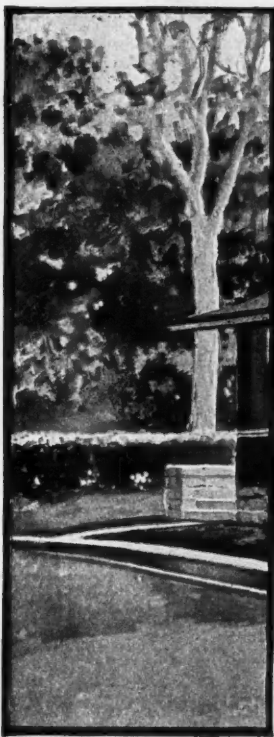


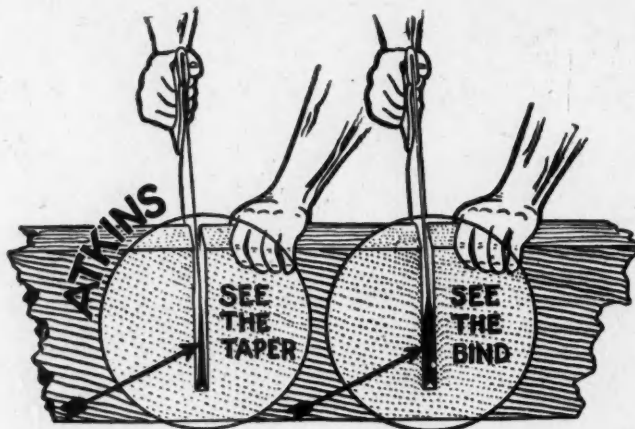
# AMERICAN CARPENTER AND BUILDER

276  
748



THE WORLD'S GREATEST BUILDING PAPER





## See the Point?

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

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

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

Of course, a little bevel is better than nothing.

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

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

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

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

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

### The Best Steel Ever Used in Saws

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

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

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

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

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

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

### Test This Saw at Our Risk

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

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

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

to your dealer and get your money back.

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

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

### FREE to Carpenters

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

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

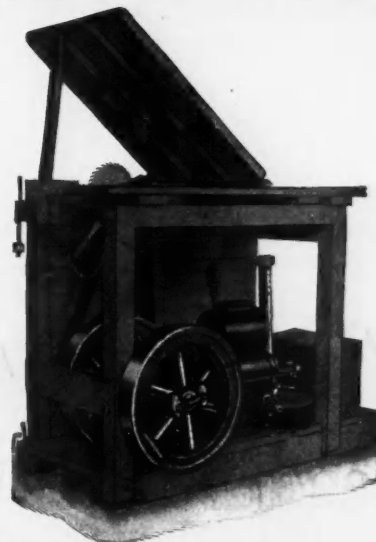
*Largest Exclusive Saw Manufacturers in the World.*



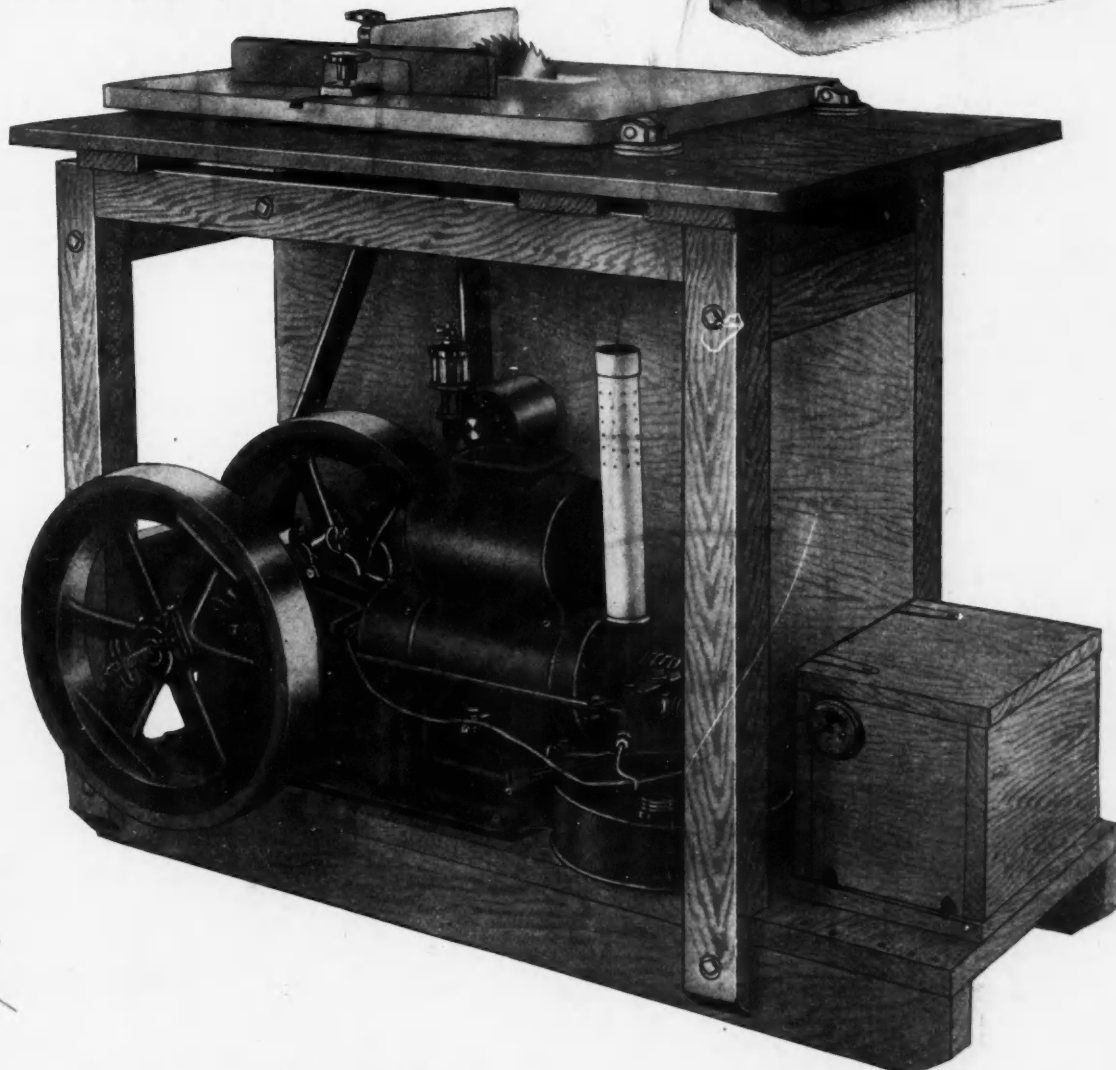
**Put this Portable Saw**  
**Rig On Your Job**

This PORTABLE SAW RIG on your job, will do all your mill work and will save you much time and labor. Figure out how much you are paying your five high priced carpenters and the expense of running this rig at 20 cents a day and you have the solution of the problem.

We guarantee this rig will do the work of five men. Always on the job and ready to work day or night.



30



S.M. 26/11/11

**SEND FOR OUR PROPOSITION.**

***Inter-State Equipment & Engineering Co.***

**1775 Old Colony Building - - - Chicago, Ill.**



# READ THE OUTCOME

See What the Daisy Did  
at the Labor Day Celebration

## Read the OFFICIAL ENDORSEMENT Below

Chicago, Ill., September 7, 1910.

The Daisy Mfg. Co., South Bend, Ind.

Gentlemen:—The Chicago Business Agents Association takes great pleasure in recommending the Daisy Floor Scraper, for the speed and quality of its work upon a platform, in the presence of over 40,000 people, at our great Labor Day Demonstration at Hawthorne Race Track on Monday, September 5, 1910. Our only regret, is that the makers of other machines did not appear to have sufficient confidence in their machine to enter them against yours.

This challenge has been an open one and we were in communication with the other manufacturers, telling them the conditions of the contest just the same as we did your concern.

Mr. John Metz, President of the Carpenters' District Council of Chicago, Mr. Peter Shaughnessy, President of the Chicago Business Agents' Association, myself, and numerous contractors and mechanics, closely examined the work done by your machine and we unhesitatingly pronounce it the finest Floor Scraper on the market. The work it had to do was done under serious difficulties, owing to the fact that the platform having been built out in the open, had been exposed to the rain for nearly two days, the rain falling upon it up to within 8 hours of the contest, the floor naturally swelling, thereby making it much harder to scrape.

Therefore, after viewing the quality of the work done under extreme difficulties, we say that it is the one floor scraper that we recommend to all our friends. We remain,

Very truly yours,

CHICAGO BUSINESS  
AGENTS ASSOCIATION

J. J. B.-E. M.

*Peter S. Shaughnessy*  
*John J. Brittain*  
*John A. Metz*



# \$1000.00 CHALLENGE

We herewith challenge the manufacturers of any advertised Floor Scraper, Floor Planer or Floor Smoother to a competitive test.

We will agree to forfeit the \$1000.00 Certified Check, deposited with the American Carpenter and Builder, if any advertised Floor Scraper, Floor Planer or Floor Smoother can do straight-edged (whole hand smooth) floor dressing as perfectly and as rapidly as the "Daisy" Floor Scraper. This challenge is open until Oct. 1st, 1910.

The Daisy Mfg. Co.

A. L. BLODGETT



OFFICE OF  
**THE DAISY MFG. CO.**  
FLOOR SCRAPERS



H. A. LENSING

SOUTH BEND, IND.

American Carpenter and Builder  
Chicago, Ill.

Gentlemen:

We challenge the makers of Floor Scrapers, Floor Planers and Floor Smoother to a competitive test. The Test to be made in your city.

We agree to forfeit the inclosed \$1000.00 check to some charitable cause, preferably to the Carpenters' Benevolent and Relief Fund, if any other Floor Scraper, Planer or Smoother can do straightedged or wholehand smooth floor dressing as perfectly and rapidly as The "Daisy" Floor Scraper.

We ask that the maker of any Floor Scraper, Planer or Smoother agrees to compete in test, forfeit or donate any money if the chance is to be free to them.

We have selected the following five well known men, who are expert judges of dressed floors, to act as a committee, to decide at any time, which section of floor is most perfectly and rapidly dressed.

- Mr. H. B. Barnard, Pres. Carpenters and Builders Ass'n.
- Mr. Wm. McCumber, Sec'y. Carpenters and Builders Ass'n.
- Mr. John A. Metz, Carpenters Executive Council.
- Mr. John J. Britton, Treas. Carpenters Executive Council.
- Mr. Daniel G. W. ... Council.

Very truly,  
HAL ... The Daisy Mfg. Co.

Per  
*H. A. Lensing*

### The "Daisy" Outfit

- consists of
- 1 "Daisy" Floor Scraper
- 6 10-inch blades (3 1/2 inch deep)
- 6 5-inch blades (3 1/2 inch deep)
- 2 "Daisy" Clamps
- 1 "Daisy" Triangle
- 1 "Daisy" Filing Device
- 1 "Daisy" Edgeturner
- File, Wrench, Hand Burnisher and Whetstone.

### 10 DAYS FREE TRIAL OFFER

We will ship a "Daisy" Outfit, freight prepaid, 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, ship it back. The trial will not cost you a penny. We have never had a "Daisy" Outfit returned to us.

### The "Daisy" Triangle

Makes two machines out of one. With it on  $\Delta$  shape, double shearing cut, with it off single shearing cut is made. Triangle is easily put on with two bolts.

THE DAISY MFG. CO. South Bend, Ind.

Gentlemen:— Send me the "Daisy" Floor Scraper Booklet Free.

Name .....

Street .....

City and State .....

Occupation .....

## 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.

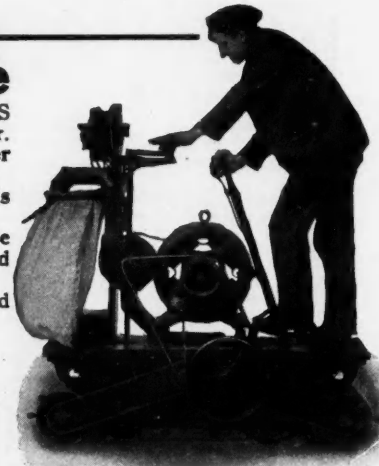
Don't be fooled with an imitation, but get a machine that does work in paying quantities, and can be operated in small rooms.

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.



"Held to its work by  
muscles of steel."



## Every Floor You Scrape by Hand, or with an Inferior Machine, means Money Wasted.

The tempered spring steel arms on the Universal, press down on the blade with a resilient and elastic action which is perfectly controlled by the operator from his standing position.

That is why the Universal cuts smoothly over hard and soft places and DOES NOT JUMP OR TREMBLE. It works on the principle of a workman's arms and his hand scraper

**"HELD TO ITS WORK BY MUSCLES OF STEEL."**

Not by a dead weight on the blade.

The Blade Sharpener is a necessity to any carpenter using a scraper of any kind. It files, stones and turns a perfect cutting edge on any scraper blade, and is complete with file, oil stone, and especially designed burnisher. Every machine has an Adjustable Blade Holder and Rubber Bumpers. This complete outfit shipped on approval at our expense.

## Universal Floor Scraper Co.

110 EXCHANGE STREET

::

::

::

WORCESTER, MASS.,

## 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.





# \$2,000 REWARD

given if it can be proved to us that there is at the present time an advertised floor scraper in existence that will do better work on all kinds of hardwood floors than

## The WEBER Floor Scraper

WINS 99 OUT OF 100

We have shipped the WEBER to hundreds of contractors in competition with all other floor scrapers, and, in 99 out of 100 instances, the WEBER was purchased in preference to all others.

We have been in business for years, and—since the appearance of the first Weber Double-Acting Floor Scraper on the market four years ago—there is not a single owner who will not testify to our fair and square method of business.

As to our reliability, we refer you to

First National Bank, West Allis, Wis.

State Bank, Hales Corners, Wis.

John Pritzlaff Hardware Co., Wholesale Hardware Dealers, Milwaukee, Wis.

Radcliffe Mfg. Co., Mfrs. of Sash and Doors, West Allis, Wis.

## Be First In Your Town to Try a Weber

Look around and see whether anyone in your town has a Weber Floor Scraper. If no one has bought one, you are entitled to our special introductory price—if you write us at once. If you can't find this out for yourself, ask us and we'll tell you. We have good reasons for wanting one scraper in each town. Experience has taught that the Weber sells itself on sight—that if we can just get one out, it is a simple matter to sell more. It means dollars and cents to us—and that's why we can afford to make a liberal discount to the first purchaser in each town.

If you ever intend to buy a floor scraper, now is the time to get the best at a price that will be good for only a short time. We mean just what we say. As soon as our scraper is introduced in your town no one can buy one at a cent below the regular price.

The Weber will do better work than any other on the market today. Order one and try it yourself for from five to ten days free.

Let us have your order now before someone else gets in ahead of you.

Write us your needs anyway and we'll hold the offer open until you decide whether you want to buy or not. Remember—this offer lasts but a short time.

**JOHN F. WEBER, Pres.,**  
**Weber Mfg. Co.**

670 71st Ave.,

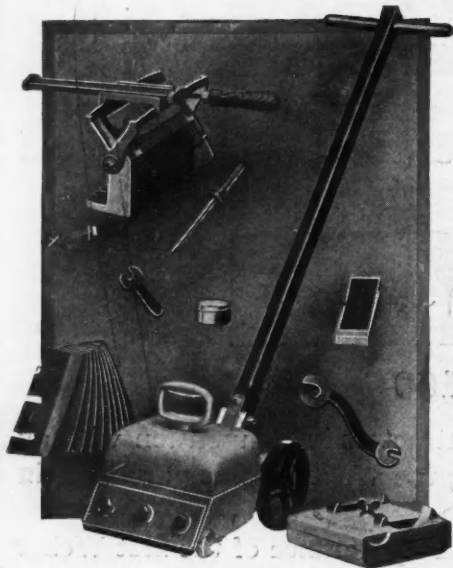
West Allis, Wis.

Weber No. 1—Latest Model, Showing New Adjustable Handle.

**1 in Your  
Town Sells  
25 More**



# IT'S A RISKY BUSINESS



for you to buy a floor scaper by merely taking the word of the manufacturer. Don't do it. Be independent. Judge by results and not by some catchy advertising scheme.

Now listen Mr. Contractor. If you are in the market for a floor scraping equipment, then let me tell you how to buy one. Send to such manufacturers of floor scrapers that offer to ship them on free trial. Work with the machines—inspect the attachments that go with it—consider carefully all details, then make your selection.

I for one, am ready to send you the ACME FLOOR SCRAPING OUTFIT on one week's free trial at my expense. You can work with the machines and if they do not prove satisfactory, just pack them up and send them back and you are under no further obligations to me.

If I could make you any fairer proposition, I would certainly do so for I have confidence in the ACME MACHINES, because I know what they can do. Just write to me to-day for booklet and further particulars.

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



Made in three sizes:  
18 x 15 and 8 x 12 in. Roller.

## Perfect Results Are Easily Obtained By Using Schlueter Rapid Floor Surfer

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.

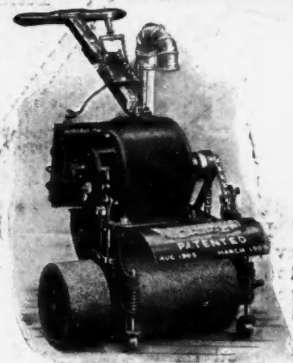
The **Schlueter** will remove all joints and warped edges, and oil, wax, lime stains, or the "muck" from skate wheels, in a most satisfactory manner.

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

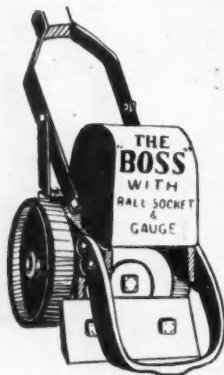
Send for prices and **Free Trial Proposition.**

**M. L. SCHLUETER, Chicago, Ill.**

103 N. Canal Street



Edge Roller easily adjusted,  
to either side.



## THE BOSS JUNIOR FLOOR SCRAPER

with gage, is the latest. With ball adjustment—it can be set to any shearing cut by loosening one bolt. Right or left gage can be set for any thickness of shaving, and keeps knife from making an uneven impression in Floors. Gives knife double support. Gage on front and wheels at the rear make it like a plane. The weight on top can move it back or forward. This machine lets you be the judge, not me.

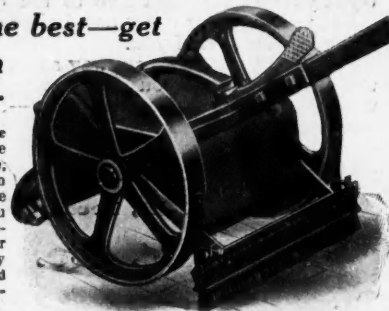
Send for Prices.

**G. 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.**



## JUDGE FOR YOURSELF

**WHEN** you want a **FLOOR SURFACING MACHINE** that will both scrape and sandpaper your floors to a perfect finish and to your particular satisfaction, there is but one way to make sure of getting the best and that is to investigate for yourself.

**WRITE** for full particulars regarding our **Triple "A" Floor Smoothing Outfit** or let us send you one on approval.

We will ship the complete outfit for free trial to any prospective buyer.

**TRIPLE "A" MACHINE CO., 112 S. Clark St., Chicago**

### AN OPEN LETTER CONCERNING A CERTAIN CHALLENGE (?)

Daisy Manufacturing Co., South Bend, Indiana.

Gentlemen:—

In the July issue of this paper you published a challenge for a competitive floor scraper test, which challenge we promptly accepted in the following issue of the same paper.

Since then two months have elapsed and as yet we have had no direct communication from you with a view toward arranging for a contest, but instead you continue to publish your challenge.

As the matter stands it looks "to a man up a tree" as if you were now trying to side-step a contest. We note with amusement the advertising you are trying to get out of a letter obtained from certain parties who recently tried to appropriate this proposed contest as one of their attractions but whose proposition was not accepted by ourselves or other manufacturers for several good reasons.

This letter, while endorsing your machine, criticises the manufacturers of other machines whom it states "did not appear to have sufficient confidence in their machines to enter them against yours." Our acceptance of your challenge mentioned above thoroughly refutes this charge in so far as the **TRIPLE "A" MACHINE COMPANY** is concerned.

Assuming that your challenge was made in good faith, rather than for mere advertising purposes, we suggest that you respond to our acceptance in a straightforward businesslike way in order that we, as principals in the contest, may come to an understanding in regard to terms and conditions that will be satisfactory and fair to both concerned.

