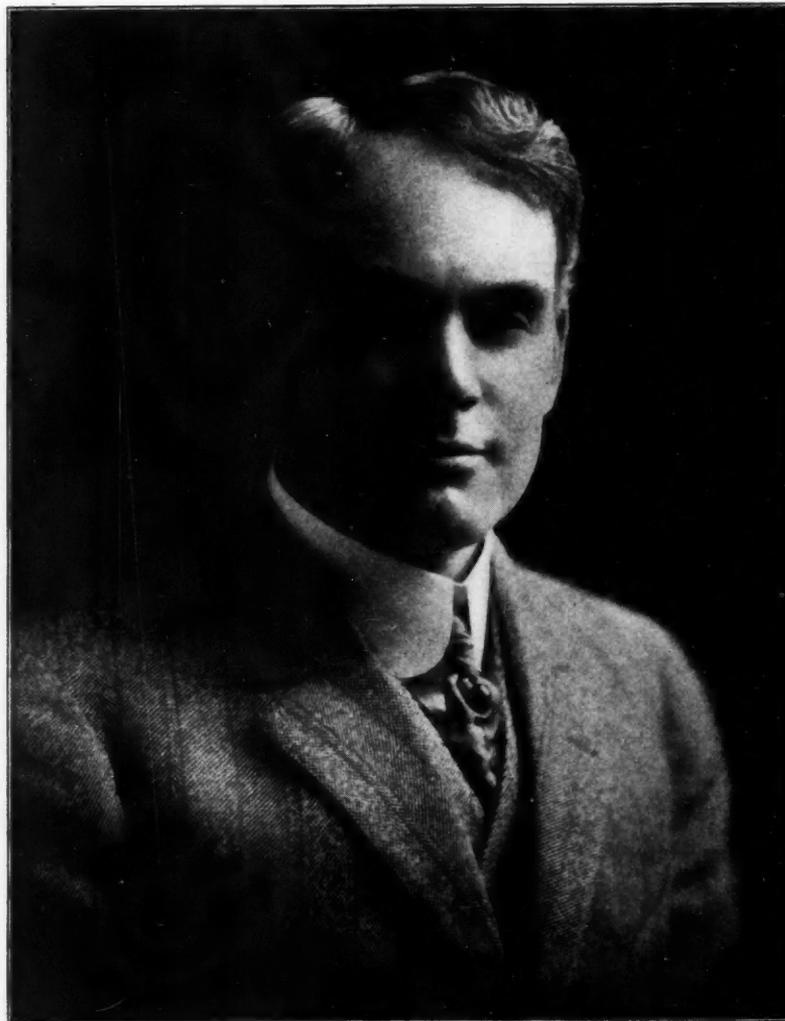
## Francis J. Plym, President Kawneer Mfg. Co.

**T**HE story of the rise to prominence in the building world of Francis J. Plym is the record of the struggle of a new idea to win its rightful place. It has been said that every human mind is favorably inclined to receive a suggestion. Yet when we consider the long ages through which, year after year, the building world has been content to keep right on in the same old track, totally oblivious of all possibility of improvement, yet grumbling and dissatisfied all the while, we realize the true rarity and worth of an improvement idea that is really new.

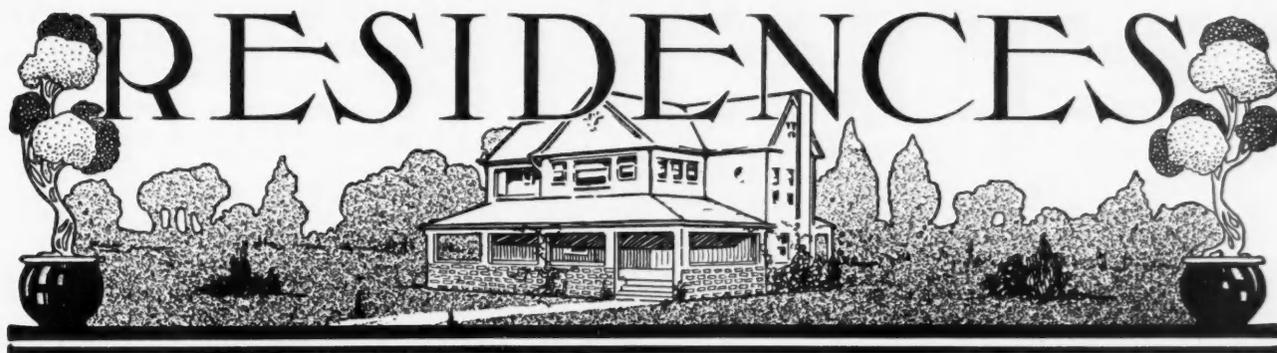
About four years ago Francis J. Plym was a young and progressive architect of Kansas City, a graduate of the University of Illinois and a member of the American Institute of Architects. In designing commercial buildings he realized the fact that while the manufacturers of building materials were developing new ideas for that class of structures, nevertheless there had not been offered to his profession a modern method of glass setting for store fronts. Like other architects, he was forced to accept the old antiquated method of setting plate glass. This was unsatisfactory to the thoughtful architects, and also the merchant client was calling for a

glass setting that would give a great exposure of plate glass, with lower insurance, and a store front wherein they could display their goods as attractively in winter as in summer without being annoyed by frost, sweat and dust.

Mr. Plym became restless and impatient for the introduction of some sort of system to supply the requirements of his clients. He began to experiment with various models and materials, until he at last evolved an idea, crude as it was at first, to be afterwards so architecturally and mechanically improved as to attract the attention of his professional brethren. Following in quick succession came the patents and the organization of the Kawneer Manufacturing Company—the name being derived from “near the Kaw” (river) or “Kawneer.” Mr. Plym was made president of the company, and it has been under his forceful direction that it has attained its present position of prominence in the building world. After operating for a short time in Kansas City the company transferred its main office and factory to Niles, Michigan, and from there the store front business is handled through branch offices in all the large cities of the country.



FRANCIS J. PLYM



## Complete Plans for Kansas City House

ARCHITECT'S SCALE DRAWINGS REPRODUCED IN FULL SHOWING HOW THIS LARGE, SUBSTANTIAL AND WELL-PLANNED HOUSE IS BUILT

THE architect's perspective drawing reproduced on this page shows the comfortable residence erected for Mr. H. C. Klock at Kansas City, Mo., in accordance with the plans which are reproduced complete on the pages immediately following this. These plans are very carefully drawn and have been detailed very carefully so that practically all the information necessary to build this house may be obtained from them. We want the readers of the

This house is of solid frame construction, with the first story and up to the second story window sills covered with a veneer of dark brown face brick. Above the brick and in the gable ends cement plaster stucco on wood lath is used.

This dwelling contains a surprising amount of room. A glance at the floor plans will show the arrangement. There are five good sized rooms on the first floor, three bedrooms and a bath on the second and two



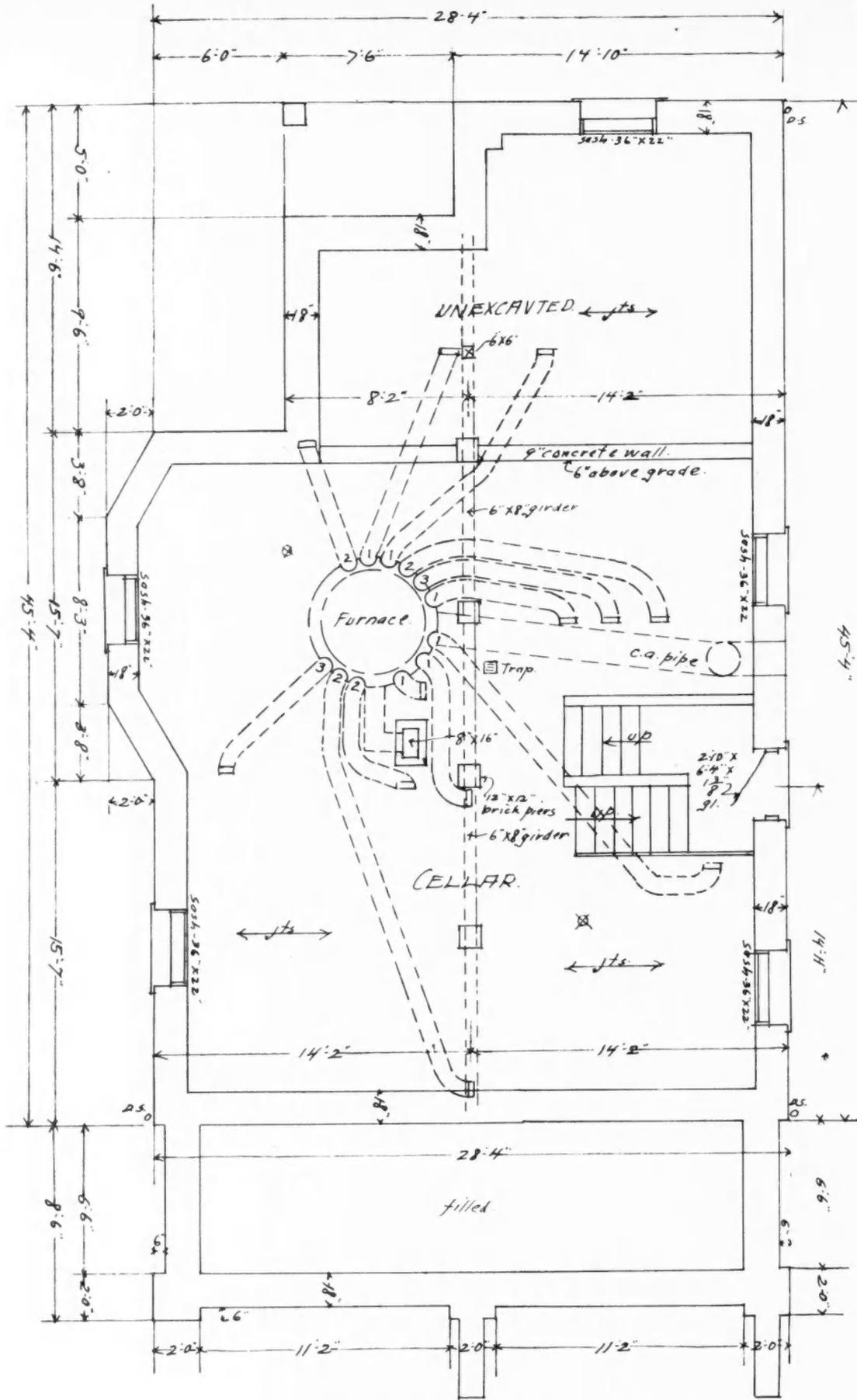
Well Built Ten-Room House of Stucco and Brick Veneer for Mr. H. C. Klock, Kansas City, Mo.

AMERICAN CARPENTER AND BUILDER to make the best possible use of all the ideas and suggestions embodied in them in their work.

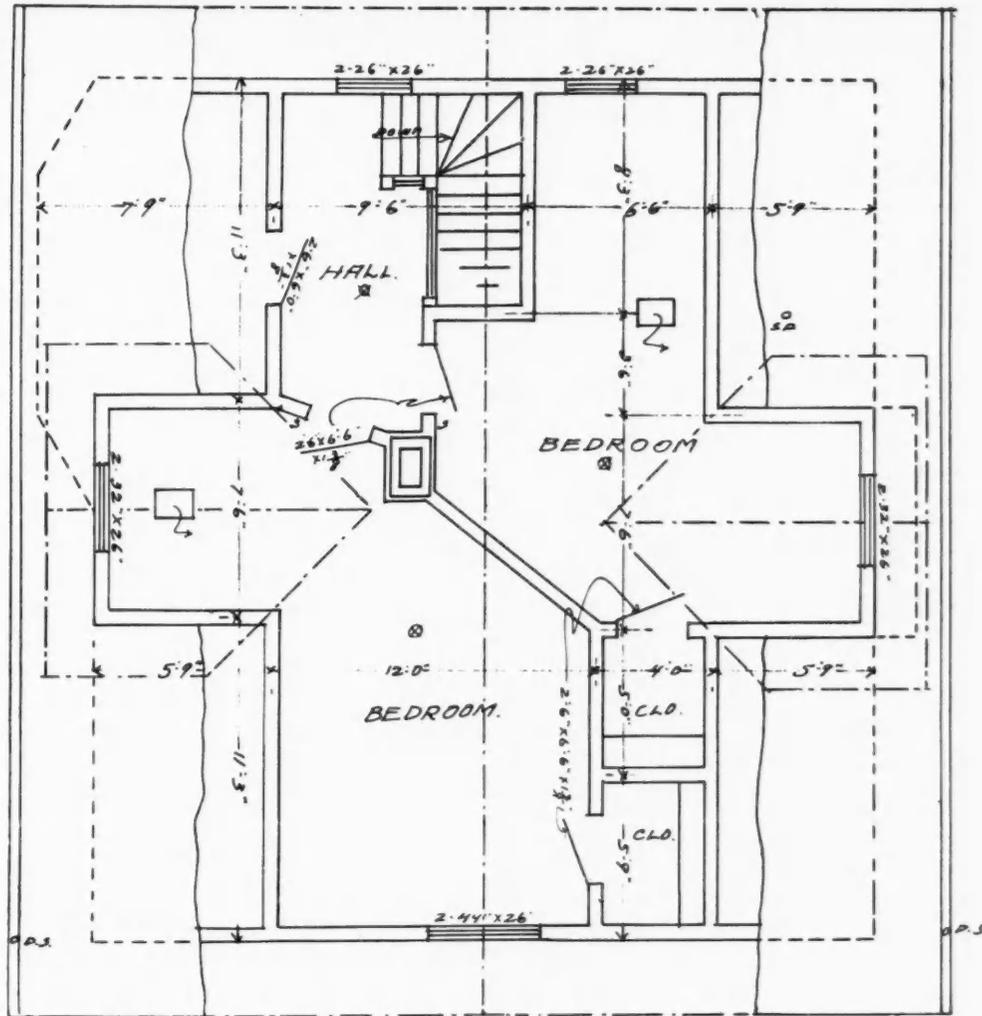
large pleasant rooms on the third floor under the roof. This house is said to have cost \$6,000 complete, including heating, plumbing and lighting.



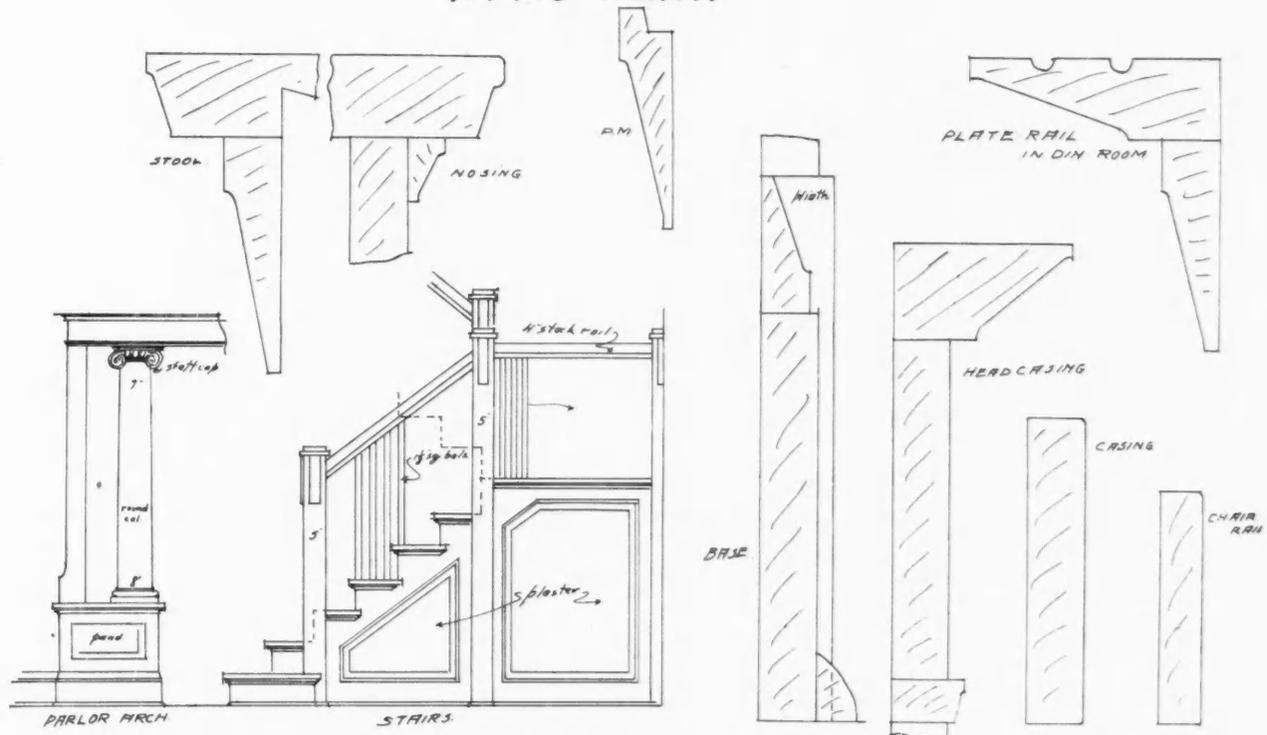




FOUNDATION PLAN.  
(PERSPECTIVE ON PAGE 53)



ATTIC PLAN.



(PERSPECTIVE ON PAGE 53)





SIDE ELEVATION



SIDE ELEVATION

(PERSPECTIVE ON PAGE 53)

# CORRESPONDENCE

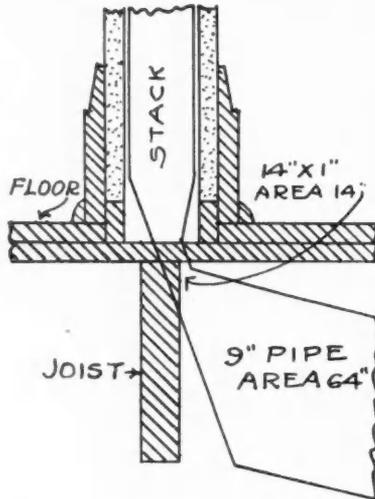


## Warm Air Piping Criticised

To the Editor:

Buffalo, N. Y.

I want to enter my protest as to the manner in which the usual hot air furnace plant is installed in ordinary dwellings.



A short time ago I saw an illustration like the sketch. The heating pipe is 9 inches in diameter. As there was a joist under the partition, a gash 1 inch deep was cut in the joist and the flue passed through the "slit," the area being 14 square inches instead of 64 square inches, that of main pipe, or about 20 per cent of the original area.

Again I have seen pipes twisted almost like a letter S to reach certain places. And again joist almost cut in two, studing above not being placed correctly. No wonder hot air heating has fallen in bad repute.

EMILE LOW,  
M. Am. Soc. C. E.

## Day's Work for a Carpenter

To the Editor:

Oakpark, Calif.

I want to find out how to estimate labor on carpenter work. I want to know about how much a man can do; about how much siding he can put on; how many doors he can case and hang; how many window frames he can set; how much base he can put down; how many sash he can put in; how much flooring he can lay; how many shingles he can put on. Also how much to charge for rough lumber per thousand at the rate of \$5.00 per day for eight hours.

J. T. HUNT.

Answer: In reply we wish to state that while we are submitting the following extracts from various authorities on the subject, we do not recommend or guarantee any of them to be exact under all conditions. They must be treated simply as approximate quantities to be used in forming a rough estimate on general work; and if a close figure is desired, it is recommended that you analyze each operation of the work in hand, applying your own judgment as to length of time needed and basing this cost upon your local rate of wages.

The following amounts are based upon a nine-hour day:

1. Two men will put on about 700 feet of drop siding in one day when window casings and corner boards are placed over the siding. Where joints are made, 400 to 500 feet per day. With lap siding, about 600 feet.
2. One man will place five door frames per day with ordinary casing. He can also hang and finish five doors per day. The above is for 6 foot to 7 foot 6 inch doors, 1 $\frac{3}{8}$  inches thick. Larger doors, about three per day.

3. "Hodgson" states that about 14 ordinary window frames may be set per day, and that about 14 sash can be put in. We believe these figures to be a trifle large.

4. A good man will lay about 200 linear feet of plain base, or about 100 linear feet of moulded base per day before plastering. After plastering, about  $\frac{7}{8}$  as much.

5. For cheap rough work about 900 feet of 1 by 6 inch matched flooring or 700 feet of 1 by 4 inch, may be laid per man per day. For a better class of work, an average day's work in a small house is about 300 feet. Maple floor, in small rooms, 150 feet. An average day's work, maple floor, end matched, large rooms, about 400 feet.

6. About 1,500 shingles per day is an average day's work for one man.

7. Two men will put on about 2,000 feet of rough barn boards per day.

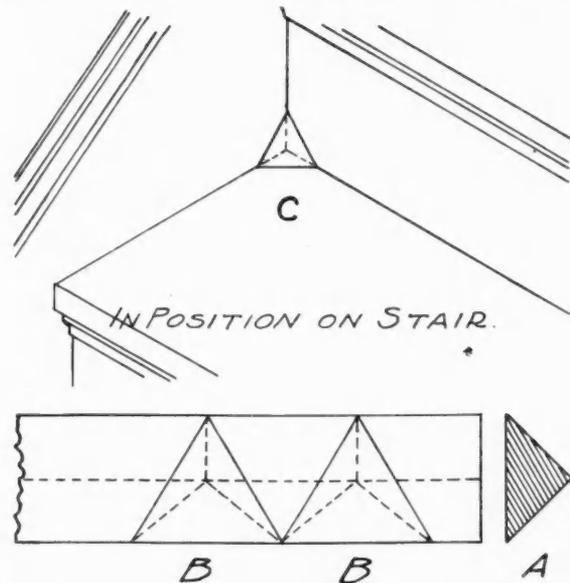
EDITOR.

## Wood Corner Fillet

To the Editor:

Missoula, Mont.

Inside corners are the special aversion of all housekeepers and it seems curious that so little is done to avoid or mitigate them. It is practically impossible to clean a square inside corner without the use of a knife, or other hard pointed instrument; so they are apt to go uncleaned or to have the



adjacent surface badly marred. We occasionally see a public stairway in the corners of which metal fillets are secured; but these are rather unsightly and not permissible on finely finished work.

It is a comparatively simple matter to get out wooden fillets which may be nailed or glued in place before the job is turned over to the painter, and which will not mar the continuity of the surface nor be at all conspicuous. To make these, get out a strip of right triangular section, as at A, having the widest side show the desired grain. This may be cut

up in a miter box, as at *B, B*, forming the desired fillets, one of which is shown in place at *C*. Half of the strip will be waste, it is true, but that is of small moment.

If the work is to be painted this fillet may be nailed through the center; or it may be sufficiently secured with glue alone. Such fillets greatly facilitate the work of the painter and house-cleaner; while they add strength and beauty to the job. If it is desired to put them on old painted work a smear of white lead on the back and a nail through the center secures one in place and takes care of irregularities which such work is apt to have.

W. D. GRAVES.

**To Frame an Uneven Pitch Hip Roof**

To the Editor: Welland, Ontario.

As I have only lately become a subscriber of the AMERICAN CARPENTER AND BUILDER, I would like a little information on one point.

Suppose I have a hip roof to build and say the main part is one-half pitch and the ends one-third pitch. How can I ar-

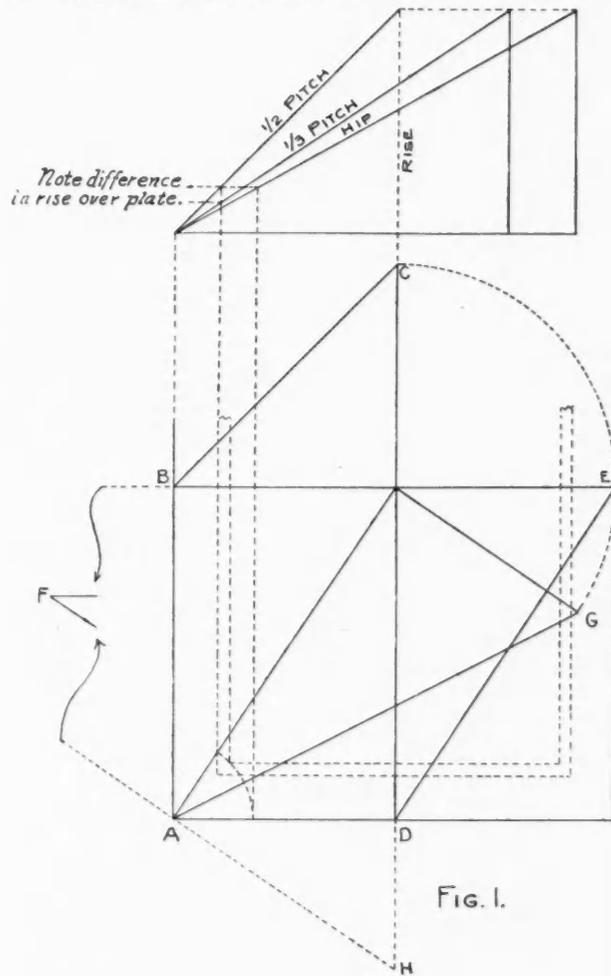


FIG. 1.

range it to make the rafters suit the sheathing and cornice and give the roof all the same projection?

I had a job of this kind to do lately and got the cornice on half decent with some twisting and prying. I thought by writing to you that you could put me on to some plan to do the work more nearly correct. Publishing the same in the AMERICAN CARPENTER AND BUILDER, might be useful to some others as well as myself.

J. W.

Answer: This furnishes a problem that is quite beyond the average man to solve in figures. We have answered this, or similar questions, many times through the AMERICAN CARPENTER AND BUILDER. We will now try and answer the ques-

tion without the use of technical figuring.

To begin with, bear in mind that the toes of the rafters on all sides must rest on a dead level at the top edge where the fascia mould is nailed on. Then the reckoning point for the run should be from the toe to a point under the ridge or intersection of the rafters instead of the outer edge of the plate. This will require different heights of the plate for the different rafters. Note, too, that the hip does not pass over the corner of the plate as will be seen by the accompanying plan, as shown in Fig. 1. The elevation of the rafters, shown in connection with the plan, show the pitches relative to one another. And the elevation of the same, as shown in Fig. 2, illustrates a simple way of arriving at the different heights required for the plates and seat cuts of the rafters.

This should be laid off full size. Mr. J. W. does not ask for the side cuts of the rafters, but as the subject is too good to omit this important part, we will give it as follows:

Take *A B* and *B C* for the side cut of jack on the half pitch side. Cut on the latter. Take *A D* and *D E* for the side cut of jack on the one-third pitch. Cut on the latter. Take *F A* and *A G* for the side cut of the hip to fit against the common rafter on the one-half pitch side and *A H* and *A G* the same for the one-third pitch side, the cut in either case being on the latter.

Another thing too, that we wish to call attention to in the different height of plates, as shown in Fig. 2, is that the higher plate cannot extend to the corner else it will project through the roof on the lower pitch side. The hip will rest on the higher plate, as will be seen by the pitch lines in Fig. 1, but can extend but a very little beyond the seat of the hip for the reason as above mentioned.

A. W. WOODS.

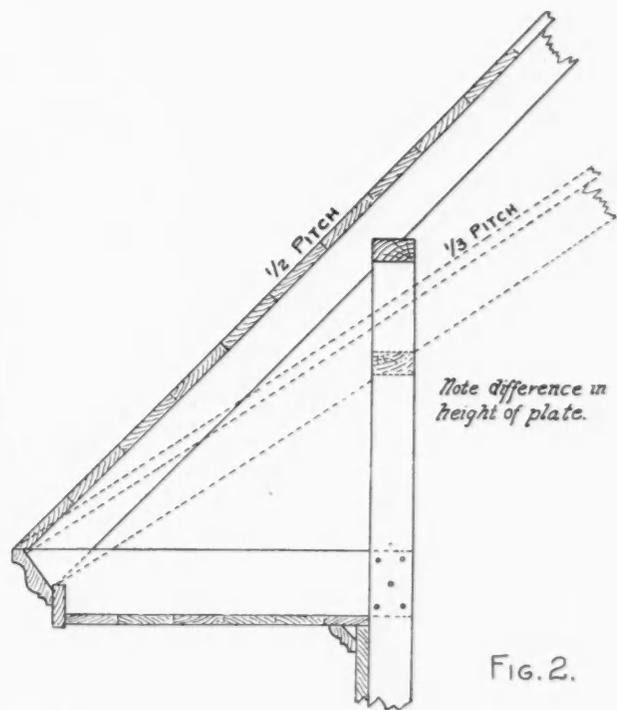


FIG. 2.

**To Construct a Floor Dumb Waiter**

To the Editor:

Kind, Mich.

Kindly publish in your next number of the AMERICAN CARPENTER AND BUILDER a dumb waiter 42 by 14 inches and to run down into basement, which is 6 feet 6 inches high in the clear. When let down in basement, the top of the dumb waiter should be flush with the pantry floor.

R. S. HANCHETT.

Answer: It would be an easy matter to construct a dumb waiter to work with weights provided that an even load is maintained, but since the weight of load will necessarily

fluctuate, it will require a governing device to regulate the uneven loading without overhead working. Better write to some of the manufacturers that make a specialty of dumb waiters of which there are several advertised in this magazine.

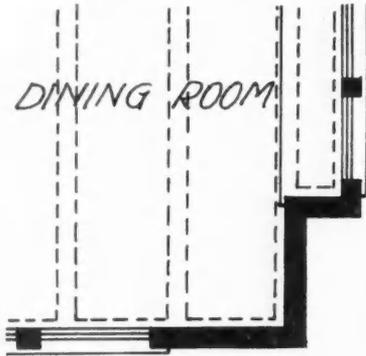
EDITOR.

### A Point in Reading Plans

To the Editor:

Milwaukee, Wis.

In your magazine for November, 1910, you have plans for a bungalow. In the first floor plan you show broken lines in the floor of the dining room as in the attached sketch, which I don't understand.



NIC. GREIN.

Answer: The dotted lines referred to represent wood beams in the ceiling. The sheet of details ought to show the design and construction of these in detail and, ordinarily, they would be mentioned also in the specifications for the

building. It is one of the conventions of architectural drafting that anything shown on a floor plan in dotted lines applies to something above the plane of that floor, such as a cased opening, plaster beam, beamed or paneled ceiling, etc.

EDITOR.

### Barn Framing

To the Editor:

Cherry Valley, N. Y.

Enclosed you will find photograph of barn I built for J. G. Blumeingstalk of Cherry Valley. Would like to have it put in the AMERICAN CARPENTER AND BUILDER to show the brother carpenters how we build barns in New York state. This barn is 40 by 80 feet with 20 feet outside posts and 32 feet purlin posts. The barn is sided up and down with 20 foot boards and batens. The basement is sided with beveled

siding. There are no cross tier from one end to the other. Notice the braces between outside and purlin post; it cannot spread.

We raised this barn with five men in 2½ days, which, I think, is better than having a raising. If any brother carpenter has a better way to build a barn would like to hear from him, as we can all learn from one another and do learn from the AMERICAN CARPENTER AND BUILDER.

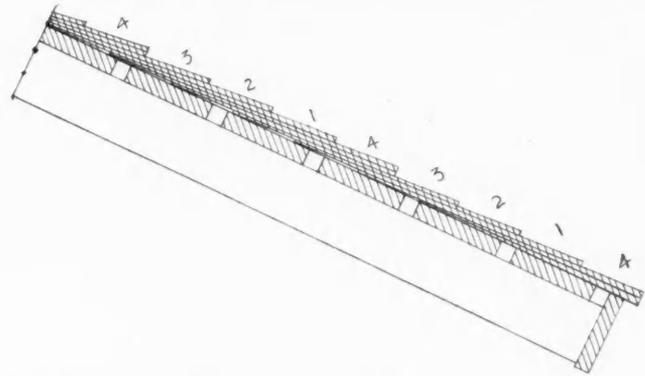
WM. GRANGER.

### Shingled Roofs with Doubled Courses

To the Editor:

Grand Forks, N. Dak.

We had a shingling discussion here the other day. A house was to be shingled and the specifications called for every fourth course double. Will you please tell the proper understanding of that and also make a detail. My opinion is that there shall be three single courses between each double course.



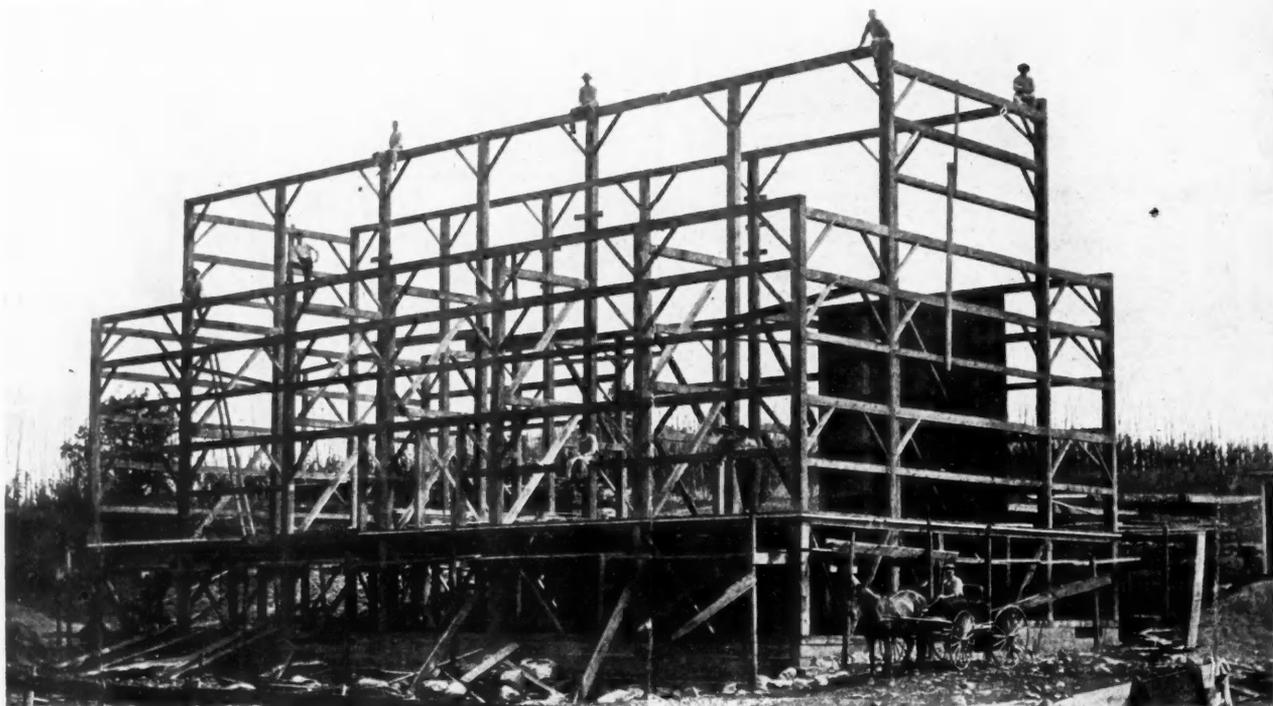
I am anxious to find out for sure about this now so that I may know next time.

T. BREIUNG.

Answer: The sketch will show you how the shingles should be arranged in such a case. The course at the eaves is doubled; and then, laying three single courses, the fourth course each time is doubled.

This device makes strong horizontal lines on the roof—an effect thought by some to add to the attractiveness.

EDITOR.



### Cutthroat Tactics

To the Editor:

Scotland, Texas.

Please answer this question for me.