Yours very truly,

**TRIPLE "A" MACHINE COMPANY.**



## TRY BEFORE YOU BUY

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

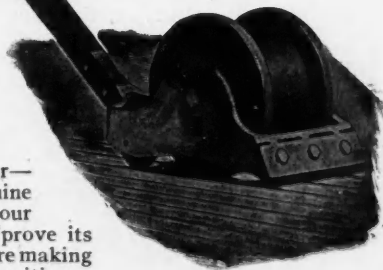
A request from you brings the "Little Giant" Floor Scraper to your door—you send no money and we pay all expenses. After you have given it a fair trial and have tested it as thoroughly as you know how, and have found it satisfactory, pay for it. If you do not think it is the best floor scraper made,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

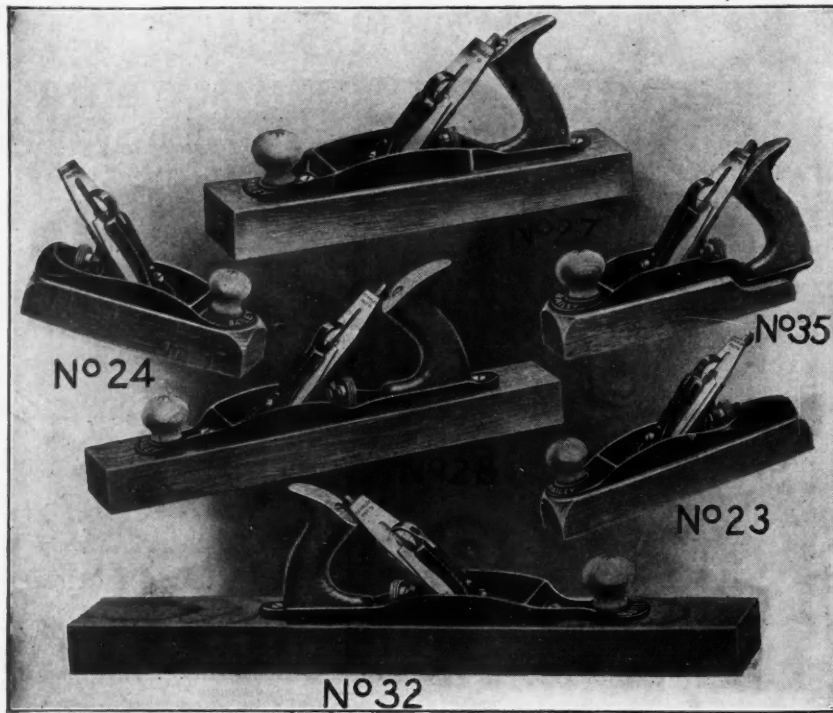
are in use throughout this country and abroad. These were purchased because they were **better**; because they did more work—did it quicker, cleaner and cheaper—than any other machine made. So great is our faith in its ability to prove its worth to you that we are making the above liberal proposition.



Write us for our Special Price

**Hurley Machine Company**

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



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

# Stanley Tools

## AMONG THEM "BAILEY" WOOD PLANES

### THEY HAVE

The same adjustment as the celebrated "BAILEY" IRON PLANE—differing only in detail where the extra thickness of the Wood Bottom has to be taken into consideration.

The Bottom is made from selected and well-seasoned Beech.

The name "BAILEY" and the number are cast on every Plane, and the name "STANLEY" is stamped on each cutter.

INSIST that your orders be filled with Planes made by the STANLEY RULE & LEVEL COMPANY, which carry with them a GUARANTEE backed by a Company that has been manufacturing Carpenters' and Mechanics' Tools for over half a century.

Send for Catalogue



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



## GOOD FOR ONE DOLLAR

### ONLY SELF-SETTING PLANE

**Introductory Offer**—During October—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.

Have you seen the Folding Draw Knife?  
It's the Draw Knife that will draw;  
It will quickly draw attention;  
Slickest thing you ever saw.



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 Fox Will Save You Time Money and Trouble

### SENT ON TRIAL

Built on scientific principles, simple in construction, light running, easy to operate.

### Will Last a Life Time

**Fox Floor Scraper No. 1**

A Perfect Machine for Perfect Work.

Remember the Fox leads; others follow, and the best is what you want. We guarantee the Fox and back that guarantee by the largest floor scraper factory in the world.



Write for catalog on floor and hand scrapers, it will pay you.

**Fox Mfg. Co.**  
Brooklyn, Wis.



# A PLANING HELP



No matter how much experience you have had, no matter how skilled you may be, this attachment on your plane will help you in your work.

Our **No. 333 PLANE GAUGE** clamps with thumb screws to any iron plane and is immediately ready for use.

The Guide may be set to any desired angle and it is then unnecessary to stop continually to test the work with a square.

It is simple to use and a great time saver.

*Ask your dealer.*

## GOODELL-PRATT CO.,

*Toolsmiths*

GREENFIELD, MASS.,

U. S. A.



### New Starrett Protractor

One of the most useful tools a carpenter ever had. See full description in free Catalogue No. 188. With this tool in your chest you can give away half a dozen or more which it will render back numbers

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

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

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

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.

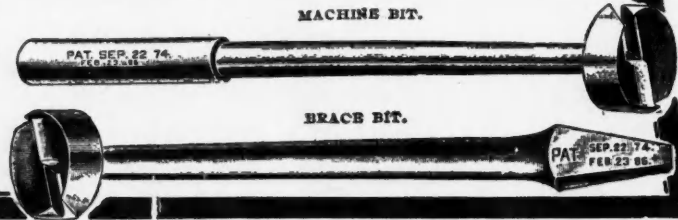
Doesn't matter how hard the wood is, no consequence whether it is full of knots, or the grain awkward to negotiate. The Forstner Bit works with equal smoothness under any condition and leaves a true polished surface on every job.

## 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.

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

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

### FOREST CITY BIT AND TOOL CO.

Manufacturing Hollow Mortising and Wood Boring Bits and Tools



Our Hollow Chisels made to fit all Mortising Machines  
For complete description write for Catalog H.

**FOREST CITY BIT AND TOOL CO., Factory and Office, Rockford, Ill.**

### CHAMPION FLOOR SCRAPERS

WHY PAY EXORBITANT PRICES?

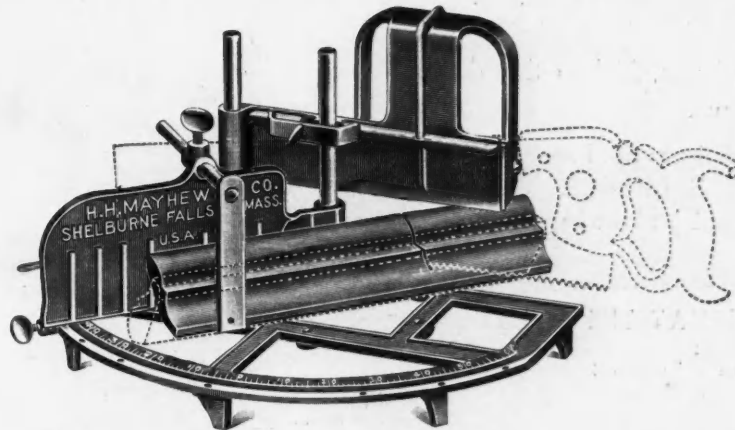
Don't give double what anything is worth. We have a machine that does the same kind and quantity of work as the highest priced.

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

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



# 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 mitring.

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 mitring 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"

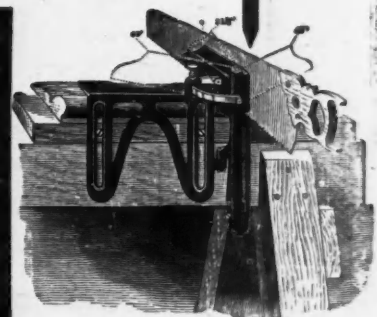
**GOODELL MFG. CO., Greenfield, Mass.**

## "SEAVEY" MITRE BOX

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.



Cuts Any Angle

Portable—Can be carried in the Tool Kit

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

Weights 2 Pounds

## LUFKIN Tapes & Rules

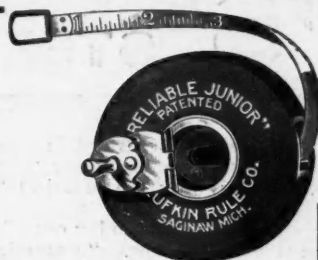
are Standards of Accuracy, Durability and Workmanship.

SEND FOR CATALOG

**THE LUFKIN RULE CO.**

SAGINAW, MICH.

NEW YORK LONDON, ENG. WINDSOR, CAN





# Miller's Lock Mortiser Does The Work

Cuts an opening for a Mortise Lock in any kind of wood, complete in three minutes, thick or thin doors, does not split the doors and cuts true.

**5000 Mortisers Sold Mean Something**  
**Complete Job in 3 Minutes**  
**Actual Use of Tool ½ Minute**

**READ, BUILDER, WHAT THE OTHER FELLOW SAYS:**

"I gave it a severe test on a lot of oak veneered doors and it worked fine."  
 "It has paid for itself already."  
 "We are more than satisfied."



Hooked fingers to keep opening clear of shavings.

Five Double edge Cutters for locks, 1-2 in., 5-8 in., 3-4 in., 1 in., and 1 1-8 in., made of best quality of tool steel

Adjustable Guides for any length mortise lock.

Rubber cushions to prevent marring of door.

**Don't judge by looks or methods;**

**Judge by Results**

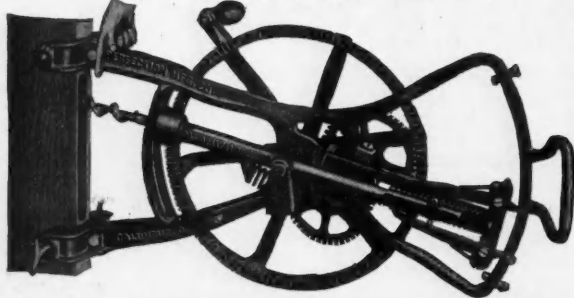
We will allow you to prove our claims. Sent subject to 30 days trial to any reliable contractor or builder. Write to us. We mean business.

**A. W. MILLER MFG. CO.,** Main Office **Cincinnati, Ohio**

Our Butt Mortiser and Rule Gauge is a useful present for any Carpenter. Seventy-five cents brings them, if your dealer does not have it

## The Perfection Universal Mortiser

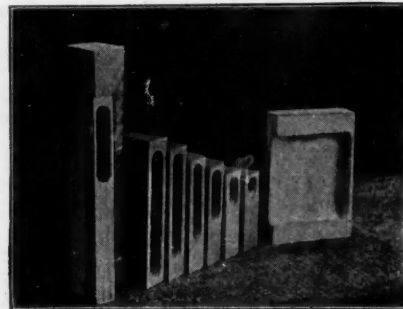
*This bit moves up and down while boring.*



For Door Locks, Sash, Sash Pullies, Screen Frames and Cabinet work.

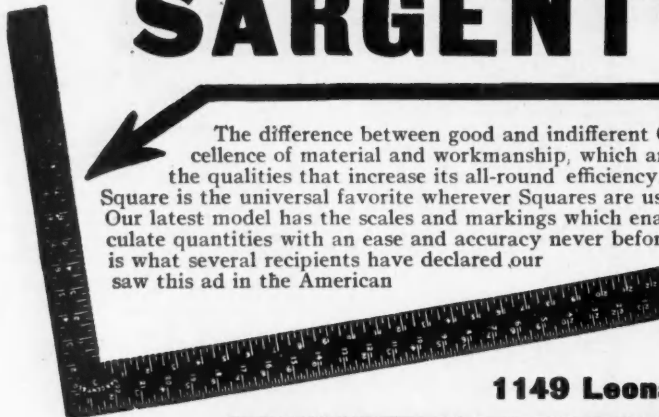
Instantly changed with screw driver, from round hole to ANY size mortise up to 6 1/2". Finished perfect, WITHOUT THE USE OF BRACE OR CHISEL.

Made of Malleable. Automatic and ball bearing.



MANUFACTURED BY **PERFECTION MFG. CO.**  
**COLUMBUS, OHIO**

# 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 Carpenter and Builder.

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

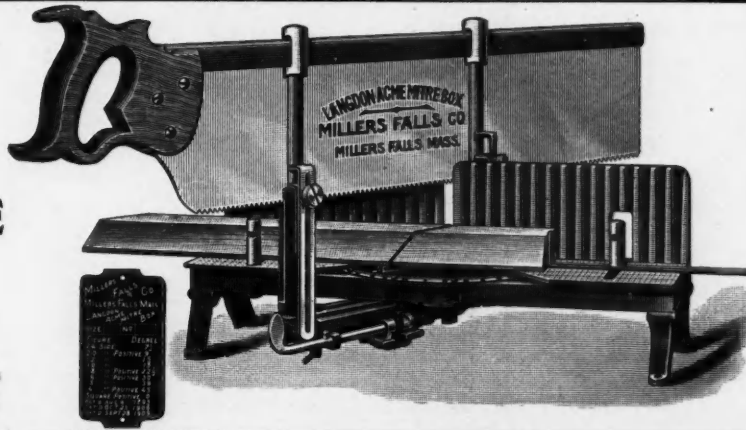
# STAR HACK SAWS



No one, minister, doctor, carpenter or farmer can afford to be without a Hack Saw. They cut everything from chalk to steel and are as useful about the home as a hammer. No tool kit is complete without one. We are headquarters for the famous Star Hack Saw Blade and make Frames for them in a great variety of styles, all of which are illustrated in our catalog. Ask for a catalog and it will be sent to you.

**MILLERS FALLS COMPANY, 28 Warren St., NEW YORK, N.Y.**

**THIS IS THE MITRE BOX YOU WANT**

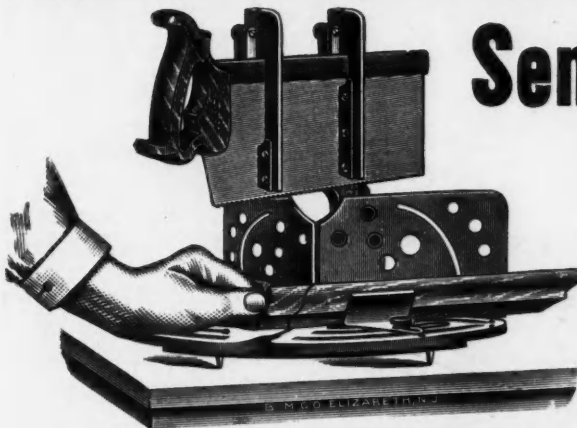


It's a LANGDON ACME and is made in three sizes put up with varying lengths of saws.

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.

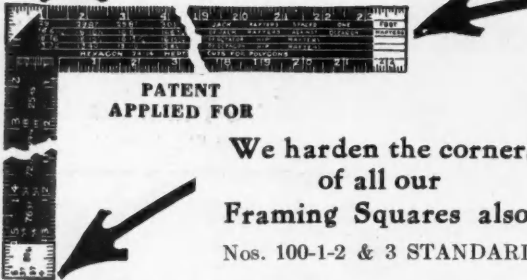
The celebrated Barton Planes and Edge Tools for carpenters and all other woodworkers are unequalled by any other made for keen, hard smooth cutting edges. If your hardware dealer does not handle

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

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

**THE BEST IS NONE TO GOOD FOR YOUR MONEY**

Buy Our Hardened Corner Squares and **GET THE BEST**



PATENT APPLIED FOR

We harden the corners of all our Framing Squares also.

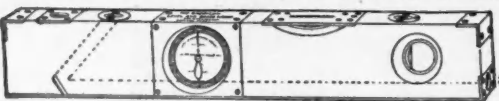
Nos. 100-1-2 & 3 STANDARD

If your dealer will not supply you we will upon receipt of price, express prepaid.

Direction Sheet with every Square	Polished Steel	Oxidized, Coppered Black or Galvanized	Nickel Plated on Copper
No. 100-A—Drafting . . . . . Common and Octagon Roof Framing Rule, brace measure, octagon and 1-100 scale.	\$2.25	\$2.50	\$3.00
No. 100—Drafting . . . . . Common Roof Framing Rule, brace measure, octagon and 1-100	2.00	2.25	2.75

**NICHOLLS MFG. CO., Ottumwa, Ia.**

**THE AMERICAN Combined Level and Grade Finder**



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

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

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

Write at once for large list of testimonials from all over the United States, and special introductory price given only to first applicants with privilege of taking agency. Address  
**American Level & Grade Finder Co., Railroad, Pa.**

**The L. & I. J. White Co.**  
**Buffalo, N. Y.**

**The BEST that Money Can Buy**

**GUARANTEED PERFECT**  
*In Quality, Shape, Material and Temper*

The strongest, finest finished and most accurate Edge Tools made. For use on any wood, any job at any time. Always ready, sharp, accurate and perfect. *The Best tools for Best work.* If not at dealers, write us.




*The Mark of*  
L. & I. J. WHITE  
1837  
BUFFALO, N. Y.  
**BEST EDGE TOOLS**

Dep't A

**YOU MUST HAVE THIS BOOKLET BEFORE THE SUPPLY IS EXHAUSTED**

**"HOW TO SHARPEN AUGER BITS"**



**RUSSELL JENNINGS**  
EXTENSION LINE AUGER BITS

HOW TO SHARPEN AND HOW TO CARE FOR THEM

**ASK YOUR HARDWARE DEALER FOR IT**

**Russell Jennings Mfg. Co.,**  
**Chester, Conn., U. S. A.** 21-33



# CARBORUNDUM Sharpening Stones

make it easy to have keen, smooth cutting tools—  
 Carborundum cuts very fast and very clean—It is  
 by all odds the greatest sharpening agent that  
 has ever been discovered—

Try the new Round Combination Stone for Carpenters use—It's a winner—

- No. 107 Carpenters Round Combination Stone \$1.00
- No. 108 Oblong Combination Stone, In aluminum box 2.75
- No. 146 Pocket Stone in leather case - - .35

*If your dealer doesn't keep Carborundum Sharpening Stones—send direct—*

**THE CARBORUNDUM CO.**  
 NIAGARA FALLS, N. Y.



## PEARSON'S IMPROVED Nailer



SEE THAT NAIL

PEARSON'S Improved Nailer is a Hand-Nailing-Tool made especially for shingle nails, it weighs only about two pounds and is a very practical Tool, as well for the roof as for a level surface.

Have you ever thought of the advantage of a machine in which you can throw a handful of nails as they come, the nails placing themselves in position to be driven, and that you can have your gloves or mittens on when nailing it? That's what you can do with this machine and the more familiar you get with it the better will you like it. The Pearson Nailer is not only a time saver and money maker, it is also a protection of your health and comfort, and we will send it to you "prepaid" for only \$5.00. In ordering kindly advise us if you use the Comm. 3d or the little larger gal. 3d wire nails 1, 1-4 inches. Ask your Dealer. Respectfully,

**Pearson Mfg. Co. Robbinsdale, Minn.**

### How Can You Do a First Class Job

When fussing with old style hangers with little or no adjustment?

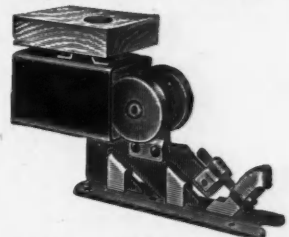
Use Richards-Hero with adjustment in both hanger and track.

Noiseless in operation.

Doors always hang in line and if desirable, you can remove track years after walls are plastered.

Ask for Richards Hero at your dealers and get it.

Shall we send you new Architects Catalogue?



No. 19 Hero Ball Bearing Trolley House Door Hanger, Noiseless Fibre Wheels

**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. :: ::

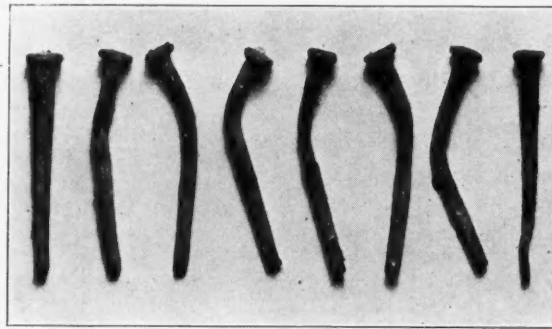
**REHM Hardware Co.**  
 1501 Blue Island Avenue  
 CHICAGO, ILL.

# Zinc Coated Brand

**TRADE  
M.I.F.CO.  
ZINC COATED  
MARK**

## NAILS

*Will Last  
a Life-time*



In Use Nearly 30 Years and No Signs of Rust.

### Read This Evidence of Durability:

In 1880, Mr. M. P. Harding, of Branford, Conn., shingled his store with pine shingles, nailing them with Zinc Coated Iron Cut Nails. In July, 1909, just 29 years later, he reshingled. The nails were as free from rust as on the day they were driven, although the house stands within three-quarters of a mile of the seashore. The cut shows some of the nails.

One of the main causes of leaky roofs is that the nails rust after being a few years in use. The way to prevent this trouble is to use nails in the beginning that are guaranteed to last as long as the building.

The "M. I. F. CO. ZINC COATED" brand of iron cut nails are that kind. They are made after a process used successfully for many years and are warranted to give full and absolute satisfaction.

We have numerous samples of nails used along the seaboard that were in use more than thirty years. They are as free from rust as the day they were driven.

Don't you think it would be profitable to use nails like these all the time? We will send you a sample package and price list free if you will write us. Why not write today?

**MALLEABLE IRON FITTINGS COMPANY, Branford, Conn.**



**Do  
You  
Use  
Your**

**Strong right  
arm in mortis-  
ing window  
frames for the  
sash pulleys?  
Just consider  
boring  $\frac{1}{8}$ -inch  
holes  $\frac{1}{8}$ -inch**

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

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

**WRITE FOR FREE SAMPLE**

Say what pulleys you are using and how many you buy

**Grand Rapids Hardware Co.**

36 Pearl Street  
GRAND RAPIDS, MICH.

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

## The "AUTOMATIC" SASH HOLDER

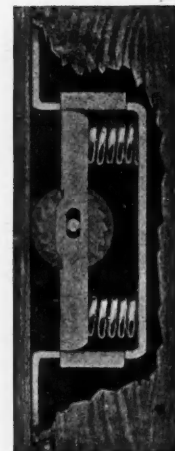
The "Automatic" Sash Holder is the new, modern, up-to-date device that dispenses with cumbersome sash weights, kinking cords or ribbons, useless weight pockets, misfit pulleys and reluctant balances, and saves all the time, labor and expense of fitting them in.

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.



## PULLMAN SPRING SASH BALANCES

Require only a mortise in the frame. No pockets, cord, weights, etc. Indispensable in repair work. Let us send catalogue.

**Pullman Mfg. Company**

13 ALLEN STREET  
ROCHESTER, N.Y.

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 LADDERS

The Pump That Pumps SPRAY PUMPS Double-acting, Lift, Tank and Spray

## MYERS

Glass Valve

### 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.

No. 1000 Cushion Tire



## LADDERS



This hook can be inserted or removed through a one-inch hole bored in the sheathing; it hooks around the studding instead of going through it. Where it is desired to plaster inside before scaffold is down, a piece of 2" x 4" turned flatwise may be used to fill in.

Made of best quality angle steel, strictly first-class and fully tested. Arms are notched and brace riveted fast in such a way that the strain is carried entirely on the solid metal instead of on the rivets; a single pair carry a ton easily.  
 4 ft. brackets  $1\frac{1}{2}$ " x  $1\frac{1}{2}$ " x  $\frac{3}{8}$ "  
 5 ft. brackets  $1\frac{3}{4}$ " x  $1\frac{3}{4}$ " x  $\frac{3}{8}$ "  
 Prices respectively, \$14.85 and \$18.00 per dozen.

**Prompt Shipments Guaranteed.**

*If you wish to try a pair, before ordering in quantity, write for terms of special trial offer.*

**THE TAYLOR STEEL SCAFFOLD BRACKETS ABOUT CLAMPS**

Isn't it quick work to be able to slide your clamp jaw right against the work operated on, let it lock itself, and then apply the power with about half a turn of the screw?

You can do this with the "TAYLOR," and as the grip doesn't depend on friction, there's no danger of the clamp becoming useless in a short time. Each is for its weight the strongest and best clamp made, and with proper use practically unbreakable. The steel bar is of a special grade, more than twice as strong as Bessmer, and the rest of the clamp is even stronger, correspondingly. We make 21 different styles, so you're likely to find one that meets your requirements.

This mitre clamp is a crack-a-jack. It's light, and easy to handle and mars the work very little. The eccentric is a special design that works quickly, but gives great holding power. The jaws are planed true, and hold the work exactly square when closed.

Just ask for a catalogue, and we'll be glad to furnish it and tell you more about these clamps.

**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.

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

**The TODD Clamp Will Save You Money**

The screw will never wear through the movable head.

**PATENTED**

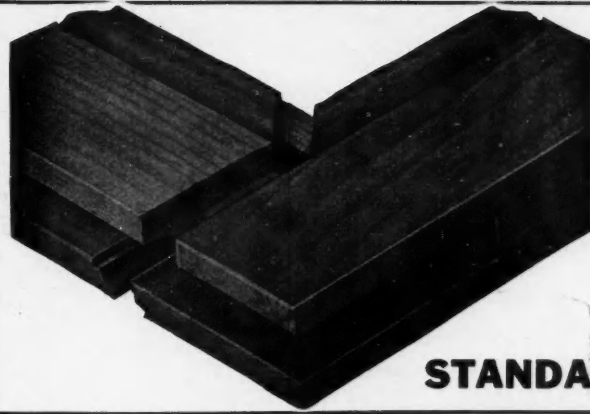
Quick adjustment. No steel bars to spring. Clamping range unlimited. No notches to weaken the bar. Heads always square with the work. Send for circular giving full description.

**BROWN SPECIALTY MACHINERY CO., Jackson Boulevard and Clinton Street, Chicago**

**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**



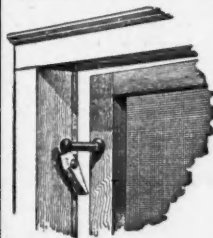
The time is drawing near at hand when carpenters and builders begin putting up storm sash and it might be well to say that the best and most convenient goods are always the cheapest in the end.

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**



**Silent Screen Door**

Avoid the nerve-racking slam of the screen door. Stop its banging and jarring—by using

**"Dime"**

**Screen Door Check**

At your hardware or house furnishing store, or mailed for 12 cts. in stamps by

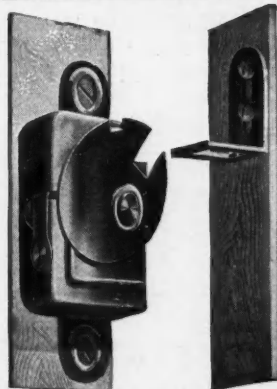
**Caldwell Mfg. Co., 15 Frank St., Rochester, N. Y.**

**The "UNIVERSAL" ADJUSTABLE HANGER**

can be used anywhere. It forms a perfect, practicable lock; sash hung with it cannot be opened or removed from the outside; it cannot be blown open by storms; makes practicable the only substitute for the half-sash sliding screen; is sold in sets, half sets, or in any other way the trade demands; indestructible; will outwear a dozen screens.

Ask your hardware dealer or write for free sample and catalog.

**The ADJUSTABLE HANGER CO. 415 Huron St. Toledo, Ohio, U.S.A.**



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

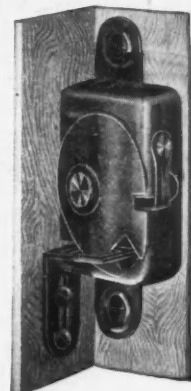
The Latest and Best Thing in Screen Door Catches

**THE CATCH WITH THE POSITIVE LOCK**

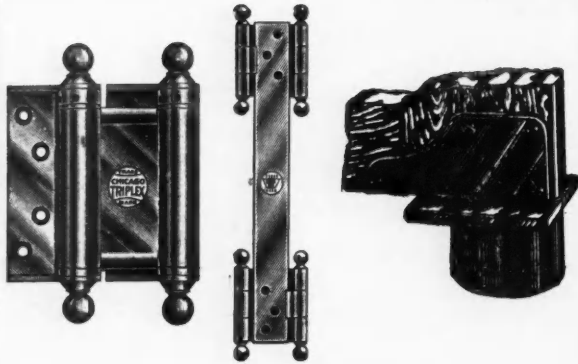
The case comes flush on door jamb. The strike is adjustable. Needs no templet. A child can set it without making a mistake. A light trip and a strong hold. Positive lock does away with necessity for hook-and-eye, or other fastener.

*Sells at Sight*

**THE E. L. WATROUS MFG. CO., DES MOINES, IOWA**



# CHICAGO SPRING BUTTS



**A PRODUCT OF RECOGNIZED SUPERIORITY**

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

**Chicago Spring Butt Company,**

CHICAGO



NEW YORK

Send for Catalogue C-26.

# Amatite ROOFING



It has a rough surface of real mineral matter on the weather side. It is evident to anyone that it is no more necessary to paint such a surface than it is necessary to paint a stone wall. Stone needs no paint; neither does Amatite. It is strong enough in itself to bear the brunt of rain and wind and sun without a coat of paint.

To paint Amatite would be a waste of time and trouble. Amatite will last for many years without any care whatever. It is made to be trouble proof as well as weather proof.

No paint is good enough to make a durable roof; a thick layer of pitch, faced with a real mineral surface, is far better—and that means Amatite.

A Free Sample will be sent on request to nearest office.

**Barrett Manufacturing Co.**

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



## The Carpenters Ever Ready DOOR CLAMP

**Durable, Efficient and Inexpensive**

Saves cost in time and labor on one job. Holds doors firmly on edge while hinges, lock and other attachments are being fitted.

Adjustable to any width of door. Clamping faces padded to prevent injury

**SATISFACTION GUARANTEED OR MONEY REFUNDED**

— Write for Free Trial Offer —

Price so low you can't afford to be without one.

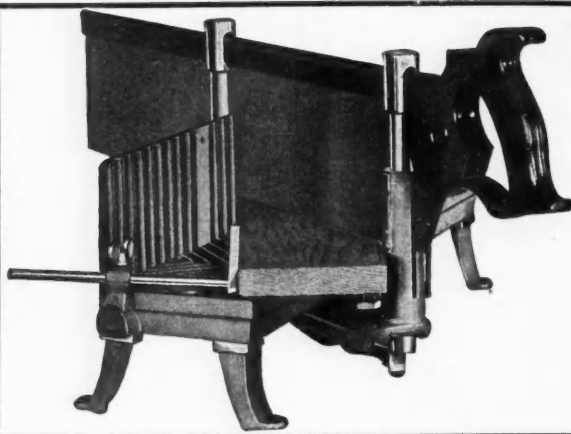
**WILLSHIRE CLAMP CO.**  
WILLSHIRE, OHIO

## A SAWSET FOR EVERY SAW



- No. 1, 95 and "Special" for hand saws of not over 16 gauge
- No. 3, for single toothed cross cut and circular saws from 14-20 gauge.
- No. 4, for double toothed cross cut saws from 14-20 gauge.
- No. 5, for timber and board saws 6-14 gauge.

**Chas. Morrill 271 B'way New York**



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

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

Illustrated circular on request.

**H. C. MARSH COMPANY**

606 Race Street

Rockford, Illinois





<p><i>The</i> <b>World's Greatest Building Paper</b></p>	<p><b>Important Notice</b> When your subscription expires, renew at once, using the blank enclosed in your final copy. If it expires with this issue your renewal must reach us before October 25 to avoid missing the November number. Use P. O. or Express Money Order if possible, but bills or 2-cent stamps may be sent at our risk.</p>	<p><i>The</i> <b>World's Greatest Building Paper</b></p>
--	---	--

**American Carpenter and Builder**

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

*Published on the first day of each month by*

**AMERICAN CARPENTER AND BUILDER COMPANY**  
185 JACKSON BOULEVARD, CHICAGO  
NEW YORK OFFICE, 178 FULTON STREET

**EDITORIAL DEPARTMENT**

WILLIAM A. RADFORD, EDITOR-IN-CHIEF  
BERNARD L. JOHNSON, B. S., EDITOR  
WILLIAM REUTHER  
CHAS. D. WARNER  
ALFRED W. WOODS  
ALFRED S. JOHNSON, M. A., PH. D. } ASSOCIATE EDITORS

**BUSINESS DEPARTMENT**

WM. A. RADFORD, PRESIDENT AND TREASURER  
CHAS. W. RADFORD, VICE-PRESIDENT  
H. M. RADFORD, SECRETARY  
E. L. HATFIELD, BUSINESS MANAGER  
H. W. WALKER, ADVERTISING MANAGER  
E. B. WOLFROM, EASTERN REPRESENTATIVE

VOL. X                      OCTOBER 1910                      No. 1

**SUBSCRIPTION RATES**

One year, \$2.00; six months, \$1.00; payable always in advance. Single Copies, 20 cents. Canadian Subscriptions, \$2.50. Foreign Subscriptions, \$2.00.

**ADVERTISING RATES**

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

**For Improved Specifications**

AS the result of a number of conferences between committees appointed by the Master Builders' Exchange of Philadelphia and the Philadelphia Chapter of the American Institute of Architects, a number of recommendations have been agreed upon for improving conditions in the building business of that city. These recommendations were the outgrowth of questions put to the architects by the builders also a general exchange of views between those engaged in both branches of the industry. Among the recommendations were the following:

Plans are to be drawn to scale of not less than one-eighth inch to one foot.

Where party walls are used, a clause should be inserted in specifications that the party wall or walls, including cost of measurer's services, etc., are to be paid for by the owner.

Wells or cisterns, if accessible to contractor at time of estimate: the cost of cleaning, filling, etc., to be included in contract price, provided such wells and the kind of filling required are noted on plans or distinctly called for in specifications. Wells not in evidence to be considered as an extra and paid for at price mutually agreed upon.

Information relating to proposals shall be supplied to sub-contractor by general contractor, and all inquiries in relation to plans, etc., should be sent to architects by letter from general contractor.

Depth of all foundation walls to be plainly marked on plans, and any greater depth of excavation and foundation walls to be paid for at price agreed upon before work is begun. If evident that foundation be on rock, or that blasting be required, the fact shall be noted in specifications. The same recommendation applies to plumbing where in excess of ordinary, such as for surface water.

All plans to be fully completed before being placed in hands of contractors, and that ample time be given to make up estimates.

In case of an apparent disagreement between plans and specifications, the attention of the architects should be called to the discrepancies in order that the contractors may be notified of the explanation.

Where walls are to be furred, the same should be mentioned in specifications and noted on plans.

All partitions to be plainly marked as to thickness and the material indicated.

Where partitions on one floor are the same as those on another floor and it is not considered necessary to draw in these partitions, the plans should be clearly and conspicuously lettered, "partitions same as \_\_\_\_\_ floor."

The detail construction of corridor partitions in office buildings, etc., should be either shown on scale drawings or fully specified to convey proper information to contractor.



**T**O THE tourist, weary of the greys and browns of an eastern winter, the Mission style houses and the Mission churches of California seem especially beautiful. The cream plastered walls, the red tiled roofs, the graceful curves of arch and window heads, the deep inviting verandas, with the intense green of orange tree and palm, and the brilliancy of blue skies over all, make a picture it is good to recall during the dark days of other winters spent under less happy conditions.

The traveller of moderate means, after his first visit to California, very often returns a second year ready to settle in a land where he may have, at a relatively small cost, a home in which he can take genuine pride, to say nothing of twelve months of sunshine and an all-the-year-round garden. And it is often the more inexpensive homes that cause the passerby to pause

and comment. He may not be able to say "How magnificent!" but he must exclaim very often "How altogether cosy and home-like and artistic!"

It is from the old churches of the early Franciscan fathers that all suggestions of Mission architecture are derived; and the building is usually most successful that does not depart from their fine lines of simplicity and strength.

That the early missionaries to California should have built with such wisdom and skill is always a marvel. They seemed to know instinctively how to choose the best sites—their missions stand on the sunniest slopes and in the most beautiful fertile valleys. The thriving towns that have everywhere grown up around these churches confirm the wisdom of their choice as to location; and the many imitations of their architecture testify to the excellence of their work as builders.



Simple Mission Design—Circle Arches, Cream Stucco and Tile Roof

With only the rough material at hand, and with the unskilled Indians for laborers, they planned and built the sole historical monuments of which California can boast. The weathering of more than a century has softened the coloring and the outline of these beautiful

Some of the photographs show the great variety of design of which these smaller Mission bungalows are capable. The house with the five arches is a Mission building of the very simplest type. The large square windows below, the dormer windows above, the regu-



Artistic Mission Bungalow, Well Designed though a Trifle too Ornate

churches, but it has not greatly impaired their strength. The arches, facades, towers and domes of such splendid missions as those at Carmel, Santa Barbara and Santa Ynez are still a source of suggestion to the architect who knows how to weave the best of the old into the new.

True it is that the alluring plans of two and three thousand dollar bungalows do not seem so alluring in Cleveland or Pittsburg, for instance, when the man who has been reading bungalow books consults his architect and building contractor. What is possible in Southern California with a few thousand dollars is not at all within the realm of possibility in a northern or eastern city. In and about Los Angeles there is not the extra expense of furnace and stone basement to be considered, and the cost of building the small home is just about what the fascinating picture books of bungalows, state. Moreover, Southern California seems to have the proper environment for this type of home—for the bungalow and especially the Mission bungalow seems to demand space and sunshine and clambering vines. A bungalow is out of place in cramped quarters between high walls, and the man who cannot afford a garden of considerable size should not waste his precious land on this rambling sort of a cottage.

In the smaller as well as in the larger towns throughout California, the architects seem to vie with each other in designing inexpensive bungalows which shall be distinctive and artistic and the happiest designs are usually of the Mission type.

lar roof, all contribute to the appearance of symmetry and finish; while the deep porch adds the desirable element of inviting comfort.

It is in its great simplicity that the real charm of the Mission style lies. It is this simplicity, possessed in such a marked degree by the old California Missions, that gives them their enduring place in American architecture; and it is only by holding fast to these ideals that the best results are to be had in adapting



Fine Mission Residence in Los Angeles

the Mission style to modern use. Sometimes this type of architecture evolves into something perhaps a bit too fanciful. For instance the little bungalow with the tile pagoda on the roof seems extremely attractive at first glance, but it is not quite in keeping with



the Mission type it is supposed to follow.

A woman's club house, the Adelpian Club of Alameda, shows another adaptation of the Mission style. There is the happy use of doomed tower, curved para-

of ornate decoration—all reveal the builder's appreciation of the beauty of this simple type of architecture.

Sad to relate, however, many examples are to be seen of the other kind, in which the architect has added



The Old Santa Barbara Mission



A City Club House of Mission Design

pets and bracketed cornices, all in combination with square window heads. Another photograph shows how the Mission style of buildings adapts itself to the rising scale of expense. For a fine city residence, this house on Hoover Street, Los Angeles, is an extremely good design. The right proportions of the upper and lower stories, the arrangement of balconies, the symmetry of arches and windows and the entire absence

to a Mission house all the adornment of which towers, elaborate facades and balconies are capable. Yet all the ornateness and ornamentation possible cannot quite spoil the Mission house, nor entirely conceal its characteristic features—the curved arches, tiled roof, plastered exterior in imitation of the old cream adobe, and the general effect of symmetry, simplicity and strength.

## Vacuum Cleaning

MODERN STATIONARY AND PORTABLE VACUUM CLEANERS. THE LATEST DEVELOPMENT IN BUILDING SANITATION—ADVANTAGES AND USE FOR HOUSES, APARTMENTS, SCHOOLS, ETC.

**A** FEW years ago, the statement "Modern Plumbing" in a real estate notice was a strong card; now modern plumbing is so universal that it is assumed to be in practically every house. In the same way, in new houses "hot water" or "steam heating" has become so common as to attract attention only when missing. Now "Vacuum Cleaning" holds the attention as the newest convenience and the advantages of this simple and sanitary means of cleaning are so evident that like modern plumbing and heating, the modern vacuum cleaner will, within a few years, be taken as an essential part of all modern residences, hotels, schools and other buildings where people congregate.

The use of mechanical appliances for interior cleaning, while of recent origin, has long since passed the experimental stage and is today a positive and proven success. As the latest development in building as well as probably the most important sanitary appliance ever introduced, vacuum cleaning becomes highly important to all builders, architects and owners. As a wonderful labor-saving arrangement, doing away with the never ending, yet futile struggle with broom, carpet beater and dusting cloth against the dust and dirt

of the home, the vacuum cleaner is welcomed by all housewives and building managers. And with the perfection and established practical success of vacuum cleaning together with its very reasonable cost, a very wide spread use has already come about. In reality, however, only a beginning has been made. Vacuum cleaners, both the "built-in" or stationary systems and the lighter, portable machines, are destined in a few years to be as universal and essential a convenience as modern plumbing is today!

In this development there will be large opportunities for carpenters, building contractors, architects, etc., to increase their own profits besides gaining the extra approval of their clients through recommending and installing vacuum cleaning systems. Accordingly a brief consideration of the subject will be profitable.

It is well known that of all the questions which confront the modern housekeeper none is more important than that of cleanliness—how to clean and keep clean the carpets, rugs, hangings and upholstery, and how to preserve from the ravages of dust and dirt, beautifully finished floors, tastily papered or decorated walls and ceilings.

Until recently, interior cleaning was accomplished

in a fashion and at great expense, by means of broom, carpet sweeper, feather duster and dusting cloth. This method, which was not dirt removal, merely dirt disturbance, involved as a result, continual scrubbing and washing of dirt grimed woodwork, redecoration and repapering on account of dust soiled walls and ceilings. Dirt, the destroyer was ever present, despite the most earnest efforts—lurking in corners, cracks and crevices, and as a final result, with increasing regularity came the real old-fashioned housecleaning spell.

The "joys" of this period of housecleaning are too well known, and too painful to enlarge upon. Suffice it to say that floor covering were torn up, hangings torn down, and a futile attempt made to clean them by destructive beating. The house was turned upside down, and the whole place thrown into such confusion and turmoil that the truth of the old song—"There is no place like home"—could not be denied.

Since the advent of the Vacuum method of removing dirt by means of suction—all is different.

Its introduction into the home means that nothing is moved but the dirt. Metal tools, with felt shoes or brushes, are moved over the surfaces to be cleaned, and every particle of dust and dirt is sucked down to



Sectional view of Residence, showing usual manner of installing a "Built-into-the-House" Vacuum Cleaning System.

a steel tank in the basement, or dust receptacle connected directly to the machine.

Carpets and rugs are left in their places—hangings are not disturbed, the furniture need not be carried out, pushed, jammed or marred—and everything in every part of the house is made spick, span and sanitary, quickly, thoroughly and economically.

And this splendid state of cleanliness need no longer

be merely a periodical occurrence of twice a year, after a siege of general housecleaning. For with a good vacuum cleaner, either of the built-in type where the suction is "on tap" in pipes like water or gas ready for immediate use by the turn of a switch, or with the lighter portable cleaners, the daily



Baseboard Outlet with Air Hose on First Floor of Residence; Equipped With Built-in Vacuum Cleaning System

accumulation of dust is thoroughly, conveniently and quickly disposed of in a cleanly and sanitary manner.

By the application of light cleaning tools to the fabric or surface to be cleaned, all dust, dirt, sand, moths, larvæ, etc., are drawn away by suction. And this is accomplished without in any way "tearing up" things—without the slightest annoyance, disturbance or discomfort to the family—without putting a single room out of use—and without raising a bit of dust into the air during the cleaning operation.