A. has two contractors, B. and C. to figure on the cost of building his house. B. puts in a bid like this, "I will build your house for \$10.00 less than C."

C. puts in this bid, "\$186.50."

Who gets the job?

H. P. STEGER.

Answer: Your question would be answered a good deal according to the business principles of the man letting the job. If the owner, "A," is really an honest man himself and is wise enough in the ways of the world to know that integrity and square dealing are the points he must be absolutely sure of when letting his work, he will, without hesitation, give the job to "C," although on the face of the bids \$10.00 higher than the other contractor. He could be pretty certain that a contractor who would put in such a bid: "I will build your house for \$10.00 less than 'C,'" is either dishonest or unbusinesslike; and either of these traits would be bad for the job. Such a bid would hardly inspire confidence, and the saving of \$10.00 would be no inducement to make up for taking chances with such a man.

In some cities the law provides that public work should be given to the lowest responsible bidder; and the method of sealed bids is used. However, it is certain that even there such a bid as this would not be considered honest, or at least the bidder not responsible.

Who do you think would get the job?

EDITOR.

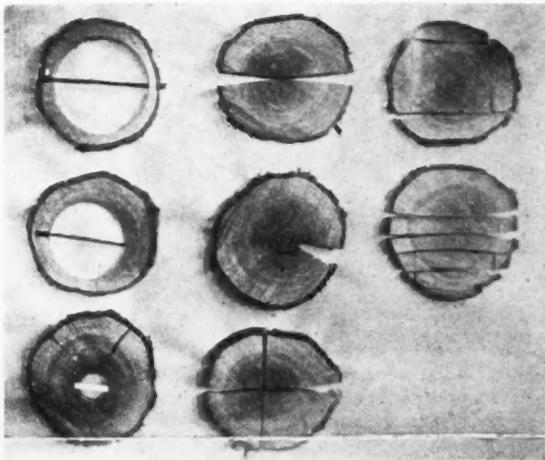
### How the Hole Shrinks

To the Editor:

Missoula, Mont.

Some time since inquiry was made as to whether a hole, bored in green wood, would shrink. At the time the writer demonstrated (to his own satisfaction, at least) that it would, but with a view to more graphic demonstration he cut and bored some sections of green apple wood. Although rather unfortunate in his photographs and in having the sections destroyed before the inferior nature of the plates became known, close scrutiny of the cuts will show the material points in issue.

One view shows several sections cut at right angles with

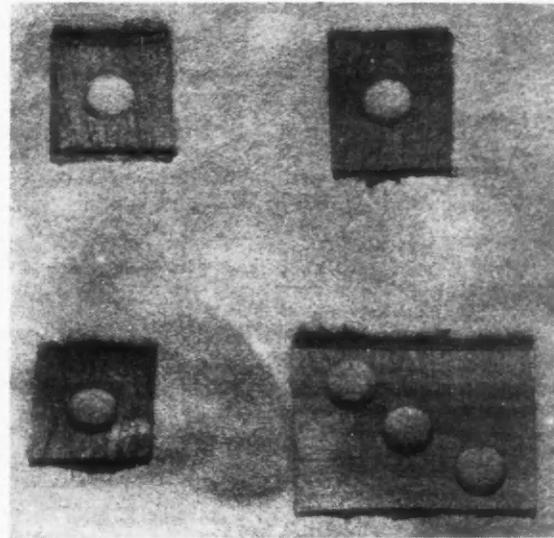


the grain and bored along the line of the heart. The wires (and, in the case of the small hole, the slip of paper) were cut to the diameter of the holes when bored. The shrinkage of the holes was much more than expected, and the smallest hole appears to have shrunk much more in proportion to its size than the others. Some of this appearance, however, is due to the use of the white paper instead of wire.

It will be noted that the small hole was insufficient to prevent the piece from checking when it dried. It occurred that perhaps apple wood shrunk more than other kinds, but

the appearance of the sections at the left, cut from the same log at the same time, would not seem to indicate this.

In the other view are illustrated several sections cut as boards are sawn, lengthwise of the log. The smaller pieces were taken off the sides, representing "flat sawed" lumber; while the larger piece with the three holes in it, was cut from directly through the center of the log, giving a "quarter-



sawed" grain. It will be noted that the holes in the "flat-sawed" stock are noticeably oval, the shrinkage lengthwise of the grain not having been appreciable, while it was considerable the other way. In the case of the "quarter-sawed" piece the shrinkage was hardly perceptible either way. Aside from the matter of the shrinkage of the holes, this seems a very striking illustration of the difference of the amount of shrinkage in plain and quarter-sawed stock. W. D. GRAVES.

### To Finish a Fir Floor

To the Editor:

Spokane, Wash.

Please let me know the best way to finish a fir floor.

H. WOODCOCK.

Answer: Let us suppose it is what is locally known as Washington fir. This wood belongs to the class of close-grained woods, along with white pine, yellow pine, Oregon pine, spruce, tamarack, basswood, whitewood, poplar, California redwood, cedar and gum wood. Hence we must use liquid, not paste filler, on fir. The flooring having been made smooth and clean, apply a coat of best liquid wood filler, or preferably, though costlier, thin shellac varnish. When dry (and shellac is not dry as soon as it seems so, for it requires some hours to become perfectly dry, this varying with the thinners used, wood alcohol and grain or denatured alcohol differing in this respect), rub smooth with sandpaper, dust off and give it a coat of good copal varnish. When dry apply a second coat of the varnish, and in turn a finishing coat of the best elastic floor varnish. If a waxed finish is desired, then give about three coats thin shellac to the floor, sandpaper each coat, and then rub on the wax polish. The French method of waxing a floor omits shellac, but applies plenty of wax, well rubbed into the wood. First make the floor perfectly clean and smooth, then coat it over with turpentine, then wax it.

There are several ways of finishing a floor, but the correspondent does not state which he would prefer. A varnished floor will give very good wear if the varnish is right, and there are some very durable or tough yet elastic floor varnishes on the market. To make a good finish use only the best materials, and skilled labor. If done well the floor will be a constant source of satisfaction. Otherwise not.

A. ASHMUM KELLY.

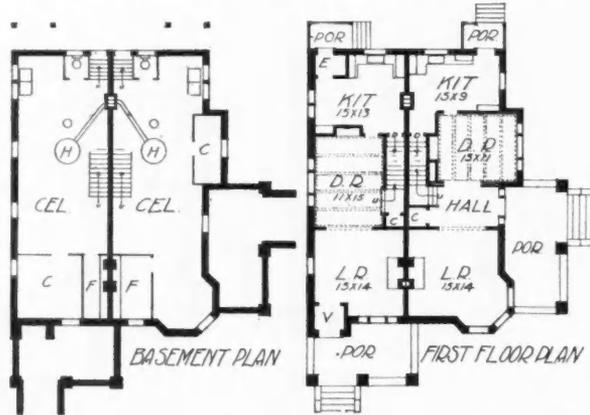
### Successfully Planned Double House

To the Editor:

Cleveland, Ohio.

For some time past I have been an interested reader of your valuable paper and have noticed that you publish plans and elevations of various styles of houses from different cities; but have not seen any from Cleveland.

I have lately completed a style of house that is common



to this city. It is for two families and is built on a corner lot with separate porches and entrances.

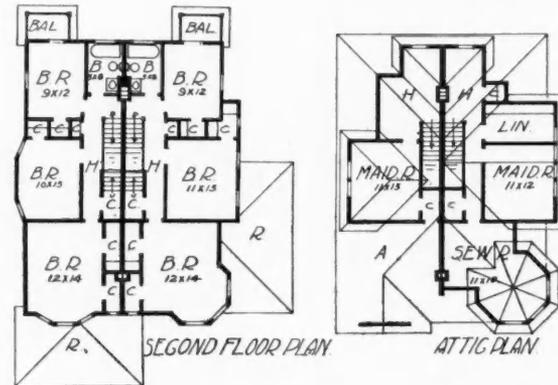
The first story is pressed brick veneer of a light color; the upper story is of siding painted a light slate color, trimmed with white; the tower, gables and dormer windows are shingled and left to weather.

The features which have been particularly noticed by most of my friends are:

*Treatment of entrances;* you will note from the plans that these are entirely separate, so that on entering or leaving either of the two sides, one will not come in contact with occupants of the other side.

*Closet space;* as I had always experienced a lack of closet room, this feature was carefully considered.

The living rooms are finished in birch, stained mahogany;



the dining room in oak, with plate rail; also beam ceilings and built-in china cabinets; the two principal bed rooms and bath rooms are white enamel; the back chambers are pine, stained a medium brown; the kitchen and third floor are natural pine, finished; the floors throughout are oak, with the exception of the third floor and kitchens, which are pine.

The house was built on a percentage basis, as I did not have the time to supervise the construction, personally.



Well Planned Two-Family House With Separate Entrances—Designed by the Owner, H. L. McFarland, Cleveland, O.

However, I took care of all bids, and let the various parts of the work after consulting with my head carpenter, who is a general contractor, and who is in close touch with all lines of construction work.

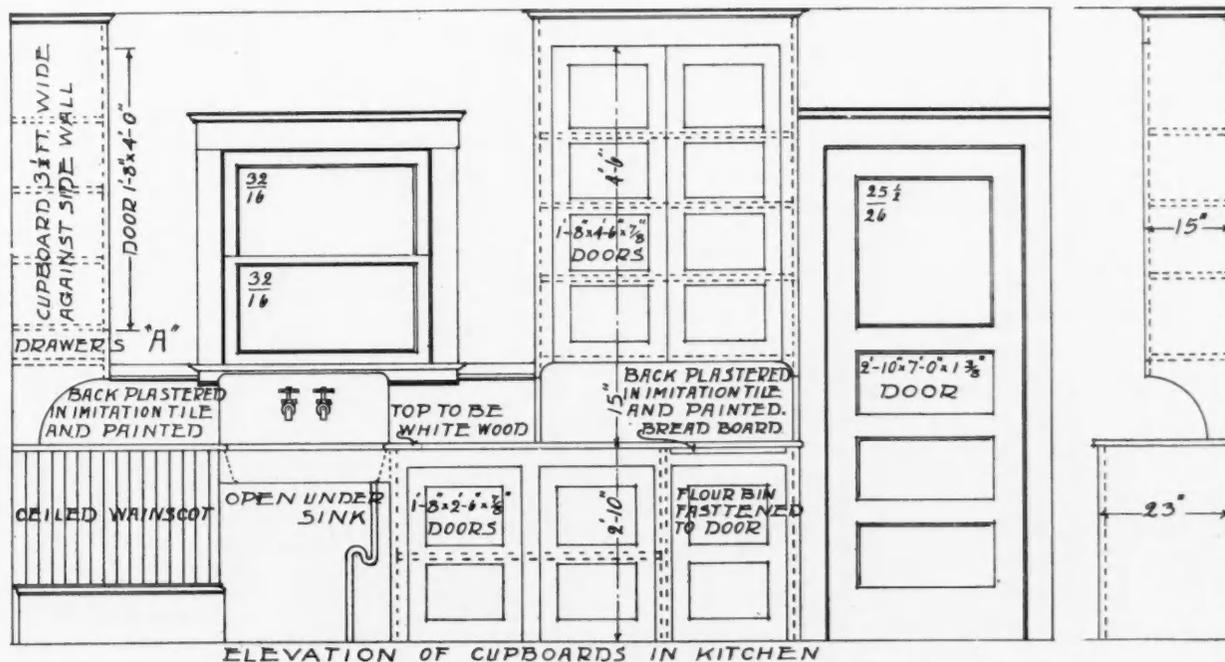
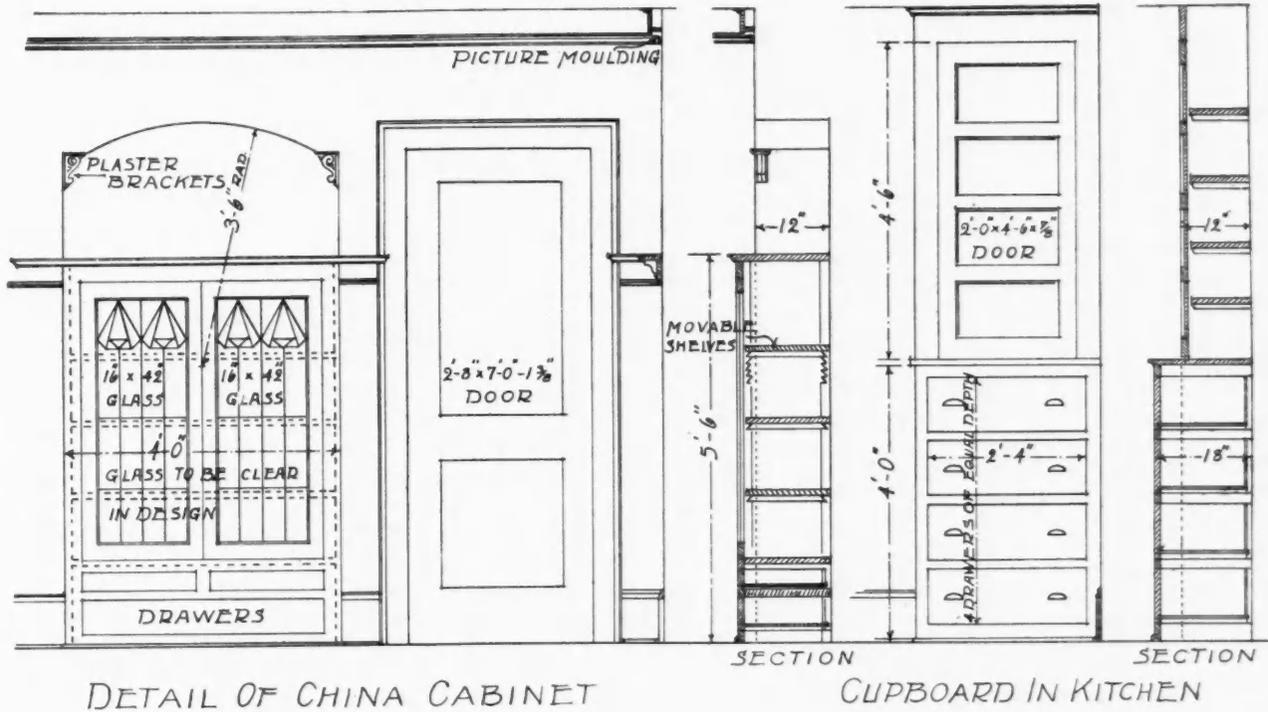
Following is a list of the larger items of cost:

Excavation and masonry, except pressed brick which I furnished.....	\$1447.00
Lumber .....	1062.00
Sash, doors and interior trimmings.....	760.00
Plumbing .....	492.00
Furnaces .....	230.00
Painting .....	300.00
Plastering .....	500.00

Slate Roof .....	295.00
Hardware, nails, etc.....	82.00
Tin work .....	85.00
Labor .....	126.00

The total cost including the above items and the percentage paid to my head carpenter for supervision, was.....\$7150.16

The plans and specifications were my own work, executed during spare time last winter, so that I might begin as soon as the weather conditions would permit. The excavating was begun March 15th, and I moved in August 4th. I have had the other side rented since September 1st, and am realizing a good return on my investment. H. L. McFARLAND.



DETAILS OF CHINA CABINET AND KITCHEN CUPBOARD

Some Features of Interior Trim Used in Mr. McFarland's Double House

**Cement Cistern for Drinking Water**

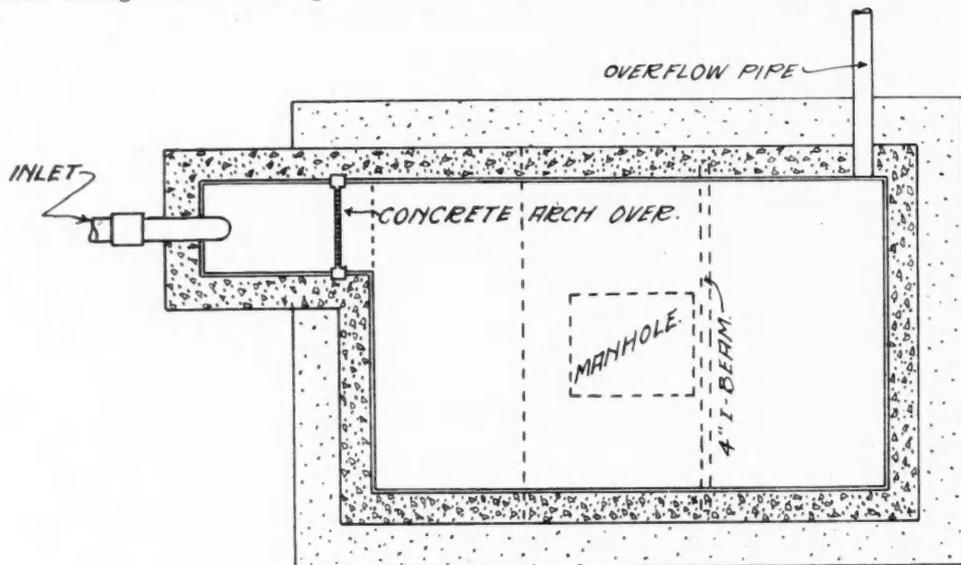
To the Editor:

Eads, Colo.

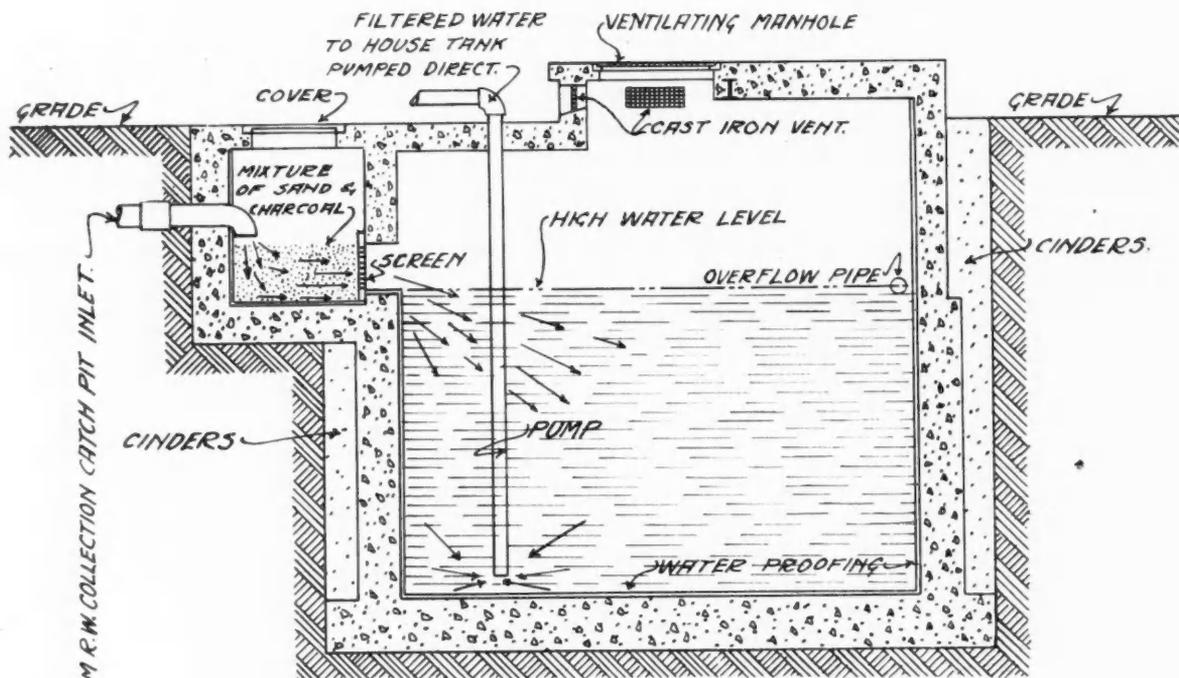
I am building a new house here; and the parties want me to build them a cement cistern, and they would like to have it so it would not taste of the cement. Is there a chemical used that would keep the water from tasting of the cement? Could one put in a filter that would purify the water and keep it from tasting of the new shingles? Also would like

or clayey matter put into the concrete for the cistern walls. In some cases impurities of this kind, dissolving out slowly, have been known to discolor the water. That is not the fault of the concrete however, but is the fault of the poor work. Dirty materials should not be permitted in any concrete work, especially for such purposes as this.

Where cistern water is used for drinking purposes a filter made of alternate layers of sand and charcoal, all about one



PLAN



LONGITUDINAL SECTION

to know the best way to build a concrete arch for such a cistern.

WALTER J. MICHELS.

Answer: You need have no uneasiness concerning such a cistern that it would make the water taste of the cement. When the concrete is thoroughly set and hardened the cement is insoluble in water and so cannot be tasted. For work of this kind the sand and gravel used should be thoroughly washed before being used to make sure that there is no loam

foot in thickness, is often put in. Such a filter is contained in a small compartment at one side of the cistern proper and through this the water is conducted into a main tank. A filter of this kind needs to be renewed occasionally, or it will itself become a source of pollution to the water. Such a filter will help appreciably the discoloration and taste due to new shingles. New shingles are only a temporary source of annoyance in this way as they soon become weathered.

The concrete arch covering the cistern may be built up over a sand core, though this means considerable labor in shoveling out the sand through the manhole after the concrete has set. A flat slab would, in most cases, be just as good as the arch. If made of four inches of concrete reinforced strongly with steel reinforcing mesh, such a slab would bear all the weight that would ever come upon it. Such a slab can be moulded at one side and then placed as a whole over the cistern top.

EDITOR.

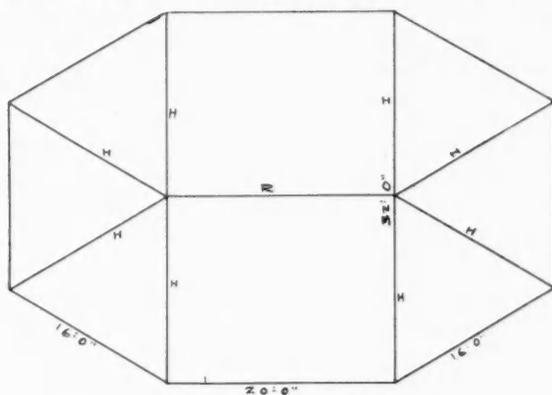


### Roof Framing for a Church

To the Editor:

Asbury, Mo.

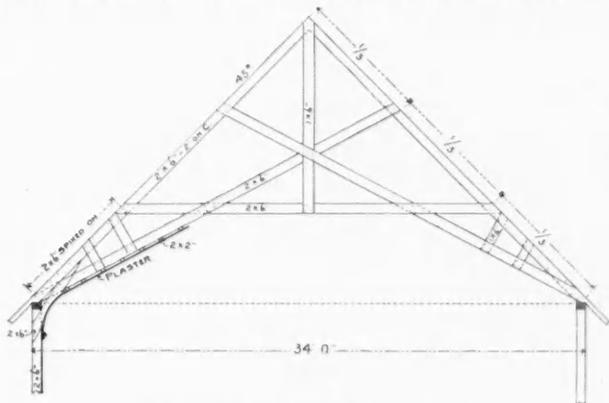
Inclosed please find plate plan for a cement block church which I have to roof. Would like to know it a self supporting



Roof Plan of 8-Sided Church

roof on the common roof part would hold it and tie the hips straight across above the collar beams. The ceiling is to run up the rafters about four feet.

I intend to construct this roof according to the sketch given in *Practical Carpentry*, Vol. 1, Fig. 138, with about 3/8 or



Truss to Support Main Part of Roof

5/12 pitch. Will say we intend to bolt two 2 by 8 inch plates on this church and it will be covered with shingles.

LESLIE L. HALL.

Answer: The sketch in question (which is reproduced here) should be all right for this building. The span shown is 2 feet greater than what you have; so it is certain that it would be amply strong.

EDITOR.



### Concrete Base for Floor Tiles

To the Editor:

Morris, Ill.

I wrote specifications for the concrete floor to be put under the tile floor at the court house here in Morris. The committee is going to take up the board floor and want to put in 4 inches of concrete with the tile on top of that. They asked me to write the specifications and give them a figure on the job. I did so, but one of the committee thinks the

specifications are not rich enough. I specified a 1 to 7 mixture, 1 cement, 3 sand and 4 crushed stone. I expected to use crushed stone from 2 inches to 1/4 inch in size. I have plenty 3/4 inch stones. Which would you recommend, and what do you think of the mixture; is it right? A false floor will be put in between the floor joists, the top of the floor joists to be sharpened.

Please tell me what you think of this mixture, whether it is strong enough or not.

C. H. BLACK.

Answer: The member of the committee who criticised your 1:7 mixture is right. The concrete under a tile floor should be absolutely water-tight, and in order to secure this, a rich mixture is needed, and we would recommend, therefore, that you use a carefully graded mixture, not leaner than 1 cement to 2 sand to 4 crushed stone, and mixed rather wet. As your concrete is to be 4 inches thick, you might lay 3 inches of the above mixture, then on top of that, as a base for the tile to rest on, you should lay 3/4 or 1 inch of rich concrete mortar, say 1 cement to 3 sand, and the joints between the tile should be well grouted with this rich mortar. The joints should be wide enough to make the floor appear as obviously a tile floor. If the joints are too narrow, this would suggest that you were trying to avoid the appearance of tiling, and the artistic effect would not be so good. A 2-inch size for your crushed stone, we think, would be rather large in a floor of this depth, and would recommend that you use a smaller size, say 1 inch down.

The top edges of the floor joists should be beveled, as this will tend to prevent cracks developing. The false floor on which the concrete is to be laid, should be put in very near the top of the joists, so that the beveled tops of the joists will be buried to considerable depth under the upper surface of the concrete. There should be about one and a half to two inches of concrete and mortar above the top level of the joists.

EDITOR.



### To Lay Out Circle Work

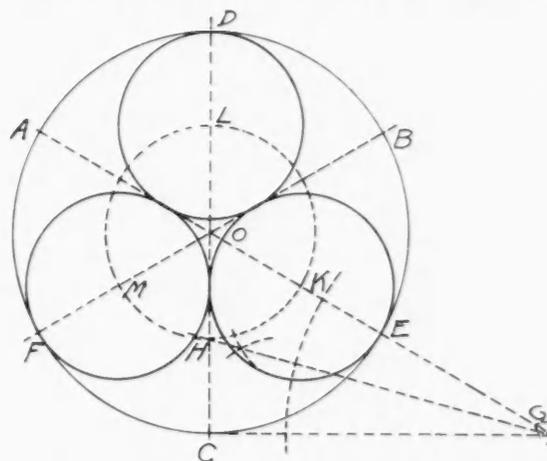
To the Editor:

Topeka, Kans.

Can you give, through the column of our much esteemed paper, the solution of the following problem: Within a given circle, draw three smaller circles, which shall be tangent to the larger given circle and to each other.

WERNER A. RICHTER.

Answer: The following will give a solution. As per sketch,



you will see that the larger circle is first divided into six equal parts by the diameters AE, CD, etc. Extend any diameter, as AE to G, making EG equal to the radius of the given circle. Join CG. Bisect the angle OGC by GH, intersecting OC in H. With center O and radius OH, draw the circle HKLM. K, L and M are the centers of the required circles.

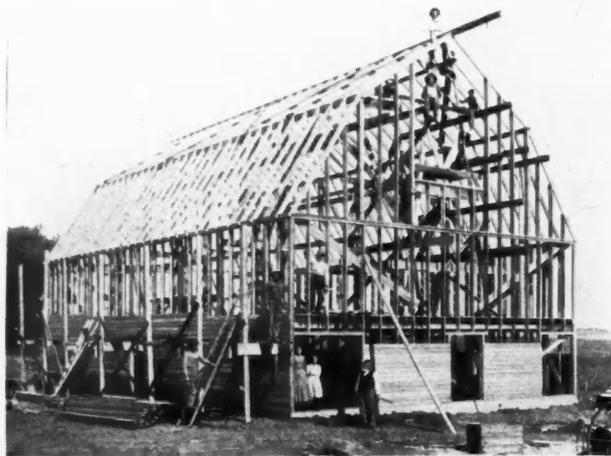
EDITOR.

### Popular Style for Barns

To the Editor:

Alton, Iowa.

Under separate cover I am sending pictures of a barn that another carpenter and myself built this fall for a farmer in this vicinity. It is 38 by 60 feet and is 16 feet high with a gambrel roof and a concrete foundation. This style of barn seems to take first place in this part of the country. The



Framework and Finished Barn

cornice is something new, at least I have not seen anything like it.

I have been a subscriber to the AMERICAN CARPENTER AND BUILDER for some time.

J. F. DOUMA.

### Fuming, Bleaching and Rusting

To the Editor:

Bloomington, Ill.

Please find \$2.00 enclosed for which renew by subscription for another year. I will say that I like the paper very much. I see questions asked and answered in this paper. I have two questions I would like to ask.

I have read in your paper about fumed oak finish, saying to put it in air tight box with ammonia. May I ask how long it takes to give a nice brown finish? I tried my luck but failed for some cause. I let it stay 24 hours but got no results. I pasted newspapers over the cracks in a box; then turned the box over and banked dirt up around the edge; but yet it failed. What was the trouble?

I also want to know if there is any way to take out rust stain caused by the nails rusting and the stain coming through the wood; is there any way to remove this rust stain? The heads of the nails were sunk in and the hole filled with crack filler, but the nails rusted and the rust came through

making a black spot on the wood all around the nail. The lumber is cherry and the black spots and the red wood look bad. What can be done?

I also like to ask is there any way to treat the nails before driven to keep them from rusting and showing the rust stain on finished stain work.

WALTER C. WILSON.

Answer: Your failure to make the ammonia fuming process of oak finishing work nicely is probably due to the fact that your ammonia was not strong enough to do the work. Ordinary household ammonia is diluted very much. It has to be in order not to blister the hands of those using it for ordinary household purposes. The ammonia for fuming should be strong; about 26 degrees Baumé. This may be secured at a drug store.

Iron rust stain in wood makes a hard problem to deal with especially if it is in some very fine piece of work; for the wood is sometimes injured slightly by the bleaching process. You might try bleaching the spots with chlorine water. Go to the drug store and they will tell you how to make and use this.

The most practical way of keeping nails from rusting in finished stain work is to use galvanized nails. These are now made so perfectly and at such a relatively low cost that anyone can well afford to use them in any work that is subjected to the danger of rusting.

EDITOR.

### A Bird House

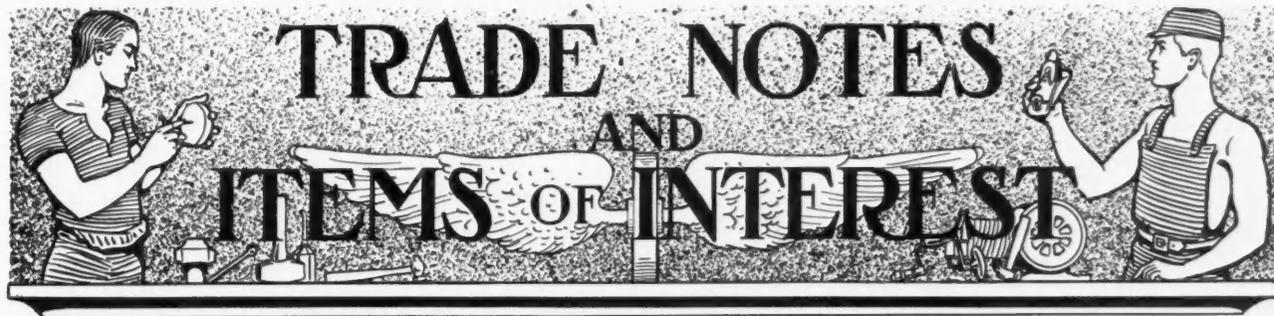
To the Editor:

Cadiz, Ohio.

Those who enjoy the company of our little feathered friends will be interested in this bird house which has been built near here. It is something of a palace for the colony of martins which make it their home. JOHN T. TIMMONS.



Snug Shelter for the Birds

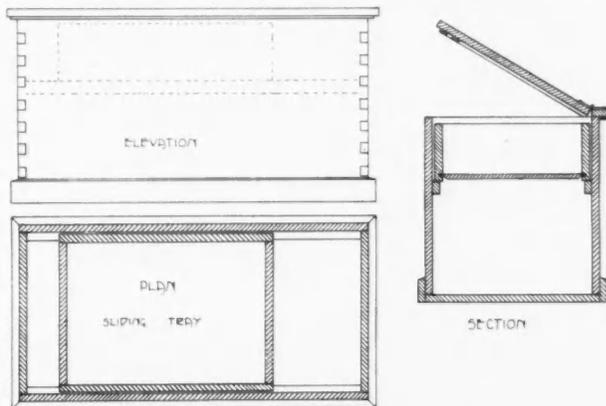


**A Cedar Chest**

For keeping furs, woolen goods, etc., cedar chests or boxes are highly esteemed and they are frequently made by woodworkers for individual use, and are also manufactured for the stores supplying material of this kind.

Cedar is used because it is commonly believed that the aromatic odor given off by the oil of the cedar-wood chest will prevent insects from attacking material stored therein. The cedar frequently used for this purpose is the ordinary red or incense cedar.

The stock for such boxes should be well seasoned so as to



**Cedar Chest—Moth and Dust Proof**

avoid warping. The interior should not be oiled or varnished. Such surface treatment would seal up the aromatic odor under an impervious layer of varnish or oil and defeat the purpose for which the box is made.

If the box is made of one thickness of cedar the outside may be finished by varnishing and polishing. This is accomplished by giving the wood one or more coats of shellac and then rubbing it down with a rag covered with shellac and oil which will give a very good polish.

Another way of treating the surface is to lightly sandpaper the first two or three coats of shellac and then rub the final coat with oil. Sometimes a good grade of furniture varnish is used in place of shellac. Either one of these agencies brings out the natural color of the wood very nicely.

In some cases the outside of the box is made of a different wood to harmonize with the finish of the room in which the chest is to be placed. In this case the cedar lining is simply tacked onto the inside of the box, the cedar boards being unvarnished on both faces.

**Cutting Glass Tubing**

Small tubing may be broken so as to have the ends perfectly square by making a nick with a three-cornered file at the point where the break is wanted. Without the file-nick the tube would break irregularly and would be very apt to splinter. If the tube should be much larger than what is known as "mill" size, it will be best to carry the nick clear around.

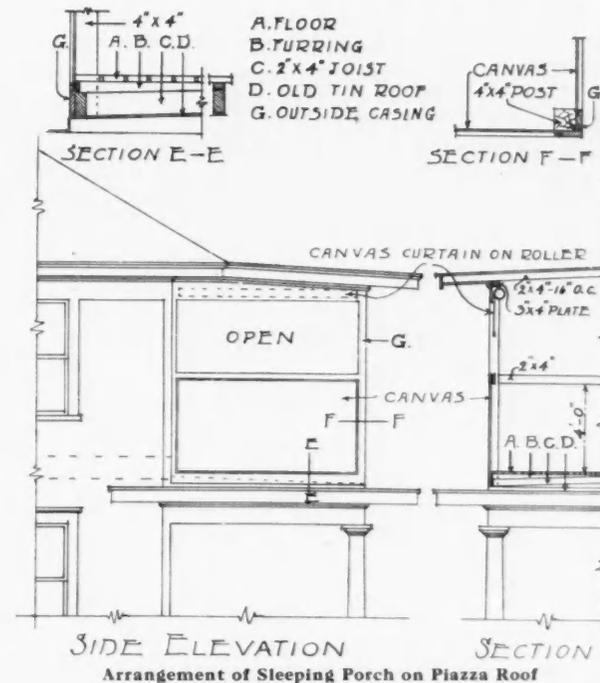
**Building a Sleeping-Porch**

A reader writes to *Suburban Life*, asking if it would be feasible and how much it would cost to build a small sleeping-porch over the roof of a piazza, with a canvas awning which will roll up. The reply of the architect to whom the question was referred, is of interest:

The sleeping-porch could be built, as you suggest, over the roof of a piazza. I know of one which was built under almost similar conditions.

Joists were laid over the tin roof and furred up to a level, and on these a cheap wooden floor was laid, with open cracks. Posts 4 by 4-inch were set at the corners, and 2 by 4-inch ones against the house, to support the 3 by 4-inch plates and the roof rafters, which were 2 by 4-inch, spaced 16 inches on centers and sloped to shed water. There was a cross stud 2 by 4-inch all the way around the porch 4 feet from the floor, and the space between this and the floor was made proof against passing glances from the street, by a canvas curtain stretched tight around and buttoned to the cross stud, sill and posts, against the house.

Besides the permanent side-curtain, there were additional



**Arrangement of Sleeping Porch on Piazza Roof**

ones which were attached to the plate, and had rope and pulley arrangements, by which they could be let down, to fill the remaining space between the plate and cross stud. The curtains were necessary to keep out driving rain-storms.

The roof was covered with a rolling canvas curtain, which was, however, never rolled up, because sudden showers were found to occur with little warning. This canvas had to be of the best quality in order to be really waterproof. In your case, the roof could be made permanent and the porch used

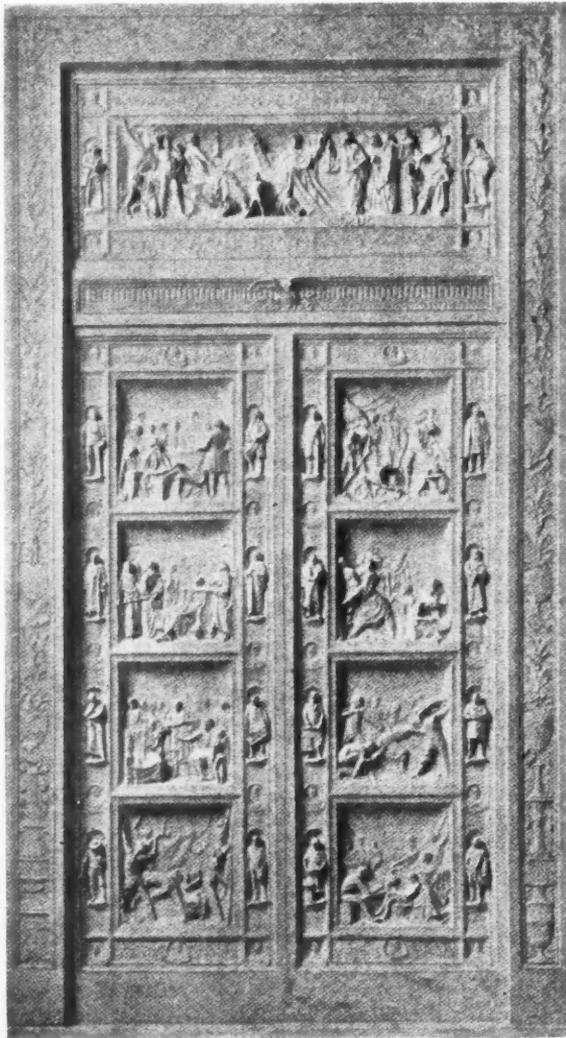
throughout the year, by using a cheap boarding over the rafters and covering this with a good quality of roofing material, but it must have a slope sufficient to shed both snow and water. Built in this way, it would be more expensive than the waterproof canvas rolling curtain. The cost was as follows:

Carpenter's labor and materials, including hardware .....	\$30.00
Curtain for roof, or permanent roof of rough boarding and prepared roofing....	12.00
Side-curtains and curtain around base...	18.00
<hr/>	
Total .....	\$60.00

This includes no painter's finish. A khaki covering for the bed will keep out any dampness, and, with two of the side-curtains down during the day, there ought to be no damage from rain.

### New Bronze Doors for National Capital

Seven years ago Congress awarded to L. Amatois, a citizen of Washington, a prize of \$10,000 for the design, declared by a board of judges to be the most meritorious, for the western doors of the Capitol.



New Western Doors of the National Capital

The doors have been completed and cast in bronze. The panels symbolize Jurisprudence, Science, Art, Mining, Agriculture, Electricity, Engineering and Commerce. The doors represent the apotheosis of America. According to the *American Architect*, they contain designs which bring the history

of the nation down to the present time.

It is seventy-two years since the first bronze doors were placed at the eastern portal of the Capitol. They were by Rogers, and are known as the Columbus doors. Afterward the Crawford bronze doors, on which were designs depicting scenes in the history of the republic, were placed at the Senate and House entrances.

### Inlaid Chess Board

The chess board shown in the accompanying illustration is the work of a seventh grade Icelandic boy, sixteen years of age, in Winnipeg. *The Manual Training Magazine* states that



Beautifully Inlaid and Carved by an Icelandic Lad

before making the board the boy made a drawing and blueprint of it. The design for the carving was adapted to the size of the frame from a design given him for a frame two inches larger.

### Melting Points

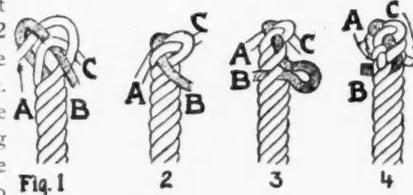
The melting points of some of the more common metals are as follows:

Cast Iron .....	2210 deg. Fahr.
Wrought Iron .....	2912 deg. Fahr.
Steel .....	2500 deg. Fahr.
Copper .....	2160 deg. Fahr.
Brass .....	1900 deg. Fahr.
Lead .....	608 deg. Fahr.
Tin .....	446 deg. Fahr.

### Rope-End Neatness

A very effective method of keeping rope ends in good condition yet at the same time small enough to pass easily through pulley blocks, small holes, etc., is the "spliced wall knot" described by a reader of *Farm and Fireside*. Fig. 1

shows the wall knot started and Fig. 2 shows all of the strands pulled tight. Fig. 3 shows the first step in splicing the ends of the loose strands back into the rope. Strand B (shaded) in this case is used as an illustration and all of the other strands are treated in a like manner with respect to the adjoining strands. After all of the strands have been treated as shown in Fig. 3 they should be drawn as tightly as possible into their places and cut off so that about one-half of an inch of each strand protrudes from the rope. The rope is then laid on a smooth board and rolled with the foot until it assumes a smooth, round finish as shown in Fig. 4.



### Standard Automatic Brush

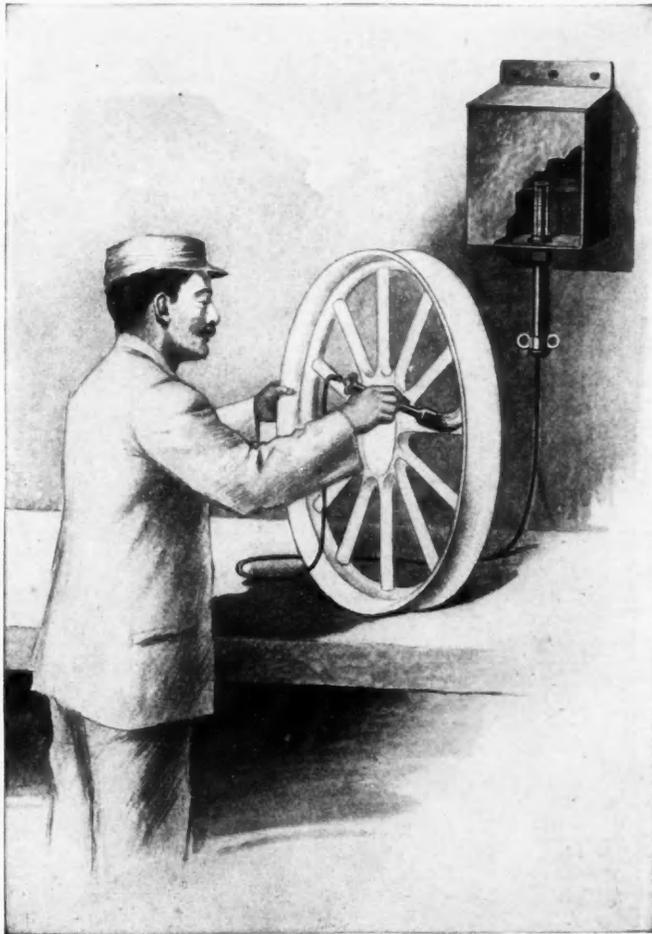
An ingenious painter's outfit has been perfected by the Standard Automatic Manufacturing Company, of New York, which will prove to be a great time and money saver in all woodworking shops where any considerable amount of painting is done. It will be especially useful for the manufacturers of automobiles, automobile bodies and wheels, all kinds of vehicles, carriages, etc. It will also be very useful for the manufacture of furniture.

This painting appliance is called the Standard Automatic Brush. Its arrangement and use are clearly shown in the accompanying illustration. By means of this labor saving appliance painting is done better and more quickly, eliminating all waste of paint. With it there is an absolutely even flow at all times, the brush being easily and accurately adjusted to put on any thickness of coat desired.

Unlike the air brush, the Standard Automatic system requires no air pressure and is claimed to be far superior to the spray, for with it the paint is rubbed into the grain of the wood. Any kind of paint can be used with it. The Standard Automatic Brush is absolutely clean and is fire-proof.

The ordinary outfit complete consists of a large paint tank with automatic valve, and 6 feet of flexible tubing with the automatic adjustable brush which is made of aluminum. For factory or shop use the paint tank is stationary and is placed in an elevated position. The outfit is also made with a tank to be strapped on the back for house and sign painting, work on structural steel, etc.

For all these purposes the Standard Automatic Brush will reduce the cost of painting. Readers of the the AMERICAN CARPENTER AND BUILDER are urged to make a test with one outfit and be convinced of the money-saving features of the



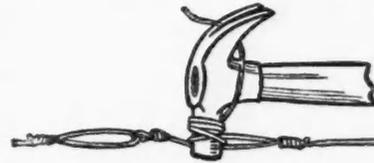
Painting With the Standard Automatic Brush

Standard Automatic system. Since the apparatus will last a life time, the first cost would be the only expense. It does not matter what you are manufacturing or what special line you are engaged in, if you are having painting work done, it will pay you to investigate this method.

Address the Standard Automatic Manufacturing Company, 50 Church street, New York, N. Y., and they will send you immediately, their booklet describing this system in full.

### The Hammer as a Wire Stretcher

The accompanying picture shows how some farmers use a hammer for splicing wires. A loop is made and the



loose end of the wire pulled through it and wrapped around the hammer head and fastened in the claws. The head is inserted in the loop as shown and by winding the wire onto the hammer head, it is stretched. As the unwinding is done, the wire is wound in such a way as to complete the splice.

### Locking Ships at Panama

With the wonderful progress being made in the construction of the Panama Canal and the near approach of the time when it will be finished, the operation of the locks takes on new interest.

Recent estimates fix the time to be spent in ascending or descending the lock stair at Gatun at an hour and a half, and in all probability the three locks at the Pacific end will be passed with equal quickness. Under ordinary circumstances it is thought that a lock chamber can be filled in about fifteen minutes. The remaining quarter of an hour may be needed of the operation of the gates and entrance to and departure from the lock. If there is need for haste, though, it is asserted that the work can be conducted twice as quickly. Once inside the lock, steamers will not be permitted to move under their own power. They will be towed by electric locomotives. In approaching a lock a safety chain in front will check any excessive speed. In crossing the isthmus a vessel will take ten or twelve hours. Hence it is likely that passengers will leave it temporarily at one end of the canal and make the journey by rail, going on board again at the other terminus. In this way several hours can be saved for sightseeing at Colon and Panama.

The largest steamships built for the transatlantic service belong to the White Star Line. One of them, the Olympic, is nearly completed. The other will be ready next year. These vessels are 890 feet in length, 92 feet wide at the broadest part, and very much larger than the Mauretania and the Luisitania of the Cunard Line. Yet the Olympic and her sister ship will have plenty of room in the locks of the Panama Canal if they ever have reason to use the new waterway. The interior measurements of each lock give a breadth of 110 feet and length of 1,000.

### Valuable Cabinet as a Hen's Nest

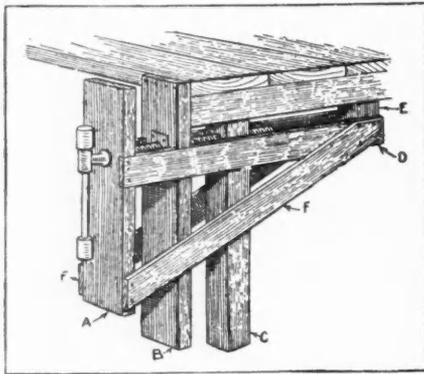
At a farm sale in Warwickshire a beautifully carved old Jacobean cabinet realized about \$380. Up to the time of the sale it had been used as a medicine chest in the cow house, and at one time was made the nesting place of poultry.



There is no absolute need of painting zinc work, for exposing it to the atmosphere has the effect of coating it with a thin film of oxide, which protects it as effectually as paint.

### A Parallel Bench Vise

Herewith is given a sketch showing the construction of a parallel vise for carpenters, as suggested by *Popular Mechanics*. The jaws of the vise, A and B, are made from 2 by 6 inch material of the right length for the bench. A hole is bored through the leg, C, of the bench to make a guide for the screw.



Carpenter's Bench Vise

This hole should be of such a size to make a close fit for the screw. Two pieces of 1 by 3-in. material, D, are mortised into the jaw, A, and fastened with screws, and also loose mortises are cut in the stationary jaw, B, to allow the pieces, D, to slide freely. These two sliding pieces, D, should be longer than the screw. The block, E, is 4 by 4 inches square and 6 inches long and fastened between the ends, D. The upper end of this block should be smooth for sliding along the under side of the bench support. Two braces, FF, are fastened diagonally from the lower end of the jaw, A, to the sides of the block, E, and over the pieces, D. The screw is an ordinary vise screw that can be purchased at any hardware store.

### To Take Heat Stains Out of Polished Wood

Take three or four thicknesses of blotting paper and lay on the spot and place a hot smoothing iron on the paper. Have ready at hand some pieces of flannel, also folded and made quite hot. As soon as the iron has made the surface of the wood quite warm, remove the paper and go over the surface with a piece of paraffine, rubbing it hard enough to leave a coating of the substance. Then with one of the pieces of flannel rub the injured surface. Continue the rubbing, using freshly warmed cloths until the whiteness leaves the varnish or polish. The operation may have to be repeated one or twice, but it always succeeds at last.

### Flexible Paint for Canvas

Take 2½ pounds of good yellow soap; cut it into thin slices and dissolve it in 1½ gallons of boiling water. While hot, grind the solution with 3½ gallons of good oil paint. This paint is impervious to water, but does not diminish the flexibility of the canvas or other fabric to which it may be applied.

### A Ladder Elevator

One of the newest appliances for the use of stucco workers and painters is the ladder elevator shown in accompanying cut. One

notable feature about this device is that it takes away entirely the necessity for erecting scaffolds, even for work on stucco houses. These ladders do not lean against the building. Only a narrow steel brace just touches it at two points, and is not fastened in any way.

Using these elevators, a couple of workmen can erect a perfectly safe scaffold and be at work on it in 10 minutes; they can afterwards raise or lower themselves at will with ease, for the elevators can be operated from the ground, from the scaffold, or from any point necessary on the ladder. It locks automatically and positively every foot.

A second smaller platform is provided, about 2 ft. above the one on which the men stand; this holds tools, material, etc., within easy reach, and its advantage can scarcely be over-estimated, for it saves the workmen stooping every little while, which is the heaviest part of the work, besides saving considerable time.

Elevators are run on and off after ladders are up, and can be folded for shipment after removing two wing nuts. There is nothing about them to get out of order, and if properly taken care of, they are good for a life-time of use.

Any wide-awake contractor who studies into it will quickly appreciate what the returns will be from investment in this equipment; in fact it will be hard for the man who does not use it to compete with estimates from those who do.

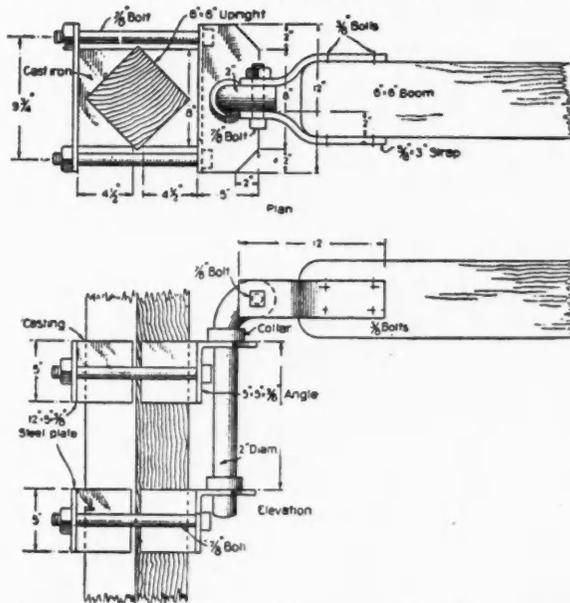
These elevators are being manufactured by the James I. Taylor Mfg. Co., Bloomfield, N. J., who will be glad to furnish circulars and full particulars on request.



A Severe Test for the Taylor Ladder Elevator

### Novel Boom-Seat for Hoisting Derrick

In the execution of building contracts novel expedients are often devised with a view to facilitating the performance of some detail of the work, or some peculiar form of construction is adopted in connection with the apparatus which is



likely to command the immediate attention of the contractor or builder who may see it. In connection with the recent erection of a reinforced concrete building a rather novel fastening of the boom to the upright of a derrick was adopted by the concern executing the contract for the work. The boom seat was attached to a construction elevator tower, the elevator being used for hoisting concrete and the derricks for raising reinforcing steel and forms to the various floors of the building. The seat consisted of two pairs of castings 8 inches wide by 5 inches deep by  $4\frac{1}{2}$  inches thick cast to fit a 6 by 6 inch timber diagonally. Each pair of these castings was tightly clamped to an upright of the elevator tower by two  $\frac{7}{8}$  by 11 inch bolts, a 12 by 5 by  $\frac{3}{8}$  inch steel plate and a 5 by 5 by  $\frac{3}{8}$  inch angle 12 inches long. The two pairs of castings were spaced so that there was a distance of 12 inches from top to top of the outward flanges of the angles. In the horizontal flanges were holes through which passed a 2-inch steel pin, held in place by a collar resting on each angle. The head of the pin was bent slightly out from the upright, upset and drilled for a  $\frac{7}{8}$ -inch bolt. This bolt held a  $\frac{5}{8}$  by 3 inch strap to either side of the head of the 2-inch pin, and the 6 by 6 inch boom was tightly bolted to these straps by four  $\frac{3}{8}$ -inch bolts.

### A New Jointer or Hand Planer

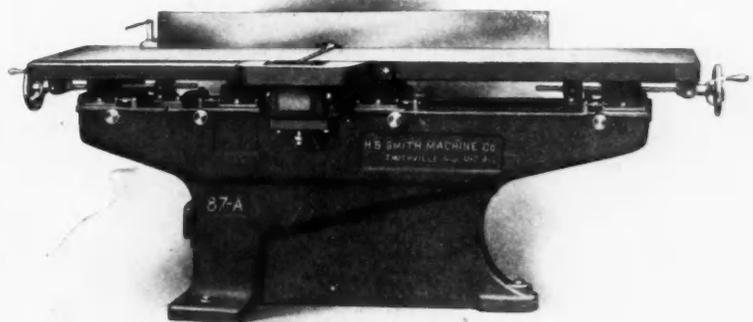
H. B. Smith and his successors the H. B. Smith Machine Company, have been building jointers for many years. Those which were made forty to fifty years ago had each table mounted on four links which were of the same radius as the cutting circle, then known as the Carey style. Subsequently they built them with the table mounted on four slides, and a few with only one large or long slide to each table, later (some twenty-five years ago), they built them with four slides or inclines to each table in such a manner that the tables were made to adjust radially with the cutting circle; and while the design did not indicate it the base was made so

that it could rest on the floor in three places like a three-legged stool. As indicated by the illustrations they have now brought out a new design in which the frame is cast whole and rests upon the floor in three places so that it cannot be twisted out of line by changing floors. And the longer table comes first so as to handle long materials with better facility. The following description will give an idea of the details and adjustments:

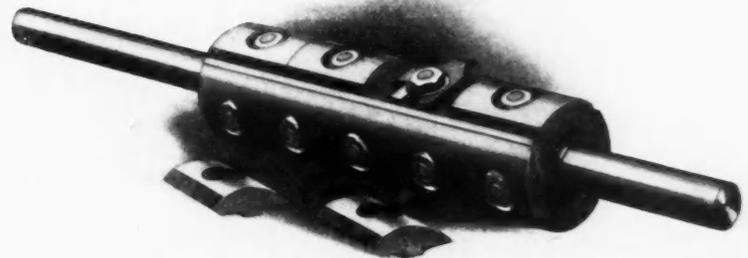
The frame is of box form, very rigid and is provided with a chute for delivering the shavings to the rear, where connection should be made to the exhaust pipe system. The top of the frame for supporting the table inclines is 74 inches in length, while the base is 46 inches long by 24 inches at the rear end of the 12-inch and 16-inch machines. The larger machines have wider frames.

The tables are extra wide and conjointly are 86 inches over all, the front table being 48 inches long. These tables are deeply ribbed so as not to sag or twist out of truth, and are raised and lowered by hand wheels and screws at each end on inclines which are locked together and tongued to the carriage, making it practically impossible to get the tables out of alignment. The rear table has a rabbeting groove  $\frac{1}{2}$  inch deep and a plain rabbeting bracket is furnished with each machine. Both of the tables are faced with steel next to the cutter-head and can approach one another so as to reduce the throat to  $1\frac{1}{4}$  inches.

The carriages on which the tables are mounted, are secured to the main frame in dove-tail slides, and can be drawn away from the cutter-head for projecting or molding knives, and for changing and sharpening the cutters. Four small hand wheels serve to clamp the carriages on the position desired.



Rear Side View of New Jointer



New Round Safety Head Showing Sectional Caps Removed on Two Sides for Projecting Cutters

The rear inclines adjust for glue joints.

The head-stock is firmly held in clamp bearings and is adjustable by screws beneath for aligning the cutter-head perfectly to the tables. The bearings for the cutter-head are of the new wing or side-clamp style and are self-oiling; the

front box being  $6\frac{1}{2}$  inches and the rear box  $7\frac{3}{4}$  inches long.

The new cutter-head is made round and is arranged to carry two thin self-hardening knives which are held on by two steel caps and screws; the other two sides of the head are slotted and provided with bolts and nuts for holding the projecting cutters which may project to cut to the depth of 1 inch. These slots are covered by sectional caps which can be removed when cutters are used, as shown in one of the cuts. The angle of cut is the same as any regular 4-slotted head and therefore offers no beating resistance to the cut. The head proper is made of high grade crucible steel with the lips for self-hardening knives faced with hardened tool steel, and the journals which are forged solid thereon are turned and ground to  $1\frac{1}{2}$ -inch to fit the clamp bearings above referred to. The head is driven by a  $4\frac{1}{2}$  by 5 inch pulley.

The guide or fence is 54 inches long, tilts to 45 degrees for bevel planing, may be set slightly diagonally and adjusts entirely across the tables.

The countershaft is provided, consisting of a shaft of suitable size with pressed steel hangers, and tight and loose pulleys 10-inch diameter by 5-inch face, the loose pulley being fitted with the Gleason patent self-oiling bush.

The equipment for regular jointers consists of one pair of thin, self-hardening cutters, and bolts and nuts for the other two sides of the head including sectional caps; also the countershaft described above.

For further particulars address H. B. Smith Machine Company, Smithville, N. J., U. S. A.

### To Dull Brass

One part by weight of iron rust, 1 part white arsenic, 12 parts hydrochloric acid. Clean the brass thoroughly, and apply with a brush until the color desired is obtained, then rinse well, dry and lacquer.

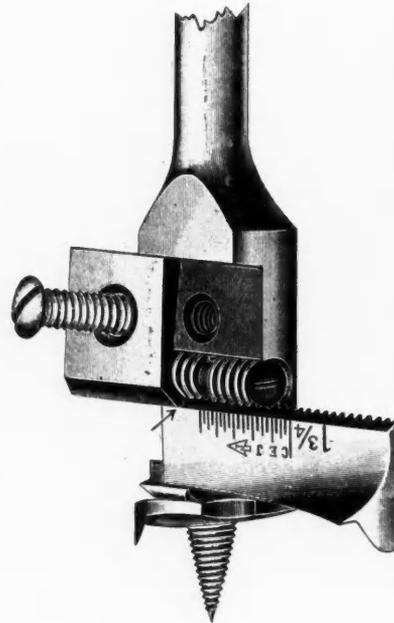
### Improved Expansive Bit

Carpenters and builders generally will undoubtedly be interested in the accompanying illustration showing the improved Steer's patent expansive bit, made and sold by C. E. Jennings & Co., 42 Murray street, New York. Particular

attention is called to the micrometer screw by means of which the cutter can be instantly adjusted to the thousandth part of an inch. There is a bevel on the cap and the cutter; and this, with the teeth, prevents the cutter from slipping and creeping. Bits are made for large cutting, from  $\frac{7}{8}$  to 3 inches, and for small cutting from  $\frac{5}{8}$  to  $1\frac{3}{4}$  inches. The cutters, caps and screws can be obtained in various sizes.

These bits come packed in waterproof canvas case, so made as to prevent damage to the tools. C. E.

Jennings & Co. are manufacturers of the "Arrow Head" line of carpenters' tools, and will be glad to send catalogs and price lists to any address on request.



### THE Kawneer System of Store Fronts

The Kawneer System of Store Fronts is not founded entirely upon theory but upon actual experience as well. Its development is based upon years of study into the requirements of a modern store front.

The construction of the Kawneer System is practical, and the installation of it is so simple that with ordinary care you can erect a first-class and complete modern store front. All glass is set from the outside and the different bars are so made that there is ample allowance for construction and expansion. It's the only construction that enables you to REGULATE the ventilation and drainage of show windows.

Write for our new 1911 Booklet No. 2. It contains some good pointers on store fronts together with illustrations.

**KAWNEER MFG. COMPANY**

Factory and General Offices

NILES, MICHIGAN

BRANCH OFFICES IN ALL LARGE CITIES



### M. P. DURABLE FLOOR VARNISH

Price \$3.00 per gallon; Quarts 85c each

Exhaustive tests conducted during many years show this varnish to be the most durable and elastic Floor Varnish on the market. It is impervious to water and does not mar nor scratch white. It is light in color, thus preserving the natural beauty of the grain. It can be used with equally good results over painted or grained surfaces. It dries hard in from 15 to 24 hours, and can be rubbed and polished or left in the gloss.

For sale by paint dealers everywhere. If not at yours, we will send by prepaid express upon receipt of price. Full descriptive price list upon application.

**THE GLIDDEN VARNISH CO.**

Makers of High Grade Varnishes for all purposes  
GLIDDEN BLDG., CLEVELAND, OHIO

# GLIDDEN'S

GREEN LABEL VARNISHES



## How a New York Contractor Made a Barrel of Money on 150 Suburban Houses!

### The Gordon-Van Tine Catalogs OPENED HIS EYES!

Here's just **one example** of the way our business grows. A New York Contractor, conducting extensive building operations in the suburb of Far Rockaway, Long Island, noticed an advertisement of the Gordon-Van Tine Co. of Davenport, Iowa, offering high-grade, guaranteed Millwork, Lumber and all other Building Material—**direct from the mill**—at a big saving over retail dealers' prices. It interested him. He wrote for our Catalogs. When they came, the low prices opened his eyes to the enormous savings offered.

### Comparison of Our Prices With Local Dealers' Made Him "SIT UP AND TAKE NOTICE"

He said to himself, "Great Scott, if there's as big a saving as that, **me for Gordon-Van Tine!**" He made careful comparison of our quotations with the prices asked **on the same class of stuff**

by local retail lumber dealers and millwork men. He decided to risk a trial order, as he found our bank references O. K. and our rating in Dun and Bradstreet satisfactory.

### Sent Us a "TRIAL ORDER"—Goods Shipped Quick and Proved to be HIGHEST QUALITY

We filled the order in the usual way—**promptly, carefully, conscientiously**. We didn't know he had "150 houses up his sleeve." It wouldn't have made any difference even if we had. The contractor was delighted with our stuff.

It was not only better than he expected, but everything came through "shipshape"—due to our extreme care in packing.

He saved so much money on the "trial order" that he felt like he had tapped a "pay streak."

### Orders Material for 150 HOUSES and Becomes a STEADY CUSTOMER of the Gordon-Van Tine Co.

The pictures at the top show the class of houses which this wide-awake contractor built from our materials exclusively.

He made a barrel of money on those 150 houses

and is a steady buyer of our materials. There are over half a million fellows throughout the country who have also "seen a great light" out in Iowa.

### Honestly, MR. CONTRACTOR, Why Not Investigate?

Our immense concrete warehouses are packed and with bargains in sash, doors, millwork, stair and porch material, flooring, roofing. Everything ready for quick shipment anywhere; **quality, safe delivery and satisfaction guaranteed**. Get the Free Catalogs. Compare prices, note the big saving, and send us a trial order.

**GORDON-VAN TINE CO., 553 Federal Street, Davenport, Iowa**

**What is Marble?**

The most recent authority on marble defines it as follows: "The name marble is given to any calcareous or magnesium rock sufficiently beautiful to be utilized in decorative work. Commercially this includes limestones, magnesium limestone and dolomites, onyx or travertines, serpentine and alabaster, in short all varieties that are capable of taking and retaining a polished face and that are adapted to and available for decorative purposes."

By a critical investigation of a manufactured marble, "Tesco," a product recently placed on the market, it is found to display all the analytical features of a real marble—a multitude of crystals twined together to make up the whole, displaying natural colors that closely resemble the quarried marbles of France, Italy, Belgium, Greece and those of this country and so easily distinguishable in its characteristics as to be recognized by name.

The advantage of a surface that is crystallized, translucent and without any fractures gives it merit, and furnishes the building trades a marble product that will create a new market peculiarly its own.

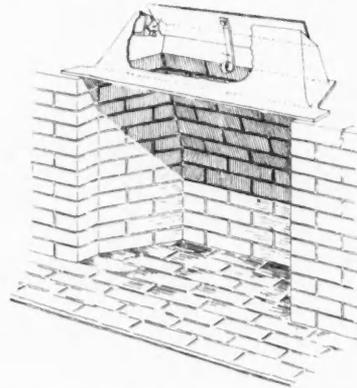
The results finally attained in this manufactured marble came after 28 years of experimenting, in which time the product seems to have been perfected to withstand the exposure of the elements. Since its price is low it undoubtedly will be given a trial; and will prove successful, if its claims are borne out—which time will tell when put in general use.

**Fireplace Construction**

A genuine, old-fashioned fireplace for burning logs is a most delightful feature in any home. Family life centers around it and it has a charm that no other feature has. A gas log or a small coal grate is a poor substitute for the

genuine wood fire. Unfortunately, many an attempt at such a fireplace is a failure simply from the lack of knowledge on the part of the average builder, of a few simple rules for building such a fireplace.

There is no mystery nor any great difficulty in building a fireplace that will burn wood without smoking: proper pro-



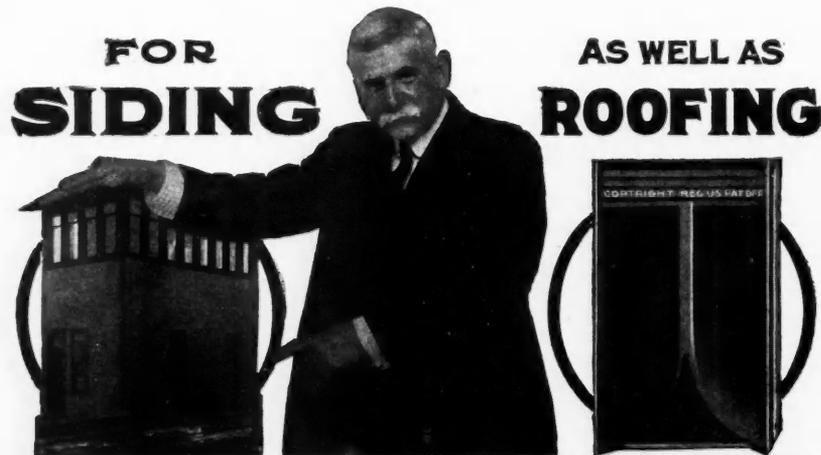
**The Covert Fireplace Throat and Damper**

portioning of the flue to the fireplace opening, proper forming of the throat and smoke chamber—with this knowledge any mason can build a successful fireplace.

Clear and explicit rules for the above are found in "Hints on Fireplace Construction," published by the H. W. Covert Company, No. 168 Duane Street, New York City, and a copy of this booklet will be sent *free* to any one who will apply to them.

**To Whiten Brass or Copper**

Three pounds cream of tartar, 2 gallons water, 4 pounds finely-divided tin.



**CORTRIGHT**

**Did You Ever Know This?**

**Selling Talk  
No. 9**

This is one of a series of Selling Talks published to help you make more profit through Cortright Metal Shingles. Next month's talk will explain how an absolutely tight roof is guaranteed with Cortright Metal Shingles.

That Cortright Metal Shingles are just as desirable and successful for siding as for roofing? This has been conclusively proven by their many years of service for this purpose. They're laid in the same manner as when laid on the roof and we supply a Corner Finish for use at the corners of the building, similar to the Hip-Covering we supply for the roof.

All the same advantages which apply to Cortrights on the roof apply when used as siding, prominent among them being their protection from fire and their permanence. And what could be more ornamental than the Cortright design?

The above picture is of our Metal Slate but always remember that we also supply three other styles.

Get the actual photographs of buildings roofed with Cortrights—see how they look in practical use.

These are in our two free illustrated books and all you need do is to send us your name, when we'll forward them by return mail.

Gentlemen: You may send me the two free books, offered by you in the January issue of the American Carpenter and Builder.

**Cortright Metal Roofing Company**  
PHILADELPHIA AND CHICAGO

**COUPON**

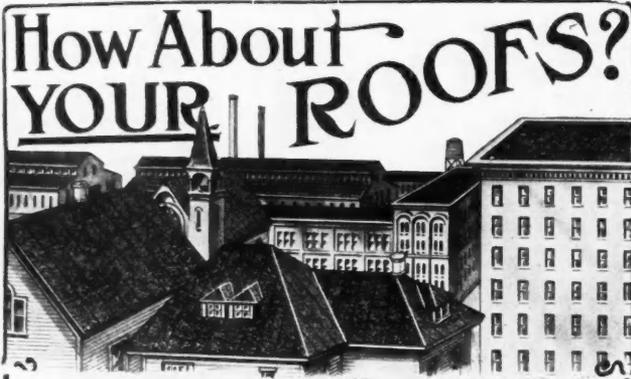
Name .....

Street Address .....

City .....