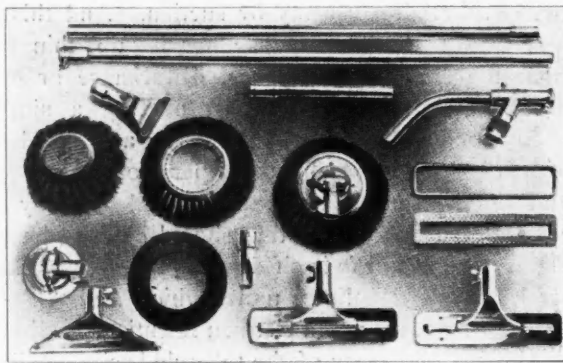
And yet the convenience and practical economy of vacuum cleaning is not all that should be considered; for health and even life itself depends largely upon the general state of cleanliness under which we live. As recently as 1882, the noted German scientist, Dr. Koch, made the first discovery of the tubercle bacilli, settling beyond doubt the first fact that tuberculosis or consumption is a contagious, infectious disease. Since that time it has been found that practically all of the so-called infectious diseases have their origin in bacteria, or germs as they are commonly called; and it is also well known at this time that almost all of these so-called "criminal germs" are capable of being dried up and floated in the air along with other particles which go to make up our common "dust."

Civilization is expending money at the rate of many billions of dollars a year to guard itself against polluted water, by buying up large areas of water sheds, and by installing in its buildings modern sanitary plumbing, etc., while, as a matter of fact, there is but one dangerous germ transmitted to human beings through the water supply—the germ of typhoid fever. In the meantime, a glance over the mortality report issued by the United States government will disclose the fact that from the two leading causes of death—tuberculosis and pneumonia—more than 280,000 persons in the United States die annually, while the deaths from other *dust germ* diseases, scarlet fever, diphtheria, influenza, grippe and other infectious diseases, all exceed the deaths caused by the typhoid germ.

From the foregoing you will get some idea of the importance of vacuum cleaning from a sanitary point of view, particularly when you discover that there is absolutely no other known method by means of which dust can be utterly suppressed and removed from building interiors, than by the process of vacuum cleaning or suction sweeping.

By withdrawing all of the dust contents of the buildings out of the rooms, and conveying it to air tight receptacles, the air that is found in the rooms is used as the fluid to scour the interior and its contents, and also to carry the dust and dirt away to the dust separator.

In residences, the use of the vacuum cleaning system prevents entirely any necessity of the old-fashioned semi-annual house cleaning. The use of the vacuum tools on the carpets and rugs throughout the house for a period of three months or more not only removes the dust and dirt within these fabrics, but all that may have accumulated on the floor under them as well, so that there is no necessity of taking up these articles, removing them to be cleaned, returning, and relaying them.

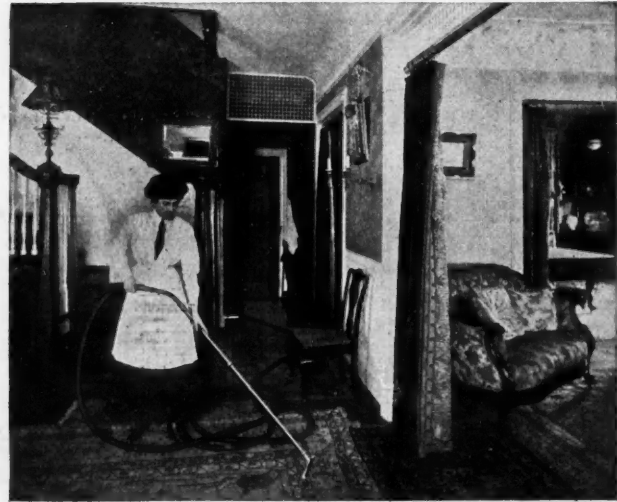


Cleaning Tips for Various Uses

It is estimated that the cost of house cleaning in residences averages about one per cent on the cost of the building every time it is done, or if it is done twice a year, then two per cent per annum. It is easy to figure what a splendid investment that saving alone would make in a vacuum cleaning system, to say nothing of the saving on interior decorations, carpet wear,

etc., and not to mention the greater ease in the matter of doing the daily house cleaning.

The equipment for built-in or stationary vacuum cleaning installations consists of the vacuum producer—whether high-pressure steam, electrical power current, or the pressure of the ordinary water system in the house—which is permanently installed in the basement or cellar, and from which a suction pipe is run up through the floors the same as are the gas and water pipes. On each floor a valve is placed in this suction pipe, to which is attached a length of suction hose.



House Cleaning via the Easy, Sanitary Way

On the end of this hose are attached various tools, one at a time, such as a suction carpet and rug sweeper, an upholstery and bedding cleaner, and others illustrated.

When wanted for use, the power is turned on by opening an ordinary valve (or by closing a switch, if electricity is used), and at once a strong suction is created throughout the entire system of piping, hose and tools. The suction in the tool in use may be stopped at any time by moving a little thumb-valve in the handle of the tool—and started again by moving it in the opposite direction.

Unquestionably all new buildings, if they are to be counted *modern*, should be equipped with one of these systems. Also many owners will want them installed in buildings already occupied; which can be easily done. In a great many other cases a good portable cleaner will be desired; and as a means of introducing vacuum cleaning in houses and buildings when the owner or tenant does not wish the larger and more expensive stationary equipment, they are of the greatest utility.



### Soft Tar Saved Him

A vat of tar on the roof of the buildings of the Union Iron Works, San Francisco, recently saved a painter from instant death by providing a soft place for his fall from a height of 65 feet. He was painting a high chimney, when one of his ropes broke, dropping him into the vat. The tar was soft, but not hot, so he escaped with a few bruises.



## Varnish—What it Is and How Produced

INTERESTING FACTS CONCERNING THE HISTORY OF VARNISH—THE STRANGE FOSSIL GUMS OF WHICH IT IS MADE—PROCESSES OF MANUFACTURE AND RIPENING

By Charles H. Smith

**V**ARNISH is by no means a modern invention, its use having been known in the earliest historic times. The Chinese and Japanese were adepts in the use of varnish, and the latter people carried the art to a high degree of perfection, as our modern word "japanning" shows.

The Egyptians also understood the art of varnishing and the pictures exhumed from the buried cities of Herculaneum and Pompeii are said to owe the brightness of their color to their having been covered with a species of wax varnish.

An exchange tells a story of "How Varnish Got Its

Greek sailors, in their voyages to distant African points, occasionally found the rare and valuable resin now known as amber, and called it Bernice, in honor of the beautiful Egyptian queen's tresses. Bernice is equivalent to the Greek Pheronice. Ph sometimes had the sound of v, and the name was pronounced Veronice. The Romans referring to the amber made it vernice and their descendants further changed it to vernis—hence Vernis—Martin. The Anglo-Saxon form became varnish, and there you are.

It is now a generally acknowledged fact that the finest varnish is produced in America, although for



Sorting the Copal Gum

Name," and it goes as follows:

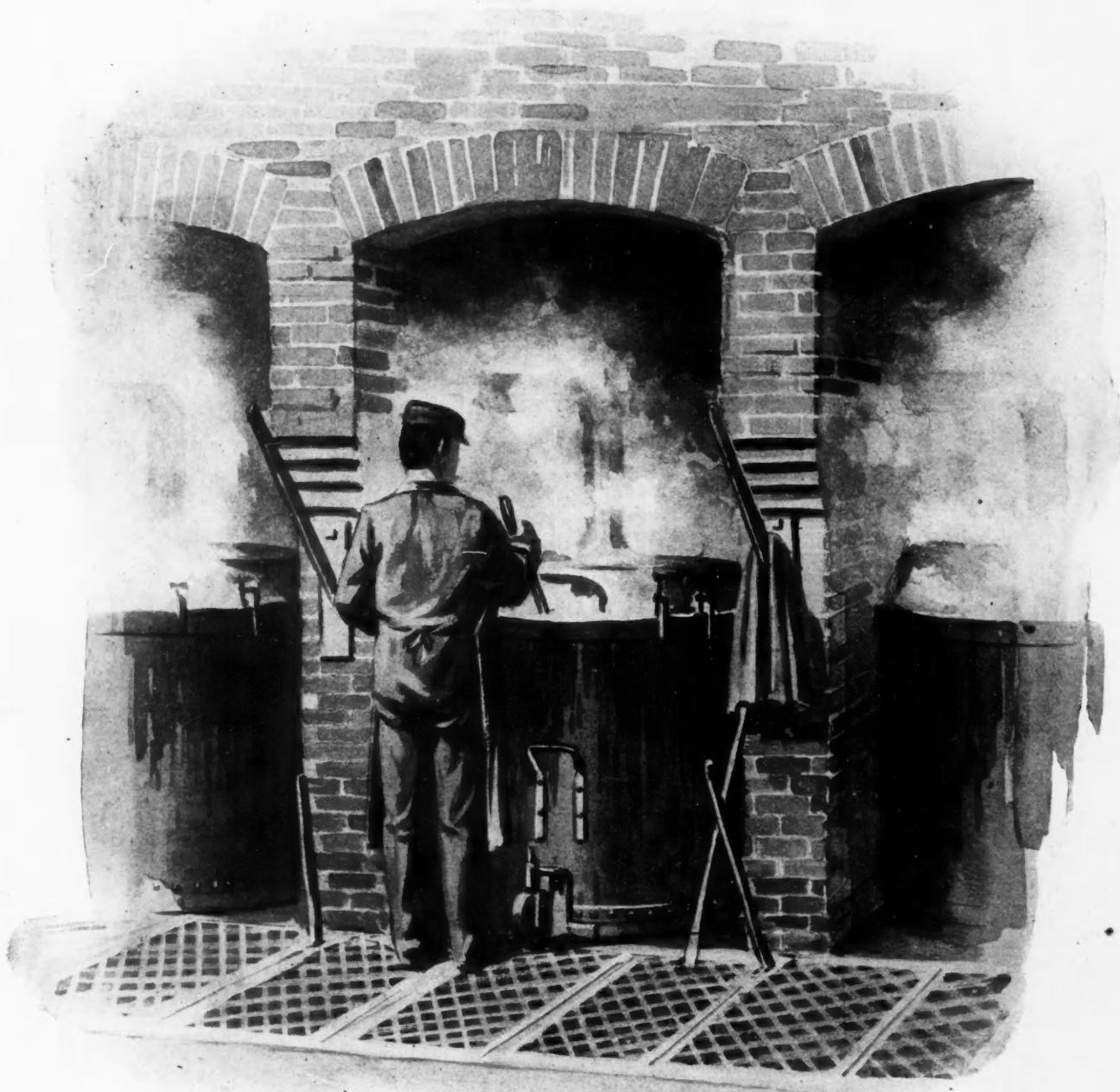
The prosaic and common-place varnish of today and all other days got its name in a pretty romantic manner. Bernice, wife of one of the Ptolemys, of Egypt, a grand-daughter of a half-brother of Alexander the Great and an ancestor of the lovely Cleopatra, was blessed with a crowning glory of red-gold hair. The

many years the fight for supremacy between English and American varnish was very hotly contested. There are even yet some few consumers whose craze for things "English" still blinds them to the merits of American made varnish, but they are greatly in the minority, and it is a matter of only a very short time when English varnish will suffer total eclipse.

#### The Three Classes of Varnishes

The varnishes in modern use are divided into three classes: Fixed oil varnish, volatile oil varnish, and spirit varnish. The solvents used are, for the spirit varnishes, alcohol, and for the volatile oil varnishes, turpentine, while the fixed oil varnishes, which are the

and are principally used for first coats on work that is to be afterwards treated with a fixed oil varnish, filling up the pores of the wood and making a good foundation to work on. Spirit varnishes are also used to a certain extent, to impart a finish to sundry articles of furniture, tool handles and other objects not neces-



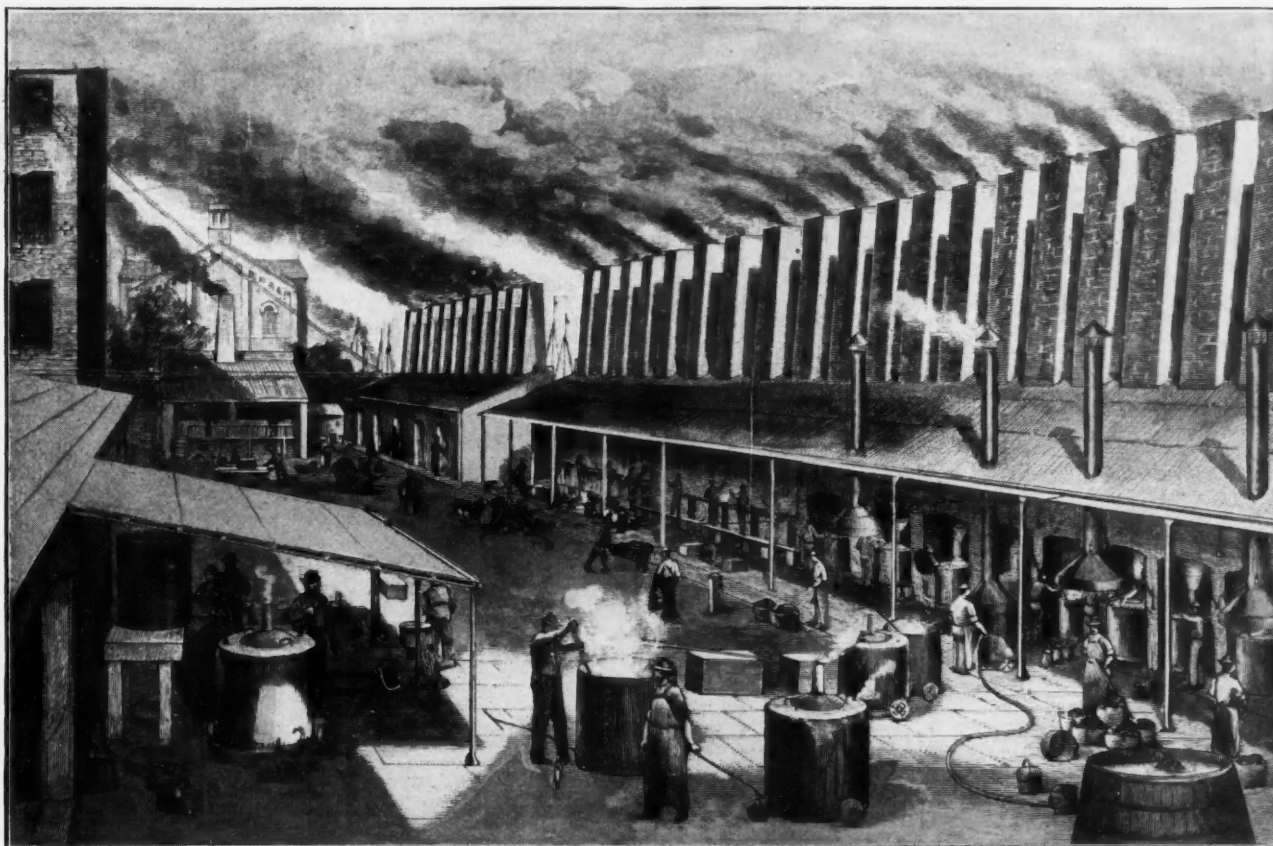
Gum Melting

most important of all, have, properly speaking, no solvent, the gums or resins of which they are composed having first to be melted and then combined with turpentine and linseed oil.

Spirit varnishes possess a limited value only for finishing purposes. The alcohol evaporating leaves a coating lacking in durability or elasticity, so that they are entirely unfitted for exposure. They are useful,

sitating exposure to the weather, the most commonly known spirit varnish being shellac.

Volatile oil varnish consists of a solution of the various soft gums or resins with turpentine. They possess neither the brilliancy of spirit varnish nor the durability of fixed oil varnishes, their chief mission being to mix with paint to impart a gloss. They are also used on wall paper, maps, etc. Damar varnish



Battery of Gum Melting Kettles

is perhaps the best known example of the volatile oil varnishes.

Fixed oil varnishes, the most important division of these classes, are the prevailing varnishes in modern use, embracing: carriage varnishes, house varnishes, cabinet varnishes and furniture varnishes.

The ingredients of fixed oil varnish are three in number, consisting of copal, which is the base, linseed oil and turpentine.

#### Copal, or Fossil Gum

Copal, which is the base of the fixed oil varnishes, is the gum, or to be chemically accurate, the resin of

trees long since extinct; copal being a true fossil, and is found in places now treeless and barren. Copal is found in certain portions of Africa, the Philippine Islands, New Zealand and other places, the finest grade coming from Africa. The known African gum fields, however, are rapidly becoming depleted. The Island of Zanzibar, where the choicest copal is found, has been dug over several times by the natives; and the quantity of copal exported decreases annually.

Other deposits of copal, however, will undoubtedly be found, as beyond question it exists in many places yet undiscovered.



Part of Shellac Bleaching Process—Pulling Hanks



Apart from its commercial utility for varnish making, much interest attaches to copal on account of its great antiquity; and although geologists differ as to its probable age, it certainly belongs to a period so remote that the most learned opinions can be received as conjecture only.

The term copal, by the way, is a family or generic name for all fossil gums: Zanzibar copal, North Coast copal, Kauri copal, Pebble copal, Manila copal, and so on, the term copal as above intimated being common to all fossil gums.

perhaps, at their bases, and being unable to extricate themselves from the viscid mass, died and became entombed therein.

Time has wrought the extinction of the race of trees; nay more; the very soil in which they grew disappeared, the Island of Zanzibar being now a sandy desert. And the ocean is now rolling over the sands where amber copal is found, its present abiding place being on the shore of the Baltic Sea; but the little creatures found in the gum are still perfectly preserved in their crystal prisons. Leaves, twigs, fragments of



Bleached Shellac Grinding

It is not perhaps generally known that amber from which beads and other jewelry, mouthpieces for pipes, etc., are made, is a fossil copal of precisely the same nature as that from which varnishes are made, and indeed varnish is actually made from amber copal, although not so generally used as varnish made from other varieties.

Among the Zanzibar and amber copals, pieces are occasionally found with insects and small animals of the reptile family imbedded in them. Just how they got there is not precisely known, but it can be readily imagined how they may have been ensnared in the soft resin as it oozed from the trees, forming little pools,

bark, seed pods, etc., are also found in the gum, and thus we are brought face to face with the fauna and flora of a period perhaps antedating the earliest dynasty of the Pharaohs.

The most useful copal gum for the varnish maker at the present time comes from New Zealand and is known as Kauri copal, deriving its name from the Kauri tree, of which it is a product. Although the trees that produce the Kauri copal of today have long since perished, the species is not extinct, but the fresh or living gum is of no use to the varnish maker.

Kauri copal is found quite close to the surface of the ground, and the natives locate it by prodding the soil

with their spears, and on feeling a lump, dip it up. Much the same process is employed in procuring the African copal, although the natives frequently have to dig deeper, eight or nine feet not being an uncommon depth at which the copal is found; and when the lazy aborigines can summon sufficient energy to delve so deeply, they are rewarded by finding larger and better copal.

Having now introduced the famous triumvirate, copal, linseed oil and turpentine, it is fitting we should say a few words about varnish, which is made by the union of this "mystic three."

#### Varnish Making and Ripening

To an onlooker, the manufacture of varnish is apparently an exceedingly simple process, merely consisting of putting a quantity of the gum copal into a copper melting kettle, wheeling it over the fire and letting it remain until the gum is melted; then adding a certain quantity of the prepared linseed oil—some stirring, a little more boiling and lastly adding turpentine to the mixture, some straining and filtering, and lo, the varnish is made. And so far as the mere mechanical process is concerned, that is really all there is to it.

Simple as it appears to the novice, every process in the manufacture of varnish must be conducted with scrupulous care, unremitting attention and mathematical accuracy.

No guess work is permissible in varnish making. The gums are carefully sorted and graded for the various kinds of varnish; the quantities to be melted correctly weighed; the melting or cooking of the gum closely watched by the varnish maker by means of his stirring rod; and the proportions of oil and turpentine added, measured with the greatest accuracy. In addition to these leading essentials in the proper manufacture of varnish, there are numerous minor points to be observed, only learned by experience and long acquaintance with gum copal and its faithful allies, linseed oil and turpentine. I use the expression "minor points," however, in a relative sense only, as every point and precaution observed in the manufacture of varnishes is or should be based upon personal experience of what is necessary to produce the best results; and all are factors in aiding to reach the goal that should be constantly striven for: "perfection."

Next to the quality and adaptability of varnish the most important requisite is undoubtedly uniformity of quality, and in order to preserve this successfully, an enormous tankage capacity is necessary. Although in the manufacture of several lots of varnish, the same formula may be used, and the same "modus operandi" adopted throughout, there is still one essential feature that must be observed to insure absolute uniformity, so far as human means will permit, and that is the time allowed for the ripening process. This is something that cannot be hurried; and the results obtained while the varnish is remaining in the tank undergoing

the mysterious process of "ripening" cannot be produced by any artificial means so far discovered.

The proper time for ripening is from three to twelve months, according to the grade of varnish, so that it will be easily seen, that to allow the varnish full time to ripen; and at the same time keep a supply of "ripe" varnish on hand, sufficiently large to fill all orders and to meet emergencies, demands a very extensive storage capacity; and a poor equipment in this regard must necessarily prove disastrous to the production of uniform goods; a limited storage capacity compelling varnish manufacturers to either ship unripe varnish, or refuse orders, or delay shipment until the stock ripens.

A varnish carefully and correctly made from a tested and approved formula is only half complete, and if not given the proper time to mature before shipping will, in all probability, be condemned by the consumer to whom it may be shipped.