Business .....





be they **NEW** or **OLD**  
**Ready-To-Lay**  
**Burmite**  
**FLEXIBLE - CEMENT -**  
**BURLAP INSERTED MATERIAL**  
 (PATENT APPLIED FOR)  
 WILL BE FOUND NOT ONLY THE  
**MOST DURABLE AND INEXPENSIVE**  
 BUT THE  
**HANDSOMEST AND MOST PRACTICAL**  
 FOR  
**ROOFING AND SIDING**

Factory, Residence and Business Buildings, Churches,  
 Warehouses, Summer Homes, Outbuildings,  
 Bungalows, Garages, Barns, Etc.

MADE IN TWO SURFACES—  
**BIRD-SAND and "TWOLAYR" SLATE-CHIPS**  
 TO MEET EXTREME WEATHER CONDITIONS

Sparks, Hail, Sleet, Sliding Ice, Rain, Snow or the Extremes of  
 Cold and Hot Weather do not affect the Storm-Resisting and Fire-  
 Retardative Qualities of BURMITE.

For the "Twolayr" Slate-Surfaced Material, Natural Colored  
 Slate of Unfading Quality is used, the fine slab-shaped Slate Chips  
 being embedded into the Pure Asphalt Composition so thoroughly  
 —and put there to stay—that a smooth, even upper mineral sur-  
 face (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.

**2** Permanent SLATE-RED || UNIFORM SOLID SLATE  
 Natural and "Stoddard" Surface. Requires no Painting.  
 Slate Colors) SLATE-GREEN || Kept Clean and Bright by the Rain

**THE BEST BY TEST**

Sold on its MERITS and LASTING QUALITIES  
 The First Cost—The Only Expense

As a rule, other grades must be coated at least three times in 7  
 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

GENERAL OFFICES, 1208-1226 Tribune Bldg. CHICAGO  
 PLANT, 56th, Armitage and Grand Avenues

BEAVER BOARD. Coating for Prepared Roofing.  
 PAINT for Structural Iron Work, and ROOFING BRUSHES

CHICAGO, BUFFALO, N. Y. CINCINNATI, O. GREEN BAY, WIS.  
 GRAND RAPIDS, MICH. PITTSBURGH, PA. ST. PAUL, MINN.

**CUT AND USE THIS COUPON**

Birmingham & Seaman Co., Tribune Bldg., Chicago  
 Mail to my address, Samples and Booklet. This places me  
 under no obligation.

Name.....

Address.....

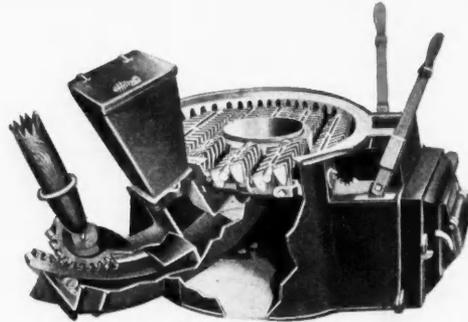
Business.....

C. & B. 1-11

**The Peck-Williamson Way of Reducing  
 Cost of Living**

Underfeed heating systems have created a distinctive place  
 among worth-while inventions. The Peck-Williamson slogan  
 which has been sounded without let-up for years is one which  
 appeals strongly to anyone who really comprehends its cheer-  
 ful meaning; viz., "The Peck-Williamson Underfeed systems  
 save one-half to two-thirds of coal bills." Here is a slogan  
 that gets pretty close to everybody who has to pay the bills.

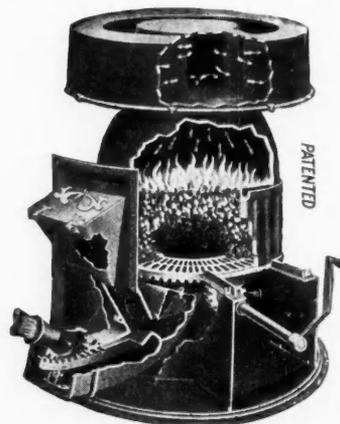
The Peck-Williamson Underfeed principle of coal-burning,



The Boiler Underfeed Device

indorsed by many municipalities as best for health and the  
 wiping out of the smoke nuisance, has already won national  
 favor. Ten years of success with the Peck-Williamson Under-  
 feed warm air furnaces have had a counterpart in two  
 years of rapid growth of Underfeed boilers which have en-  
 joyed two seasons of increasing sales and wonderful popu-  
 larity. The Underfeed boiler followed the Underfeed warm  
 air furnace because of an insistent demand for the same type  
 of apparatus by those who preferred steam and hot water to  
 warm air.

To meet this demand, after several years of careful plan-



Underfeed Boiler, Cut Out to Show How Fire Burns on Top

ning and research, the Underfeed steam and hot water boilers  
 were placed on the market in January, 1909. The new  
 apparatus met with a hearty reception by the heating trade  
 generally, and a large number of boilers were sold and in-  
 stalled last season. The boilers made good in every particu-  
 lar and many enthusiastic letters have been received from  
 dealers and users telling of the remarkable savings which  
 Underfeed boilers are effecting in money, time and labor.

The Underfeed heating systems have won national recog-  
 nition among architects, builders, and improvers of real estate  
 as systems which add to the renting and selling value of  
 any building, because they provide clean, even heat at least  
 cost.

Underfeed furnaces are made in three sizes—the smallest  
 suitable for the modest home of four or five rooms, and the

# UNDERFEED

HEATING SYSTEMS

## Decrease Cost of Living.

9 Tons Hard Coal = \$57.60

7" Buckwheat Coal = 23.80

Saving = \$33.80



### Write for FREE Books on CLEAN Heat at LEAST Cost

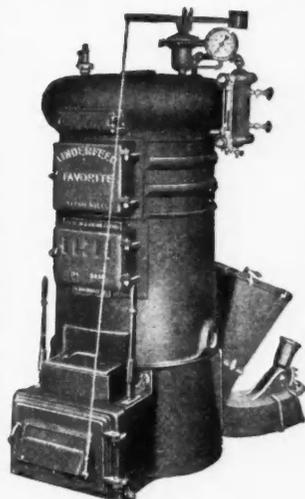
**W**HILE the cost of food and clothes has materially INCREASED, the Underfeed coal-burning way has in far greater measure DECREASED the cost of heating. Carpenters and builders are invited to take advantage of this economic certainty which ADDS to the renting and selling value of ANY building. Thousands who have thoroughly tested Underfeed heating systems are willing and able to prove that

## The Peck-Williamson Underfeed HEATING SYSTEMS WARM AIR STEAM-HOT WATER FURNACES-BOILERS Save 1/2 to 2/3 of Coal Bills

There is nothing mysterious in this. The UNDERFEED burns coal in the *logical* way. Coal [is] fed from below. All fire is on top. Smoke and gases *wasted* in other heating plants must pass through the flames, are consumed and make more heat. Pea sizes of hard and soft coal or *cheapest*

slack, which would put out fire in ordinary furnaces and boilers, yield in the Underfeed as much clean, even heat as *highest-priced* coal. This means you save the big difference in coal cost. The few ashes are easily removed by shaking the grate bar as in ordinary furnaces and boilers.

This illustration shows The Underfeed Boiler.

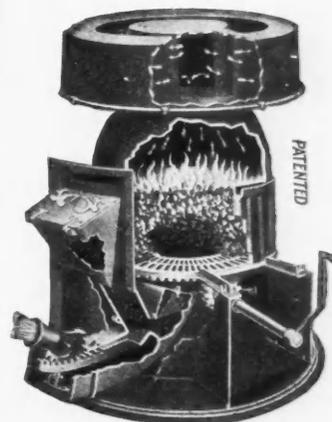


G. M. Stanton, of 127 Pennsylvania Ave., Binghamton, N. Y., is a good witness for Underfeed Saving qualities. He writes:

*"I have heated ten rooms, keeping the temperature at 70 degrees. I have used 7 tons of Buckwheat coal at a cost of \$23.80 and have heretofore used 9 tons of Chestnut coal at a cost of \$57.60, making a saving of \$33.80. I have saved one-half the work of caring for the furnace. I would not let the Underfeed go out of my cellar for \$1,000 if I could not purchase another like it."*

Let us send you an Underfeed Furnace Booklet and fac-similes of other cheerful testimonials like this, or our Special Catalog of Steam and Water Boilers—both FREE. Heating plans of our Engineering Corps are FREE. Write today, giving name of local dealer with whom you prefer to deal.

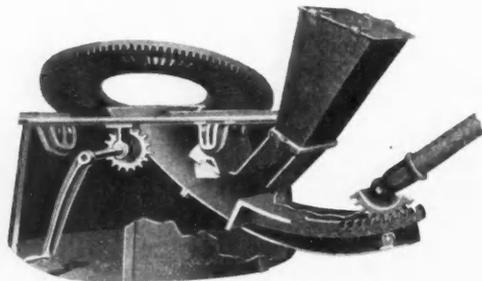
Illustration shows furnace without casing, cut away to show how coal is forced up under fire, which burns on top.



**THE PECK- WILLIAMSON CO., 436 West Fifth Street, Cincinnati, Ohio**

largest giving satisfaction in homes that include 14 or 15 rooms.

Underfeed boilers made in fifteen sizes each, steam and water, with ratings ranging between 450 and 2725 square feet. The Underfeed contains all the good points of the



The Furnace Underfeed Device

best top-feed furnaces and boilers, with the addition of the Underfeed method of combustion and operation, which is just the reverse of the ordinary way of firing.

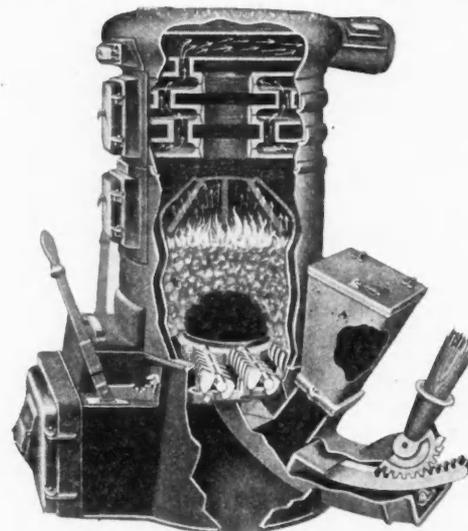
This enables the successful use of the cheapest grades of hard or soft coal, which could not possibly be burned in the ordinary furnaces and boilers, and the consequent saving is claimed to be one-half to two-thirds in coal bills.

The cuts clearly show the operation of the Underfeed feeding devices. Coal is placed in the hopper at the side of the boilers and furnaces and pumped up through the feed chute by means of a wooden lever which operates the plunger, onto the grate and underneath the body of burning coal. The fire is pushed upward and outward, and the fresh coal is thus surrounded on all sides and the top by fire. Smoke and gases released by combustion are consumed, thus utilizing every heat unit and bringing the fire in direct contact with the most effective heating surfaces of the heater. The few ashes

are removed as in ordinary furnaces and boilers.

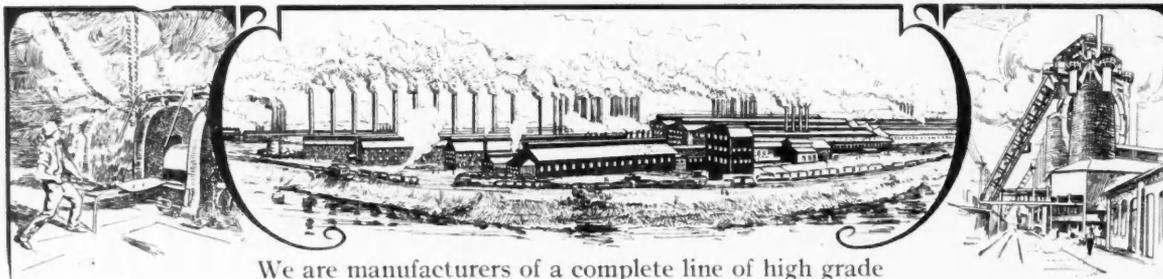
Carpenters and builders are urged to specify Underfeed heating plants, because in so doing, they will confer favor upon the house-owner or renter, because the Underfeed soon pays for itself and then keeps on saving money by reducing cost of heat.

Carpenters and builders are invited to write to The Peck-Williamson Company, 436 West Fifth street, Cincinnati, Ohio,



The Underfeed Furnace, with casting removed, cut away to show how coal is forced up under fire, which burns on top

for their illustrated Underfeed Furnace booklet or special catalog of Underfeed water and steam boilers. These are free, as are heating plans of the Engineering Corps of this big Cincinnati concern.



We are manufacturers of a complete line of high grade

## SHEET AND TIN MILL PRODUCTS

Of every description and for every known purpose. The following products are carefully manufactured, high in quality, and are specially adapted to the requirements of modern building construction. American products are always standard—will give maximum service.

**Apollo Best Bloom Galvanized Sheets—Gauges 10 to 30**  
**Formed Roofings and Sidings—Black, Painted, Galvanized**  
**Terne Plates—MF, American Old Style, American Numethod**

Write nearest District Sales Office for full information and quotations. Send for Weight Cards and Booklet, and for our valuable 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

# "RICHMOND" CONCEALED TRANSOM LIFT

*"Simply turn the Knob"*

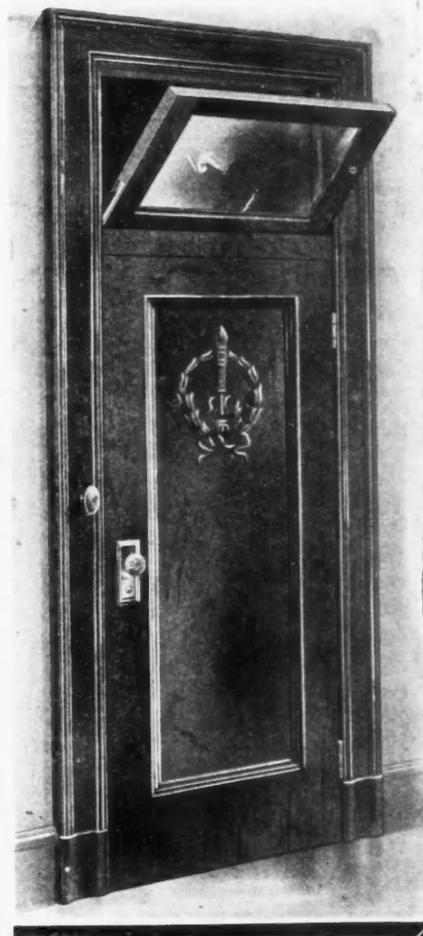
The "RICHMOND" Concealed Transom Lift is in a class by itself. Scientific principles have been applied in its design with joints and contacts reduced to a minimum.

It is easily set in position, operates by the turn of a knob, has a positive action and the knob is the only part exposed.

The operating knob is about on a level with the door knob, turns almost as easily as a latch and locks the transom in any position.

The knob is the prominent feature of this device, and the fact that a transom can be operated by turning a knob will appeal to owners—the fact that all mechanism is concealed should appeal to architects.

We have an interesting booklet on this device, which tells more about it, and we will gladly mail a copy to any architect upon request.



## THE McCRUM-HOWELL Co.

NEW YORK: 41st Street and Park Avenue

CHICAGO: Rush and Michigan Streets

Manufacturers of

"RICHMOND" Modern Improvements

For Heating, Vacuum Cleaning  
Ventilation and Sanitation

If it's "RICHMOND" it's right

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

### Money Making Offer on Portable Baths

Through the inventive genius of a Toledo man, Mr. Willard E. Allen, it appears that the blessings of modern bathing facilities are now to be enjoyed by all. It is a rather startling fact, when you come to think of it, that with all the progress that has been made in sanitation and in the matter of household conveniences of other kinds, there has been no improvement for the great majority of families in the matter of bathing facilities.

Most people are still obliged to use the same crude appliances that were used hundreds of years ago. For everyone knows the sorrowful fact that modern bathrooms are possible only where there is running water, supplied either by public water works or private water pressure systems, and then only at great expense.

The vast number of people living in small communities or in rural districts where water pressure systems are unknown still have to rely on the old bothersome and unsatisfactory utensils of long ago.

Any one who has experienced the inconvenience of carrying water to pour into a tub or basin, the nuisance of slopping water, to say nothing of the incompleteness of the old cleansing process, will appreciate at once the wonderful advantages of a simple equipment which will do the work claimed for this invention of Mr. Allen's.

Being naturally of an inventive turn of mind, Mr. Allen perfected what is known as the Allen Portable Bath Apparatus for his own use. The success of the invention was so remarkable, however, that friends and neighbors in large numbers immediately wanted to share in its benefits also. The Allen Manufacturing Company was accordingly organized, with Mr. Willard E. Allen as president, and the project was undertaken to manufacture the Portable Bath Apparatus

in sufficient quantities to supply the huge demand which immediately developed.

The apparatus itself proved so efficient in operation, so simple in construction and so easily used, at the same time being extremely moderate as to cost, that its use quickly spread throughout all parts of the country. It is now stated that after having been thoroughly tested throughout a considerable period of years, a quarter of a million of these portable bath outfits have been sold.

The Allen Manufacturing Company, 3221 Allen Bldg., Toledo, Ohio, are making a very attractive offer to readers of the AMERICAN CARPENTER AND BUILDER to act as district agents for the Allen Portable Bath Apparatus. It will pay you to drop them a line requesting details of their agency plan and information concerning the apparatus itself. You will find this very interesting and well worth investigating.

### New Light on Vacuum Cleaning

The McCrum-Howell Co., manufacturers of the well-known "Richmand" line, have just issued two new booklets dealing with the subject of vacuum cleaning.

These booklets are entitled "What it Means to Be Clean" and "Vacuum Cleaning and School Hygiene," written in a very fresh and attractive style, offering many good ideas on this new branch of industry.

Vacuum cleaning, both built-in and portable, is certain to have a great future in this progressive country. Carpenters and builders should see to it that they keep fully informed as to all its developments.

We understand that these booklets will be mailed with other information, to all readers of the AMERICAN CARPENTER AND BUILDER requesting the McCrum-Howell Company, New York City, for details of the vacuum cleaning business.

Concrete and Cement Floors Wear Dusty  
Sweeping Makes Them Constantly Dustier

## KONKRETO

gives them a surface like Tiling—smooth, sweepable,  
dustproof and dampproof.

Used everywhere in Factories, Stores, Storerooms,  
Schoolhouses, Residences, Garages and R. R. Stations.

**The Varnish  
That Lasts  
Longest**

**Murphy Varnish Company**

FRANKLIN MURPHY, President NEWARK, N. J.

Associated with Dougall Varnish Company, Limited, Montreal, Canada

BOSTON  
CLEVELAND  
ST. LOUIS  
CHICAGO

# Will You Answer This Advertisement And Get These Samples Delivered Free?

**R**IGHT by actual test we want you to know all about Johnson's Wood Dye and Under-Lac. A single trial will prove their superior merits. We will gladly bear the expense of sending samples that you may be familiar with the quality of our goods. There's a great difference between

## Johnson's Wood Dye

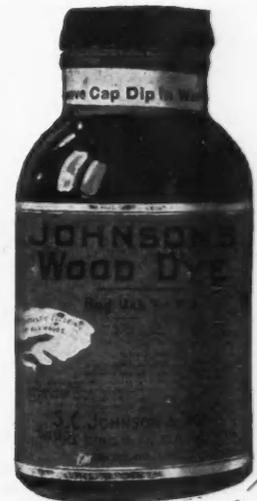
and a mere stain. It is a real deep-seated dye that penetrates the wood, giving a rich, permanent color that will not raise the grain in the slightest. Johnson's Wood Dye is made in fourteen standard shades, as follows:

- |                        |                             |
|------------------------|-----------------------------|
| No. 126—Light Oak      | No. 130—Weathered Oak       |
| No. 123—Dark Oak       | No. 131—Brown Weathered Oak |
| No. 125—Mission Oak    | No. 132—Green Weathered Oak |
| No. 140—Manila Oak     | No. 121—Moss Green          |
| No. 110—Bog Oak        | No. 122—Forest Green        |
| No. 128—Light Mahogany | No. 171—Flemish Oak         |
| No. 129—Dark Mahogany  | No. 178—Brown Flemish Oak   |

Half-Gallons—\$1.50 Each.

## Johnson's Under-Lac

is a spirit varnish which will not chip, mar or scratch. It is better than shellac or varnish, as it can be easily applied and does not raise the grain, nor is it thick and sticky like varnish—dries in half an hour. Gallons \$2.50. In answering, use attached coupon for samples of Johnson's Under-Lac and Dyes. State carefully the number of shades wanted. With samples we will also send a copy of our booklet, "The Proper Treatment for Floors, Woodwork and Furniture," showing all shades of dye.



Free Sample of Dye

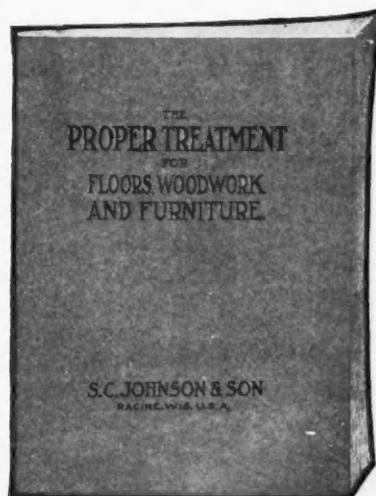
### S. C. Johnson & Son

"The Wood Finishing Authorities"

Racine, Wisconsin, U. S. A.



Free Sample of Under-Lac



Free Book

Please send FREE samples of Johnson's Under-Lac and Wood Dye No. —. Also booklet, "The Proper Treatment for Floors, Woodwork and Furniture." I agree to test the samples and if they are satisfactory will use and recommend them in my work.

Name.....

Address.....

A.C.B.-1.....

# BEAVER BOARD

## Offers the Good Carpenter Another Good Opportunity

You build and finish most of the house, why not the walls and ceilings, too? You can if you know how to put up BEAVER BOARD

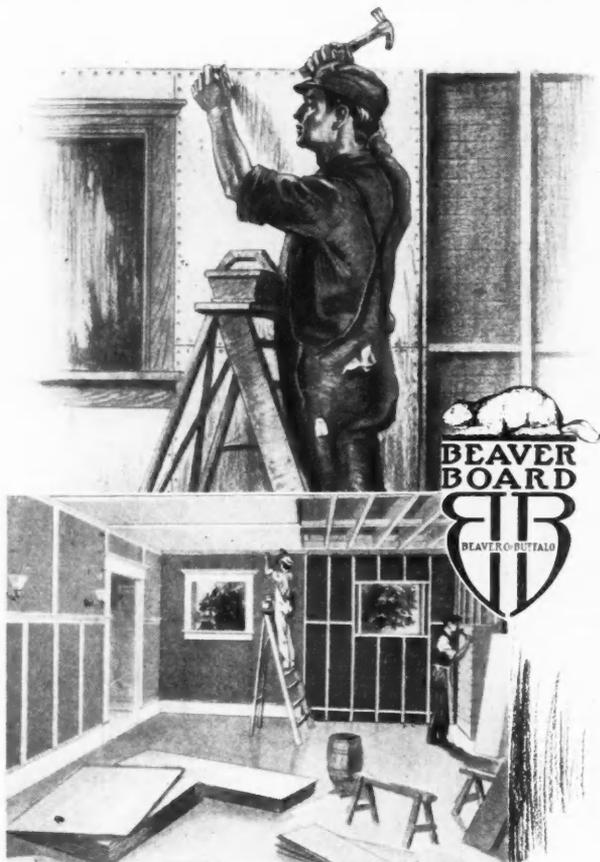
**T**HE picture below shows how easy it is for a good workman to turn out a classy job and get the reputation and steady employment that goes with it. When it's done it's a standing ad for you, for BEAVER BOARD Walls and Ceilings *last*. They don't crack, peel off and deteriorate like lath, plaster and wall-paper; they cost less and look better.

**Write today for** samples, booklets and special information to carpenters—How BEAVER BOARD is nailed direct to studing of new buildings or over the lath and plaster of remodeled buildings of every kind; directions for working out different designs; pictures of finished interiors; how to make partitions, drop ceilings, etc.

**Sold by** lumber, hardware, paint, wall-paper and builder's supply dealers and decorators, in sizes to meet all requirements. If not handled by your dealer, write us, mentioning his name.

### The BEAVER COMPANY of BUFFALO

In U. S. address 279 Beaver Road, Buffalo, N. Y.  
In Canada address 329 Beaver Triangle, Ottawa, Can.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

### A Popular Tool

The great popularity of Fay & Egan Company's No. 61 hand planer and jointer is evinced by the fact of its general introduction into the best woodworking shops in the land.

This machine is said to be remarkably simple. The accuracy, precision and superiority of work performed, together with the immense saving effected over hand labor, has made it a universal favorite among carpenters, contractors and retail lumbermen.

The manufacturers designed this machine for general, jointing and rabbeting, planing straight or out of wind, cornering, chamfering, making glue joints, and a great variety of similar work.

In its construction, the manufacturers have given special attention to the frame, casting it sufficiently heavy—making it perfectly free from vibration.

Tables are planed perfectly true, and are each vertically and horizontally adjustable, independent of each other. They are



No. 61 Hand Planer and Jointer

mounted on inclines tongued into each other. Each incline has an independent micrometer adjustment, for perfectly aligning the tables. They can be instantly drawn away from cutter head on each side to facilitate the setting, and sharpening knives and for swinging larger cutters.

Cylinder is of forged steel, four sided and slotted, running in reservoir of self-oiling bearings. The manufacturers furnish their safety cylindrical cutter head with this machine when ordered.

Fence bevels to 45 degrees and is equipped with spring post for holding down material while passing over head.

For further information regarding this machine, you are invited by the manufacturers to write for large illustrated circular. The proper address of the manufacturers is J. A. Fay & Egan Company, 545-565 West Front street, Cincinnati, Ohio.

### American Ingot Iron—Non-Rusting

The American Rolling Mill Company began operation January 1st, 1900, at Middletown, Ohio. This site was chosen because of the exceptional shipping advantages, the proximity of the coal fields and the central location; in fact, the most advantageous location for shipping finished material to all parts of the United States. The growth of this company has been very fast.

In the year 1904 the output was increased by purchasing the Curtis Plant at Zanesville, Ohio. The company is now turning out a total of 60,000 tons per year.

In February, 1910, four hundred and eighty acres of ground were purchased at Middletown for the erection of a new \$3,000,000 addition, which will treble the present output of the company.

Since its inception, the present officers have had charge of the management of this company and have gained a reputation not only in this country, but abroad, for fair dealing and

Know this label  
and you know all  
you need to know  
about the quality  
and value of varnish.

It can be your sole guide to  
the purchase or recommendation  
of varnish for any grade or char-  
acter of work.

It is always the sign of honest  
quality.

### Berry Brothers' Architectural Varnishes

MEET ALL REQUIREMENTS FOR HIGHEST  
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."

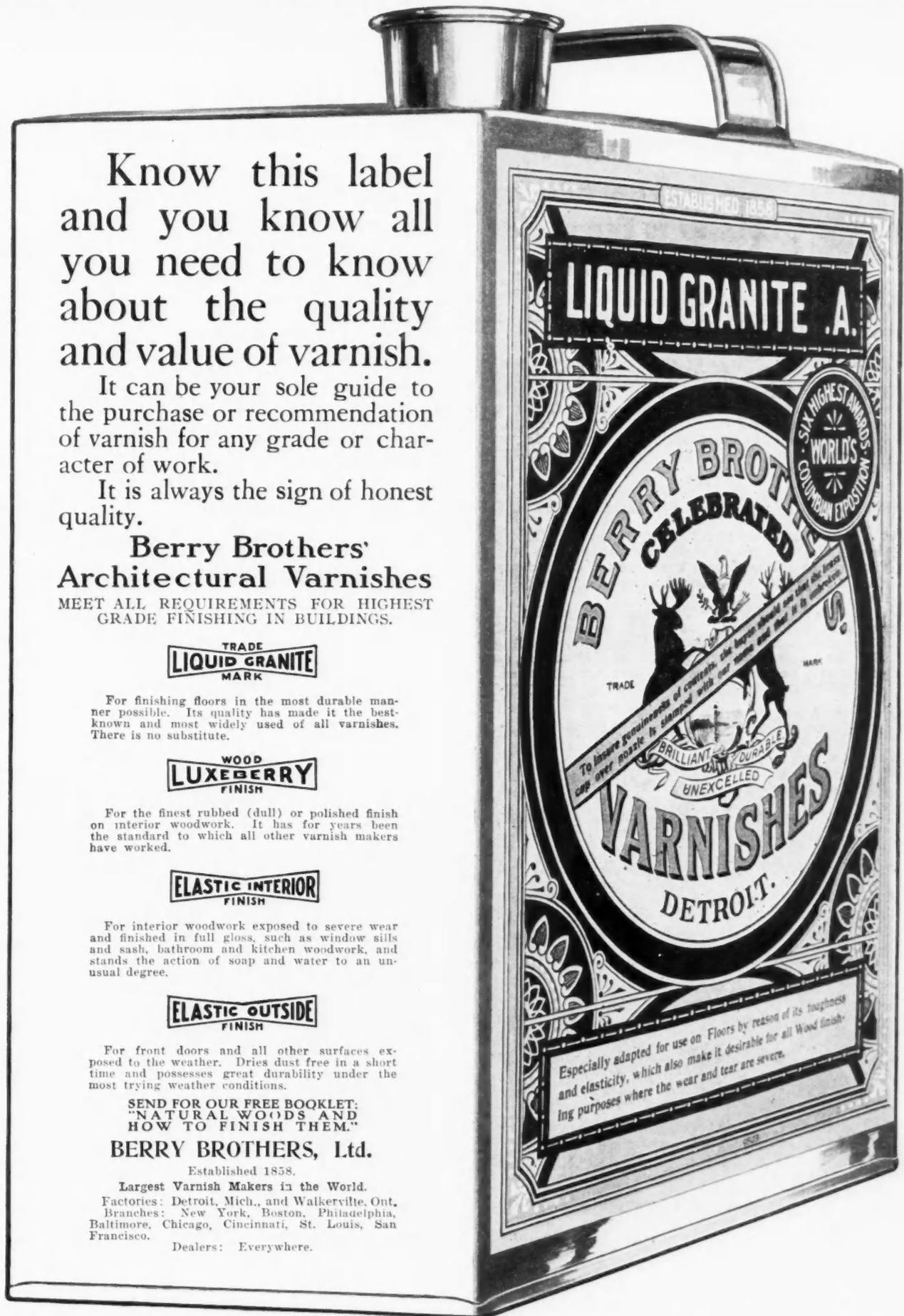
**BERRY BROTHERS, Ltd.**

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.



# FAMOUS UNIVERSAL

## The FAMOUS JUNIOR for \$150.00 is the greatest offer in Woodworking Machinery ever made

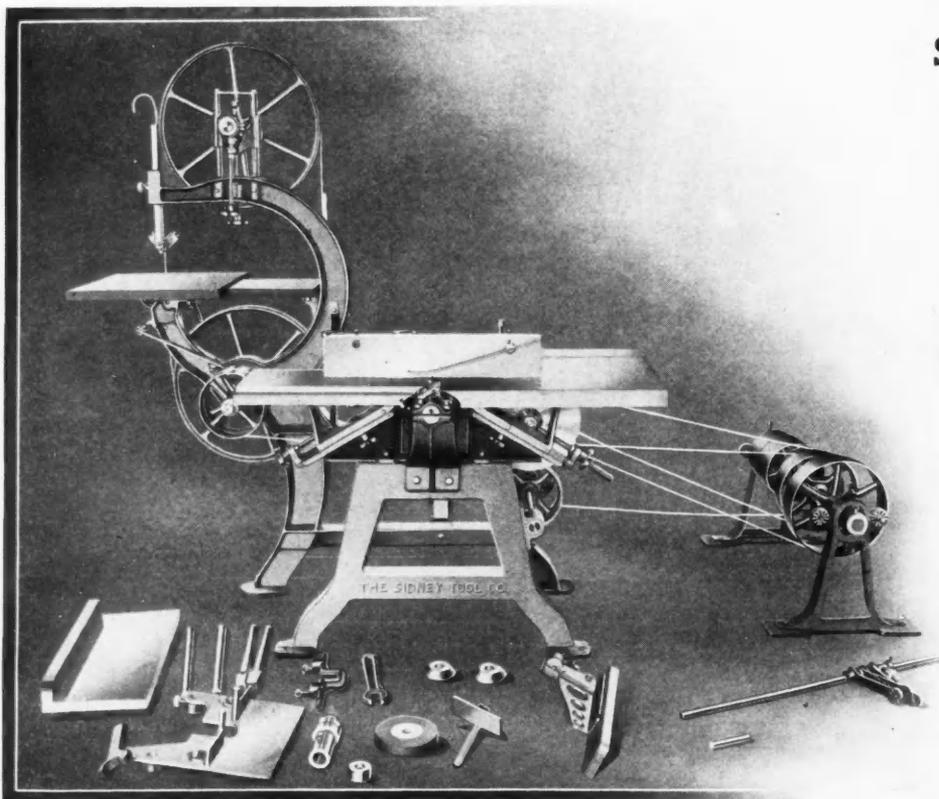
This extraordinary bargain in woodworking machinery gives every carpenter, builder and contractor in America the opportunity to install a machine-shop for the total investment of \$150.00. The offer holds good until February 1st—after that the price will be increased. The present low price is about 50 per cent below the usual cost; it's made for the sole purpose of competing with inferior machines, and to convince the trade how much extra profit a FAMOUS Universal Woodworker will put in their pocket.

The FAMOUS JUNIOR does eight different kinds of work, and embodies the following eight machines: 20" Band Saw, 8" Jointer, Felloe Rounder, Emery Grinder, Saw Table with raising or lowering arbor, Boring Machine, Dadoing Machine, Vertical Shaper. One man, with no previous experience, can operate the machine; there is nothing complicated, nothing to wear out, nothing to cause the least trouble. It means an end to the planing-mill bugbear, because in addition to saving planing-mill bills, there is the saving in time and trouble. Buying a FAMOUS JUNIOR is like putting money in the bank—only the dividends are bigger.

### Half Price—Until February 1st

Hundreds upon hundreds of contractors have already taken advantage of our "half-price" offer. You have a clear month to make your application and to lay the foundation for a more profitable business. The year of 1911 will be a busy one for contractors and builders—prepare to meet it by installing the FAMOUS JUNIOR. Think of it—a complete machine-shop for only \$150.00 (there are positively no extras).

The FAMOUS JUNIOR is for hard service. We guarantee it—not for a year but for LIFE. Doesn't matter how long you have it, our guarantee is always good. No other manufacturers of woodworkers in the world can afford to make such a sweeping guarantee. But we know what the FAMOUS JUNIOR IS. We know how strong it is—how simple in construction and operation, and how it will live up to its guarantee. Yet the total outlay that you are called upon to make is \$150.00. And then we sell on trial and will take time payments.



### Send Today for Special Literature

We have special literature telling all the details which will be sent free upon request. Don't think you do not need a woodworker—you DO. Don't think you cannot afford this FAMOUS JUNIOR—because you CAN. Once you get the machine installed it will pay for itself each month—and save money in the bargain. Write for literature at once—before you do another thing.

## The Sidney

SIDNEY,

The A. R. Williams  
Machinery Co.  
Front Street  
TORONTO, CANADA

The A. R. Williams  
Machinery Co.  
57-61 Alexander St.,  
VANCOUVER, B. C.