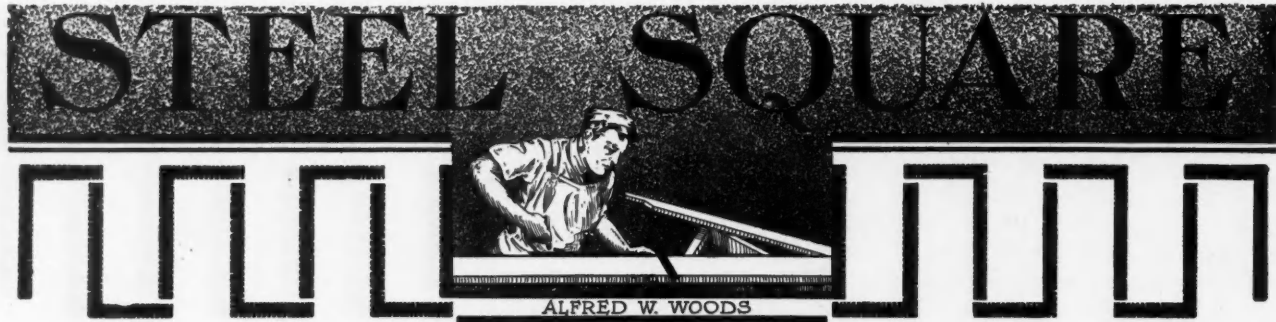
Next month this paper will be concluded with a practical consideration of the properties and uses of varnish in modern building work.



#### Fire Resistance of Cinder Concrete

The cinder concrete walls of the buildings used in subjecting floor constructions to fire tests at Columbia University were erected two years ago and have been subjected to five fire tests of 4 hours each, during which the average temperature has been 1700 degrees Fahr. At the end of each four-hour test a stream of water at 60-pound nozzle pressure was played back and forth over the ceiling for 10 minutes while the ceiling walls were red hot. After this severe treatment, Prof. Ira H. Woolson states the walls were practically as good today as they were when new, except that the rear wall has been scored by the water to a depth of from  $\frac{1}{2}$  to 1 inch for 2 or 3 feet near the top. This wall gets the direct stream for a portion of the time and always receives the deflected stream from the ceiling. He believes that the structure is good for an indefinite number of tests, the only repairs necessary being an occasional plastering to renew the wall surface washed away.

A duplicate of this building torn down some years ago sustained seven four-hour tests at 1700 degrees before its removal. At that time the walls were as good as those in the present structure. Professor Woolson is of the opinion that within reasonable limits the percentage of coal and the amount of fine material in such cinders have very little if any effect upon their fire resisting qualities. He believes that sifting and washing the cinders would be a useless expense and injurious to the cinders as aggregate for concrete. The pieces of coal which came next to the surface of these walls have been burned to an ash, but remain in place and act as a non-conductor of heat. Plenty of particles of pure coal can be found in the walls less than 2 inches beneath the surface.



## Problems of Roof Framing Solved

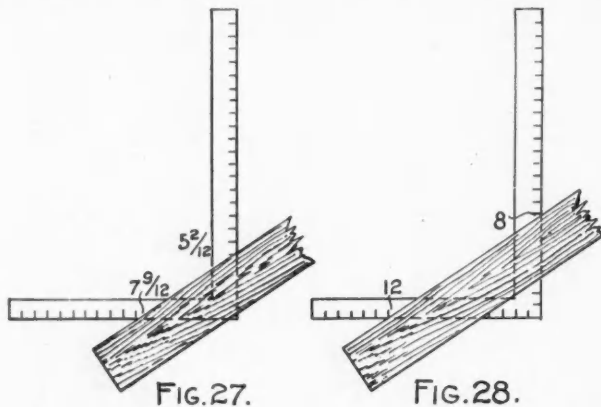
TENTH ARTICLE--EXEMPLIFYING THE CUTS OF COMMON AND HIP RAFTERS BY TWO METHODS. BY THE ONE-TWELFTH SCALE AND FULL SIZE TO ONE FOOT

IN all of our writings, it has been the aim to explain not for a certain problem, but more in the way of illustrating a general rule that could be applied to all like conditions, even though seemingly different. The great trouble in learning how to use the steel square, is in not being able to recognize the relation, or we might better say, the similarity of cuts under different conditions. There is in fact but the

parts to take to obtain these cuts, but in order to make this article complete, we will give them along with the others.

Take half the width of the building on one member of the square, and the rise of the roof on the other; the member on which the half-rise is taken, will give the seat cut and the other member will give the plumb cut. Or take 12 on one member of the square and the rise for that proportion (12) on the other. The side on which 12 is taken, will give the seat cut, the plumb cut being on the other.

Now for illustration purposes, suppose the building is 15 feet 6 inches wide and we wish to frame to the 1-3 pitch. By the first method, the parts to take are 7 9-12 inches on one member and 5 2-12 inches on the other. Why? Because the 7 9-12 represents one-half of the width of the building and 5 2-12 represents one-third of the width. By the second method, the parts to take are 12 and 8. The first number is taken because it represents one foot and is used for that much of the run; the latter is used because if the run is one foot, the span must be two feet, and one-third of two feet is 8 inches.

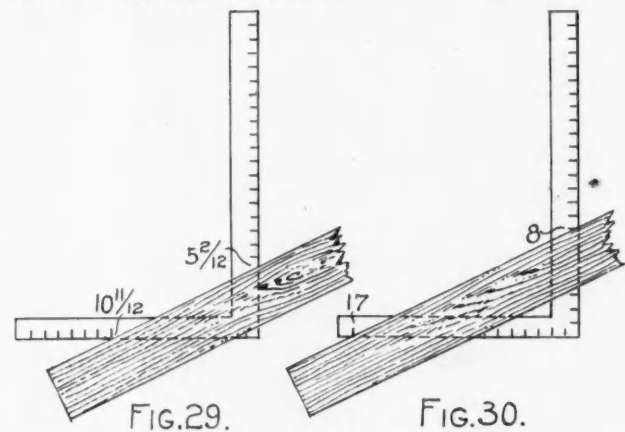


one broad rule, working from unity; and when that is understood the steel square can be readily applied to the timbers to obtain all of the cuts, lengths and bevels that enter into any shape or pitch the building may have. But as the parts to take are susceptible of different scales which may be used there is a tendency to confusion.

So we have thought best in this article to exemplify the different cuts that enter into the roof, showing what constitutes the parts to take on the steel square; how it should be applied; and why these parts give correct results. Therefore, this article is a summing up of what we have gone over, placing the subject more in a nut-shell, so to speak; because it contains the kernel of what was preceded. In doing this, we will illustrate by two methods, or scales, giving first the 1-12 scale, or one inch to the foot; and second, the full scale of 12 inches to the foot; the result being the same in either case.

### Seat Cut of the Common Rafter

This is the simplest of all the rafters to frame and every carpenter that is worthy of the name, knows the



Figs 27 and 28 illustrate both methods in the order in which they are given. From this it will be seen that the results will be the same. The reader will understand, of course, that it does not make any difference which member of the steel square is used for the run or rise, but for our own work, have always let the tongue represent the run as here shown.



**Seat Cut of Hip or Valley**

In this, it is first necessary to find the run of the hip; and in the case of a square cornered building, this may be quickly done by taking one-half the width of the building on both blade and tongue; the lengths diagonally across from these figures will represent the run. This taken on one member of the square and the rise of the roof on the other, will give the seat cut on the former the plumb cut on the latter. (When the building is out of square, it is best to lay out a diagram of the corner to a scale one inch to the foot, from which to obtain the run.)

For the example in question, it would be 10 11-12 on one member and 5 2-12 on the other; the former giving the seat cut and the latter the plumb cut. By the second method, take 17 and 8; the former giving the seat cut and the latter the plumb cut. Seventeen is used because it is the diagonal (practically) of a one-foot square, and answers for any run the building may have. Eight is used in this case, because it represents the 1-3 pitch as before described for the corresponding common rafter. See Figs 29 and 30.

In the next article we will continue with the side cuts of the rafters and other parts contained in the roof.

**Cost of Fire Proof Walls**

The following figures taken from a booklet just issued by Pennsylvania Fireproofing Co. should be of interest as showing the costs of various hollow tile fireproof walls in comparison with those of ordinary frame construction:

**HOLLOW TILE OUTSIDE WALLS.**

Cost per 100 Superficial Square Feet (1 Square).					
With Exterior Cement Stucco and Interior Plaster Complete.		With Exterior Plain and Interior Plastered Complete.		Without Exterior Stucco or Interior Plaster—Tile Keyed Ready for Plaster.	
Wall.	Cost.	Wall.	Cost.	Wall.	Cost.
6 in.....	\$23.85	6 in.....	\$18.35	6 in.....	\$15.50
8 in.....	27.10	8 in.....	21.60	8 in.....	18.75
10 in.....	30.85	10 in.....	25.35	10 in.....	22.50
12 in.....	32.35	12 in.....	26.85	12 in.....	24.00
15 in.....	36.35	15 in.....	30.85	15 in.....	27.00
16 in.....	39.35	16 in.....	33.85	16 in.....	29.50

**HOLLOW TILE WITH EXTERIOR BRICK VENEER.**

Cost per 100 Superficial Square Feet (1 Square). Tile used for this purpose sometimes called "Backing up block." Tile with keyed surfaces ready for direct application of plaster. Includes exterior stone trim.

Thickness of Wall.	Face Brick Veneer.	Common Brick Veneer.
8 inch .....	\$38.50.....	\$26.80
10 inch .....	42.00.....	30.30
12 inch .....	45.25.....	33.55
14 inch .....	49.00.....	37.30
16 inch .....	50.50.....	38.80

**PARTITION WALLS—HOLLOW TILE READY FOR PLASTER.**

3 in.....	\$10.50	5 in.....	\$12.80	7 in.....	\$14.50
4 in.....	11.00	6 in.....	13.10	8 in.....	17.00

Outside walls, wood frame construction throughout, painted exterior, plastered interior, including all labor and finish, is stated to cost \$18.50 per square.



**S**MILE, and you'll land your customer.

**T**O paraphrase a bit of popular slang, every workman may be thoroughly in love with what he is doing—but, oh, you dinner whistle!

**Winning a Derby**

Miss Yangkie: And what has Lord Chichester done that you think him so interesting?

Lord De Fendus: He won a Derby, y' know.

Miss Yangkie: How lovely! On an election bet? —*Cleveland Leader.*

**To Improve the Site**

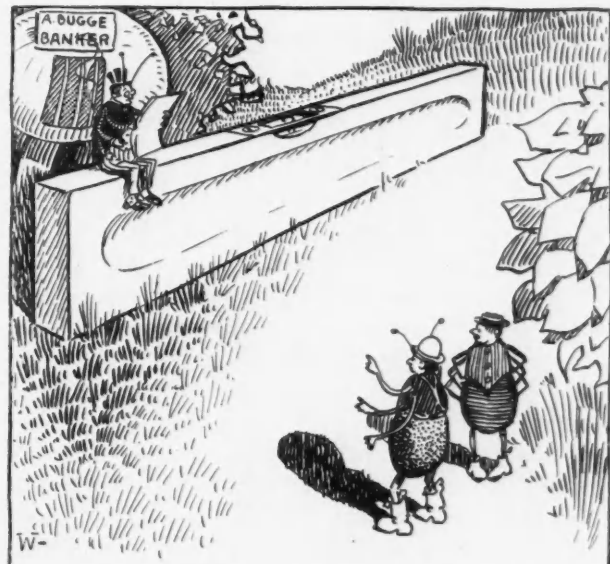
[A twenty-story edifice in Wall Street is being torn down to make room for one of forty stories.—*News Item.*]

We're on the road to progress;  
There is no turning back.  
In New York town  
They're tearing down  
A twenty-story shack.

This twenty-story shanty  
Belongs to ages gone.  
It has no place;  
They need the space  
To put a building on.

—*Washington Herald*

**On the Level**



They say Old Bugge is very upright and honest. Yes! Anyone can see he is on the level.



## Architectural "Hand-Me-Downs"

MISFITS IN BUILDING—SUBSTANTIAL GOODS SPOILED IN THE CUTTING BY CARPENTER DESIGNERS WHO WANT TO PLAN WELL BUT DO NOT KNOW JUST HOW

By A. W. Woods

**T**HE most costly dress goods can easily be spoiled by an unexperienced tailor. He must have an eye for true proportion and style, else the cost of his services is worse than wasted, for through his cutting the goods are spoiled. Though his garments may be made just as substantially and will wear just as long—in fact too long for comfort and peace of mind—yet it is an ill fit, and whether known to the owner or not, there are others who do know a good thing when they see it and the ill fit grates on their nerves. On the other hand, the experienced tailor can take cheap goods and make the same party a suit that will be a graceful fit from head to foot, though it may not be made as substantially as the first. Still it has received the finishing touches that bring out the good points and appeal to the artistic sense.

The same is true in all lines of work from that of the humblest workman up to that of the most skilled in any trade. It applies to all alike. Yet this sense of taste is not promiscuously handed out by the giver of all things; it is rather a gift that is obtained by diligent exercise of both mind and body. Think and work patiently and the desired results will come to those who persevere, but "think" and work must go hand in hand, working together to make success.

In no trade is this more applicable than in carpentry work. The architect is like the cutter in the tailor shop. He lays out the patterns for the subordinate workman (the carpenter) to follow. Both are liable to mistakes and singularly or jointly they may be responsible for a bum job.

In the smaller towns the tailor is the whole thing; he cuts his stock and puts it together, making the finished product. The same is true of the carpenter. He plans and builds; more often plans as he builds. We know a carpenter who makes a business of building and selling houses. He has a reputation of being a good workman, and he is; but his houses lack the finishing touches that show real refinement of taste. He uses good material, but like the inexperienced tailor, he does not always get a good fit. Some places he cuts his stock long and in others short, and nails them up that way. He wants to build tasty houses and

probably thinks he is getting what he wants; and, while he is seemingly successful in selling them at a profit, there is no question but that he could more readily sell to a better profit if he gave better proportion to his houses.

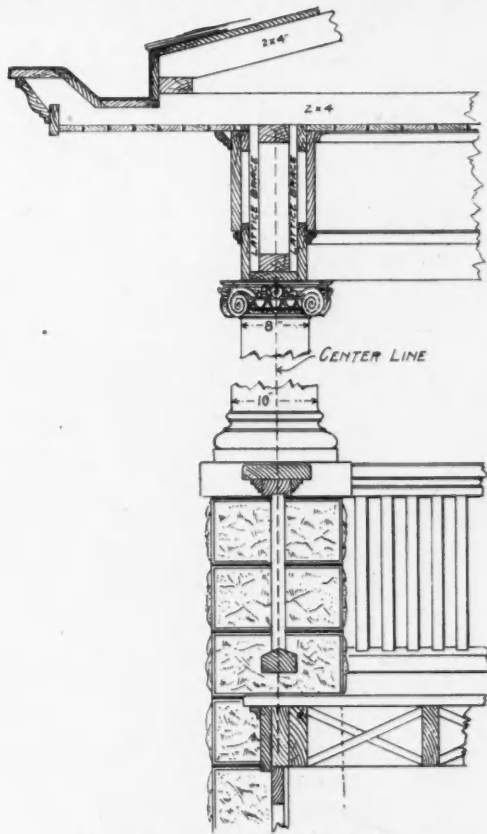
It was our lot to pass from two to four times a day on the cars by one of these houses then under construction. The whole work showed that he wanted to build a good looker; but he did not know how, so to speak, to cut the goods. He wanted a nice wide cornice and he built it wide; but he failed on the nice part because he lacked judgment of proportion. He built dormers on the roof, but he did not care for wide cornices on these, so he left them off. Here he had the two extremes, too wide and too narrow. The contrast was so great that if he could have heard some of the remarks of the passengers that glided by his house, his ears would be tingling yet. At least they were not of the kind that would indicate a prospective purchaser!

And so there are many other points encountered in the every-day house building that could just as well be made right as wrong, without extra cost and thereby adding greatly to the architectural effect. Like the experienced tailor, the skillful builder may take cheap goods and make an ideal fit just the same as he would from the finest of materials and that too with but a trifle extra expense, if any, to the owner.

Let us then study the proportions that enter into the more simple construction of our dwellings. For instance, let us take the porch which is found on most every house of any pretense. It is the first part of the house that the eye catches as we approach the entrance. It is here that the long hours of the hot summer days are spent in study and relaxation. Its proportions should have a restful effect to the eye as well as serving the comfort of the body. Yet, here is where some of the most noticeable misfits are made. Pass along any street and take notice of the cornice and supporting columns. Some will contain sagging lines, caused by not having frame work rigid enough to properly support the weight between the columns, which in many cases are placed too far apart, both for

looks and for proper support. Again, probably in the very next porch, probably too many columns are brought into use. In either case, the effect is bad.

But one of the most noticeable mistakes is found in the soffit. It is usually anything but the right width and does not rest properly with reference to the column. The width of the soffit should be governed by the diameter of the neck of the column. So to proportion it the builder should know the diameter of the column, where it rests on the base, which is the proper reckoning point for its height. But we will not stop to take up this part of the subject now, as it would furnish quite an article itself. The builder should know the size of the column at the base, he should also know the size of the column at the neck and should build his frame work accordingly, so that the finished soffit will exactly center over the column.



Showing Proper Relation of Parts

This may be easily accomplished by working from a center line through the column, as shown in the illustration, or better still, have the columns on the job; set them up in place and frame the work accordingly so that the soffit will center over it. In case of large columns, the soffit should be paneled to avoid a large plain surface.

Recently we saw what was intended to be a pretentious porch, but from lack of judgment in proportion the whole thing was spoiled in effect and what otherwise was a fairly well proportioned house was made an awkward misfit. Here cement block columns about eighteen inches square were built up and on top of this was a moulded cap, making the top about

twenty-four inches square. On this rested a frail looking wood cornice with about an eight inch soffit, leaving projecting ledges on both sides, which made a most excellent bird roost and not the best place to have it either! What should have been done was to have made the soffit the full width of the shaft and with a frieze and plancer more in keeping with the size of the columns. The soffit being wide for solid wood panels, wainscoting could have been used to good effect to form the recess panel, and by breaking a mould around same a simple, yet attractive finish could have been given the whole work without much additional cost.

And it does not stop here with the porch. Mistakes of this kind are generally carried clear through the house, cropping out here and there, from cellar to garret, both internally and externally. In short, the laying out of the plan is a study within itself. Like the expert cutter in the tailor shop, the architect lays out the pattern. Then other workmen take it up and carry out the work to perfection.



**Wages of Workmen in Building Trades**

Some interesting statistics have just been compiled by E. M. Craig, secretary of the Chicago Building Contractors' Council, showing the rates of wages paid workmen in the various branches of the building trades in Chicago, as contrasted with those paid in the same lines in 1902. From the table here given, it will be seen that the painters received the highest advance and the bricklayers and stone masons the lowest:

	—Per Hour—		Per Cent Increase
	1902	1910	
Bricklayers and stonemasons.....	\$0.60	\$0.67½	12.5
Structural ironworkers.....	.50	.65	30.0
Ornamental ironworkers.....	.50	.60	20.0
Plasterers, tilesetters, plumbers, steamfitters .....	.56¼	.68¾	22.2
Gasfitters .....	.50	.68¾	37.5
Carpenters .....	.50	.60	20.0
Painters .....	.40	.60	50.0
Stonecutters .....	.45	.62½	37.0
Electricians, lathers.....	.50	.68¾	37.5
Sheet metal workers.....	.42½	.60	41.2
Marble setters .....	.50	.62½	25.0
Cement finishers .....	.40	.57½	37.5

According to the authority above quoted, bricklayers in Kansas City secured an increase of 37.1 per cent since 1902, and in Providence, R. I., 35.4 per cent. Chicago led 24 other cities in the advance in wages for building workmen, the average for all trades being much higher than in any other city.



**No Cause for Worry**

Painter (to his servant)—Now carry this picture to the exhibition gallery. But be careful, for the paint is not quite dry yet.

Servant—Oh, that's all right. I'll put on an old coat.—*Fliegende Blaetter*.



## A Notable American Residence

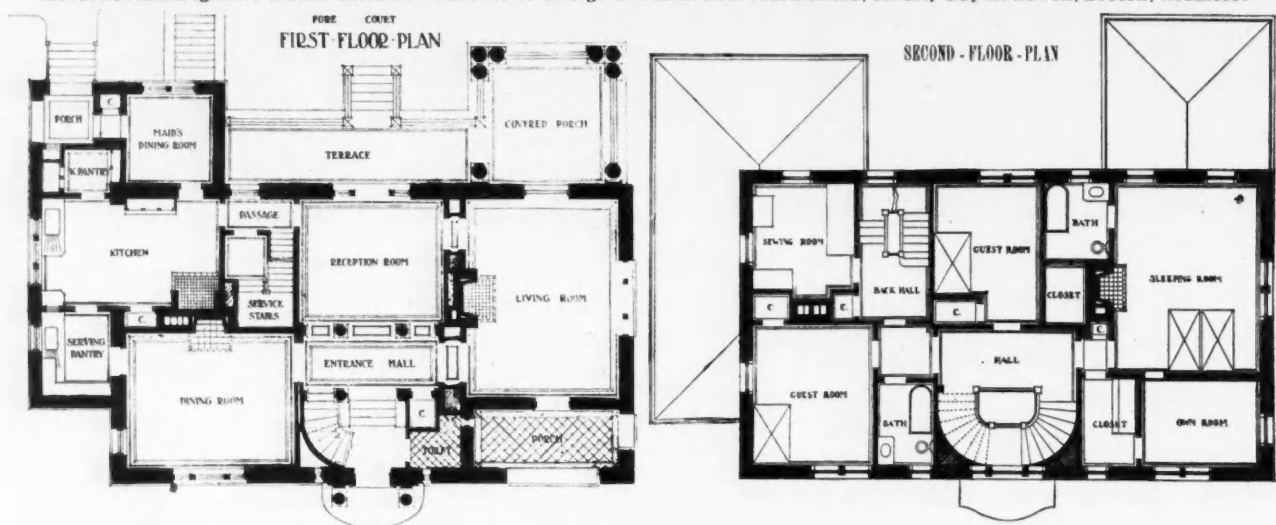
"WELDACRE" THE HOME OF MR. GEORGE E. SMITH AT PHILLIPS BEACH, MASS.—A DUTCH COLONIAL BRICK RESIDENCE OF EXCEPTIONAL BEAUTY

**S**TANDING back from the main highway that runs from Swampscott to Marblehead, in Massachusetts, is an example of pure Dutch Colonial architecture, the residence of Mr. George E. Smith, designed by Guy E. Lowell of Boston. In its well proportioned simplicity, its staunchness of construction, and its beauty of design, both exterior and interior, it

simplicity of its lines being relieved also at the front and rear by quaint dormer insertions. To the right of the entrance door is an attractive loggia, screened in and fitted up as a cosy lounging nook. At the rear of the house is a broad covered veranda, its roof supported by classic columns, which serves as an outdoor living-room. Connected with it, and shaded by an adjustable



Beautiful and Dignified Dutch Colonial Residence of George E. Smith near Marblehead, Mass., Guy E. Lowell, Boston, Architect



presents many aspects well worthy the careful study of all interested in residence work.