# WOODWORKERS

## The FAMOUS No. 14 is an ideal Woodworker for Contractors' use

While our FAMOUS JUNIOR is the best universal woodworker on the market today for small contractors and builders, this No. 14 FAMOUS is unquestionably the most satisfactory for carpenters, builders and contractors who have a large amount of millwork done, and a great variety, as on the one machine SIXTEEN DIFFERENT KINDS OF MILLWORK CAN BE DONE, SIMPLY BY MAKING A FEW SIMPLE ADJUSTMENTS.

The No. 14 FAMOUS Universal Woodworker is, without the shadow of a doubt, the most unique piece of woodworking machinery, and the greatest time and labor saver, ever invented. On the one base are embodied the following sixteen woodworking machines:

- |  |   |
|--|---|
| 1. 27" Band Saw  | 9. Single End Tenoner                               |
| 2. 12" Jointer   | 10. Drum Sander                                     |
| 3. Saw Table with raising and lowering<br>Saw Arbor        | 11. Disc Sander                                     |
| 4. Single Spindle Shaper                                   | 12. Knife Grinder                                   |
| 5. Boring Attachment arranged on Special<br>Boring Spindle | 13. Emery Grinder                                   |
| 6. Poney Planer  | 14. Band Re-saw                                     |
| 7. Tongue and Pole Rounder                                 | 15. Spoke Tenoner, Rim Borer and Wheel<br>Equalizer |
| 8. Hollow Chisel Mortiser                                  | 16. Adjustable Felloe Rounder                       |



### Record Sales for 1910

Over five hundred contractors bought FAMOUS woodworkers during the past year; over a thousand will buy during 1911. We have never had a machine returned for repairs—we have never had an unsatisfactory report. Such a record points to a machine possessing REAL MERIT—a proposition which every contractor should inquire into.

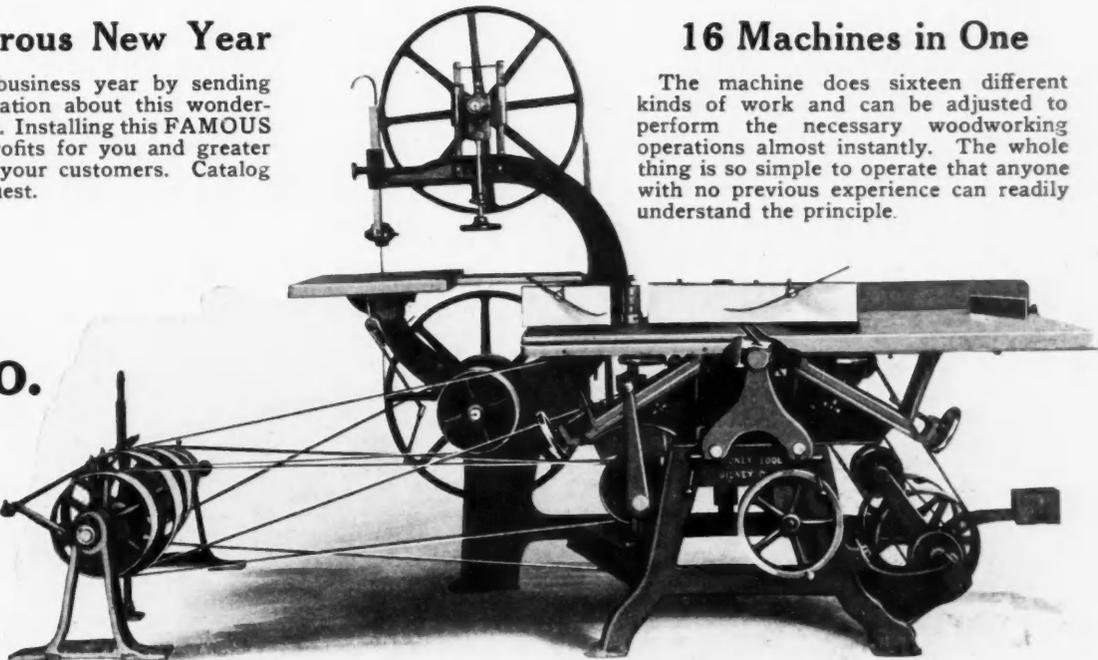
Think what it means to install a machine which does the work of sixteen. Consider the saving in initial cost—in ultimate cost—in power transmission equipment—in floor space—in time—in labor. And remember that we guarantee the machine for life. Only the highest quality materials obtainable are used; the durability is wonderful. Yet, notwithstanding the adaptability of the machine there is absolutely nothing complicated—nothing beyond the knowledge of any machinist.

### A Prosperous New Year

Begin your business year by sending for full information about this wonderful woodworker. Installing this FAMOUS means more profits for you and greater satisfaction to your customers. Catalog sent upon request.

### 16 Machines in One

The machine does sixteen different kinds of work and can be adjusted to perform the necessary woodworking operations almost instantly. The whole thing is so simple to operate that anyone with no previous experience can readily understand the principle.



## Tool Co.

OHIO

The A.R. Williams  
Machinery Co.  
260 Princess St.  
WINNIPEG, CANADA

Williams & Wilson  
320-328 St. James St.  
MONTREAL, CANADA

SERVICE OF KOVNAT & SHORT, CHI.

the production of the best quality of electrical sheets manufactured in the world.

In 1904 extensive experiments were begun to ascertain the real causes of the rapid corrosion of steel in its various forms. Following out the line of reasoning of one of the most prominent chemists and metallurgists in the United States, Dr. A. S. Cushman, Department of Agriculture, a metal was manufactured with the manganese eliminated.

In July, 1908, these experiments were culminated in a metal being produced in which the total amount of sulphur, phosphorus, carbon, manganese and silicon was reduced to 6/100 of 1 per cent. This was the purest iron ever manufactured commercially in this country or abroad. The metal was termed "American Ingot Iron" and has made the American Rolling Mill Company famous throughout the United States, Canada and Mexico as the manufacturer of the purest and very best grade of rust-resisting iron produced.

This iron is especially adapted for all purposes where resistance to corrosion is essential and is being specified and used extensively throughout this country for metal lath, roofing, siding, conductor, eaves trough, tanks, metal window frames, ventilators, cresting, corrugated culverts, etc.

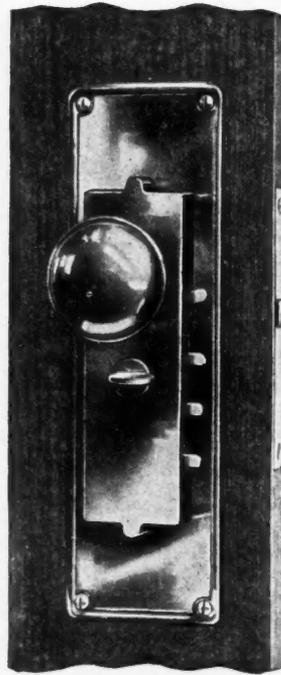
The American Rolling Mill Company has issued a very comprehensive and interesting booklet on the properties of American Ingot Iron, which can be obtained by addressing this company at the main office, Middletown, Ohio.

**Making the Cribs Rat Proof**

One way to build a rat-proof corn-crib is to set the crib on posts 22 inches from the ground and place glazed sewer tile 24 inches long around the posts before the crib floor is laid. The tile will settle enough so that the crib will rest on the posts. With the posts incased in tile it is impossible for rats to climb up the smooth surface and into the crib.

**Agents Wanted for Keyless Locks**

The Dayton Keyless Lock Co., Dayton, Ohio, have perfected a combination door lock which, being unlocked by pressing down the levers in the proper way, is predicted will put an end forever to the "Great Key Nuisance."



The Dayton Keyless Door Locks are the equal of the best key locks in appearance, material and mechanism, and give you double the protection, and their superior convenience make them worth many times more, though they sell for the same price.

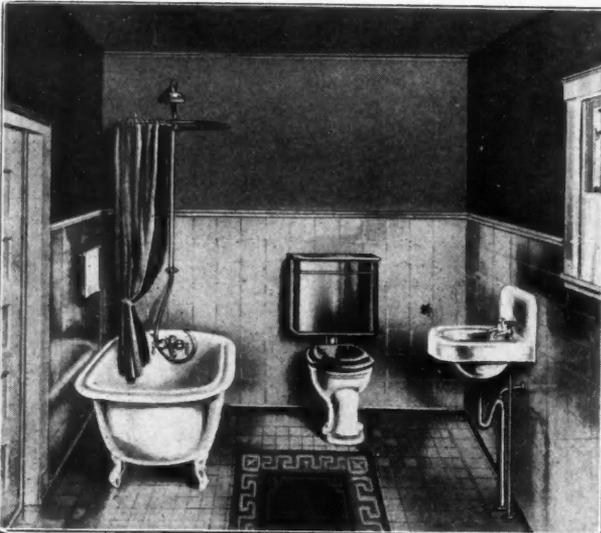
It is confidently expected that the Dayton Keyless Door Locks will soon be used on old and new doors of all homes, shops, stores and offices. With old locks, just lay aside the spindle, and the outside escutcheon and place the keyless attachment on the outside.

It is much easier put on than a mortice lock, and cannot be removed from the outside.

This company is offering a high-grade, special chance to local agents with exclusive territory. A few places are also open to first-class men as state managers. All readers of the

AMERICAN CARPENTER AND BUILDER ought to know what this new keyless lock is. Write today for complete information.

**\$38.95** BUYS THIS COMPLETE **Bathroom Outfit**  
**30** A Modern Bathroom For Every Home



Down go high prices—in goes this handsome high-grade bathroom outfit complete at **\$38.95**. Think of it. Your plumber would charge **\$75.00 to \$90.00**. Buy direct and save the difference. We are putting this splendid outfit in thousands of homes. Let yours be one of them. Here's the chance you've been waiting for. No home is complete without a modern bathroom. Keep clean, comfortably. Have same luxurious equipment at **less than half others pay**. Satisfaction guaranteed or money back.

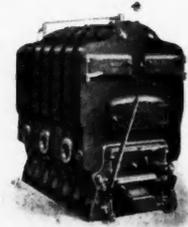
**WATER SUPPLY OUTFITS**

Complete pneumatic water systems from \$42.00 upwards

**STEAM AND HOT WATER PLANTS**

You can save from \$100 to \$250 by buying your steam and hot water plants from us.

Anyone can install their own heating plant. Plans and detailed instructions furnished with every order. We have been selling these heating plants for more than 30 years. Send sketch of building—we will make you a price on a complete heating system. Our catalog gives prices on all sizes radiators and boilers.



**Send for Big FREE CATALOG** Greatest chance you've had. Buy now! Have a fine modern bathroom in your home. Each piece highest grade. Can't be duplicated anywhere at three times the price. Immense business—unlimited capital—quantity buying—makes this marvelous bargain possible. In our big free catalog we list our entire line of plumbing and heating material, pumps, pneumatic water systems, pipe fittings, hot water and steam plants, acetylene lighting plants—gas and electric fixtures—all at a price saving that will startle you. Send for big free catalog. One hundred pages of real bargains. See our wonderful values. See how much money you save.

Our Catalog Shows Everything—Kind of Plumbing, Heating and Lighting Fixtures. Write Today

**M. J. GIBBONS** Dept. B., Gibbons Arcade Dayton, O.



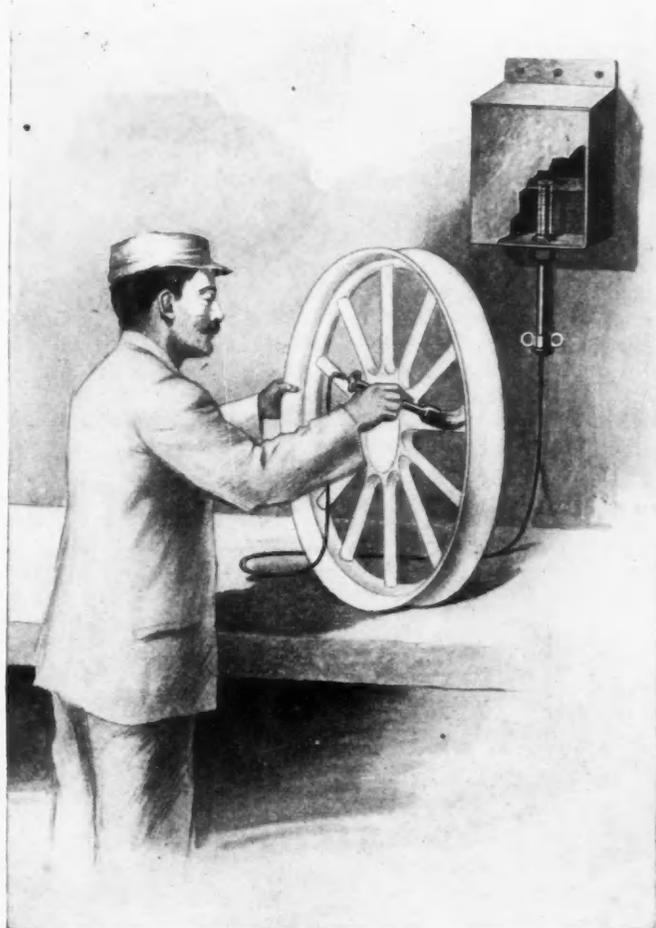
## THE STANDARD AUTOMATIC BRUSH

does your painting work in a new way, better, quicker, cheaper, eliminating all waste of paint. An equal flow at all times; thickness of coat can be accurately adjusted. Absolutely clean and fireproof.

## THE STANDARD AUTOMATIC SYSTEM

does away with the paint can. It eliminates the dip and is far superior to the spray, but it does rub it in. No air pressure is needed. Will work with any kind of paint. Get next to this method. Made especially for manufacturers of automobiles, automobile bodies and wheels, all kinds of vehicles, carriages, etc. It is most useful for manufacturers of furniture. It will also save a lot of time in painting structural work, such as bridges, elevated roads, etc. House and sign painting can be done effectively and quick.

Whenever duplication of work exists, this device will increase your output and reduce the cost. Buy just one outfit today and be con-



vined. We are sure that we will have to equip your entire plant. Special equipments can be made to suit your purpose.

Complete outfit consisting of a large paint tank, either stationary or movable, with automatic valve and six feet of flexible tubing together with the automatic adjustable brush made of aluminum, costs \$7.50 and it is still cheaper than the ordinary brush. The outfit is also made with a tank, to be strapped on the back, which will cost \$2.50 extra. Our booklet will tell you why. Write for one today. Send in your order. Your outlay will only be once. Apparatus will last a lifetime. Let us know today what you are manufacturing and we will effect a saving for you.

**JOBBER AND DEALERS WANTED EVERYWHERE**

**Standard Automatic Manufacturing Co.**

50 Church Street - - - - - NEW YORK

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

### New Catalog of Coltrin Mixers

A catalog of more than usual value and interest has been issued by the Knickerbocker Company of Jackson, Mich., covering their complete line of "Coltrin" Concrete Mixers. The machines of various sizes are very clearly illustrated and described and the construction of the various parts is shown in such a way as to be easily understood.

Every contractor or cement worker should have this catalog so as to examine the merits of this line. We note from the foreword that the Knickerbocker Co ships on five days' trial to trustworthy parties anywhere in the United States, the mixer to be accepted if it will do as they claim. If the mixer is not accepted, it will be taken off your hands.

### Johns-Manville Remove to Larger Quarters

Owing to greatly increased business the H. W. Johns-Manville Company announces the removal of its offices now located at 85 Sheldon street, Houghton, Mich., to more commodious and convenient quarters at 96 Sheldon street, where they will be better prepared to serve their patrons.

As in the past, Mr. S. T. Harris, who has been associated with the company for a number of years, will be in charge of the offices at the new address.

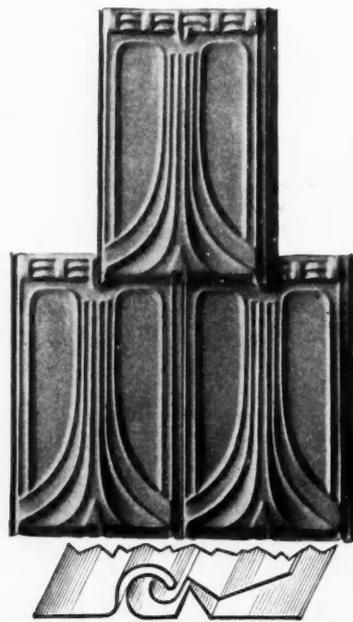
### Wood Shingles Not a Proper Roofing

At a recent meeting of the Board of Trade of the city of Worcester, Mass., F. H. Wentworth, secretary of the National Fire Protection Association, discussed the subject of the shingle roof. In his opinion the wooden shingle is not a roof covering, but its use for this purpose is a genuine crime. "Except that they are not placed with malicious intent, wooden shingles have all the dire qualities of fagots piled about

the victim to be burned at the stake. Any person who witnessed the Chelsea conflagration cannot be other than the enemy of the shingle roof.

"If the roofs of a city are incombustible, any conflagration

in it will have a distinct fire line, and this fire line will, of course extend itself, as the conflagration advances. In Chelsea, after the first hour, there was no fire line. The whole city was afire from the different centers, caught from shingle roofs. The belated citizens who sought to save their goods knew not where to fly. Horses, dogs, men, women, children, cats, and swarms of rats ran in the streets together, the live coals dropping upon them as they sought avenues of escape. They were impoverished victims of the shingle roof, but for which half the household goods in Chelsea



Edwards Interlocking New "Ajax" Metal Shingles

might have been saved."

These words of Mr. Wentworth should be pondered by all builders. The shingle roof is a relic of the days when our

## J-M Sanitor One-Piece Construction

NOTHING TO COME APART



Molded in one piece under hydraulic pressure.

No sections to come apart—no bolts, braces, screws or nails to work loose.

*The only Seat and Tank made in one piece.*

Will not crack, split or warp.

Tanks never leak. Furnished in mahogany, oak and white enamel finishes.



MOLDED IN ONE PIECE

Write nearest branch for sample of Sanitor Material and Booklet.

## H. W. JOHNS-MANVILLE CO.

Manufacturers of Asbestos and Magnesia Products

ASBESTOS

Asbestos Roofings, Packings, Electrical Supplies, Etc.

Baltimore  
Boston  
Buffalo  
Chicago

Cleveland  
Dallas  
Detroit  
Kansas City

London  
Los Angeles  
Milwaukee  
Minneapolis

New Orleans  
New York  
Philadelphia  
Pittsburg

San Francisco  
Seattle  
St. Louis  
(1060)



## “The Clear Track”

Two men a thousand miles apart talk to each other by telephone without leaving their desks.

Two wires of copper form the track over which the talk travels from point to point throughout a continent.

Moving along one railroad track at the same time are scores of trains carrying thousands of passengers. The telephone track must be

clear from end to end to carry the voice of one customer.

The Bell system has more than ten million miles of wire and reaches over five million telephones. This system is operated by a force of one hundred thousand people and makes seven billion connections a year—twenty million “clear tracks” a day for the local and long distance communication of the American people.

*The efficiency of the Bell system depends upon  
“One System, One Policy, Universal Service.”*

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
AND ASSOCIATED COMPANIES**

**Granite**  
TRADE MARK  
**ROOFING**



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 25 years for use on great factories. It is immune from damage by coal smoke or cinders, and it has a sea grit surface which makes painting entirely needless. Behind it is a reputation that has Passed the Quarter Century Mark.

**EASTERN GRANITE ROOFING CO.**  
19 Battery Place, New York

Chicago Pittsburgh

WE WANT TO ESTABLISH  
**Tesco Marble Factories**  
IN THE FOLLOWING CITIES

<i>New York</i>	<i>Philadelphia</i>
<i>Indianapolis</i>	<i>Atlanta</i>
<i>Kansas City</i>	<i>New Orleans</i>
<i>Chicago</i>	<i>Minneapolis</i>
<i>Denver</i>	<i>Seattle</i>
<i>Los Angeles</i>	<i>Cuba—Havana</i>
<i>Canada—Montreal, Winnipeg and Vancouver</i>	

Since Tesco Marble is a real marble in its analysis and surface appearance the demand has come from all sections of the United States and overwhelmed our present factory facilities in Milwaukee, consequently it becomes absolutely essential to meet the demands

We are ready to open negotiations with responsible parties for the manufacturing rights in the above named cities. Our marble is thoroughly covered by patent rights exclusively our own, thus assuring you absolute safety on your investment.

Tesco Marble is the marble of the age. Best financial references required. Full information regarding investment, profits, etc., will be mailed.

**Tesco Products Company**

*N. W. NORRIS, President*

**Main Offices: 1-3 Builders and Traders Exchange  
MILWAUKEE**

population was small, in comparison with its present size, and large cities were not crowded with buildings. The notion of protection against fire had scarcely been thought of in those times, so little was the chance of serious danger from this source. Should a fire occur in a house, it could generally be extinguished without communicating to another. But in these days when large areas are covered with adjoining buildings, the power of flames to spread has been multiplied enormously, and the protection of the roof is one of the first necessities which the growth of this destructive power has created. Non-combustible roofs should be one of the leading demands of the cautious home builder now.

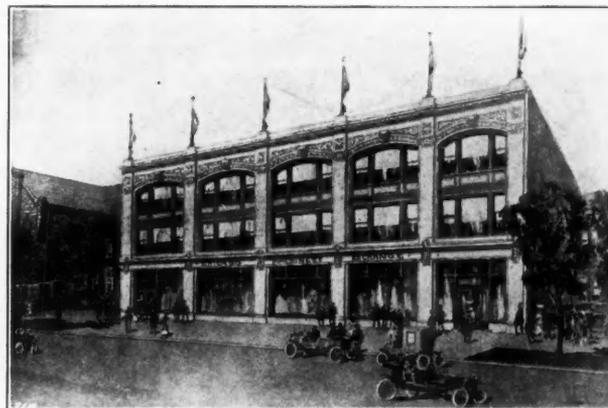
In this connection we wish to call the attention of our readers to a new metal shingle that is being placed on the market by The Edwards Manufacturing Company, known as Edwards Interlocking "Ajax." They claim it to be the most perfect metal shingle ever invented. Note particularly the perfect embossing and sharpness of pattern.

Then there is the interlocking device, which provides for expansion and contraction and conceals all nails from the weather. These shingles when properly applied are absolutely guaranteed to be wind, weather, storm, fire and lightning proof. The patented interlocking device is so constructed that it is impossible for the hardest rain or driving snow to penetrate. Manufactured from best quality Worcester grade terne plate, furnished painted or galvanized (regalvanized after formation), size 10 by 14 inches.

Further information, samples, prices, etc., can be had by addressing The Edwards Manufacturing Company, 401-417 Eggleston Ave., Cincinnati, Ohio.

**Chicago Machinery Exchange**

About the first of February the Chicago Machinery Exchange will move into its new building on Washington Boul. near Ann St. This building, illustrated herewith, is of mill construction, three stories high and with a floor space of 60,000 square feet. Everything, from office equipment to facilities for manufacture and repairing, will be modern and up-to-date and will be installed with a view to facilitating, to



**New Home of the Chicago Machinery Exchange**

as great a degree as possible, the ability of this concern to handle its trade.

Under the direction of Mr. Waldemar Giertsen, its owner, the Chicago Machinery Exchange has had a remarkable growth, and now enters a new era. The original business of the company consisted in dealing in second-hand machinery, but this stock was soon replaced by a complete line of the best types of woodworking machines. The remarkable success of the Exchange is undoubtedly due to the quality of the goods handled, the unusual facilities for the best service on all sales and exceptional reputation Mr. Giertsen has acquired for fair dealing with all customers.



# Thin Hardwood Flooring Will Increase Your Profits

**Y**OU can easily build up a big business right in your home town, Mr. Carpenter, by laying "Thin Flooring." There's big money in it for you and it gives you the chance of replacing the high priced floor specialist.



Our flooring is the best hardwood flooring on the market because: It requires less labor to lay. Our special tongue and groove, found on no other flooring, makes it the easiest to put together.

It is absolutely level. Each piece is absolutely uniform and perfect, producing a uniform and perfect finished floor.

It is most beautiful. The finished floor looks just like a solid expanse of hardwood. No nails can show and it seldom requires scraping.

It is most sanitary. No dirt, dust or disease germs can catch or lodge in the floor, because there are no seams.

It has more wood above the groove—is more durable than other hardwood floors. And it is kiln dried.

These special features make our thin hardwood flooring the best selling proposition on the market. Housewives everywhere prefer hardwood floors to other kinds. Our flooring can be laid as cheaply as a carpet.

We offer this great opportunity to you, will give you the benefit of our twenty years' of experience. It's easy to learn how to lay the flooring. Just level the old floor underneath, and slap the hardwood flooring down. It's so perfectly made that you can't make mistakes.

## Mail the Coupon To-Day for Free Booklet

"Profitable Opportunities to Carpenters" tells you everything about our flooring—tells how to lay and finish hardwood floors. It shows how to estimate surfaces, and—most important of all—how it means good, honest dollars to you.

You place yourself under no obligation writing for it, so do it now. Be the first in this line in your community.

**CINCINNATI FLOOR CO.**

**228 West Fourth St., Cincinnati, Ohio,**

Cincinnati Floor Co., 228 West 4th St., Cincinnati, Ohio.  
Gentlemen:—  
Send me free copy of "Profitable Opportunities to Carpenters" and other information regarding flooring. I understand that this request places me under no obligation.

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

Only concerns specializing in woodworking machinery of various types are represented, and only the best types of these machines are handled. The Exchange handles the entire trade of this section for Baxter D. Whitney & Sons, the Hermance Machine Company, Greaves-Klusman Company, McDonough Manufacturing Company, Porter Machinery Company, Beech Manufacturing Company, Crescent Machine Works and the West Side Iron Works. The standard of the goods manufactured by these firms is so widely recognized as to scarcely necessitate mention. It is certain that they represent the cream of the trade. It is Mr. Giertsen's object to keep on hand a full line, with duplicates, of all the patterns of the various firms represented, enabling him to give the very best of service.

Mr. Giertsen says that besides carrying on the business of the Exchange as in the old plant, he will invite manufacturers of special woodworking machines to take space and desk room in the new building at a nominal rent. The Chicago Machinery Exchange will guarantee to give the exhibits the best of attention, keeping the machines clean and in presentable order at all times, thus offering to such manufacturers an advantageous proposition in that it will bring prospective customers to that building when in search of any kind of woodworking machinery. He expects, he says, to eventually make it the woodworking machinery exposition building of Chicago.

### To Gild Cast Iron

Cast iron can not be gilded or silvered well by direct deposit. Copper or bronze deposits are better, though not perfect; but if the iron is tinned, the coat is adherent, and will readily receive the other metals.

### A New Hand-Book on Concrete

A new hand book on concrete brick and block making is just coming from the press. This book is a regular standard text book on concrete and is right up to the minute with information on the following subjects and others:

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

It has cost a lot of money and time to gather this valuable information; but this book is being mailed *absolutely free to all who ask for it*, as it is designed to assist those now in the concrete business and those who contemplate it in putting their concrete plants on the best possible basis.

This book is being mailed free by the Helm Brick Machine Company, 271 Bank building, Traverse City, Mich. These people are the manufacturers of the well-known line of Helm presses for making "Dry Wall" blocks and pressed cement brick. The "Dry Wall" block system saves the cost of furring and lathing for the builder and the blocks meet with a ready sale wherever introduced. Full information pertaining to this improved line of machines for hand and power operation will also be mailed free to anyone interested.

### Antiseptic Soap

M. Vigier recommends a soap made by adding 8 per cent of dried sulphate of copper to any good soap. When thor-

COVER YOUR OLD ROOF WITH

**WALTER'S**

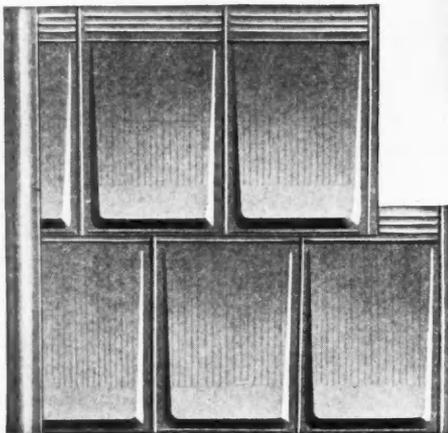
&

**COOPER'S**

**Lasting Metal Shingles**

Put them right on over the old Wooden Shingles. Saves Time, Money and Work. Old Shingles add Warmth and saves sheathing.

**GET ESTIMATES**



COOPER'S CORINTHIAN TILE



**Walter's & Cooper's Metal Shingles Were the First Metal Shingles Made. They Were the Best 28 Years Ago. Are the Best To-Day**

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.

**National Sheet Metal Roofing Co.,** Jersey City, NEW JERSEY

# 6 MONTHS' FREE TRIAL

We want every Carpenter, Contractor and Mechanic in the United States to grind any and all their tools on the **LUTHER CARBORUNDUM PERFECTED GRINDER** for the next **SIX MONTHS**, in order that they may realize that it is a money earner, and also its great value. If after this trial you decide not to keep it, return it to us—no hard feelings—just send it back. The **SIX MONTHS' USE WILL HAVE COST YOU NOTHING?**

Mechanic's Special with Twist Drill Grinding Attachment.

## Luther Diamond Tool Grinder

The Perfected Carborundum Sharpener  
EITHER HAND OR FOOT POWER  
PAYS FOR ITSELF EVERY MONTH



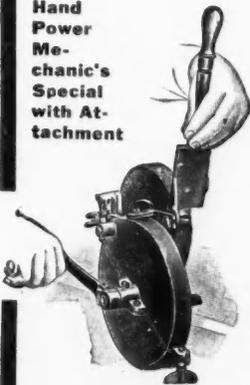
### 25 Times Faster Than a Grindstone 8 Times Faster Than Emery

It will cut the hardest steel as easily as emery cuts copper. One man with a *Luther Grinder* will do the work of 20 men with any other sharpening device. The wheel of the *Luther Grinder* is

### Genuine Carborundum

Carborundum is the most wonderful abrasive known. There is nothing else like it or near like it in the world. Nothing except the Genuine Diamond itself is so hard, and wheels made of Genuine South African Diamonds would sharpen tools no quicker, and even with all this speed and ease of sharpening tools, you can't draw the temper from the tool and need no water for cooling.

Hand Power Mechanic's Special with Attachment



### The Greatest Labor-Saving Tool Ever Made

*The Luther Grinder is built like a high-priced Lathe and is Guaranteed for five years.*

It's construction is mechanically perfect—machine cut spur gears—dust proof and bronze bearings—all machined parts run in bath of oil.

The *Luther Grinder* cannot fail to please owing to its solid construction and because it makes it easy to have keen edged tools without drudgery.

**RETURN THIS COUPON FOR OUR SIX MONTHS' TRIAL OFFER**

READ WHAT W. H. SEARS, OF PENTWATER, MICHIGAN, WRITES:

Luther Grinder Manufacturing Co., Milwaukee, Wis.  
Gentlemen:—We have tried your tool grinder and find that it will grind a chisel in two minutes that would have taken an hour of time on the ordinary grindstone.

**If the Luther Grinder will do this for Mr. Sears it will do it for every man in the country.**

## Luther Grinder Mfg. Co.

Address 56 Madison St.

MILWAUKEE, WIS.

Luther Grinder Mfg. Co., 56 Madison St., Milwaukee, Wis.

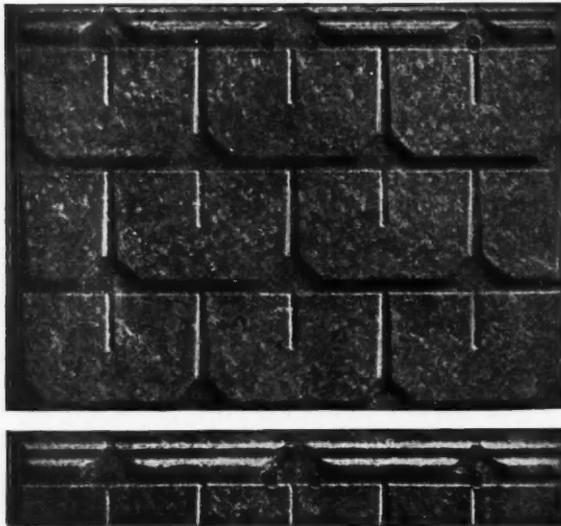
Gentlemen:—Please send me particulars of your Six Months' Free Trial Offer, also your booklet about Carborundum. This does not obligate me in any way or mean that I will buy. It means simply that I want full details.

Name \_\_\_\_\_

Address \_\_\_\_\_

## The Most Important Part of the Building

TOO often the most important part of a house is looked upon as a matter of the least concern. The roof is, and always has been, the most important factor in the protection from the elements. It is not a question whether it is needed, but whether you will make a wise selection in the covering for your building. The roof should not only be a protection, but ought



*The Canton Shingle*

to be ornamental and add to the beauty of the building, as an unsightly roof may defeat the object for which it was intended and cause a loss to the owner of more than the price of a first class roof.

The advantages of sheet metal for a roof covering are obvious. The "Canton" Shingle is light in weight, fire and lightning proof and



*Side Lock Connection*

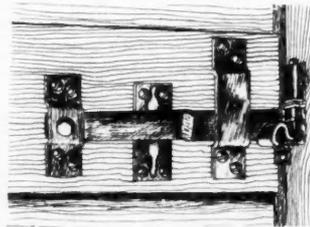
cannot crack, break, or fall out. It has less joints, reducing the danger from leakage. In applying, it does not require skilled labor, and the cost of erecting is reduced, as it comes to you ready to lay, requiring no cutting nor punching. Each sheet contains an equal area to nine slates, which, when laid covers a space  $19\frac{1}{2} \times 26\frac{3}{4}$  inches. It will not rattle, as each sheet is firmly anchored to the sheathing. Expansion and contraction are provided for, in the lock seams and all nails are covered, so there is no danger of leaks from these sources. There is no loss from breakage.

**Canton Art Metal Co.**  
Canton, Ohio

oughly mixed, the product has a pleasant green tint; it is in no way irritating, and it has the property of closing cracks and of healing sores and scratches. Oxide of copper has long been known as a powerful destroyer of disease germs, and this was the case long before the germs themselves had been discovered, though their effects were well known and dreaded.

### Scheel's Door Latches

C. F. Scheel, of Western, Neb., a practical builder, has devised and patented a barn door latch and lock that will meet a long felt need.



**Latch and Lock for Sliding Barn Doors**

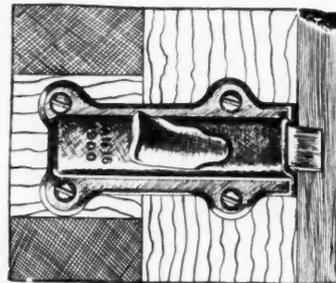
By a strong yet simple contrivance the barn door is securely locked from either side—within or without—and can be unlocked with the key from either side. The illustration herewith shows the arrangement for sliding barn doors. The latch fastens

to the inside of the door and stops the door both ways. It is locked with a spike and key attachment from the inside; with key, only, from the outside.

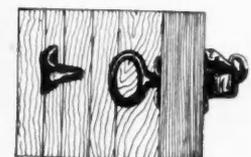
The Scheel door latch and lock for swinging barn doors is arranged to lock with a padlock from the outside and is opened with a key from the inside. It holds the door open as well as closed. With this ingenious device it is said that a barn can be locked with one pad-lock, no matter how many doors it may have, since the balance are locked with spikes.

Mr. Scheel has also patented a locking latch of merit for screen and storm doors. The two cuts herewith show what it is like.

This latch is fastened to a screen, or to any door, on the inside and with the lever on the outside. The section view shows the latch hook which engages with the lever to hold the door open.



**View from Inside of Door**



**Section of the Door with Hook on Wall**

It is claimed by the inventor that no storm door, or barn door is complete without one of these locking latches. Doors and buildings fitted with these latches not only last much longer by being held firmly, open or shut, thereby saving breakage from slamming; but the novel locking device baffles the intruder. Give them a trial.

All interested should write to C. F. Scheel, Western, Neb., for full information and prices.

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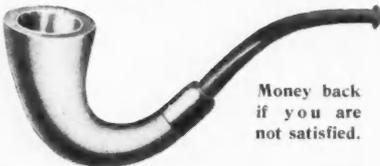
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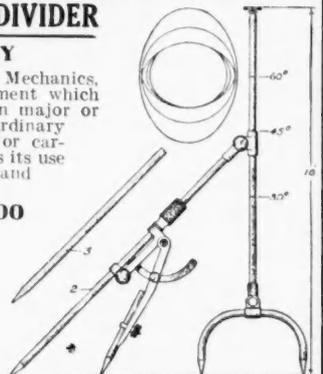
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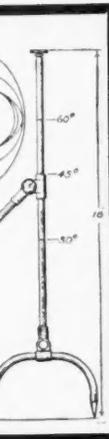
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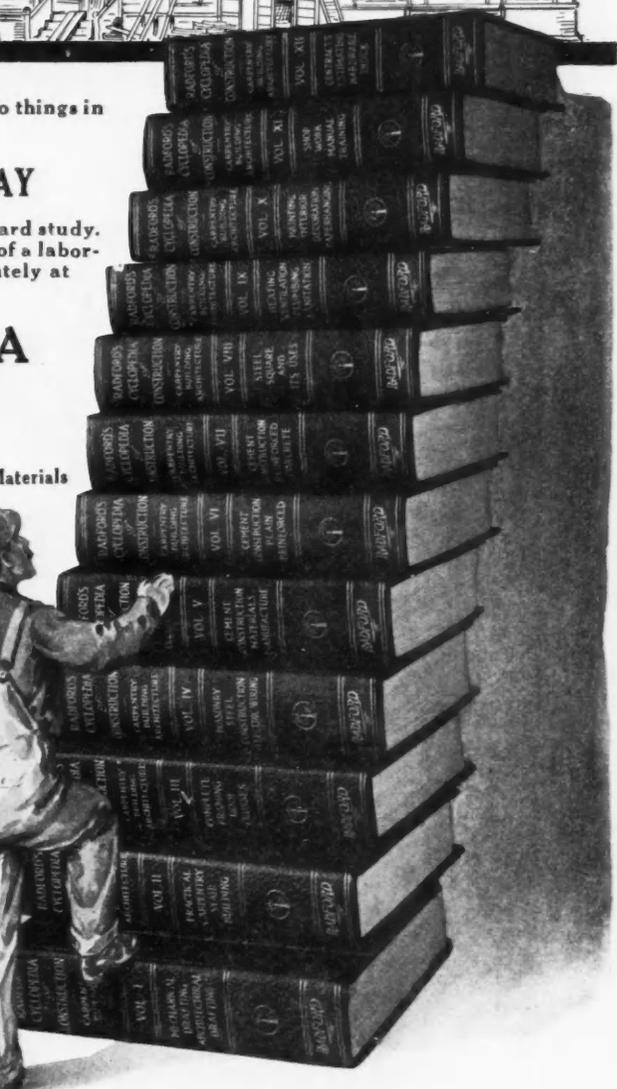
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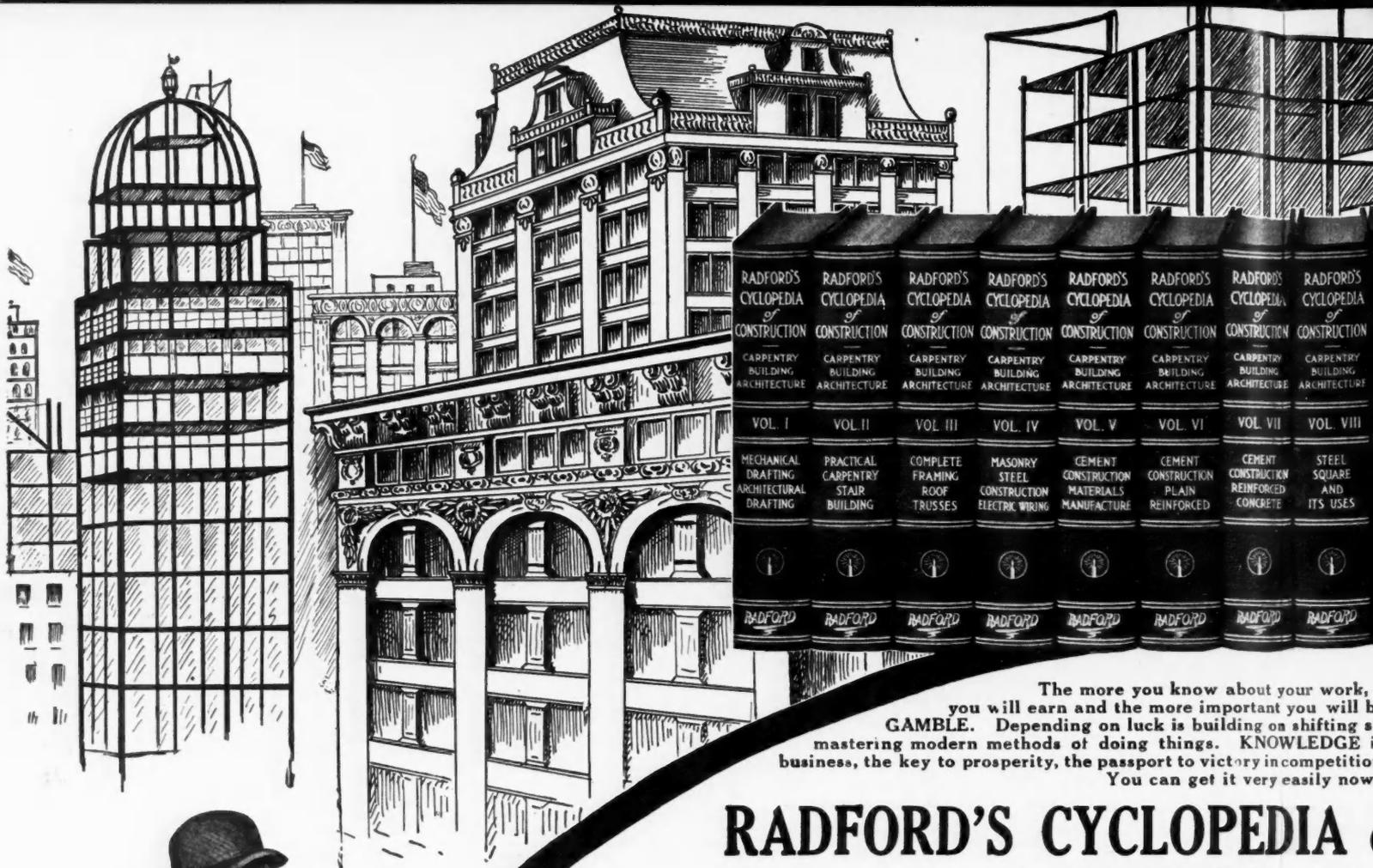


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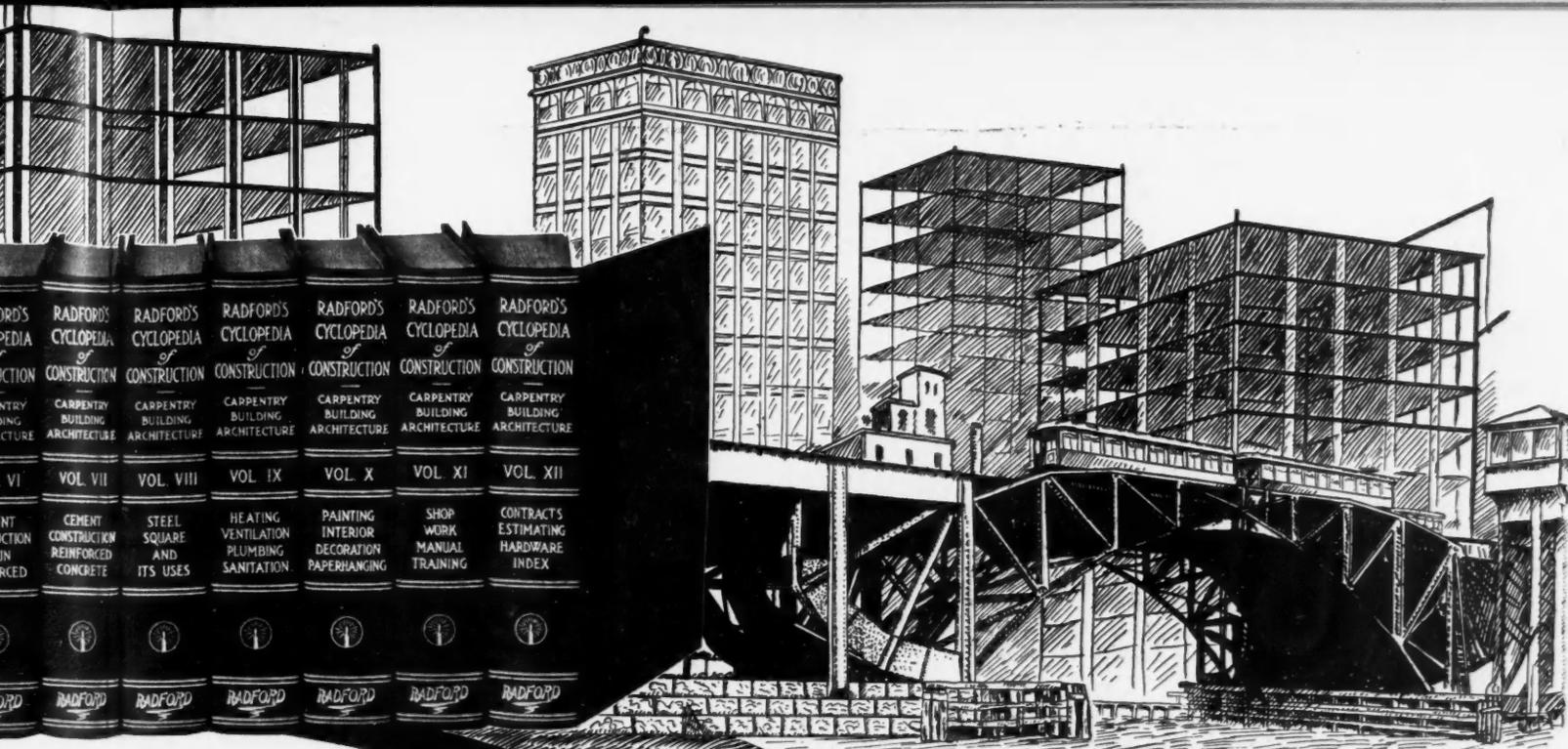
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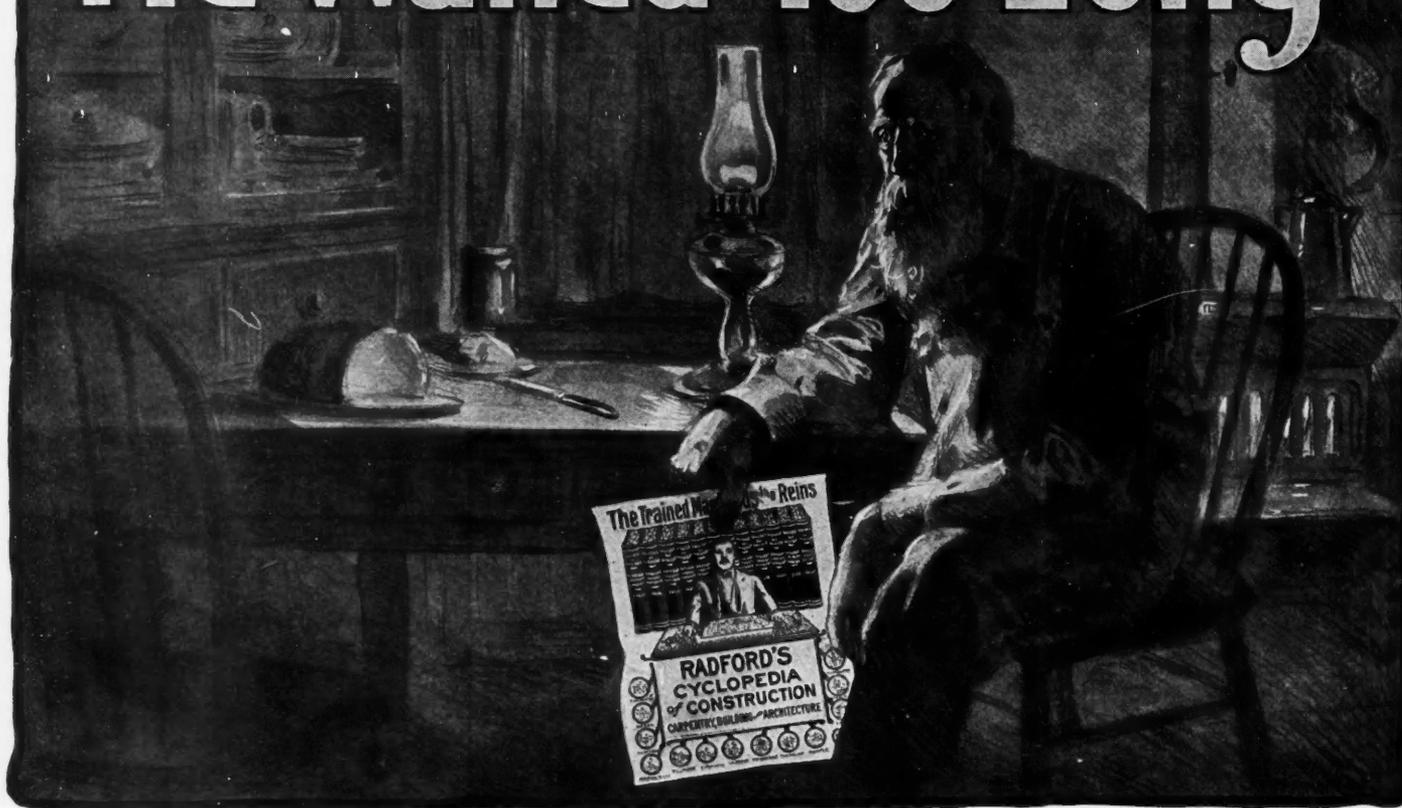
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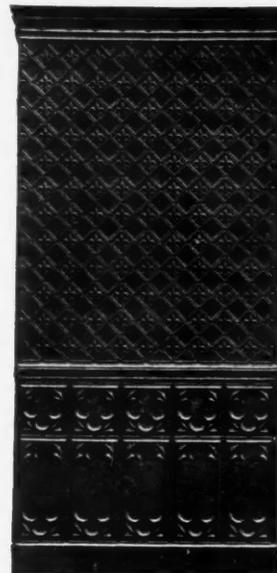
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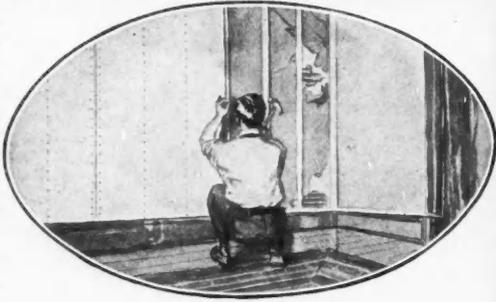
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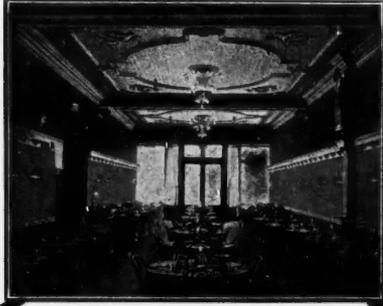
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It explains the many uses and advantages of Compo-Board and you can get an idea of what it is from the sample.

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5777 Lyndale Ave. No. Minneapolis, Minn.

The border of this advertisement is a cross section view of Compo-Board.



**SECURE THE  
AGENCY**

for these metal ceilings in your town and we will send you our handsome, 400-page, 11"x13" catalogue which will sell them for you.

*"BERGER'S"  
Classik  
METAL CEILINGS*

are different and superior to any you have ever seen. They are deeply embossed with Classic designs—made in heavy dome, beam, cornice and border combinations—are preferred to all others. Write for agency proposition and catalogue to-day.

**The Berger Mfg. Co.**  
Canton, Ohio

New York Philadelphia Boston Chicago St. Louis Atlanta Minneapolis San Francisco

**Commonwealth Hotel**  
OPPOSITE STATE HOUSE, BOSTON, MASS.



Offers rooms with hot and cold water for \$1.00 per day and up, which includes free use of public shower baths.

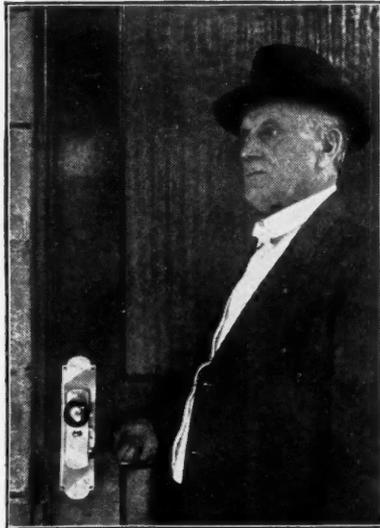
**Nothing To Equal This in New England**  
Rooms with private baths for \$1.50 per day and up. Suites of two rooms and bath for \$4.00 per day and up. Dining Room and Cafe First-Class. European Plan.

**Absolutely Fireproof**  
Stone floors, nothing wood but the doors. Equipped with its own Sanitary Vacuum Cleaning Plant.  
*Long Distance Telephone in Every Room*

**Strictly a Temperance Hotel**  
SEND FOR BOOKLET  
**STORER F. CRAFTS, Prop.**

**USE FINGERS NOT KEYS**  
THE DAYTON KEYLESS DOOR LOCKS

give greatest protection to homes. Can't be picked. Opened in 3 seconds day or night. Meets every want. Removes all of the Key Nuisance. Each Home Needs it. Interests Carpenters, Builders and Architects. Is a Money Winner. Salesmen Wanted. Let us tell you all about it. Write today.



**The Dayton Keyless Lock Co.**  
802 U. B. Bldg. DAYTON, OHIO, U. S. A.

Our Keyless Padlock Has 38005 Combinations

# Milk's Pocket Miter Box

## Three Tools in One



You can cut miters on scaffolds and ladders with Milk's Pocket Miter Box without getting down, and it will not be in the way before or after cutting.

You will like Milk's Miter Box as Much as These Contractors and Builders Do.

Parsons, Kans.

Parsons Manufacturing Co.

Gentlemen:—I have been using one of the Milk's Pocket Miter Boxes and can say it is one of the handiest tools a carpenter can carry in his kit. It is not only good for outside scaffold work but for finish work, as it is much more convenient and takes much less time to do the same work it would with the ordinary miter box.

Yours,  
F. A. TUTISON, Contractor and Builder.

Parsons, Kans.

Parsons Manufacturing Co.

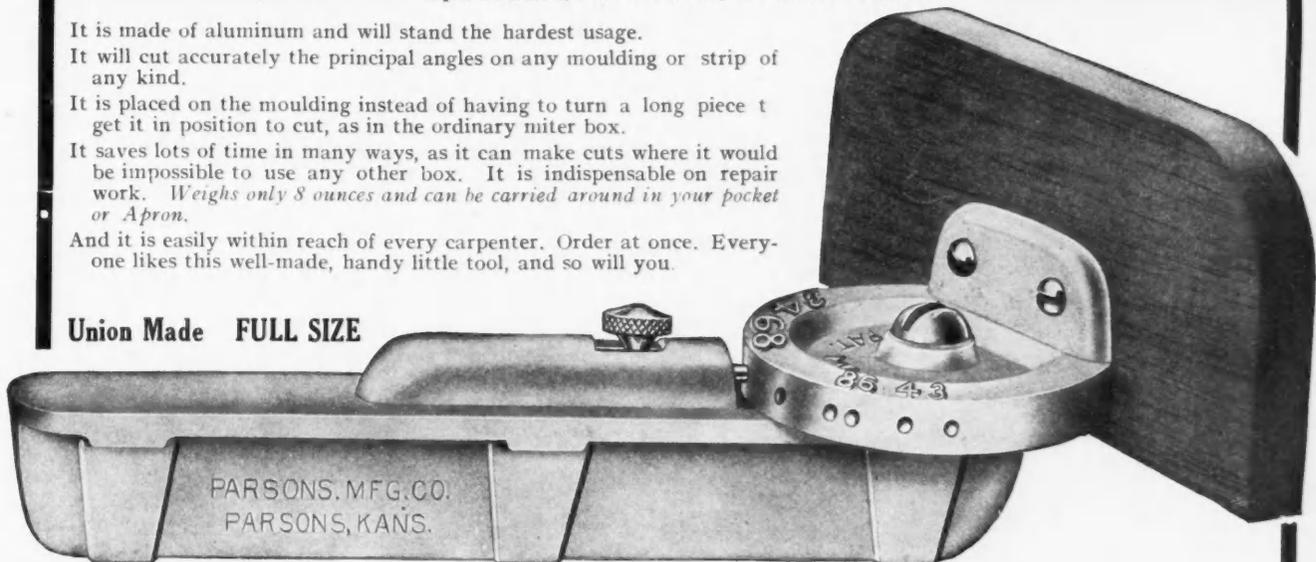
Gentlemen:—I have been using the Milk's Miter Box on my house and it is the only miter box I have had on the job, both inside and out, am satisfied I have saved the price of the box in time on the scaffold work.

Yours,  
E. M. BOWERS, 2009 N. 27th St., Contractor and Builder.

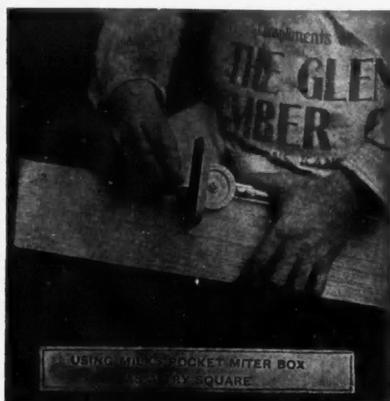


It is made of aluminum and will stand the hardest usage.  
It will cut accurately the principal angles on any moulding or strip of any kind.  
It is placed on the moulding instead of having to turn a long piece to get it in position to cut, as in the ordinary miter box.  
It saves lots of time in many ways, as it can make cuts where it would be impossible to use any other box. It is indispensable on repair work. *Weights only 8 ounces and can be carried around in your pocket or Apron.*  
And it is easily within reach of every carpenter. Order at once. Everyone likes this well-made, handy little tool, and so will you.

Union Made FULL SIZE



**\$1** Ask Your Dealer for Milk's Pocket Miter Box for **\$1**  
Or We Will Send You One Prepaid for **\$1**



Parsons  
Manufacturing  
Company

1800 Washington Ave.  
PARSONS, KANSAS





**\$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

"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.

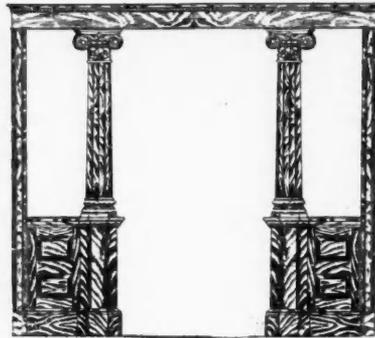
CATALOGUE FREE—Will send our 112 page catalogue, the finest ever issued, free, to carpenters, builders, and those building a home

**CENTRAL MANTEL COMPANY,**  
1247 Olive Street, St. Louis, Mo.

**CHICAGO GRILLE WORKS**

1892

1910



During the month of JANUARY 1911 we will fill all orders reaching us accompanied by Post Office or Express Money Order, or Chicago exchange, for \$16.00 for the opening herein shown, No. 108: in plain oak, birch, yellow pine or cypress in the white. No orders will be filled at this price unless accompan-

ied by cash. Lay in your next years' supply, you may never have this chance again.

**CHICAGO GRILLE WORKS**  
826-838 Wells St. :: CHICAGO, ILL.



**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 Catalogue No. 16

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



**Northwestern Grille Works**  
CHRISTENSEN BROS., Props. 1820-26 Milwaukee Ave., Chicago

Interior and Exterior  
**CAPITALS AND ORNAMENTS**



**DETROIT DECORATIVE SUPPLY CO. Limited**  
810 14th Avenue, : : DETROIT, MICH.  
Most Complete Catalog Ever Issued

**The Builder Who Knows: vs The Builder Who Guesses**

It is easy to tell which wins out. Stop guessing. Learn to estimate safely and rapidly.

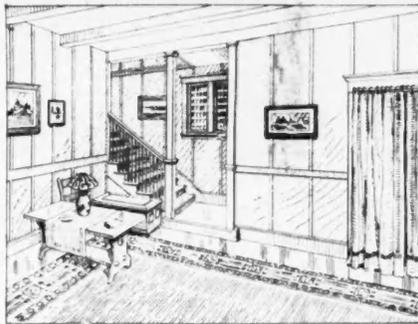
The New Sixth Edition of  
**THE LIGHTNING ESTIMATOR**  
shows you how

**SIMPLE RAPID ACCURATE RELIABLE PRACTICAL SYSTEMATIC**

Easily adjusted to any locality. Based on experience not theory. Ample Illustrated and Bound in CLOTH. This is Your Opportunity to get on to the road to Success. Don't let it go by, but send \$1.00 TO-DAY, for a copy of this interesting book.

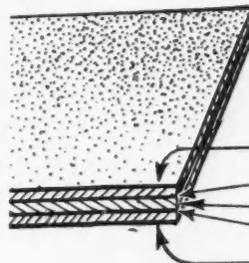
**BRADT PUB. CO.**  
1260 Michigan Ave. :: JACKSON, MICH.

# UTILITY WALL BOARD



Samples are FREE Send for FREE SAMPLES and CIRCULARS Quick

## A Fibrous Waterproof Board in Sheets To be Used Instead of Lath and Plaster For New Buildings or Repair Work



### MR. CONTRACTOR:

This is your chance to make more money and finish your jobs quicker.

Every up-to-date builder should use Utility Board at once.

Remember that all the delays of the plasterer are a thing of the past for those who use this modern building material.

UTILITY WALL BOARD is better than lath and plaster and actually saves the user a lot of money and gives him a handsome, durable job.

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.

THE HEPPE'S COMPANY, 4503 Fillmore Street, CHICAGO, ILL.

## Artistic Domes and Fire Screens

Mosaic or Inlaid Glass for Wainscoting or Wall Decorations. Perfect and Permanent Reproductions on Glass from Photographs or Paintings of Persons and Places.

### ARTHUR MICHAUDEL

AMERICAN ART INSTITUTE FOR STAINED GLASS WINDOWS

542 N. Paulina St., Cor Ohio St., CHICAGO

## On the Square



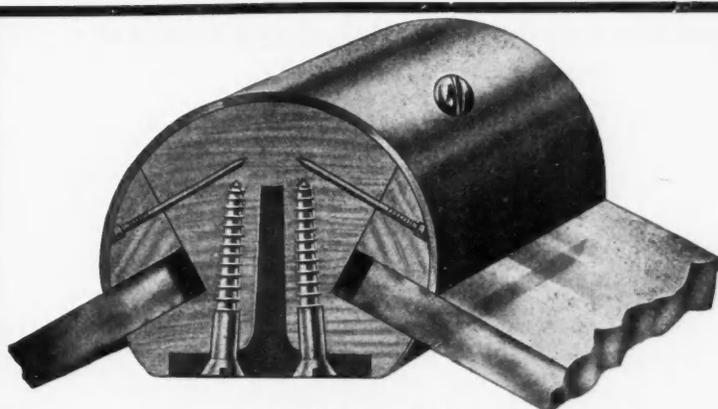
every builder should have my little works and be a constant reader of the "Cement World," the leading paper of its kind published.



STEEL SQUARE POCKET BOOK.....	\$0.50
FOLDER (in case with pockets).....	.25
DESIGNING (finely illustrated).....	.50
CEMENT WORLD.....	1.00

All for \$1.75. \$2.25

DWIGHT L. STODDARD, Author of "Steel Square Pocket Book," 328 W. Raymond St., Indianapolis, Ind. Send for other Combination Offers.



NO. 13 CORNER POST

## The Coulson Patent Store Front Construction

makes the most practical, complete and modern store front and enables the merchant to display his goods to the best advantage.

It is specified by the leading architects for both new and remodeled store fronts, and recommended by Plate Glass Insurance Companies.

Write for Illustrated Catalogue "E-800".

J. W. Coulson & Co.

234 N. Third St., Columbus, Ohio

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

Makers of

## Fine Hand Made Hand Saws

The Purest of Quality Our  
"GREYHOUND" Hand Saw



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



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

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

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

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

# Architects & Engineers' Supply Co.

*DRAWING & SURVEYORS INSTRUMENTS*

BOUGHT, SOLD AND REPAIRED

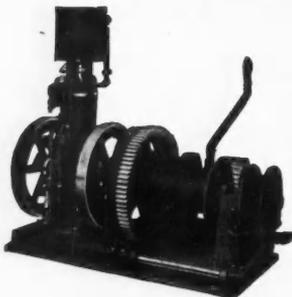
ARTISTS' MATERIALS

1010 Grand Avenue

::

Kansas City, Mo.

## EVERY CONTRACTOR AND BUILDER



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.

**BATES & EDMONDS MOTOR CO.** LANSING, MICHIGAN

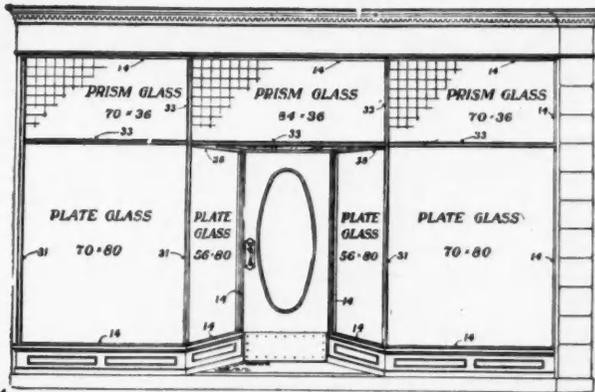
## HANDY LAMP Gasoline Lighting System

**DRAWS TRADE TO  
YOUR SHOP**



Gives a **300 Candle Power Shadowless Light** the instant you move the lever. Turns up or down like gas burns dim when not in use, or can be turned up instantly when more light is needed. It floods a 30-foot space with a brilliancy like daylight. Far cheaper than gas, kerosene or electricity, and so simple that anyone can use it. You can depend on it for years for any purpose demanding a big strong light. Catalogue A. C. B. tells why. Send for it now.

**BRILLIANT GAS LAMP CO.**  
Dept. 20, 42 State Street Chicago, Ill.



## The Satisfactory Bar

—the one that incorporates the largest number of desirable features in store front construction—is the Petz Bar. It is the strongest bar to be had and the finest in appearance; takes less display space and gives more light; is easier than any other to install and gives the best protection to the plate glass. Hundreds of prominent builders, architects and insurance experts endorse Petz Bars.

A booklet, "Modern Store Front Construction," gives illustrations and full details about them. Write for it.

**DETROIT SHOW CASE CO.,**

Sole Makers,

491 West Fort St., Detroit, Mich.

# We Want Every Ambitious Carpenter and Builder

To Examine This Great Work—Free!

TEN BIG COMPLETE VOLUMES

4,670 Pages, 3,000 Illustrations, Plates, Etc.



This great cyclopedia is a complete review of architecture carpentry and building. No work so practical, so complete, so reliable, has ever before been placed on the market. Every problem likely to confront you in your daily work is solved and the solution placed before you in such a clear manner that you cannot fail to understand and profit by it.

If you have a building contract in hand, you need this great

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at your elbow to show you the most economical and practical method of handling the job and the proper way to estimate the amount of material required, with the least possible waste.

For the practical carpenter and student, its value as a Home Study Instructor cannot be estimated.

Just examine the "Partial List of Contents" below and you will at once realize how broad is the field covered by this work—how thoroughly it covers every branch of the building trades.

The books are illustrated with hundreds of full-page plates; plans for homes and buildings; views of jobs completed and in the course of construction. Securely bound in half red morocco leather; titles stamped in 23-carat gold. Read our free examination offer.

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Carpentry—Building—Estimating—Stair Building—The Steel Square—Building Superintendence—Contracts and Specifications—Building Law—Building Material—Roof Trusses—Masonry—Reinforced Concrete—Concrete Blocks—Steel Construction—Mill Building—Fireproof Construction—Cornices—Skylights—Roofing—Hardware—Plastering—Painting—Electric Wiring and Lighting—Heating—Ventilation—Steam Fitting—Plumbing—Architectural Drawing—Freehand and Perspective Drawing—Orders of Architecture.

For a short time we will include as a monthly supplement, for one year, 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.

## AMERICAN SCHOOL OF CORRESPONDENCE

CHICAGO, U. S. A.

### Free Examination Coupon

American School of Correspondence, Chicago, U. S. A.

Please send set Cyclopedia of Architecture, Carpentry and Building for five days' free examination; also Technical World for 1 year. I will send \$2.00 within five days and \$2.00 a month until I have paid \$24.00 or notify you and hold the books subject to your order. Title not to pass until fully paid.

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ADDRESS .....

OCCUPATION .....

EMPLOYER .....

Amer. Carp. & Bldr. 1-11



**Public Garage Type Pitless Turntable with steel approach for rear kind of Garage door.** May also be equipped with electric motor for revolving and full car conveniently as structure above from inside.

**SMALL 4 CAR TYPE PITLESS TURNTABLE.** Maximum capacity for four automobiles.

**Maximum capacity for six automobiles.**

## If You Have Any Pride

In keeping up the appearance of your premises as well as your motor car you cannot possibly afford to overlook the sanitary, clean and practical annular Ball Bearing.

### PITLESS TURNTABLE

Can be installed in thirty minutes by an ordinary workman without the slightest marring or as much as a nail scratch in any public or private garage. Out of doors or in basement, on wood or concrete floors. There can only be one first cost on a PITLESS TURNTABLE because they are guaranteed FOREVER, and besides, this first cost is decidedly less than the installation expense of the hazardous, filthy and danger traps of the old style turntables requiring a Pit or Building Alteration.

To concrete your yard in front of garage for purpose of washing and backing car around is not only to make an otherwise beautiful lawn into a very unsightly eyesore but the expense of such concrete work alone will buy several Pitless Turntables.

The cheapest accident insurance ever offered the Motorists is an investment in a PITLESS TURNTABLE—because it is not only wrong to back your car continually but extremely dangerous to life, limb and car, irrespective of how expert you may be in handling an automobile. The expense of one accident to car will pay for several turntables.

Write today for our ART CATALOG Giving full particulars, weights, dimensions, etc.

**PITLESS AUTO TURNTABLE CO.**  
FULLY PROTECTED BY PATENTS      KANSAS CITY      FULLY PROTECTED BY PATENTS  
MISSOURI

## DISSTON No. 5 HANDY SAW CLAMP



¶ This No. 5 Handy Saw Clamp has been designed with the view of making it light, strong, durable and so compact that it will take up the least possible space in a tool-chest.