The house is constructed of red brick, with white painted trim and dark green blinds. The hip roof, shingled with slate, is built with a "flare," the severe

awning, is a smaller veranda, equipped as a breakfast room, and so used whenever the weather permits. From this side of the house the lawn slopes away in a great stretch of marshland and meadowland to the borders of old ocean.

The front entrance is an excellent example of the best type of the Colonial porch, and it is doubtful if a finer specimen is to be found along the entire shore. Its deep rounded hood is shingled and supported by finely fluted columns, painted white, the whole in striking contrast to the deep red of the house, and the varying greens of the surrounding lawns and shrubbery. The simple white painted door is ornamented with a handsome old-time brass knocker, and fitted with a quaint oblong glass insert, set a few inches from the top of the single panel.

The main hall is constructed on a slightly higher level than the vestibule, from which it is reached by a flight of oak steps. The stair hall is separated from the reception hall by handsome Ionic pillars, with enriched volute capitals. To the left a simple staircase, painted white with hand-rail of mahogany, rises in an elliptical well to the second floor, its landing half way

white, and of a design harmonizing with the balance of the trim.

Opposite this apartment and opening from the reception hall is the dining-room, one of the most attractive rooms in the entire house. It is pure Dutch-Colonial and is finished in a color scheme of blue and white. A deep paneled wainscot extends around the room, and above it on a level with the mantel shelf is a narrow plate rail. Above the wainscot is a pictorial frieze of beautiful design, in tones of Delft blue, green and soft browns. Complete working details for the finish in this dining-room are given on page 42.

In a separate wing, at the rear of the main portion of the dwelling, is the service department, reached from the central hall by a broad passageway, which opens at the left.

On the second floor are five large chambers and two finely appointed bath rooms. The third floor contains



The View From the Rear Is Out Over a Broad Meadow to the Ocean

up coming directly over the entrance doorway. The reception rooms, like the vestibule and stair hall, is finished in white wood, with wall hangings in tones of grey. It connects at the rear with the open veranda.

To the right of the hallway opens the living-room, or library, a large, pleasant apartment, connecting at the front with the loggia, and at the rear with the larger veranda. It is finished in white wood, its walls above the low paneled wainscoat, hung with grass cloth in tones of red. At one end of the room is a great brick fireplace, fitted with the majority of the old-time accessories, and above it extends a handsomely carved mantel of true colonial feeling. On either side of the apartment are low, glassed-in bookcases, painted

three additional bedrooms, a bath, and storage room. The house is lighted throughout with electricity, and all the doors on the main floor are of solid mahogany.

#### ◆ Making Bricks from Slag

Word comes from Queensland that the slag from the copper smelters is being made into good quality building bricks by being run into molds.

"The bricks have been found equally useful in the erection of offices and in the construction of water tanks, retaining walls, piers for ore bins, and bases for chimney stacks.

"The moulds used in making the bricks consist of two L-shaped cast iron plates, and mention may be



Entrance Hall Finished in White Enamel with Mahogany Doors and Hand Rail

made of the following features, which have proved important: First, the thickness of the metal, sufficient to chill the slag without becoming overheated; secondly, the reinforcing of the angles to minimize warp-



View of Living Room

ing; and, thirdly, the adaptation of these reinforcements to form distance pieces by which means space for air circulation is maintained between adjoining

moulds. These plates, having been set upon edge on the leveled surface of the slag dump, and arranged to form rows of twenty moulds or thereabouts, are banked up with one and one-half inches of dry sand or ashes.

"The slag is poured into the moulds from the ordinary hand-drawn slag pots, which are filled from the double bowl horse pots now in use on this mine. As soon as the bricks have solidified the moulds may be removed and set up afresh elsewhere. After from ten to fourteen hours the bricks are cool enough for handling. Their average weight is eighty pounds, and, when tested with the rough appliances available, they have successfully withstood a crushing stress of thirteen tons per square foot without showing any sign of strain or collapse."



### Correct

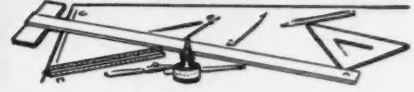
A teacher was examining his class, and he said: "I will give a quarter to any boy that can tell what nothing is." A small boy at the back of the class put up his hand, "Well, Willie, and what would you say it is?" "Please, teacher, it is a bung hole without a barrel around it." Willie got the quarter.



# DETAILS of CONSTRUCTION AND FINISH



CHARLES F. RAWSON



## Colonial Dining Room Trim—Wall Sections

TWO LARGE SIZE DETAIL PLATES. ONE SHOWING TRIM USED IN "WHITE" DINING ROOM ILLUSTRATED BELOW, THE OTHER GIVING CONSTRUCTION OF NINE TYPES OF OUTSIDE WALLS

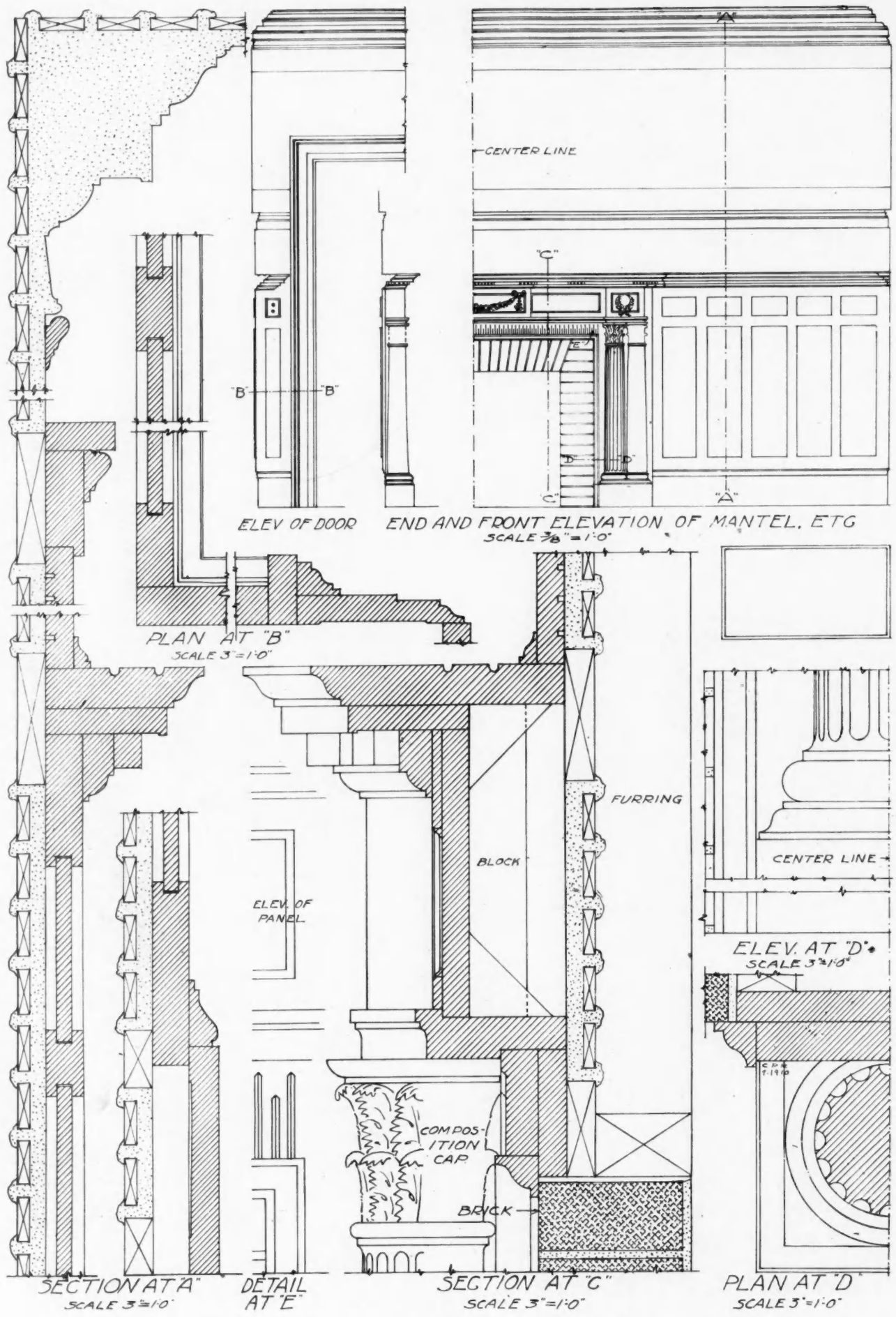
**T**HE DINING-ROOM illustrated below, details of which are given on the next page, emphasizes the two considerations that should take equal rank in the planning of a dining-room—convenience and cheerfulness. Convenience must come first; and a glance at the floor plan, page 38, will show that this element has been unusually well handled by the architect in this case. Cheerfulness is also a dominant feature, obtained more by the decorations and white enameled woodwork than by the number of spacing of the windows. The plaster ceiling and cornice

which are painted white also add greatly to the beauty of the room. A very unusual feature and one highly to be commended is the placing of the plate rail. If one is to be had at all, it seems that it should be below the top of the wainscot, thus keeping the plates below the level of the wall decorations. The details are drawn to the scales of three-eighths inch equals one foot and three inches equals one foot.

On the second page following, various common types of sill and wall constructions are detailed, the scale being three thirty-seconds inch equals one foot.

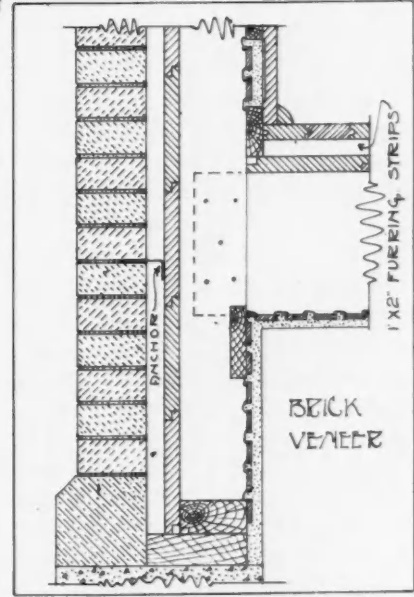
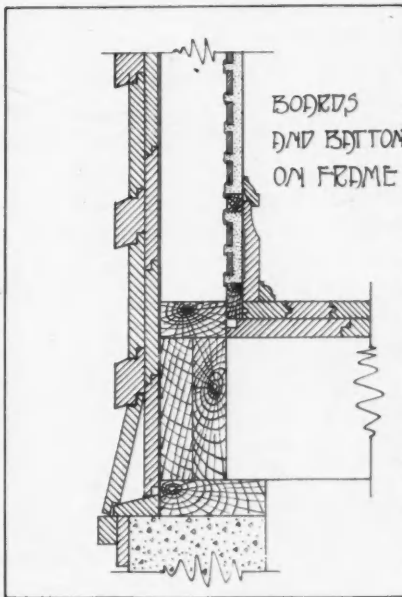
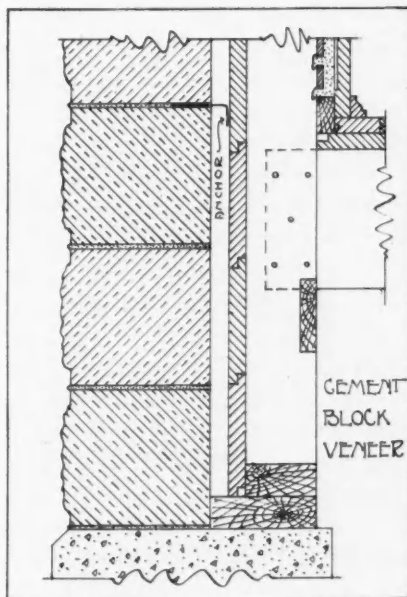
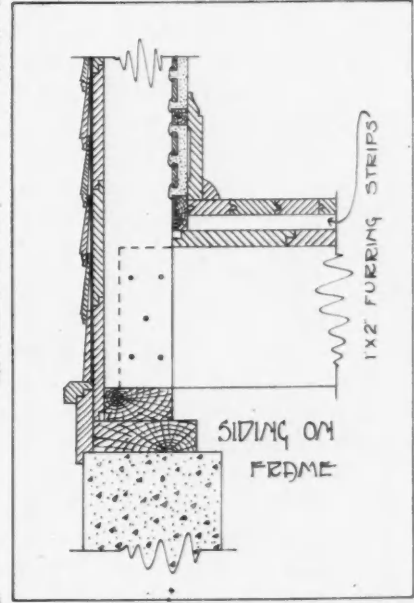
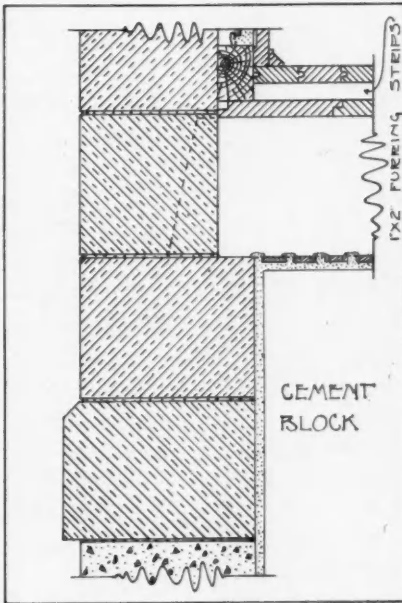
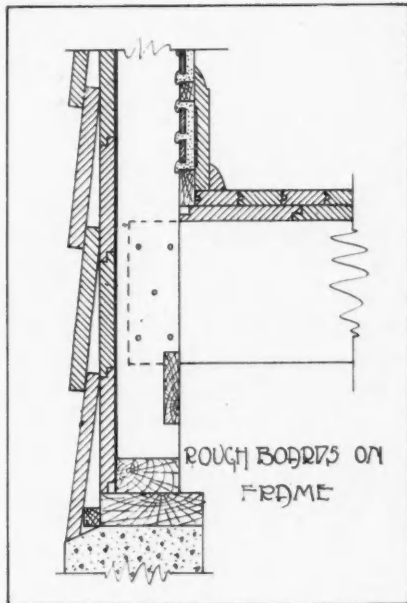
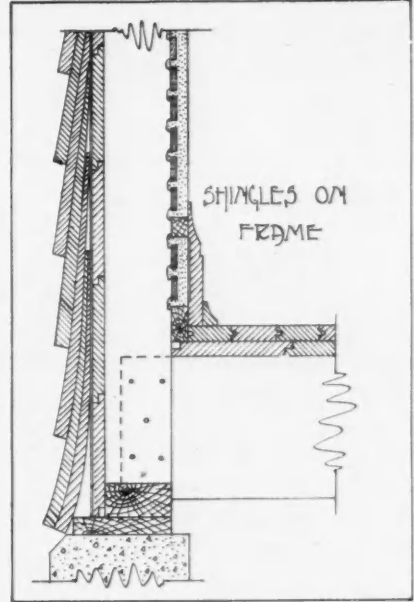
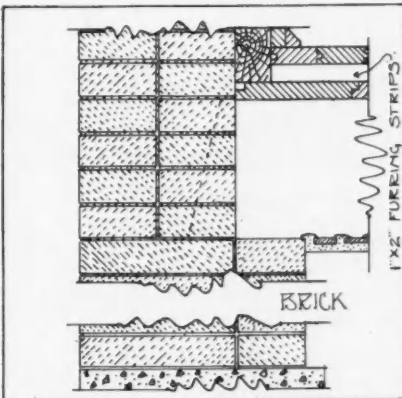
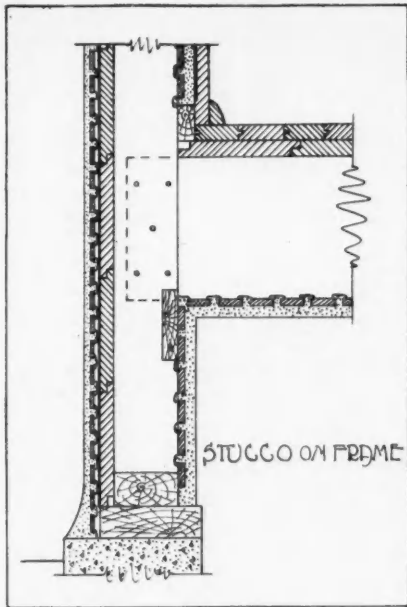


Colonial Dining Room in the Smith House, with High White Enamel Wainscot and Beautifully Colored Landscape Frieze  
COMPLETE DETAILS FOR THIS ROOM ARE SHOWN ON NEXT PAGE

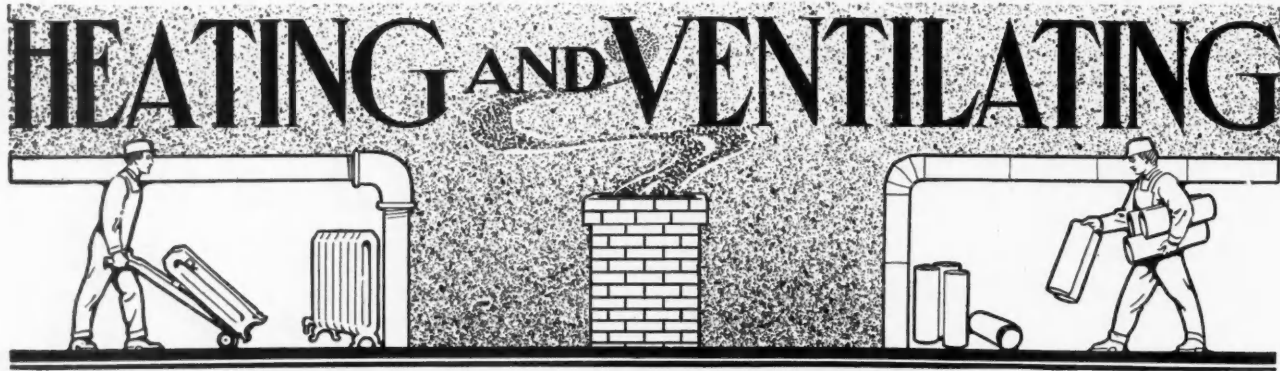


DETAILS OF TRIM FOR COLONIAL DINING ROOM

SECTIONS OF WALL & SILL  
 CONSTRUCTION  
 $\frac{3}{32}$  INCH = 1 INCH  
 KEY  
 CONCRETE BRICK STONE CEMENT BLK. WOOD







## “Too Much Fresh Air is Just Enough”

PORTIONS OF AN ADDRESS BEFORE THE RECENT CONVENTION OF MASTER SHEET METAL WORKERS  
—FURNACE HEATING AND VENTILATION—OPPORTUNITIES AND OBLIGATIONS FOR CONTRACTORS

By Wm. F. Colbert, M. D.

WE are living in a progressive age. We have seen wonderful improvements in machinery, in transportation facilities, in methods of communication, in building construction, etc. But, better still, we are living in a healthful and humanitarian age, an age in which Boards of Public Health, Anti-Tuberculosis Leagues, Housing Commissions and Civic Betterment Organizations, and many other agencies for good are active as never before in improving the living conditions of the people.

A recent development in this work has been a proper appreciation of the value of fresh air. In fact, authorities have come to realize that plenty of fresh air is even more important than proper food. This should have been realized long ago, for there is nothing new about the physiologist's saying that, "A man can live three weeks without food, three days without water, and three minutes without air." It does not require a savant to deduce from this, that fresh air is even more necessary to the well being of the human race than either pure water or pure food.

As a result of this somewhat belated appreciation of the value of fresh, pure air, the representatives of these societies, in addition to distributing pure milk, teaching mothers how to prepare cheap but nutritious meals, etc., are preaching the gospel of fresh air. This has been done with such decided success that a writer in a recent number of "Hampton's" Magazine mentions the fact that a new word, "Freshair," all one word, has crept into the Yiddish vocabulary in the slums of New York City.

A little more experience will impress these workers with the fact that it is impossible to secure much fresh air in winter unless some special provision is made for ventilation.

### A Vital Problem in Every House

However, the dwellers in the slum districts are not the only portion of our population who are injured by a lack of fresh air in their houses during the winter months. Any American home that is not warmed by

a purely indirect system of heating, with all the cold air supply taken from outdoors, suffers from a lack of fresh air during the winter months.

The Chicago Health Department is alive to this fact. Mr. E. R. Pritchard, the Secretary of the Department of Health of the City of Chicago, at the meeting of the Midland Club, June 28, 1910, said: "In fact, so marked has been the increase of the death rate from pneumonia and the bad-air diseases in Chicago during the past ten years, that we have named pneumonia as the New Captain of the Men of Death, and we have come to regard the steam-heated flat, with its dry and overheated atmosphere, a serious menace to public health. It was the discovery of the indoor conditions under which so many people in Chicago were living, that prompted the Department of Health to start the campaign for fresh air, which it is still waging with all the forces it can command." He also refers to "steam heated tunnels" called, by courtesy, flats or apartments.

So much for the condition of the air in our homes during the winter months, when direct radiation is used as a heating medium. But don't delude yourselves into the belief that because an *indirect system* of heating is used, the air in the house is as pure as it should be in all cases. Indoor air is sufficiently pure when a gravity system of ventilation is installed in connection with the indirect system of heating, with all outdoor air supply. But when the gravity system of ventilation is omitted, it sometimes happens that the building is so airtight that not sufficient air leaks out to permit the house to be properly heated by a purely indirect system of heating. When you fail to secure enough air leakage to permit the introduction of sufficient volumes of fresh warmed air to properly heat a room to 70° Fahr. in zero weather, with the incoming warm air at a temperature of 140° to 160° Fahr., it is a certainty that you have also failed to secure enough leakage to provide sufficient ventilation.

To provide sufficient ventilation in ordinary winter

weather, 25° to 35° Fahr., the register temperature should not exceed 130° Fahr.

#### **Do not Install Return Circulation**

The use of *return* circulation of air, either partial or complete, in residence heating cannot have other than an unfavorable effect on the health of the occupants of the home.

The complete return circulation of air is as bad as the use of direct steam or hot water radiation so far as ventilation is concerned. Theoretically, this method would be far more economical than a ventilating system; practically, the difference in fuel consumption is not very great. Any slight advantage in heating economy is overbalanced by the disadvantage in heating efficiency. Return circulated air is more readily affected by wind pressure than any other indirect system of heating.

Partial return circulation of air is nearly as bad as complete return circulation. The plea is made that the air is only returned from the first floor at night, when every one is presumably in bed and the first floor is deserted. That is very good in theory, but the fact is that people use the return circulation all of the time. Partial return circulation of air creates currents of cool air that have an unfavorable effect on heating efficiency. Furthermore, if the partial return circulation is used *only* during sleeping hours, the saving in fuel is theoretically only about 8%, and in practice it would not exceed 4%, because the return circulation is not at all positive in action. I submit the fact that in the average home this would mean a fuel saving not to exceed \$4.00 a season. Rather a small saving and not worth while when one considers the fact that people use the partial return circulation at all times, and as a result have insufficient ventilation, instead of using it at night only, as intended by the designer of the system.

#### **The Heating Contractor's Obligation**

When this fact is pointed out to some men, they say it is not their fault if people do not use the system as they intended it to be used. As there is no printed list of directions furnished with a partial return circulation system, this verbal evasion always reminds me of Cains' question—"Am I my brother's keeper?" The man who evades responsibility for the welfare of fellow beings, who have entrusted him with a contract to heat their home, without injuring their health, cannot be classed as a humanitarian.

There are many architects, heating engineers and building contractors, as well as sheet metal workers, who believe that a warm air furnace system, with all outdoor cold air supply and a gravity system of ventilation, provides too much ventilation. Such a thing as too much ventilation is impossible. Dr. Evans, the Health Commissioner of Chicago, uses a terse sentence, which exactly states the truth—"Too much fresh air is just enough." Burton Hendrick's excellent story,

"Oxygenizing a City," in a recent number of "McClure's" magazine, is the best corrective that I can prescribe for that large section of the community who suffer from a form of "brainstorm," whose symptoms may be best described as a horror of any system of heating that will introduce fresh air into the home and an uncanny delight in living with one foot in the grave.

However, for the benefit of those who believe that a warm air furnace system, with all outdoor cold air supply and a gravity system of ventilation, provides too much ventilation, I would state that such a system of heating will provide in a living room of ordinary size, good ventilation for three to five persons, according to the proportion of exposed wall and glass surface. Bedrooms are usually smaller than living rooms, have lower ceiling and smaller windows, so that the bedroom usually requires only a little over one-half the air supply that must be delivered to a living room to properly warm it. Is it not ridiculous to advocate a complete or even a partial return air circulation, which will greatly reduce the amount of fresh air poured into the rooms?

The humanitarian mission of the sheet metal worker can only be fulfilled by those men who are willing to think, talk, advertise and do warm air furnace heating of the right sort, i. e., with a furnace that is adequate to do the work imposed on it, with properly proportioned warm air piping, with all outdoor cold air supply, with ventilating ducts and with proper provision for humidifying the air.

The furnace that is adequate to do the work imposed on it and properly proportioned warm air piping should be furnished by the heating contractor as a matter of business honor. The outdoor cold air supply (with no return circulation and with no cellar-air supply), the system of ventilation ducts and the proper provision for humidifying the air, are the items that the sheet metal worker must strive to have included in his heating contracts if he would succeed in fulfilling his humanitarian mission in life, for it is only where he succeeds in having these items included in a residence heating contract that he secures a contract for the most healthful system of heating. Every time the sheet metal worker secures a contract of this sort, not only has he done something that will have a good influence on the health of his customer and his family, but he has also indirectly raised the standard of health in the community. The sheet metal worker should take a keen interest, not only in the science of heating, but also in ventilation and air conditioning. A broad knowledge of all three will give him an implicit confidence in furnace heating that he cannot secure in any other way, and the confidence thus gained is a money maker—confidence inspires confidence—for it will have a most favorable effect on prospective customers.

You may say people will not pay the difference in price between the kind of heating done by the ordi-

nary do-it-the-easiest-way heating contractor, and the man who is trying to live up to his humanitarian mission in the great scheme of life—I say that they will pay the difference in price, if you will do the things that you must do to live up to your humanitarian mission in life, i. e., think, talk, and advertsie as well as do warm air furnace heating of the right sort. Before a man pays you more money than he would pay

another contractor, he wants to know the reasons for the greater cost. The man who thinks in terms of the right sort of furnace heating will have little trouble in supplying reasons that will convince the average man that the increased outlay is well worth while. Remember that the man who admits that his price is regulated by his competitors' price admits that he lacks the force possessed by a truly successful man.

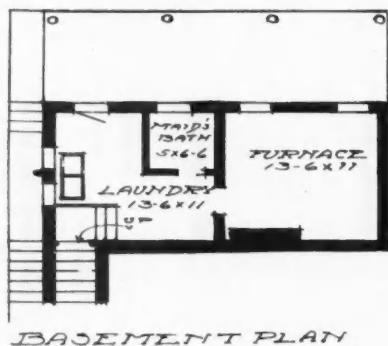
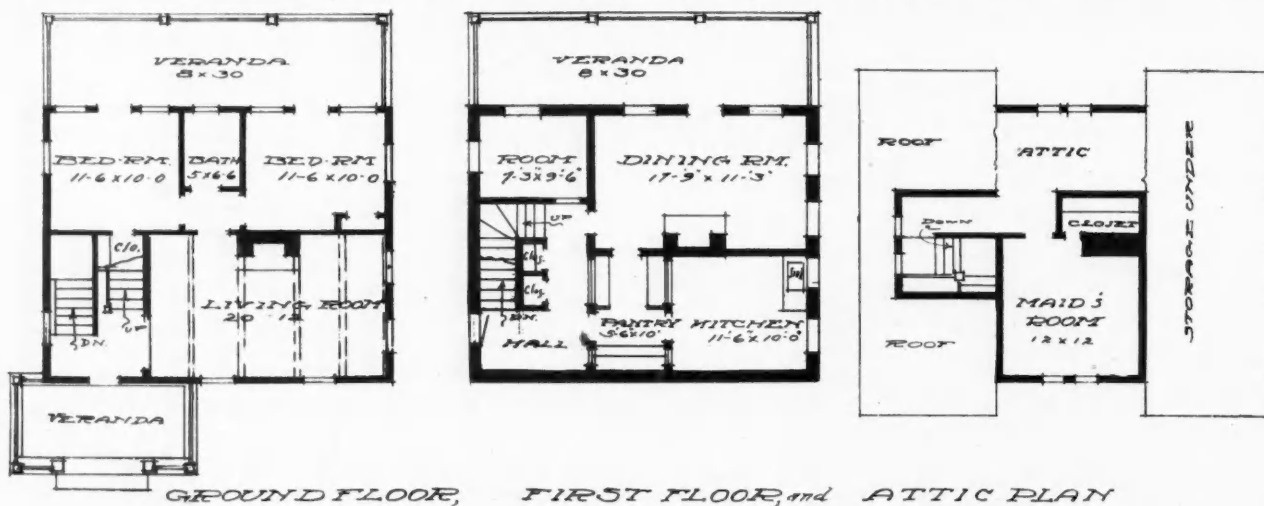
## The Problem of the Steeply Sloping Lot

ALMOST EVERY LOCALITY HAS STEEP SIDE-HILL SITES, CONSIDERED WORTHLESS FOR BUILDING PURPOSES—HOW SUCH MAY BE IMPROVED BY PROPER BUILDING

By O. S. Lang

**P**ITTSBURG, like many other cities built upon hilly ground, taxes the ingenuity of the architect and builder to utilize the many side hill sites without sacrificing either beauty or utility or adding unnecessarily to the expense. Nevertheless, hills and ravines are valuable adjuncts toward beautifying

frame bungalows different in exterior design, but with rooms arranged the same in each. There is, on the main floor, a large living room, two bedrooms, bath and reception hall. There is also a rear outside sleeping porch 8 by 30 feet enclosed with glass for winter and screens for summer, which commands a view for



### Floor Plans of Side Hill Bungalow

Interior Arrangement the same in all 3 Houses—Exteriors Different.

miles down the ravine to the Monongehela River. There is one good sleeping room in the attic space above. From the hall a plain, neat stairway leads down to another story enclosed with brick walls. Upon this floor there is a large dining-room, kitchen, maid's room and entrance hall. Here likewise there is a rear veranda full width of the house. From the entrance hall another stairway leads down to the laundry, fur-

the surroundings of the home, provided we can accept and use them, fitting our developments to their natural slopes.

The houses here shown were planned and built by O. S. Lang, architect of Buffalo, upon a sloping lot in Pittsburg, so steep as to be considered nearly valueless, the grade being about 45 degrees to another street 150 feet below. To fill would be practically impossible; to build an ordinary house would mean a rear wall entirely out of proportion.

These houses, as they show from the street, are



Perspective of Side Hill Bungalow



nace room and maid's bath-room. This floor is enclosed with brick walls and extends under only half of the house. An outside door from the laundry opens upon a rear porch, floored with concrete; and

the wild natural surroundings harmonizes perfectly. The interiors are plastered with rough cast, tinted with wax transparent paints in colors of tan, yellow, green and brown. The woodwork is plain finished in dark



Street View—Three Attractive Bungalows Built in Pittsburg on a Steeply Sloping Lot

the grade of the lot is leveled off at this point.

There are concrete outside steps and walk rising about 13 feet to the street grade above. The lots are graded in two terraces, using all of the side hill as

mission. There are two complete tile bath rooms, hot air furnace, instantaneous hot water heaters.

The cost of each, though somewhat different in appearance, was about the same; the contract price

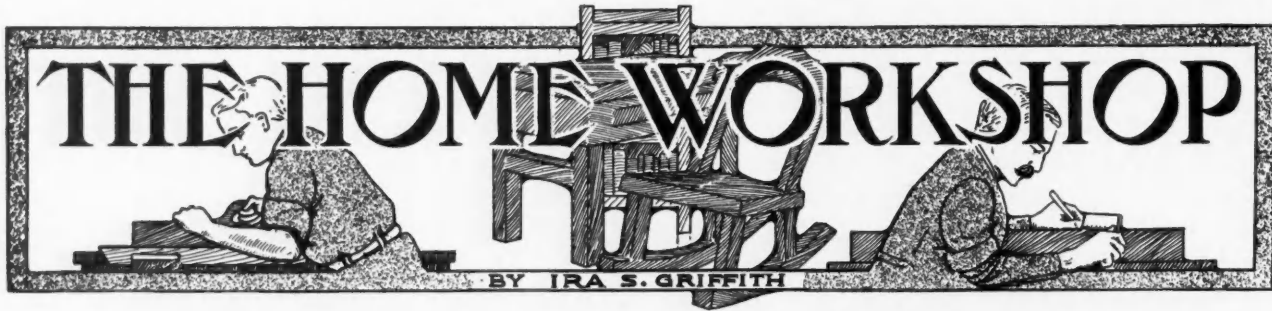


Rear View—Lots are Terraced—First Floor With Dining Room and Kitchen is Below Street Grade

lawn and garden, grading with the dirt left by nature and requiring no more.

All exterior woodwork is finished with clear cypress stained brown, the roofs are moss green, which with

being about \$5,000.00, or \$15,000 for the three. The houses and lots sold for \$8,500 each, netting the owner a very handsome margin for the price of his valueless lots.



## Two Simple Pieces of Handicraft

DETAILED INSTRUCTIONS FOR MAKING A PLANT STAND AND AN UMBRELLA STAND—HOW TO HAMMER SHEET COPPER—SUMATRA BROWN FINISH

**T**HE plant stand or taboret will be found a convenient piece of furniture upon which to place the foliage plant such as can be found in most every home. It is not a difficult piece to make and requires comparatively little wood.

There will be required the following pieces:

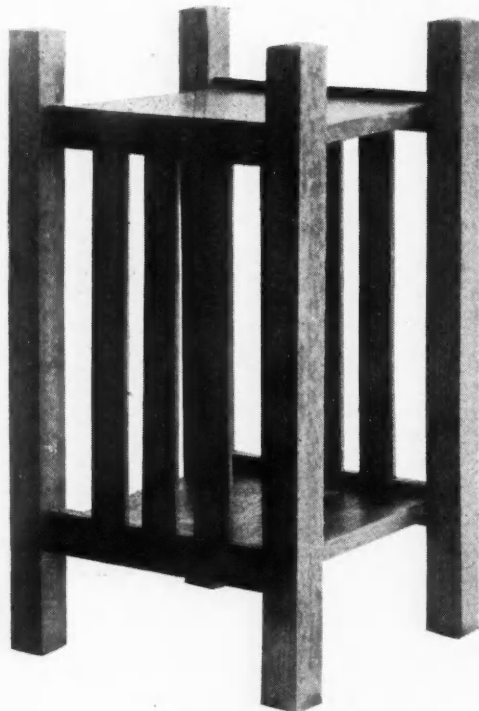
### STOCK BILL FOR PLANT STAND.

Posts, 4 pieces,  $1\frac{3}{4}$  by  $1\frac{3}{4}$  by  $22\frac{1}{2}$  inches, S-4-S.  
 Horizontals of rails, 2 pieces, 1 by 2 by 12 inches, S-4-S.  
 Horizontals or rails, 2 pieces, 1 by 2 by 12 inches, S-4-S.  
 Slats, 6 pieces,  $\frac{3}{8}$  by  $1\frac{1}{2}$  by  $12\frac{1}{4}$  inches, S-4-S.  
 Shelves, 2 pieces,  $\frac{7}{8}$  by  $10\frac{1}{2}$  by 12 inches, S-2-S.

The best material to use is quarter sawed white oak, though any other hard wood might be used if the white oak is not available. A beginner might use soft wood, such as poplar, and by staining the wood with

man should order his piece a little wider than the bill above specifies.

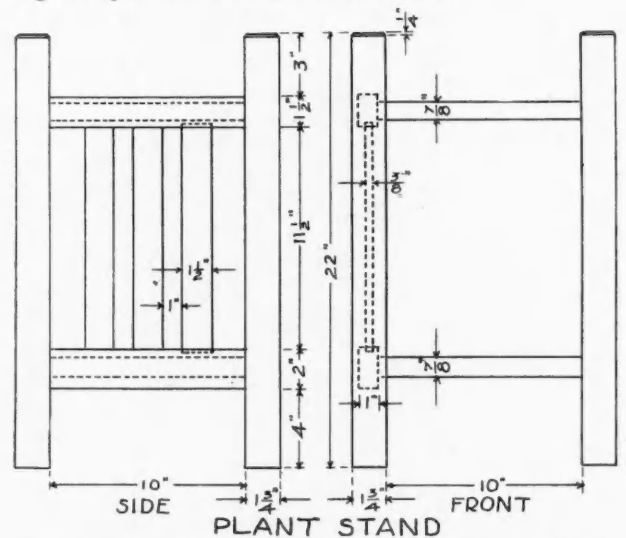
Begin work on the posts, squaring up the lower ends of each. Next measure the length on one of them and by placing them side by side on the bench and evening the squared ends, square a line across all of them at the point so marked. Use knife and try-square in doing this. Put a slight chamfer on the lower ends of the posts so that they will not sliver through usage. Also put a chamfer on the top ends, or, if desired, a slight slope from the sides to the center.



Plant Stand of White Oak

some of the popular stains now on the market, get a fairly satisfactory piece.

The stock bill calls for most of the pieces squared to exact width and thickness. Should it not be possible or desirable to have the mill do this, the crafts-



Stand the posts up in the positions they are to have relative to one another in the finished piece, face sides "in," and mark roughly as with penciled circle, the approximate locations of the mortises for the tenons of the rails or cross ties. Place the pieces on the bench side by side, even the lower ends by means of the try-square and then measure off on one of the posts the exact positions for the ends of the mortises. With the try-square and a sharp pencil square lines across all the pieces that are to have corresponding mortises. Gauge the sides of the mortises, keeping the head of the gauge always against one or the other of the faces. The gaugings for the sides of the mortises can and ought to be done with but two settings of the gauge—once for the lines nearest the faces and once for the lines that locate the far sides of the mortises.

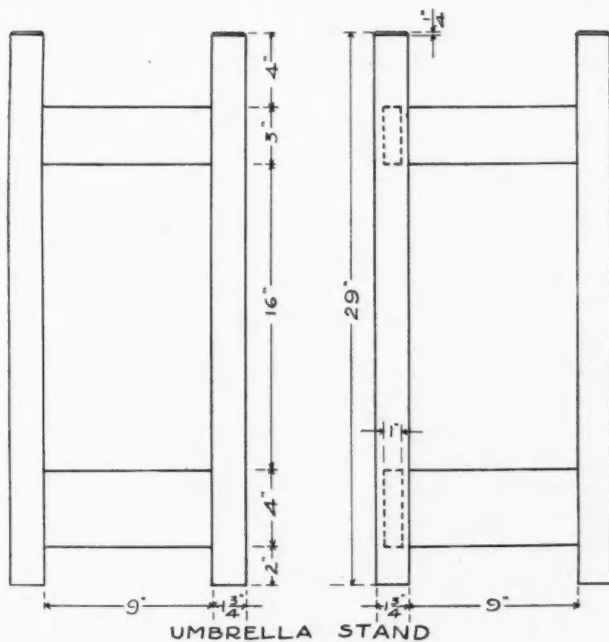
Having marked the mortises in the posts the next

step is to cut them. After this, lay out and mark the rails to proper length. Since the ends of these rails are to be tenoned it will not be necessary to square them up with the plane, only saw them square to the lines. Place the pieces together, even the ends and measure and mark the shoulder lines. Set the gauge and gauge for the sides of the tenons, keeping the gauge block against the face side or face edge. On this one-inch stock the tenons may be made three-eighths or one-half inch thick with a similar amount shouldered on the edges and with a length of three-fourths or one inch.

Into the edges of these rails are to be "let" the ends of the vertical slats. Cut the mortises of a sufficient size to take in the entire end; this is much easier and much more likely to produce satisfactory joints than to attempt to shoulder the ends of the slats. "Let the ends in" about one-fourth or three-eighths of an inch. Place the four pieces together and knife or lay out the ends of the mortises of all of them at once. Separate them and gauge the sides of the mortises.

The inner surfaces of the rails are to be ploughed to a depth of one-fourth of an inch and of a width sufficient to take in the ends of the shelves. This should not be done, however, until the shelves have been surfaced and squared to size.

Thoroughly scrape and sandpaper all the parts and put the sides that have the slats together, using good,



hot glue. After the glue has hardened on these, the clamps may be removed and the surplus glue scraped off and the shelves put in place.

#### Sumatra Brown Finish

A suitable finish for this piece is obtained as follows: Apply a coat of Sumatra water stain. Allow this to dry over night, then apply a second coat of the same stain diluted by the addition of an equal volume of water. This is to make a stronger contrast. Sand-

paper lightly both of the coats of stain after they have dried, using number 00 paper.

Upon this last coat of stain put a very thin coat of shellac. Be sure that it is thin, otherwise the shellac will gloss and spoil the effect desired—it is used merely to hold the filler in place and to keep the stain in the filler from affecting the high lights of the wood-finish. Being thin, it does not fill up the pores or in any way interfere with the application of the filler.

On this coat of shellac, after it has been smoothed with fine sandpaper, apply the filler according to the directions that will be found on the filler can. A dark paste filler should be used. On the filler, after it has hardened and been smoothed with sandpaper, put a coat of orange shellac. Follow the shellac with two coats of some good rubbing varnish. The first coats should be rubbed with hair cloth or curled hair and the last coat with pulverized pumice stone and crude or raw linseed oil. This produces an effect known as egg shell gloss and is a most satisfactory finish. Sumatra brown is dark brown in general effect with the highlights standing out in reddish brown, giving a rich, warm color effect.



Umbrella Stand with Copper Drip Pan.

#### How to Make the Umbrella Stand

Another piece of simple design and construction is the umbrella stand shown in the accompanying picture. It can best be made of some hard wood, such as oak, and may be finished in a manner similar to that described for the plant stand.