¶ The material is grey iron. The arches are reinforced to give requisite strength where needed.

¶ The eccentric lever for tightening permits of quick and positive action.

¶ There being three points of pressure on the jaw, proper contact with the blade is obtained along the

entire length of the jaws, which insures the holding of the saw-blade firmly and rigidly in position.

¶ Fastened to bench by screws.

¶ Length over all, 14 $\frac{3}{4}$  inches.

¶ Filing length of jaw, 13 inches.

¶ Weight of clamp, 3 $\frac{3}{4}$  pounds.

¶ We also make the No. 6 Handy Saw Clamp which is of the same pattern, with the addition of screw-lugs for fastening to bench. These lugs fold snugly to body of clamp thus taking up small space in tool-chest.

## Henry Disston & Sons

INCORPORATED

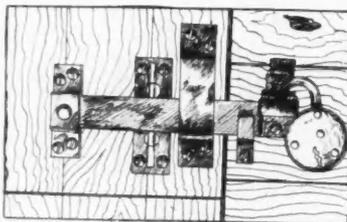
Keystone Saw, Gool and File Works

PHILADELPHIA

BRANCHES: Chicago, Cincinnati, Boston, New Orleans, Memphis, San Francisco, Seattle, Portland, Spokane, Vancouver, and Toronto

## Scheel's Door Latches

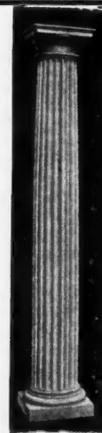
Newest and Safest—Absolute Protection  
For Sliding or Swinging Barn, Storm or House Doors



These door latches have just been patented and no storm door or barn door is complete without one. Doors and buildings fitted with these latches not only last much longer by being held firmly, open or shut, thereby saving breakage from slamming, but the new locking device baffles intruders and insures complete protection.

Write for prices and descriptions of various designs.

C. F. SCHEEL, - Western, Neb.



## 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.

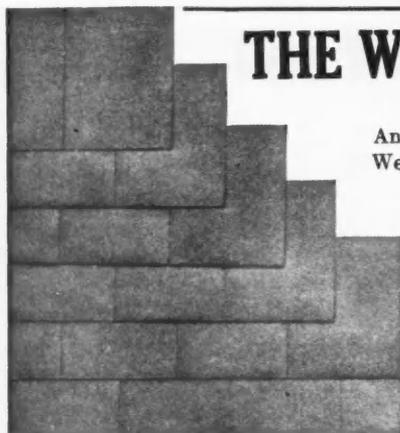
Hartman-Sanders Company

Sole Manufacturers of

KOLL'S PATENT LOCK JOINT COLUMNS

2155-2187 ELSTON AVENUE : CHICAGO

Eastern Office: 1123 Broadway, New York City  
The best columns for porches, pergolas or interior use.



## THE WINTHROP SOLID TAPERED ASPHALT SHINGLES

ARE OF A COOL, GRAY SLATE COLOR

And have all the Durability of Asphalt—the Fine Appearance of Slate and the Light Weight and Low Cost of Wood Shingles. Laid with regular Shingle Nails, the same as Wood Shingles. NEVER REQUIRE PAINTING.

Write for Free Booklet and

**SPECIAL INDUCEMENTS TO THOSE WHO APPLY  
FIRST ROOF IN EACH TOWN**

Winthrop Asphalt Shingles are Fire-resisting, Weather-proof, Wind- and Sun-proof, and never Crack, Break or Fall Off.

**WINTHROP ASPHALT SHINGLE CO. 1101 $\frac{1}{2}$  The Temple  
CHICAGO, ILL.**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



# We Want a Builder In Every Town

We Have An Attractive Proposition For One Carpenter Or Builder In Every Community To Take Orders For Our Widely Advertised

## Edwards' Metal Spanish Tile

ARE EASILY SOLD BY OUR AGENTS  
Home Owners Everywhere Are Reading Our Advertisements In The Leading Magazines

## Edwards' Interlocking Metal Spanish Tile

ARCHITECTS EVERYWHERE SPECIFY THIS ATTRACTIVE ROOFING

Edwards' Metal Tile are stamped out of the highest quality Worcester Grade Terne Plate, size 10 x 14 inches, furnished either painted or heavily galvanized. They are provided with our patented interlocking device, which conceals all nails, makes it possible to get a perfectly moisture proof roof without soldering and without danger of having the tile crack open in extremely cold or hot weather. Edwards Metal Spanish Tile looks exactly like the best Terra Cotta Tile. They have the decided advantage of being much lighter, easier to apply, longer lived and cost much less.

Write us today about your territory. Here's an opportunity you should not miss. Many carpenters and builders have been so successful taking orders and laying out Metal Spanish Tile that they now devote their entire time to this business. Others have made big profits selling and laying our metal tile roofing "between jobs." We show you how to build up an independent, profitable business in your own community. Write for our proposition today. The territory is going fast. Don't be too late. Send a postal right now.

## The Edwards Manufacturing Company

"THE SHEET METAL FOLKS"

401-417 Eggleston Avenue

Cincinnati, Ohio

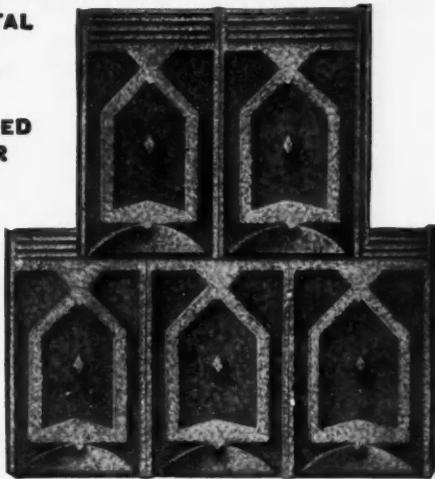
THE WORLD'S LARGEST MANUFACTURERS OF METAL ROOFING, METAL SHINGLES AND METAL CEILINGS

### STANDARD—Lock Joint—METAL SHINGLES

ORNAMENTAL  
EASILY  
APPLIED

GUARANTEED  
WEATHER  
PROOF

We can save  
you money on  
CORNICES  
SKYLIGHTS  
VENTILATORS  
METAL  
CEILINGS  
ROOFINGS  
SIDINGS  
EAVE  
TROUGH  
CONDUCTOR  
PIPE



ABSOLUTELY STORM PROOF

### CANTON Manufacturing Company

1310 to 1320  
East Second Street

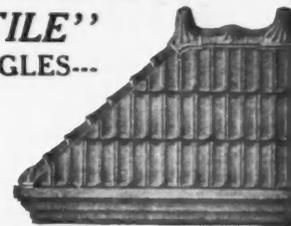
CANTON  
OHIO

Catalogue  
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### Scott's "ARTILE" --METALLIC SHINGLES--

Made in  
Painted Tin  
and in  
Galvanized



BEAUTIFUL—DURABLE—CHEAP

These shingles add value to any building, upon which they are used  
Send for Catalog

Agents Wanted THE SCOTT ROOFING & MFG. CO.

Eastern Office Parkersburg, W. Va. 235-236 East Front Street Cincinnati, Ohio

### MONTROSS METAL SHINGLES

21 years test and satisfaction of all users back of them. Best roofing for Service, Durability and Economy. Will last life of the building. Offer you a permanent, durable roofing for your customers, and a good profit for yourself.

Outwear wood shingles and composition roofings. Lighter than slate or tile. Embossed, then galvanized or painted. Easily applied, no soldering. Won't crack or break. Inexpensive. Stop maintenance charges. Suitable for all kinds of buildings.

Write us AT ONCE for Illustrated Catalogue Testimonials, Prices, and full information.



Montross Octagon Shingles and Gothic Tiles

MONTROSS METAL SHINGLE CO., 102 Erie St., CAMDEN, N. J.



# 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.

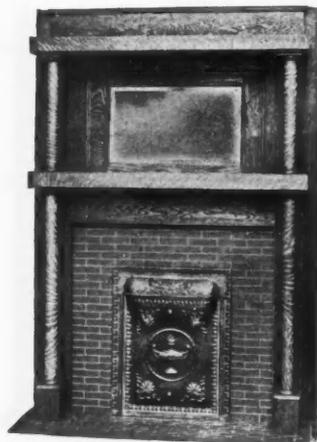
We have catalogues showing our various lines of product. Please specify the particular class of sheet metal work you are interested in and we will send you the proper catalog for same.



**W. H. Mullins Company**

214 Franklin Street,

Salem, Ohio.



 **\$24.75 Special Bargain**

No. 239

**AT** the above prices we include **Mantel**, with **Tiling** and **Grate**, also **Plated Frame** and **Front** and **Ash Screen**. Write for our 50 page catalogue.

Sent free on application.

**MOORMANN & OTTEN**

611-613 Main St.

CINCINNATI, OHIO



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

**No  
Dust  
Dirt  
Smoke  
Cinders**

Travel  
Over the  
Road of  
Good  
Service

## 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

**Hot Water HEATING \$215**

ANDREWS SYSTEMS OF HEATING are built upon principles that appeal to the common sense of the purchaser. There is no secret about a heating plant that any full grown man or woman cannot fully understand without special training. A steel boiler will transmit heat from fuel more rapidly than will heavy cast iron. That gives quick response to your fire. The Andrews regurgitating safety valve and group system of piping make 100 feet of radiation do the work of 150 feet by other systems.

You can install your own Andrews heating plant or hire a carpenter or handy man to do it. It isn't any more difficult than screwing a nut on a bolt or setting up a stove and stove pipe.

Our Book Tells. Send for it.

**Plumbing \$120**

THE ANDREWS PLUMBING EQUIPMENT for a house is now made so that no plumber is needed. The pipes are all screwed together and the fixtures are easy to set up. This saves the excessive cost of the proverbial "plumber's bill." The Andrews Plumbing Equipment shown in the illustration, is so reasonable in price and so dependable in quality that no home owner can afford not to know all about it.

Our Book Tells. Send for it.

**Write Today for Our Big Book, "ANDREWS 4 SYSTEMS"**

72-page Portfolio—Over 300 Fine Illustrations. Every page worth reading. Tells you how to make your home Modern, Comfortable and Sanitary.

**\$75 Air Pressure Water Supply**

ANDREWS AIR PRESSURE WATER SUPPLY gives to the country home or farm house the essential convenience of city water. You can have running hot and cold water in your house using the Andrews air tight tank in the basement or in the ground outside. This is filled by the use of a pump, worked either by a gasoline engine, windmill or hand power, the water being delivered under pressure. It has all the advantages of an overhead tank, but it never freezes, never runs over and the pressure is usually sufficient to throw water over the house, thus giving ample fire protection.

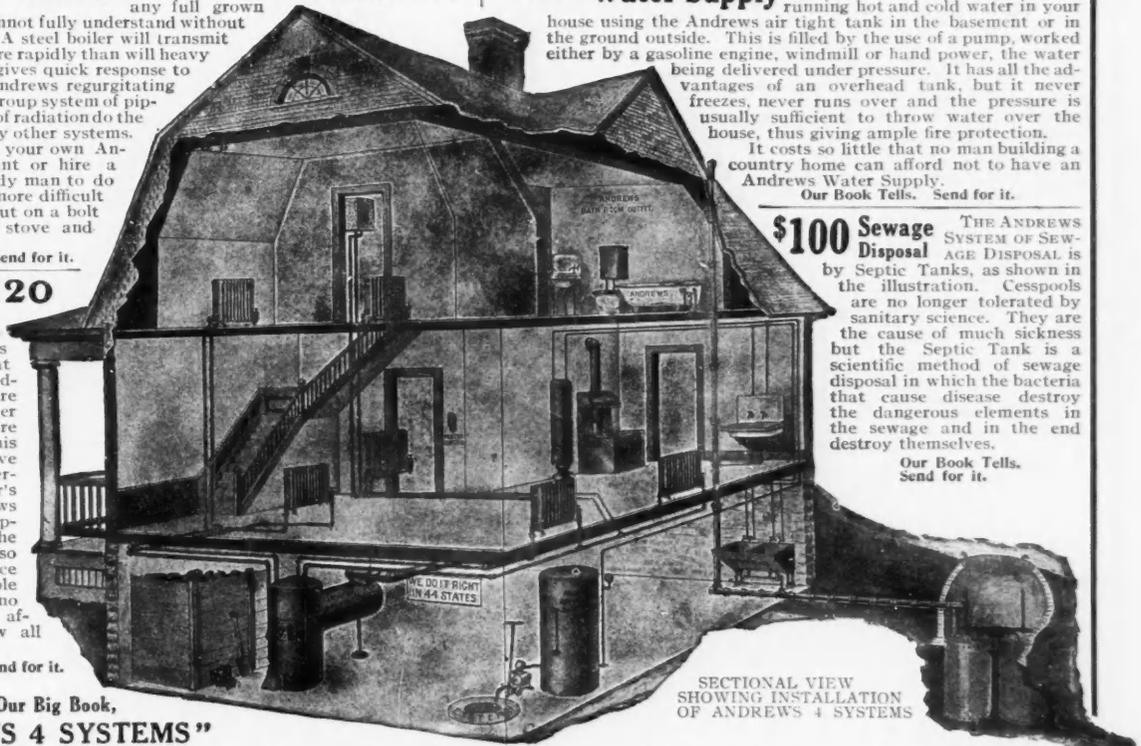
It costs so little that no man building a country home can afford not to have an Andrews Water Supply.

Our Book Tells. Send for it.

**\$100 Sewage Disposal**

THE ANDREWS SYSTEM OF SEWAGE DISPOSAL is by Septic Tanks, as shown in the illustration. Cesspools are no longer tolerated by sanitary science. They are the cause of much sickness but the Septic Tank is a scientific method of sewage disposal in which the bacteria that cause disease destroy the dangerous elements in the sewage and in the end destroy themselves.

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SECTIONAL VIEW SHOWING INSTALLATION OF ANDREWS 4 SYSTEMS

**ANDREWS HEATING Co.,** Manufacturers—Contractors—Engineers  
1150 Heating Bldg., Minneapolis, Minn.

**PLUMBERS' SUPPLIES AT WHOLESALE**



When in the market for Plumbing Supplies and you wish to

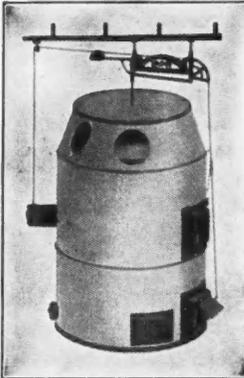
**SAVE 20 to 40 Per Cent**

in every article, write for my free illustrated Catalog. The only house that sells first class guaranteed goods at wholesale prices direct. Shipments are promptly made from a very complete stock.

Small orders are as carefully handled as large ones.

**B. B. KAROL, 768-772 W. Harrison St., Chicago, Ill.**

**A PAYING SIDE LINE FOR YOU**



**The Kees Regulator**

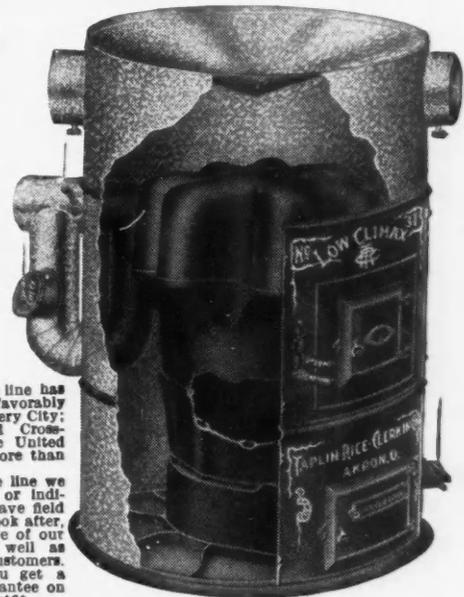
works the drafts of a hot air furnace automatically, so as to keep the temperature even. It prevents waste of fuel through overheating, makes the home more comfortable and healthful and practically "runs" the furnace. Every furnace owner needs one. The price is moderate

You can make a good many extra dollars this fall selling and installing them.

Drop us a card for full particulars.

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Ten Substantial Reasons 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 Crossroads 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.
4. 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 the do the work—of no pay.—BEWARE OF TRAPS FOR THE UNWARY.

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The Only Stove and Furnace Folks  
Send for Catalog  
"Sold in every city, town and cross roads in United States."

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Some men dig, dig, dig, all their lives and never get out of the rut. Always striving—never succeeding—they need but a helping hand to point the way. Are you doing the same? Every carpenter, bricklayer or any man in the building trades who wants to get out of the rut should devote his idle time this winter, when work is slack, to a course in **DRAFTING**. The course is short, but complete, and includes

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Building superintendence, building materials, carpentry, stair building, re-enforced concrete, masonry, estimating, contracts and specifications, the law of contracts and liens, hardware, plastering, painting, heating, ventilating, steel construction, elevators, sheet metal pattern drafting, mechanical and architectural drawing, and blue printing.

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Send us the names of all the contractors, carpenters, cement workers and prospective builders you know of. Keep each class separate. We will send you a big portfolio containing perspective views and floor plans of over 100 Modern Bungalows, Cement Houses, Residences, Cottages, Farm Buildings, Churches and Stores, selected from 1500 prize designs absolutely free. Write

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without a cent deposit, prepay the freight and allow **10 DAYS FREE TRIAL** on every bicycle. **IT ONLY COSTS** one cent to learn our unheard of prices and marvelous offers on highest grade 1911 models.

**FACTORY PRICES**—Do not buy a bicycle or one at any price until you write for our new large Art Catalog and learn our wonderful proposition on the first sample bicycle going to your town.

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I want to send every poultry raiser my large free book on home incubator construction. I want to show you how my patented Lamps, Thermostats-Tanks, Egg Trays, Wicks etc. will save you money. All sizes, latest exclusive improvements. Used by the leading poultrymen of America. Write for free book of incubator plans today.



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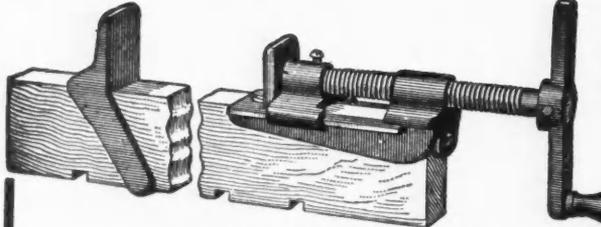
### Do Not Buy a Floor Scraper

Until you have looked into the merits of the

## HAVEN FLOOR PLANER

The Scraper that Planes. Banishes heavy weight pulling—planes and smoothes at one operation.

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Yours truly,  
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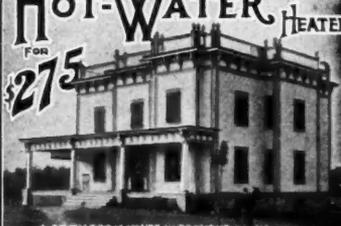
Thousands suffer severe injuries or death every Winter through falling on icy or snow-covered streets and walks. protect you absolutely—give you safety, security and confidence in the slipperiest places. Do not go another day without them. You may receive serious injury if you fall on the icy pavement. Protect yourself today with Never-slip Heel Teeth. Regulated by a touch, for in— or outdoor use. 25c per pair prepaid. Agents wanted. Send today.

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for \$275



A SEVEN ROOM HOUSE IN ROANOKE, VA.

### BIG 72 PAGE Catalogue Free

Full of information about Andrews System of Heating, Plumbing, Water Supply and Sewage Disposal. Sold on 360 days Free Trial Guaranty. Send names of two or more persons who want to buy heating plants.

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**In Roofing Slate, Slate Blackboards Structural and Plumbers' Slate**

**SATISFACTION GUARANTEED IN QUALITY AND PRICE**

**ASK FOR DELIVERED PRICES**

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### DO YOU WANT SLATE?

Roofing Slate for Houses, Barns, Sheds and Railroad Stations. Clean and ornamental, rain, wind and fireproof.

Blackboards for Schools, Colleges, etc., are being used all over the World, need no better commendation, "It is just the thing."

Structural and Electrical Stock, Steps, Sink Tops, Wash Tubs, Window Sills, etc., superior to all other stone for such purposes.

Slaters' Supplies, Hand-made Slaters' Tools, Snow Guards, Slaters' Cement, Nails, Felt, Slate Punching and Cutting Machines, etc.

Write for prices and I will tell you all about Slate. D. McKenna, Slatington, Pa., U. S. A.

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\$2.50 and up, sold on approval, an unconditional money-back guarantee.

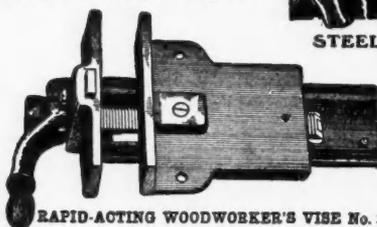



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Guaranteed Indestructible

We solicit privilege of sending samples and our complete catalogue.

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“We extend to all our best wishes for a happy  
and a prosperous New Year.”

**Milwaukee Corrugating Company**

Milwaukee, Wis.

Kansas City, Mo.



**PERFECTION  
ELEVATORS**

The Best Value for the Money in the World  
Mechanically Correct

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

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

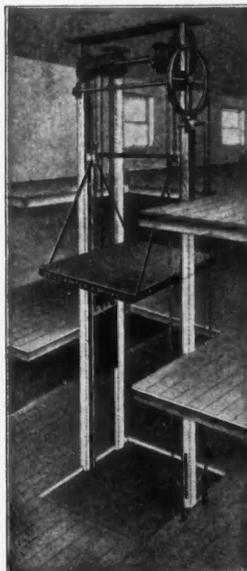
**The Low Cost Will Surprise You**

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

**SIDNEY ELEVATOR MFG. COMPANY, SIDNEY, OHIO**

**The New Otis Metal  
Hand Power  
Elevator**

**FOR STORES**



WORKS EASIER AND  
LASTS LONGER  
THAN OLD STYLE  
WOODEN ELEVATOR

**\$75.00  
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SEND FOR  
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**DUMB WAITERS  
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HAND ELEVATORS**  
OF THE MOST IMPROVED  
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**This DUMB WAITER**

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HARDWOOD CAR  
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ROPE, GUIDES, HARDWARE,**

knocked down and shipped with the only  
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Crescent Variety Wood Worker

Every carpenter and builder should invest in one of these machines. No inconveniences, no worry, no bills from local mills to pay. By doing your own mill-work you can place yourself in a position to estimate below your competitor. You will therefore have more work and a larger profit.

### The Crescent Variety Wood Worker

fills a long felt want in those shops that have a varied but limited use for wood-working machinery. It combines a jointer, borer, shaper, pole rounder and tool grinder. The "Crescent" is built to stand hard usage, all the parts are made of the best material obtainable for the purpose. The machine is strong, durable and will stand the most severe tests.

This machine is especially valuable to carpenters and contractors, as it can be taken out on a job, or can be used in the shop with equal satisfaction. Can be driven with electric motor or gasoline engine.

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

**The Crescent Machine Co.,** 224 Main St., LEETONIA, OHIO

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ROOFING SLATE, BLACKBOARDS, STRUCTURAL AND ELECTRICAL SLATE

The increased demand for these slate is the best evidence of their satisfying qualities.

Sole Quarriers and Manufacturers

**SLATINGTON SLATE CO.**

Established 1852

**SLATINGTON, PA.**

Write for Booklet and Price List



Annual Output  
Eight Million Barrels

The uniform high quality, the regular setting properties and good popular color of Universal Portland Cement recommend it to the building contractor for concrete work of all kinds.

## "Sterling" Convertible Level

Two Instruments in One



The only perfect Builders' Level made that can be converted into an Instrument for Vertical Sighting.

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# ROOF SLATES BLACKBOARDS

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38 Park Row, New York |  
**Quarry Operators**  
BLACK, GREEN, PURPLE, RED

Booklet, Samples and Prices on Application

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IS THE STANDARD WOOD FOR HEAVY CONSTRUCTION, owing to its EXTRAORDINARY PHYSICAL CHARACTERISTICS.

A large number of tests, under the direction of the United States Division of Forestry with seasoned Long Leaf Yellow Pine, has proven conclusively that its shearing strength, its tensile strength, its bending strength, its compression strength, with and across the grain, is greater than any other dependable or available wood structural material.

**THE BEST TIMBER FOR HEAVY ENGINEERING STRUCTURES,**

Where Great Strength, Long Span and Durability are Required.

A Reminder—Wood costs less than iron construction, and can be furnished at any time by first-class lumber dealers. "Standard Wood Construction" furnished on application.

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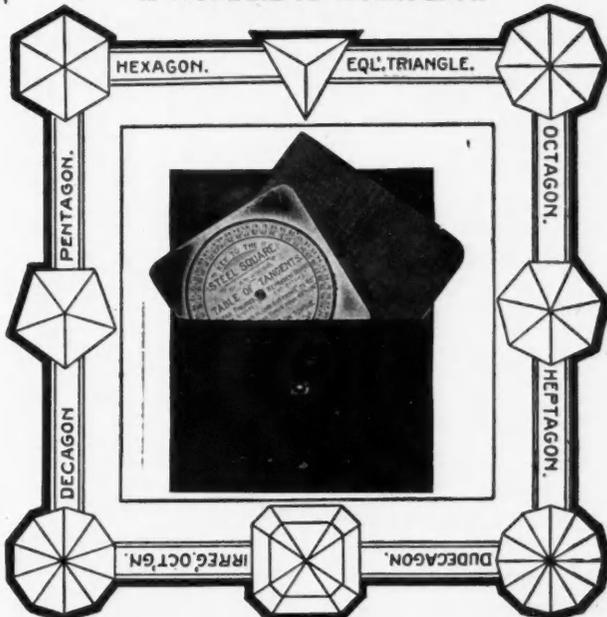
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*Plaster Relief Decorations*  
*Theatres Designed Everywhere*

Write for illustrated Theatre Catalog. Send us Sizes of Theatre for Special Designs.

—The—  
**Decorators Supply Co.**  
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### ALFRED W. WOODS' KEY TO THE STEEL SQUARE A WONDERFUL INSTRUCTOR



It should be in the possession of every carpenter, or those having work in angles. It tells the whole story of how to use the common steel square, to obtain the cuts in degrees, or by inch rise per foot run for all kinds of framing.

Price \$1.50. Postpaid

**AMERICAN CARPENTER & BUILDER**  
185 Jackson Boulevard, CHICAGO

## CARPENTERS

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

**Barnes' Hand and Foot Power Machinery**

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

SEND FOR OUR NEW CATALOGUE

**W. F. & John Barnes Co.**  
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### Wood Carvings for Interior Finish



Our beautiful Catalogue No. 21 will be sent upon receipt of 15 cents in stamps. Our product is of the highest grade, and too large to list here.

Write today

**Waddell Mfg. Co.**  
Corner of Taylor and Coldbrook Streets,  
Grand Rapids, Michigan

# \$13,245 IN 110 DAYS

R. V. Zimmerman, an Indiana farmer, (address upon application), as sales agent for our

## NEW INVENTION ORDERED \$13,245 WORTH IN 110 DAYS, AND HIS ORDERS FOR 9 MONTHS TOTAL OVER \$30,000.00

His first experience selling goods. Started at home in spare time while farming. Another agent, M. G. Stoneman, an artist, of Nebraska (address upon application), devoting only spare time, total orders amount to

## OVER \$15,000.00

and placed one order for over \$6,000. He writes: "Best thing ever sold. Not one complaint from 2,000 customers." Another agent, Wm. McCoubrie, a student of Kansas (address upon application), comes next, with total orders of

## OVER \$8,000.00

Another agent, C. A. Korstad, a carpenter, of Minnesota (address upon application), furnishes added proof that we offer an extraordinary winner, by ordering

## \$2,212 WORTH IN 2 WEEKS

These are just a few of hundreds who have made big money as agents, salesmen, managers, for

### ALLEN'S POWERFUL PORTABLE BATH APPARATUS



M. Juell



R. V. Zimmerman



M. Stoneman

Nothing like it. Gives every home that long desired blessing—Modern bathing facilities for only \$6.50. Abolishes tubs, bowls, buckets, wash rags, and sponges. Turns any room into a bath room, with hot or cold running water. Think of it. So energizes water, one gallon ample; cleanses almost automatically; no plumbing—no water works—self heating. Gives cleansing, friction, massage, and shower baths. Makes bathing 10 minutes operation. Operates wherever water is obtainable. Easily carried from room to room or packed in grip when travelling. So simple—child can operate. Truly delightful; bathing without the drudgery, inconvenience, annoyance, muss of lugging water, filling tubs, emptying, cleaning, putting away. Surely it has all the features of a popular, easy, quick seller. Think of millions who need—want modern bathing facilities—who will welcome this chance to modernize their homes.

Agents very successful. See what others are doing. Actual results that make you want to seize this opportunity. Investigate anyhow.

See what these agents have ordered. (Address supplied upon application).

M. Juell, Canada, (clerk) over \$7,200; C. C. Fritzel, Iowa (lawyer) over \$6,800; W. S. Harlow, Nebraska, (farmer) over \$6,400; E. Edwards, Nebraska (solicitor), over \$6,300; B. F. Magee, Florida (Physical Director) over \$6,100; A. J. Wilson, Kentucky (Bank Organizer), over \$4,000, and writes:

### "Sold 102 Outfits In 14 Days"

F. Oviatt, Iowa, (Minister), over \$800 in 11 days, \$4,000 to date; A. Rogers, Kansas, (Surveyor), over \$3,000 and writes: "Selling baths got me one piece of property;" W. H. Byrd, North Carolina, (Mechanic) over \$2,200, and so it goes. O. P. Schleicher, Ohio, (Minister), writes:

### "First 12 Hours' Work Sold 30 Outfits" " (PROFIT \$107.25) "

A. P. Lodewick, Maine, (Solicitor), writes: "Lucky I answered ad; it's great; money coming fast; 17 orders to-day; sells on sight." J. B. Hart, Texas, (Carpenter), total orders exceed \$5,000 and writes: "Took 16 orders in 3 hours. Appeals to all. Can't keep from selling it if it is properly demonstrated." Reece of Pennsylvania, (Carpenter) solicited 60 people—sold 55

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with exclusive right to demonstrate, sell, deliver, collect, appoint, supply and control sub-agencies, at home or travelling, all or spare time. Previous experience, capital unnecessary.

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to active agents. Test your ability once, with a real opportunity. Surprising what a little hustle will do. Think what this business means. No competition. New patent—field unworked—demand enormous—price insignificant—fascinating, dignified, exciting work—everything just right for a good business. Allen's Powerful Portable Bath Apparatus is no experiment. Quarter million already sold. Used by U. S. Government. Praised by thousands. Delighted customers say don't see how they ever got along without it.

#### SEND NO MONEY—INVESTIGATE FIRST

Just spend 1 cent to-day—a postal—to get our free catalogue and high grade agency plan. Act now—be first—don't let someone else get territory you want.



**The Allen Mfg. Co.**  
3221 Allen Building, Toledo, O.

# Down Goes the Price

From \$3.00 to \$2.00

ON account of the great demand for the ABC Protractor Square we are able to make this great reduction offer.

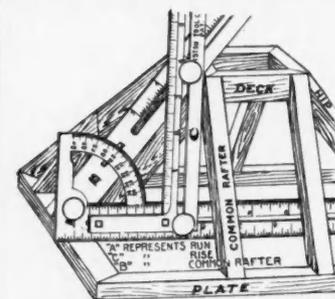
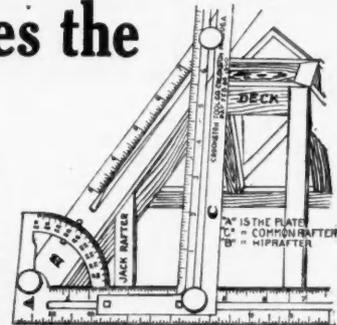
The ABC Protractor Square is the wonder of the age. If not satisfactory, your money cheerfully refunded.

Read what the State Superintendent of Construction of Minnesota, says about the ABC Protractor Square:

"I find that the ABC Protractor Square is a perfect tool as well as very handy on the drafting table, and consider it the very best and most useful tool any mechanic can have.

With it anyone can grasp and understand the art of roof and stair framing, regardless as to the education of the owner of the tool.

The tool does its own figuring. It is accurate, well made of steel and not clumsy nor frail but just right.



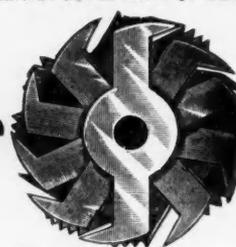
Predicting you large sales of the tool as soon as its usefulness becomes known to the progressive mechanic, I remain, Yours truly, H. H. Vernon, Walker, Minn."

Buy from your dealer or send \$2.00 to

**Crookston Tool Company**  
Crookston, Minn.

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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 at our expense. We also make a specialty

Showing Arrangement of Cutters of concave ground, smooth cutting circular Mitre Saws, for either rip or cross cut; Grooving Saws for all kinds of special work; Lock, Corner Cutters, Concave Saws, etc.

Try our Scraper Blades and you will use no others:

**HUTHER BROS SAW MFG. CO.**

1000 University Ave.

ROCHESTER, N. Y.

# Parks' Woodworker

The FIRST and ORIGINAL COMBINATION of Circular Saw, Jointer and Band Saw, ever placed on the market.

Reversible Spindle Shaper, Boring and a dozen other valuable attachments can be added.

Each machine is sold separate or can take a circular saw and add to it all desired.

The long base best arranged for Portable Use.

BUY from the ORIGINALATORS and LEADERS in improvements and you will be sure to get the best.

Our Ball Bearing Machines are the greatest improvement ever made in Foot and Hand Power Circular and Band Saws.

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*A Practical Working Guide to the Intelligent Use of Cement, Concrete, and Structural Steel* (2,250 pages; 1,500 illustrations; completely indexed). As necessary to the Carpenter and Builder as to the Stone or Brick Mason or the Cement Man; to the Home Owner and Builder as to the Architect or Engineer; to the Farmer as to the City Craftsman of the Building Trades in general.

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Aggregates (Sand, Gravel, Crushed Stone, etc.)  
Proportions for Mixing  
Mixing by Hand and Machine  
Strength of Concrete  
Cement Testing  
Cost of Concrete  
General Working Rules  
Depositing Concrete (in Air, under Water)  
Bonding Old and New Concrete  
Precautions against Freezing  
Concrete Troubles and Remedies  
Expansion, Contraction, Hair Cracks, etc.

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Integral Mixtures  
Surface Treatments  
Asphalt Waterproofing  
Waterproof Paints

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Stucco and Plaster  
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Cost of Blocks  
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Tile, Pipe and Shingle Machines

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Forms (Wood, Metal)  
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### Cement Houses

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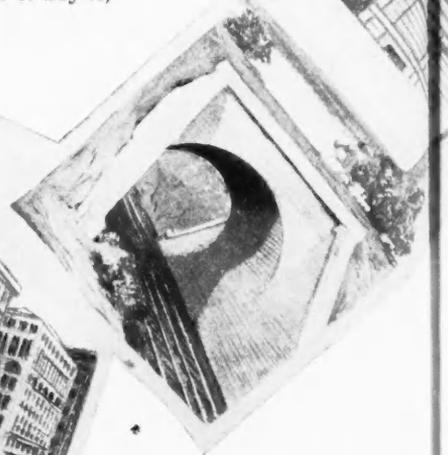
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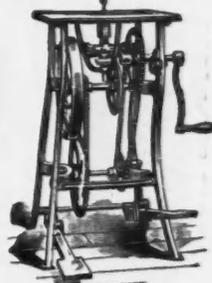
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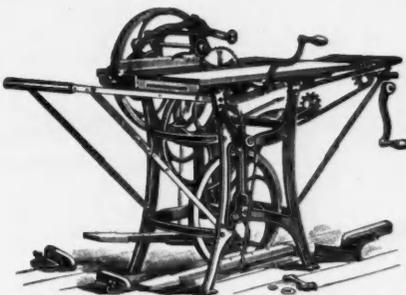


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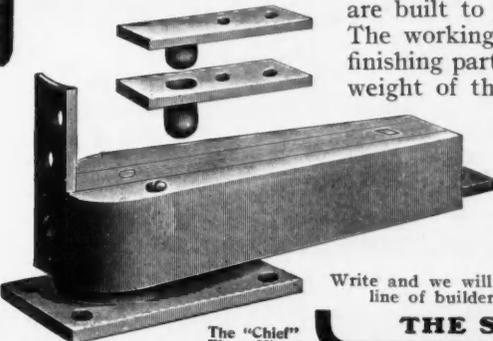
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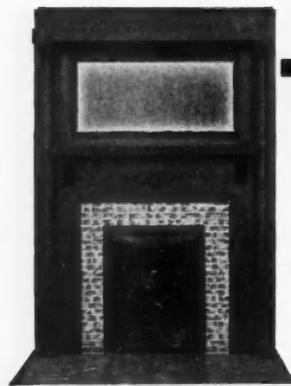
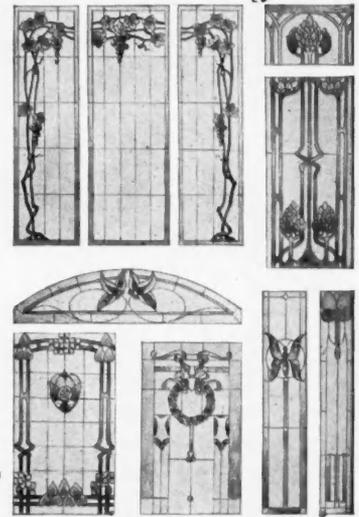
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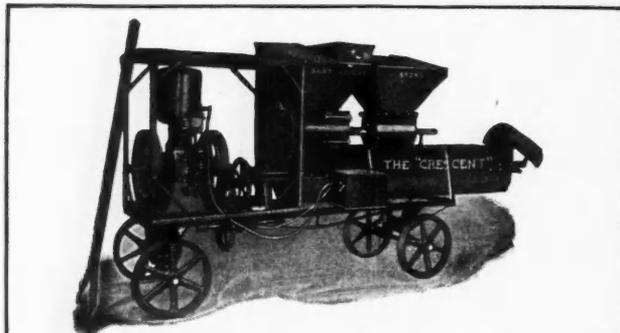
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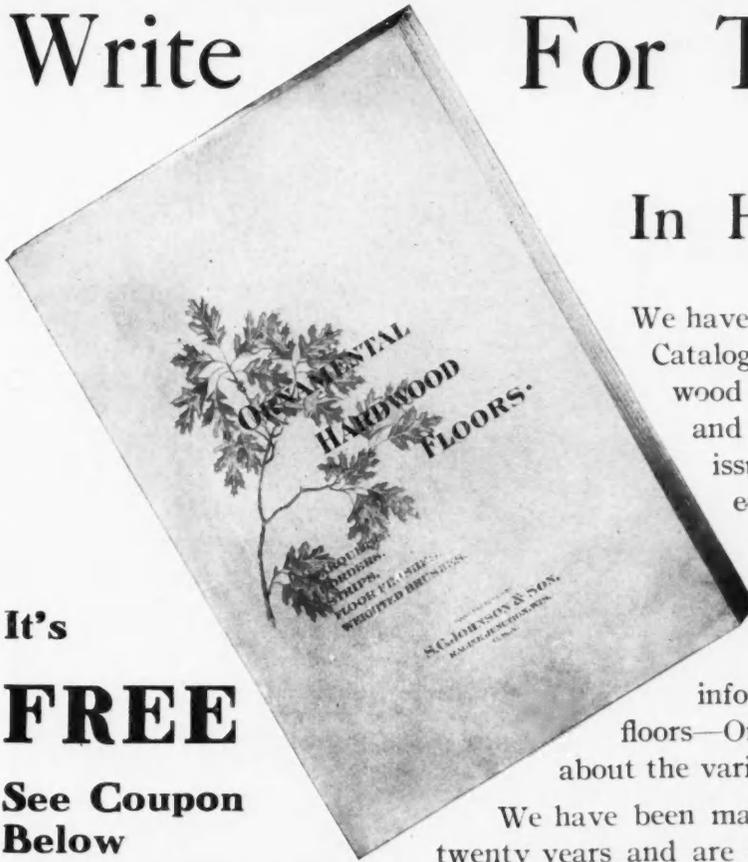
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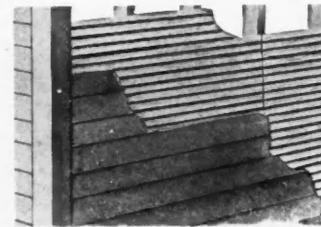
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**PRICE AND SHIPMENT From Nearest Point: Crate of 16 sheets, covering 256 sq. ft. of surface, \$6.40 or \$2.50 per 100 sq. ft., f. o. b. New Orleans, La., Cincinnati, O., or Alma, Mich.**

## BISHOPRIC SHEATHING

Bishopric Sheathing is made of same materials as Wall Board, but finish is not necessarily so fine, and therefore costs less. It is of uniform thickness, insuring a perfectly even surface when applied. It is nailed to studs, with lath and asphalt side exposed. Over laths weatherboards are nailed or cement is 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 Sheathing is a non-conductor; keeps the building cooler in summer and warmer in winter. Moisture cannot penetrate it; is proof against vermin. The pests cannot bore through the tough, gummy Asphalt Mastic. In applying weather boards over the laths, dead air spaces are left between the laths, forming splendid insulation. Bishopric Sheathing does away with the expense of building paper and cost of its application. One wagon load of sheathing covers an area from six to ten times as great as one load of lumber—a tremendous saving in hauling. The cost of applying ordinary wood sheathing is from \$5 to \$10 per 1000 feet, whereas the cost of applying Bishopric Sheathing is but \$2.50 per 1000 feet



Weather Boards over Sheathing

Bishopric  
Sheathing  
Construction

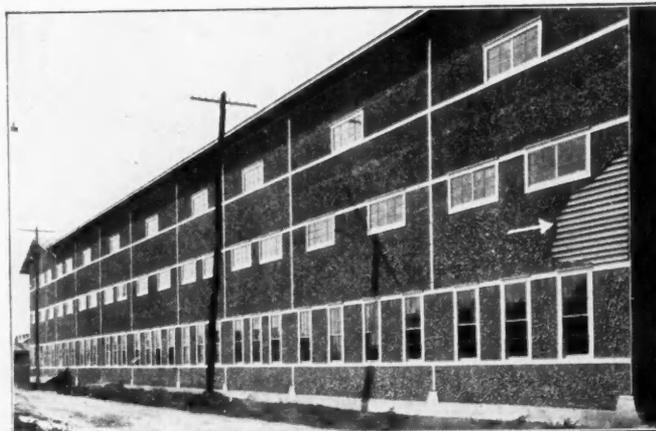


—A saving of about 75%. Furthermore, 1,000 square feet of wood sheathing covers but 750 feet of surface, 20% less being due to tongue and groove. In applying Bishopric Sheathing one man drives a few nails in each sheet; a common laborer or boy can finish the nailing. As soon as the building is closed 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.

Bishopric Sheathing is used with splendid result<sup>s</sup> under flooring and roofing boards. Under floors it serves as a sound deadener and keeps out dampness; under the shingles it keeps out summer heat.

Illustration to right shows Bishopric Sheathing nailed to outside of studding and exposed lath and Asphalt Mastic coated with cement. The artist has indicated with arrow exposed lath. This form of cement construction is most durable as well as economical; is fire-proof, moisture-proof, wind proof as well as proof against heat and cold. The cement firmly adheres to the laths, making a solid, smooth exterior. Spaces between parts of laths not fully imbedded in Asphalt Mastic form an excellent key for firmly holding the cement. For factory or residence this form of cement or stucco construction is the cheapest and best known.

**PRICE AND SHIPMENT: Crate of 16 sheets, covering 256 sq. ft. of surface, \$6, or \$2.35 per square of 100 sq. ft., f. o. b. New Orleans, La., Cincinnati, Ohio, or Alma, Mich. We ship from nearest point.**



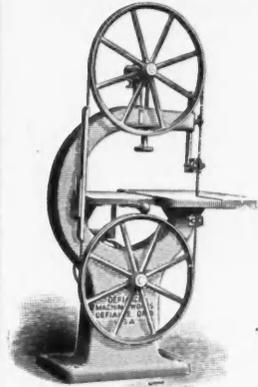
Bishopric Sheathing and Cement Construction

Write for descriptive booklet and samples of Bishopric Wall Board, Sheathing and Roofing—ALL SENT FREE.

**The Mastic Wall Board & Roofing Mfg. Co., 24 E. Third St., Cincinnati, O.**

The building of a reputation is the work of a lifetime  
**“DEFIANCE PATENT WOOD WORKING MACHINES”**  
 have been 60 years making themselves known all over the world “as the trustworthy kind”

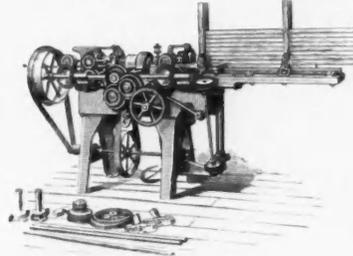
Modern American tools for making spokes, hubs, rims, wheels of every kind, wagon, carriage and automobile woodwork, shafts, poles, neck-yokes and single-trees, handles of every description, spools and bobbins, chair and table legs, golf sticks, gun stocks, insulator pins, oval wood dishes and general wood working.



28" Band Saw

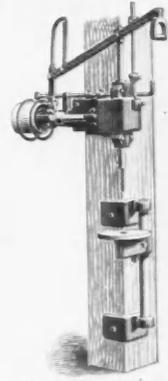
We issue a 535 page cloth bound and illustrated catalogue.

If you are interested, write for a copy.

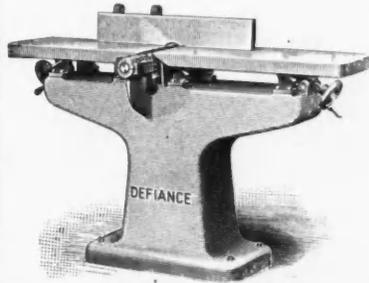


Automatic Long Handle Lathe

Single machine and complete equipments supplied promptly. Every machine is carefully tested before shipment is made



No. 15 Post Borer

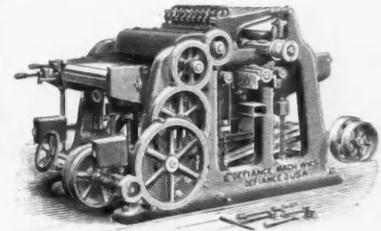


12" Hand Planer and Jointer

Designed, patented, built and guaranteed by

**The Defiance Machine Works**  
 DEFIANCE, OHIO

European Office, 71 Queen Street, E. C.  
 LONDON, ENGLAND



26" Double Surface Planer

**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

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



We Pay Freight

**INSTALL YOUR OWN FURNACE—SAVE MONEY THROUGHOUT**

Buy a Jahant Down-Draft Furnace direct from the manufacturer and save the middleman's profit. Set it up yourself and save the cost of installation. The Jahant consumes every bit of fuel—that cuts down bills. No complicated parts to break—no repair bills. We pay the freight. The

**Jahant Down-Draft Furnace**

can easily be installed with our set of free tools. We guarantee to refund your money and take back the furnace after a years trial if you are not satisfied

**Our Free Furnace Book**

contains a vast amount of information on different methods of heating. It should be read by all who depend on artificial heat. Sent free on request

**THE JAHANT HEATING CO., 200 Main Street, Akron, O.**

# 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 system 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 degrees, 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



## EVERSON VACUUM CLEANER

### WHAT YOU HAVE BEEN WAITING FOR

A high grade, noiseless type, non-vibrating vacuum cleaner. Conceded by experts to be the most perfect type of a portable (weight 35 lbs.) vacuum cleaner yet invented.

Price \$80.00 complete, which includes a full set of tools for every purpose of cleaning **FULLY GUARANTEED**

Our principle of dust separation maintains efficiency from start to finish of cleaning. Something unusual in other makes of vacuum cleaners.

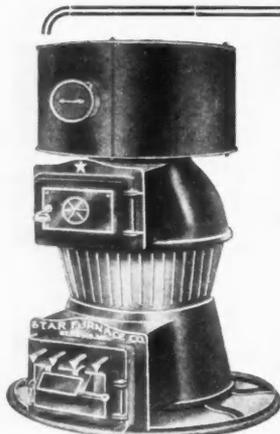
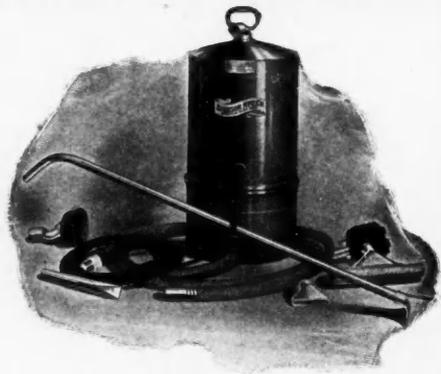
We use Holtzer-Cabot Motors exclusively.

Agents wanted. You can clear \$0.50 per hour with it. Write the nearest office for circulars and information.

### EVERSON MANUFACTURING COMPANY

706-709 Marquette Bldg., CHICAGO, ILL.

Main Office and Factory 34 Oliver Street, BOSTON, MASS.



## Improved Star Furnace

Meets every requirement for durability, simplicity and ease of management.

**BEST HOT AIR FURNACE ON AMERICAN MARKET**

Its heating power is wonderful and cost of upkeep is the minimum

Write for Catalog-It's Interesting

**STAR M'F'G & F'D'Y CO.**

Forest Park Boulevard  
St. Louis, Missouri

## CONTRACTORS and BUILDERS

THIS WILL INTEREST YOU

A furnace for small houses, cottages and bungalows, at a small price.

**NO PIPES—NO LOST HEAT**

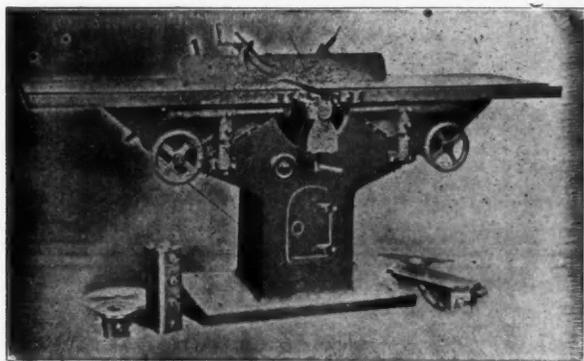
Write us for particulars about the Great Bell Furnace.

**American Bell & Foundry Company**  
NORTHVILLE, MICH.



## Universal Wood-Worker

Planes, Joints, makes moulding, Rips, Cross-cuts, Gains, Dadoes, Rabbits, Tenons, Raises Panels, Bores, Mortises, in fact its range in general work is unlimited



It is a machine every shop of any importance should have. It is ten years ahead of any other wood-worker on the market. Write for photographs, circulars, prices, etc.

**The Cordesman-Rechtin Co.**  
Cincinnati, 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, tenoning, etc. Send for prices and catalog.

**P. PRYIBIL**

520 W. 41 St.

**NEW YORK**



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



## "That Coupon Gave Me MY Start"

"It's only a little while ago that I was just where you are now. My work was unpleasant; my pay was small. I had my mother to take care of, and it was tough sledding trying to make ends meet. I hadn't had much schooling. I didn't *know enough* to fill any better job than the one I had.

"One day I saw an advertisement of the American School. It told how other men got better positions and bigger salaries by taking their courses. I didn't see how a correspondence course could benefit me, but as long as it didn't *cost* anything to mark the coupon I thought it was worth investigating at least. I marked the coupon and sent it in on the next mail.

"That was two years ago last April, and now I'm drawing more every week than I used to get in a month."

If YOU want a better position, if YOU want to get into congenial work, if YOU want a salary that's worth while—  
Sign the Coupon NOW

**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."

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| ... Bookkeeper                 | ... Draftsman               |
| ... Stenographer               | ... Architect               |
| ... Accountant                 | ... Civil Engineer          |
| ... Cost Accountant            | ... Automobile Operator     |
| ... Systematizer               | ... Electrical Engineer     |
| ... Cert'f'd Public Accountant | ... Mechanical Engineer     |
| ... Auditor                    | ... Moving Picture Operator |
| ... Business Manager           | ... Steam Engineer          |
| ... Commercial Law             | ... Fire Insurance Engineer |
| ... Reclamation Engineer       | ... College Preparatory     |

NAME .....

ADDRESS .....

OCCUPATION .....

Amer. Car. & Bldr. 1-11



# 1911 ANNOUNCEMENT

Our 1910 catalog of concrete machinery will be the most magnificent publication of its kind ever issued. It will describe the entire line of "Northwestern" Concrete Machinery, molds and tools. It will contain hundreds of beautiful half-tone engravings taken from actual photographs. It describes everything in the concrete machinery line and is an encyclopedia of what you ought to have at prices you ought to pay. It is valuable as a reference book, whether you buy our machinery or not.

## WHOLESALE PRICES

Block Machines, \$10 to \$250; Brick Machines \$18 to \$47; Mixers \$22 to \$500; Porch Column and Baluster Outfits \$15 to \$60; Cap and Sill Moulds \$11 to \$25; Lawn Vases \$15 to \$25; Bail Moulds \$2 to \$17; Grave-stone Moulds \$7 to \$69; Well Curbing Moulds \$4 to \$7; Drain and Sewer Tile Moulds \$6 to \$83; Block Cars \$11 to \$17; Fence Post Moulds \$7 to \$12; Gasoline Engines \$40 to \$500; and dozens of other articles such as Trowels, Pointers, Tuckers, Rollers, Groovers, Levels, Shovels, Wheelbarrows, Etc.

We figure our prices at so much per pound and charge no fancy prices on account of patents, territory rights, etc.

## WE ARE CONCRETE MACHINERY EXPERTS

We are distinctly manufacturers and own and operate the largest factory of its kind in existence. During 1910, we have added to our plant another foundry, 200 ft. long by 100 ft. wide, giving us room for one hundred additional moulders. We have also added three new buildings to our manufacturing plant and very extensively to our machinery equipment. Besides the Northwestern line, we manufacture complete lines of several other large concrete machinery concerns, and we are in the market for manufacturing propositions of this kind at any time. With a moulding capacity of fifteen tons of iron per day in our foundry, and a floor space of over one hundred thousand square feet in our shops; with a large force of pattern makers, moulders and machinists who are experts in this business we are naturally in a position to negotiate for the largest contracts.

## OUR WHOLESALE CATALOG IS AT YOUR DISPOSAL

We want everyone interested in concrete machinery, to have one of these catalogs. Send us your name and address and state what particular machines or moulds you are interested in.

# NORTHWESTERN STEEL & IRON WORKS

Eau Claire, Wisconsin

ASK FOR CATALOG D

BOX 903



## TAYLOR FOLDING COAL CHUTES

FIT ANY WINDOW . . . . . ARE OUT OF SIGHT WHEN NOT IN USE

They are handy and durable, keeping basement windows in harmony, and they afford a light coal bin. Handles either wood or coal. OURS IS THE COMPLETE LINE.

WE CATER TO THOSE WHO WANT THE BEST

TAYLOR COAL CHUTE CO. KEWANEE, ILL.

# GENUINE BANGOR

Roofing Slate  
Structural Slate  
Blackboards

Large Facilities, Prompt Deliveries

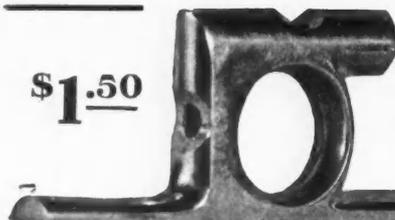
EAST BANGOR CONSOLIDATED SLATE CO. . . . East Bangor, Pa.

**DOW**  
Wire & Iron Works  
(Incorporated)  
LOUISVILLE, KY.

# IRON LINTELS

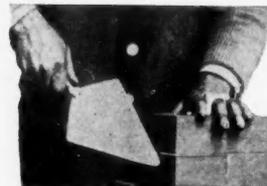
Beams, Angles, Anchors, Hangers.  
Ornamental Cast Iron Fronts and Stairways.

\$1.50



## Improved Hand Plumb and Level

SAVES its cost every day in the year. Takes place of the old style plumb and level. Can be worn on either hand without hindrance. Guaranteed absolutely accurate. Its price is the only cheap thing about it. It will last a lifetime. Send us \$1.50 and if not satisfied money will be refunded.



**Armstrong & Edwards**

Centralia, Ill. Ref.: Old National Bank

# 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.

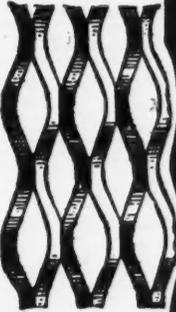
### NO PICKLED LATH

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



# HERCULES

## BLOCK MACHINES

ARE THE FASTEST, SIMPLEST, STRONGEST AND

## BEST MACHINES BUILT

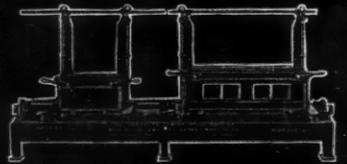
AND WE CAN PROVE IT.

### THEY EXPAND TO MEET EVERY DEMAND

THE ONLY machine making any size of stone from a 3 inch block to a 6 foot water table.

THE ONLY face down machine that allows for a really coarse WET mixture with fine facing.

THE ONLY machine on which four 16 inch stone can be made at ONE time, or two 20 inch, 24 inch or 32 inch stone at one time.



### THE HERCULES IS AN OLD ESTABLISHED MACHINE

built along correct lines and endorsed by the leading contractors and builders. They are used in all parts of the world.

### Measured by Its Ability

to expand to meet every requirement of a growing plant — its method of operation, allowing for the use of a coarse wet mixture, with fine facing — its simplicity of construction and ease of operation.

### THE Hercules IS THE BEST

Block machine value that money can buy.

Hundreds of these machines are in daily use everywhere. They have a world-wide reputation.

If you are interested in the manufacture of concrete blocks, it will pay you to write for catalog.

**Century Cement Machine Co.**  
268-278 St. Paul Street  
Rochester, N. Y.

# “TRUS=CON”

## JOIST HANGERS

### Strongest

as shown by University Tests

Made from OPEN HEARTH STEEL.

SAVES cutting and weakening of timber.

SAVES labor in installation.

LOWEST FIRST COST

All styles and sizes for brick and Concrete Walls, Steel and Wooden beams.

WRITE TODAY FOR PRICES TO SPECIALTY DEPT.

At the Chicago Cement Show, Feb. 17th to 23rd. Spaces 77, 78 and 79.

**TRUSSED CONCRETE STEEL CO.**  
344 Trussed Concrete Bldg., DETROIT, MICH.



# Willis Skylights

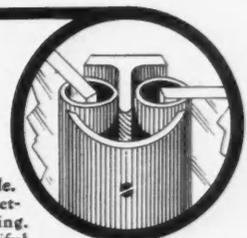


Our method of shipping Skylights—Knock Down—saves freight rates and also insures their safe carriage. They are quickly set up without using any putty.

Our equipment is complete, so let us figure with you on anything you may need in Sheet Metal Building Material.

Our New Free Book on Skylights and Ventilators is just off the press. Send for it today.

**WILLIS MFG. CO., Galesburg, Ill.**



Makes any angle. Allows for the setting of building. The most beautiful, practicable and durable Bar in the world.

“Holds with a grip of Iron yet with a touch of Velvet”

Glass set from the outside. More good features explained in our catalog. Send for a copy before you repair or build. Write today.

**VOLTZ MFG. CO.**  
1101-1103 S. 8th St. ST. JOSEPH, MO.

# "WOULD BUY NO OTHER"

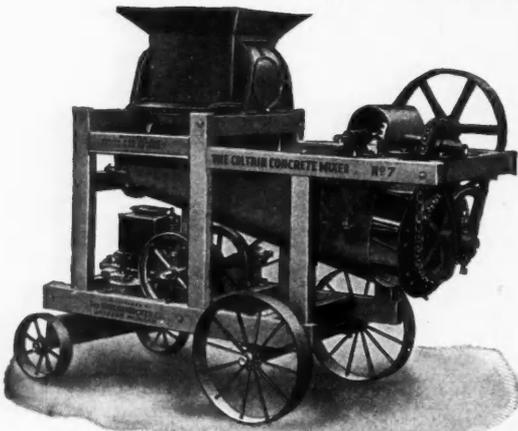
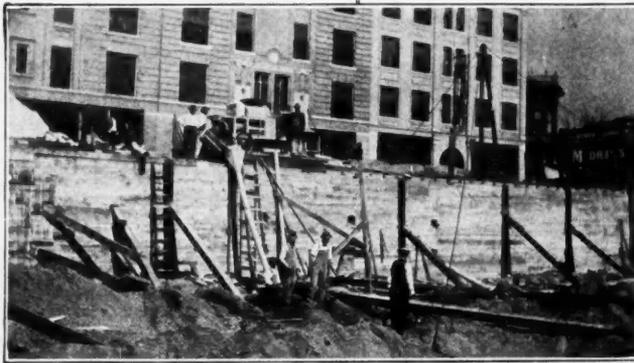
ALBION, ILL., Sept. 6, 1910.

THE KNICKERBOCKER CO.,  
Jackson, Mich.

DEAR SIR:—

The Coltrin Concrete Mixer, bought of you last April has proven an entire success. Have run it steady since last May without one cent for repairs. I put in one job of 45,000 sq. ft. 3-inch concrete, 1-inch topping, with 15 gallons of gasoline. Would buy no other mixer.

Yours truly, R. A. MCHENRY.



No. 7 Coltrin—Capacity 3 to 6 Cubic Yards per Hour

## Coltrin Concrete Mixers

MANUFACTURED EXCLUSIVELY BY

**THE KNICKERBOCKER CO.**

JACKSON, MICHIGAN

STEAM—GASOLINE ENGINE—ELECTRIC—HAND POWER

Write for 1911 Catalog

See them at

**COLISEUM, CHICAGO, FEB'Y 17-23, 1911**

SPACES 39-40

SHIPPED ANYWHERE IN UNITED STATES ON FIVE DAYS TRIAL.



## Mr. Block-Maker

Wet Process is Right.  
Face down is Right.  
Three blocks at a time is Right.  
Triple Tying is Right.  
Damp Curing is Right.

### The Mogul Invincible Block Machine

COMBINES ALL THESE

## IT IS RIGHT

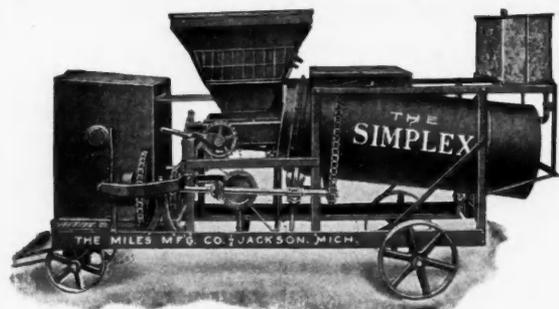
It is 48 inches long and will make three 16" or two 24" blocks at one operation. It makes sills, caps, copings, rails and steps, faster and better than a special mill machine. It has every adjustment that any other machine has and many that no other machine has.

PRICE—Machine and Outfit, \$75.00

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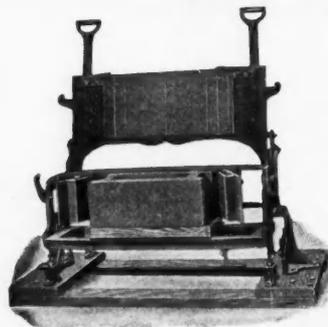
**THE PETTYJOHN COMPANY**

634 No. 6th St., TERRE HAUTE, IND.



## THE MILES SIMPLEX MIXER

Continuous Feed, Batch Mix, Low Down Steel Frame, 3 Hoppers, Positive Feed, Attractive Price

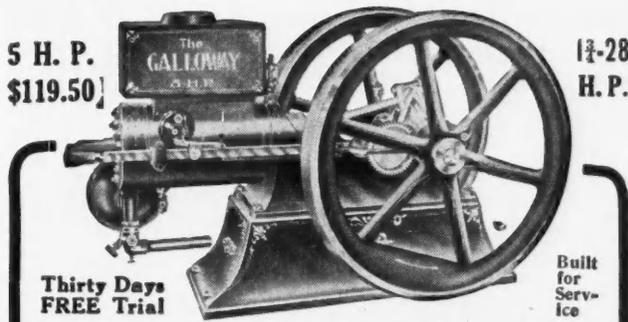


"The Miles" No. 5,  
Down Face, Wet  
Concrete Block  
Machine

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.

WRITE FOR NEW 1910 CATALOGUE

**THE MILES MFG. CO., Inc.** 109 Cortland Street  
JACKSON, MICHIGAN



5 H. P.  
\$119.50

17-28  
H. P.

Thirty Days  
FREE Trial

Built  
for  
Service

## CONCRETE MEN ATTENTION

Galloway Engines are made in all sizes from 1 1/4 to 28 H. P. They run on gasoline, naphtha, kerosene or distillate. We are furnishing complete mixing rigs and our price means a big saving of money to you—\$50 to \$300 depending on the engine you buy. You have the privilege of trying the outfit 30 days. If it is in any way unsatisfactory we refund your money with interest and pay freight both ways.

## The Galloway Gasoline Engine

SIMPLEST ENGINE BUILT

Only four things to do:  
Turn on the switch, turn on the oil, turn on the gasoline, give the fly wheel a start and the Galloway will go right along all day without further attention. It is ideal power for a small shop, and it's got the capacity to take care of your growing needs.  
The Galloway has been classed as a standard, high-grade engine for fifteen years. Over 4,000 in use in Iowa alone. Thousands in every other State and Territory.  
If you try the Galloway engine, you will find that it is not overspeeded. Remember, the bore and stroke count, and you don't have to drive your engine faster than you ought to drive it to get the rated horse power. Rated by actual brake tests.  
On the larger sizes, if it is not entirely convenient for you to pay all cash, we will take your note for the balance at the regular rate of interest for six months.  
The price given is for the five-horse power only, but we make these engines in seven sizes.  
Ask for free information on stationary and portable gasoline engines from two to twenty-eight horse power. We make the best, and we price them at a reasonable figure. Write today.

The William Galloway Co., 1505 Galloway  
WATERLOO, IOWA

## An Emergency Machine And We'll Prove What We Say



Makes any size block from 2x4x16 to 8x12x20 inches, with any design.  
It makes face down, side face or two piece wall blocks.

It makes better blocks with less cement and no blocks are cracked or have chipped or broken edges and we will prove what we say.

We will ship the machine on a 15 days free trial and you can see with your own eyes whether it has all the merits we claim.

Send for a catalogue, it describes the machine in every detail; it shows all the face designs that go with it and it shows what is possible to do with this machine what it is possible to do with no other.

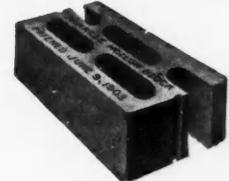
Send Tonight Without Fail

W.E. Dunn Mfg. Co.  
1328 GRAND AVE. CHICAGO ILL.



## EVERYBODY Knows that this Block

is frost and moisture proof. That is why no other block can be sold where this is made. No cutting



prices to meet competition, because the Miracle Double Air Space Block has no competition.

Our Automatic Machine is within reach of everyone.

Write now for catalog and prices—and be ready to fill orders March 1st.

MARSH CO.  
977 Old Colony Building  
CHICAGO

## YOU CAN MAKE BIG MONEY in Concrete

This FREE  
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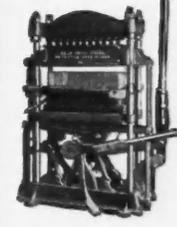


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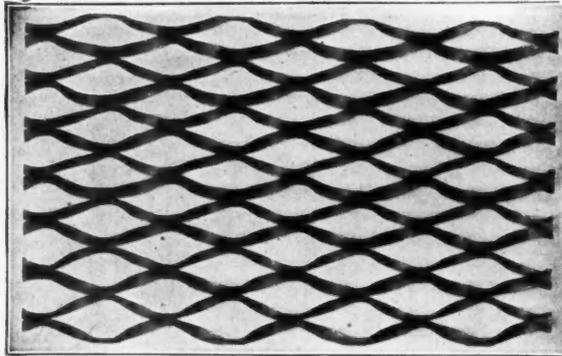
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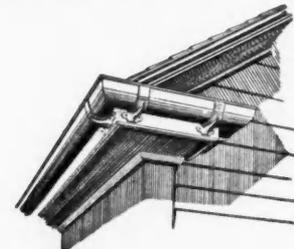
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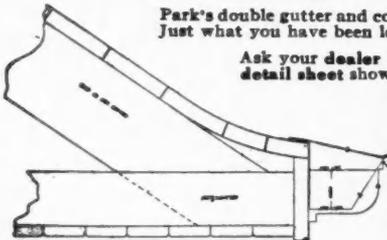
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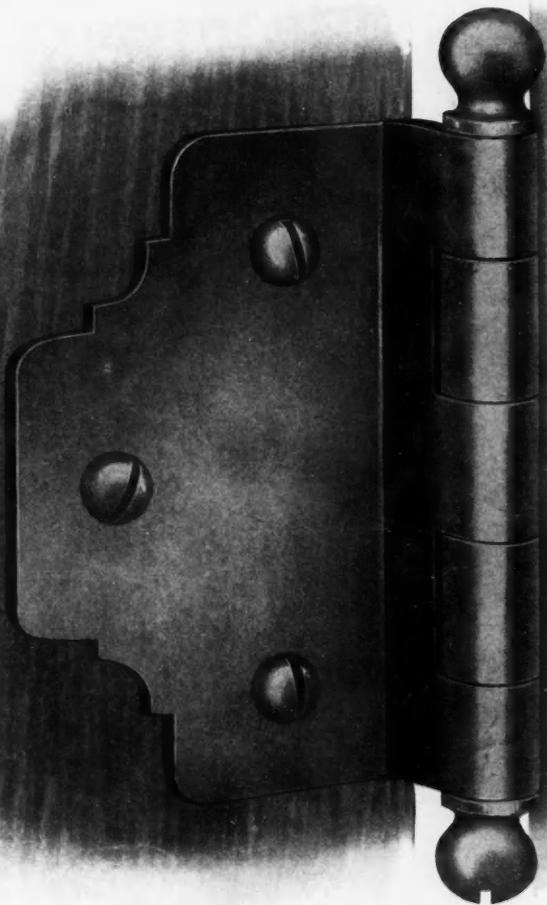
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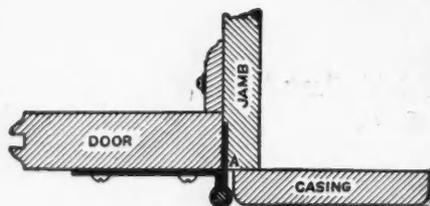
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