The following pieces of stock will be needed:

Posts, 4 pieces,  $1\frac{3}{4}$  by  $1\frac{3}{4}$  by  $29\frac{1}{2}$  inches, S-4-S.

Lower rails, 4 pieces, 1 by 4 by 10 inches, S-4-S.

Upper rails, 4 pieces, 1 by 3 by 10 inches, S-4-S.

Square up the ends of the posts as was described for the plant stand and set up the posts in position, faces in, and mark the locations of the mortises roughly. The method of procedure for laying out the mortises and tenons is the same as that just described for the plant stand, the dimensions being indicated in the accompanying drawing.



Two of the sides should be made and glued up and allowed to dry, after which the remaining rails may be placed. Make sure that the posts are square with the rails, the clamps may be shifted one way or the other to accomplish this should it be found out of square. Then, too, see that the sides of the stand form right angles one with another. This can be told by measuring the diagonals of the stand by means of two short sticks held as a slide rule. If the diagonals are equal the stand is square. If not, a clamp will need to be applied across the stand and the longer diagonal shortened until it corresponds with the other.

#### Shaping the Copper Drip-Pan

There will be needed to be made a drip-pan for the bottom. This may be made of either copper or brass, some metal that will not rust. It should be made large enough to rest on the lower rails, the corners being cut out to allow it to rest around the posts properly. To make the depression, first prepare a block of wood about three inches by three inches by six inches. In one end of this make a hollow about one-

half an inch deep having a diameter of about one and one-half inches.

Mark off, on the metal, a series of concentric rings, using the center of the metal for a center. Make a wooden mallet with one end rounded. Place the copper on the block and, beginning at the center, beat the copper over the hole in the block, gradually turning the copper around the center and working out along the rings toward the outer ring. Should the copper tend to buckle, turn it over and beat it to shape. Continue this until the desired depth is obtained. Do not attempt to make a deep pan. Repeated beatings will necessitate annealing the copper to make it malleable—this is done by heating the metal over a gas flame to a cherry red then dipping in water—but this is not necessary with the shallow pan.

If desired, instead of a circular depression the metal may be worked into a square depression.

The two pieces, pictures of which are shown, were made by pupils of the Oak Park and River Forest High Schools.

## Development and Use of Metal Ceilings

By Al. Langenbach

**W**HEN one observes the extended use of metal ceilings in modern buildings, the curiosity is aroused as to how this excellent building material came to be first thought of and used. As far back as 1840 we have records of metal ceilings being used by the Germans in the construction of large buildings and factory rooms. But at that time their artistic possibilities were not dreamed of; their merit lay solely in their being fireproof. Just how long these first ceilings endured is not positively known, but as they were not exposed to the elements, it is thought they outlived the buildings in which they were used.

These first ceilings were shallow embossed steel sheets—embossed more to fit evenly than for any other reason. Their use was restricted to buildings in which they were absolutely necessary, no one fore-

seeing to what length the idea might be improved.

Up to the year 1895, the metal ceiling industry in America remained practically undeveloped. A few manufacturers, it is true, made ceilings before that time, but they were lacking in artistic effect and were seldom used in any buildings but those necessitating absolute fireproof construction. The designs were of the straight line variety necessitating only shallow embossing, which turned out sheets very unattractive at best. Not that metal ceilings hadn't noticeably improved since their origin, for they had; but the result of these improvements was merely the production of ceilings of stereotyped designs which failed to appeal to the artistic eye. They were also hard to apply, as they were made in small steel sheets. Architects ignored them and used other forms of interior trimming which produced better decorative effect.



Beautiful Metal Ceiling in Modern Residence



Sheet Metal in Plastic Relief Effects

This was the situation in this country up to 15 years ago. Yet it was evident that there was a real field for metal ceilings and that they would gladly be used if a range of artistic design and variety could be had. The idea was conceived by the Berger Mfg. Co. that steel dies could be made to produce ceilings of designs different from any before used; these were to be true classical designs. Up to this time deep embossing was regarded as impossible with the sheet metal used. As nearly all of these classical designs required very deep embossing, radical changes had to be made, both in the form and construction of the dies and in the processes of pressing so as to successfully reproduce these ceilings without breaking the sheet metal during the process. After a long period of experimenting, these difficulties were surmounted and many minor improvements were incorporated facilitating ease of application. So now the popularity of these modern ceilings may be observed in nearly every large building constructed during the past ten years.

Beautiful dome and beamed effects are now pos-



Metal Ceilings for Drug Store—Fire-Proof

sible on account of the ceilings being made in forms as well as in sheets. All parts are shaped for easy application and perfect matching. Eleven basic, classic designs have been adopted, embracing Greek, Roman, Romanesque, Gothic, French, Italian and German Renaissance, Rococo, Moorish, Empire and Colonial Art. From these basic designs, which include heavy cornice and border forms, center plates, et cetera, hundreds of beautiful combinations are offered to select from. For large churches, public buildings, and structures built along artistic lines, where architectural

style requires special designs, unique combinations are offered for the builders' selection.

It is difficult to foretell the future of the use of metal ceilings. Though their adaptability has hereto-



Embossed Metal Ceiling in New York Hotel

fore been largely confined to ceilings, they are now coming into wide use for beautiful wall coverings. There is no reason to believe that their popularity for the latter use will not be as widespread as it has proved in the former. At any rate, since the "artistic" obstacle has been removed, it is reasonable to believe that they will be very widely used for ceiling decoration before long, not only in large buildings and stores, but in residence construction as well.

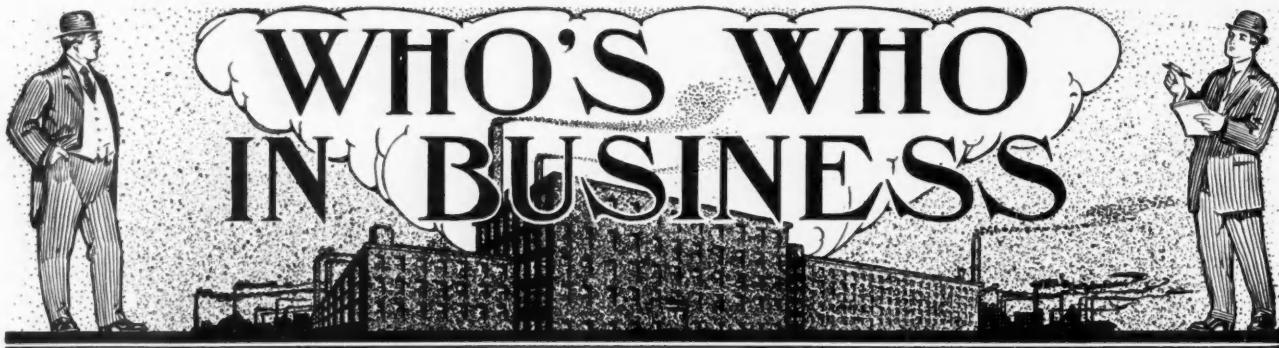
+

#### Beams in "Genuine" Mill Construction

"Mill construction of the genuine kind," says F. W. Dean, of Boston, in a recent paper, "and that which the mutual insurance companies seek to encourage, and as far as possible the only kind that they will tolerate, contemplates the smallest possible number of large wood beams for floors and roof, all running in one direction, covered with thick plank. A floor system with bays so wide that beams running at right angles to the main transverse beam are required, is not mill construction and is not desirable. It is not desirable because it is complicated, the supplementary beams are likely to be supported by non-fire resisting connections, and sprinkling is less effective and more difficult and expensive to install than with the genuine kind.

"Mill construction contemplates the use of wood beams instead of steel, because in case of fire the latter when heated lose their strength and the floors fall with great loss to building and machinery. In the case of wood beams the fire is usually put out by sprinklers and otherwise before the beams lose sufficient strength to produce this result.

"The beams of wood floors are of long-leaf Southern pine or Northwestern pine, the latter being used only in the West, Northwest and Canada. The beams are usually planed on three sides and with the lower corners chamfered."



## The Rapid Rise of R. C. Hupp

**E**IGHT years ago Robert Craig Hupp knew nothing of the manufacture of automobiles. But he had an unconquerable determination to find out.

Today he is the moving spirit in eight sound Detroit companies—three of them producing motor driven vehicles—and is the only man at the head of the automobile plant who has risen to his place from a mechanic's job in the shops.

That is the result of his determination to find out—to begin at the beginning and go on and on, learning all the ins and outs of a business then in its very infancy.

R. C. Hupp foresaw the possibilities of the automobile industry when he was 25 years old. The automobile was new; it seemed to hold forth the brightest promise.

So in 1902 Mr. Hupp went into the shops of the Olds Motor works, at that time located in Detroit. He helped assemble motors for the famous old curved dash Olds cars, and took his first lessons in the building of automobiles.

For years he worked at the bench and grounded himself in the mechanical department of the business. Then came an opportunity to go into the office and it was welcomed. Here he came into contact with all departments and all phases of an intricate business. His experience with the Olds works covered a period of three years, and in the autumn of 1905 he left and went to Chicago.

Nine months later he returned to Detroit and became a member of the Ford organization, which at that time was wrestling with the problem of building 10,000 four-cylinder runabouts. Until January, 1908, he remained with the Ford company and left to become the organizer of a new company.

In the years that had passed since he entered the industry, Mr. Hupp had come to have some ideas and plans of his own. He had never had a free hand to put them into execution; and in his new connection was restricted as much as he had been theretofore.

But for this there might never have been a Hupmobile.

Mr. Hupp had foreseen the demand for a car of moderate size and price which would compare in build and appearance with the largest and costliest. The market at that time—1908—offered no such car.

Mr. Hupp was so certain of the success of such an automobile as he had in mind that he had no misgivings in withdrawing from his associates and placing his proposition before Detroit capitalists.

The idea was so big and so revolutionary that capital was at first inclined to be shy, yet there was no real difficulty in securing enough money to equip a small plant and buy the materials for the building of a few hundred cars.

So the Hupp Motor Car Company came into being, and Mr. Hupp gathered about him an able organiza-

tion to carry out his plans. Work was begun at once on the first Hupmobile, but none save a few were any the wiser until March of 1909. Since the preceding November the first Hupmobile had been in test.

At the time the car was introduced it was planned to build 500. The company occupied a small factory on Bellevue avenue.

The success of the Hupmobile was so instantaneous and pronounced that plans were at once made for the erection of a large factory building at Jefferson and Concord avenues. This was rushed to completion, occupied in the following August and the production of 5,000 cars for 1910 was begun.



**R. C. HUPP**  
President Hupp Motor Car Co.



Mr. Hupp remains in active direction of the Hupp Motor Car Co., and his surplus energy has found outlet in the organization of seven other Detroit concerns.

Thus the automobile industry records another story of rapid and brilliant success.

Mr. Hupp advances some interesting thoughts concerning the present and future status of the automobile industry, and, incidentally, points out that the acquisition of motor cars is far from an extravagance—particularly as pertains to farmers.

"As a matter of fact," said Mr. Hupp, "the automobile is a very valuable addition to the farmer's business, and no more extravagant than owning horses.

For long distances the automobile saves money for the farmer when used in place of the horse. The good that the automobile has done for this country is very great. It has been the most potent factor in forcing the improvement of roads, and certainly when we have good roads throughout the country, the whole population will be greatly benefited and all land will be made more valuable."

Turning to the other side of the question—the talk of the business falling off, Mr. Hupp said that the manufacturers of first-class cars throughout the country have not been able to take care of their orders, and, practically speaking, there has been no over-production.

## The Voss Mantel Company

**E**VER since the founding of the Voss Mantel Company in 1885, by August F. Voss, for 23 years its magnetic center and controlling spirit, the growth of the business has been a consistent and healthy one, even through periods of National depression.

It is worthy of note, as an illustration of the fair treatment accorded the men in the employment of this company, that 25 years ago there were 22 men on the pay roll, 12 of whom are still with the company. It has been a wise policy of the company to always recognize and to suitably reward faithful and efficient service.

Mr. August F. Voss, the founder of the business, died in 1908, his son, Louis C. Voss, succeeding him. Even as a boy he employed his summer vacation in his father's factory; and now there is not a detail connected with manufacturing the product with which he is not familiar and an expert. At the age of 14, having left school, he entered the shops, and came up from the bottom by his ability and tireless efforts. At the age of 20 he was one of the company's salesmen; at 23 sales

manager, and at 27 was appointed to fill the place made vacant by the death of his father.

The future of the company is assured, because of his strict adherence to the founder's high ideals of integrity and wise business policy. All who were acquainted with the late August F. Voss, agree that his mantle has fallen upon his son and successor, who is in every sense qualified by experience and training to carry on the business to still greater success.

The personal element in the building of a mantel business is so important that were this business too large to receive personal supervision, it would prove a misfortune to their product and their customers.

The success of the Voss company has been due largely to the painstaking, personal attention on the part of the management to details of design and workmanship in the process of construction. The continued success of this company and its repu-

tation for fair dealing is doubtless the result of considerate treatment accorded its customers by members of the company who are personally interested in the



LOUIS C. VOSS  
President Voss Mantel Company

placement of their product and in the purchaser's satisfaction. The factory is one of the largest in the middle west, covering two acres and having a floor space of sixty thousand square feet. It is thoroughly equipped with all modern wood working machinery. The yards are ample to carry a two years' supply of lumber.

Plenty of light and fresh air makes the shop a most desirable place to work and enables the men to produce the high class of workmanship for which "Voss Quality" mantles are famous. It is a well-known fact that

mere quantity and quality facilities count for little in themselves, except when combined with the personal attention from men intent upon meeting the customers' requirements. While the plant and facilities of the Voss Mantle Company have grown in recent years, the efficiency of their organization has been maintained. The company is now on the threshold of the broadest and most elaborate campaign of advertising.

Thus, while they have reached the matured age, they are stronger, feel younger and are better equipped to turn out more mantels than ever before in their history.

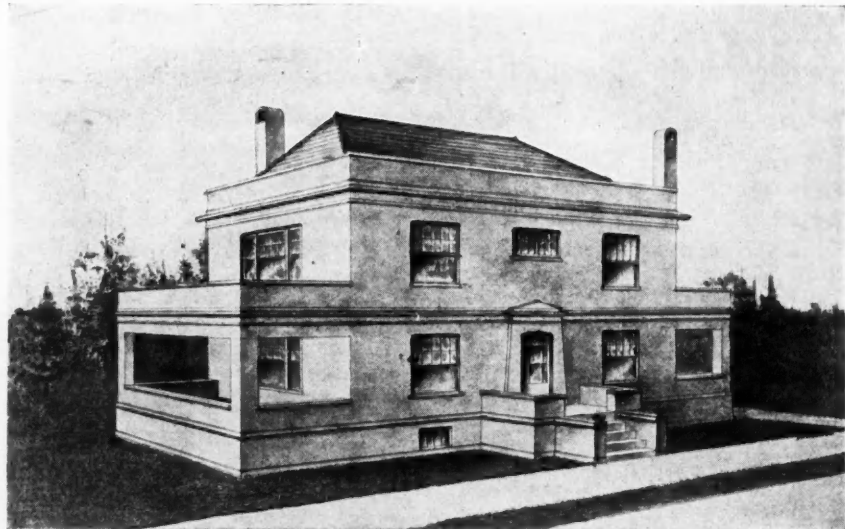
## House Won at Cement Show

PERSPECTIVE, PLANS AND METHOD OF CONSTRUCTION OF CONCRETE HOUSE WON LAST WINTER IN GUESSING CONTEST AT CHICAGO SHOW

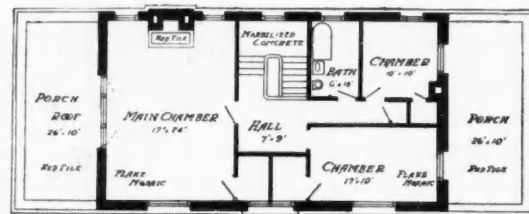
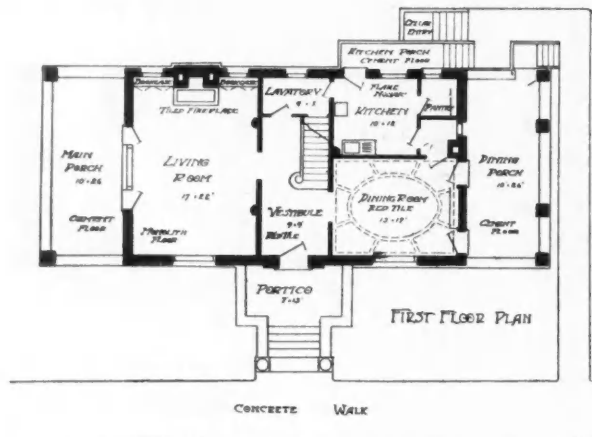
**A**T THE Third Annual Cement Show held last February in the Coliseum the material for a cement house was given the winner in a guessing contest. It was to be built wherever the winner wished, with materials furnished by the exhibitors.

The successful contestant was Miss Lillian M. Williamson of Englewood, Chicago, Ill., and the house is now under construction in Walden, a pretty suburb south of Chicago on the Rock Island Railroad. Cement is being used throughout the building, wherever possible. The house is to be a perfect example of what is possible in cement residence construction at a moderate cost. The walls and partitions are being made of hollow cement tile, insuring perfect insulation. The exterior of the walls is to be finished with a rough cast cement plaster coat. The foundations are of solid plain concrete, and the floors and stairways will be reinforced concrete. Red cement tile will be used in the roof, which will be surmounted by two concrete chimneys with round tops.

In general outline, the house is rectangular in shape, has a screened porch at each end and a small entrance portico in the center. Little attempt will be made at exterior decoration, a simple molding being used at



"Cement Show" House Being Built at Walden, Ill.



SECOND FLOOR PLAN

The house will have two fireplaces with window seats on either side and a square of red tile in front of each. The fire-place and mantel will be of solid reinforced concrete with molded decorations. The bookcases and china closet are to be built in and have

leaded glass doors. The dining-room will be unique in having a beamed ceiling with an oval central panel from which the beams radiate, carrying out the idea of decoration by means of actual structural details.

The modern idea of living nine months of the year on the porches of a house, rather than inside, has been allowed for in this design by the two spacious porches, one opening off the dining-room and the other off the living room. These are entirely separate from the entrance portico, giving the full privacy of an interior room with the advantage of screened exposure on three sides. The porches open off the living and dining-rooms through two generously big French doors, making each porch a unit with the interior room.

The house is typically modern. It has been the aim to make every line harmonize with its material. In the open doorways, the flat arch is used and where beams and columns are needed for support, they are plainly exposed. Nothing has been attempted in structure or decoration which does not harmonize in concrete, the aim being to show the highest example of true concrete construction and decoration throughout the building.

The house is already attracting widespread interest among builders throughout the country and particularly among prospective home builders in Chicago and vicinity. Over thirty of the exhibitors at last year's Cement Show have donated the material to be used in the building.



### Bonding New Concrete to Old

In discussing the question of bonding new concrete to old, Albert Mayer presents the following suggestions:

Clean off with clear water and stiff broom the surface of the old concrete. Mix one part commercial muriatic acid or hydrochloric acid and four parts water, make several applications one after another with a brush containing little or no metal. This will not injure the concrete, as the acid does not sink to a sufficient depth before it is neutralized.

This will have the effect of removing the cement from the top surface of each grain of sand or piece of stone and the other aggregates that may have been used, exposing the clean surface of these aggregates in exactly the same condition as they were before being mixed.

After applying the acid, wash the surface with clear water, scrubbing with a stiff broom or brush, removing all the dead particles. While the surface is still wet (and it should be thoroughly wet) apply the new concrete. Protect this new concrete by keeping it damp for at least a week. Do not let it dry out at any time during the first week.

It will be found that the new concrete will bond to the old as strongly as if both had been mixed at the same time.

### Anti Bellum Building in the South

In these days of modern building, wherein a house is erected while you wait, it is interesting to look back on the old buildings our grandfathers knew, comparing them with the gayly painted little homes we see to-day, the Galveston News says.

Many of the old plantation homes were veritable palaces by comparison. They were builded of brick that were made by slaves and in many cases slaves did much of the work of their construction, they being skilled mechanics in those days.

Enough wood was used in the door and window trim of one of these old houses to build two modern cottages. It was mostly hand-worked material and superbly finished, for labor was cheap, material was plenty and there was a world of time.

Great beams were used to support the flooring; the window panes in many cases were of diamond pattern set in Gothic frames and the glass was brought with exceeding labor and awful expense from the far east.

The hardware was hand-made and of massive and artistic pattern, not the flimsy, machine-made hardware we see in these degenerate days.

Then away back in the mountains they built cabins of strange design, but undoubted stability. Great logs were notched and placed together for walls; split logs were used for door lintels and window frames—where there were any windows. The floors were of puncheons—logs split in half and placed flat side up after having been hewn to a reasonable smoothness. Sometimes the inner and outer sides of the log walls were hewn flat, and in all cases the cracks and crevices were solidly filled with a sort of mortar composed of sticky mud and chips.

This was known as "chinking and daubing." The chimneys in the more pretentious houses were of stone, the same adhesive mud being used for mortar. In the simpler cabins the chimneys were of sticks and mud.

The roofs of such cabins were of narrow boards split with wedges from sections of logs cut for this purpose and were laid like shingles.

Today the houses are practically built in the mill. All parts are completely finished except as to paint, and sometimes with one coat of that, and when a mill gets so reckless as to waste an inch of material it's time for the mercantile agencies to look into its standing.

So today we are building houses that look mighty pretty, but when it comes to lasting qualities, there's no comparison with even the simpler forms of buildings used in our forefather's day.

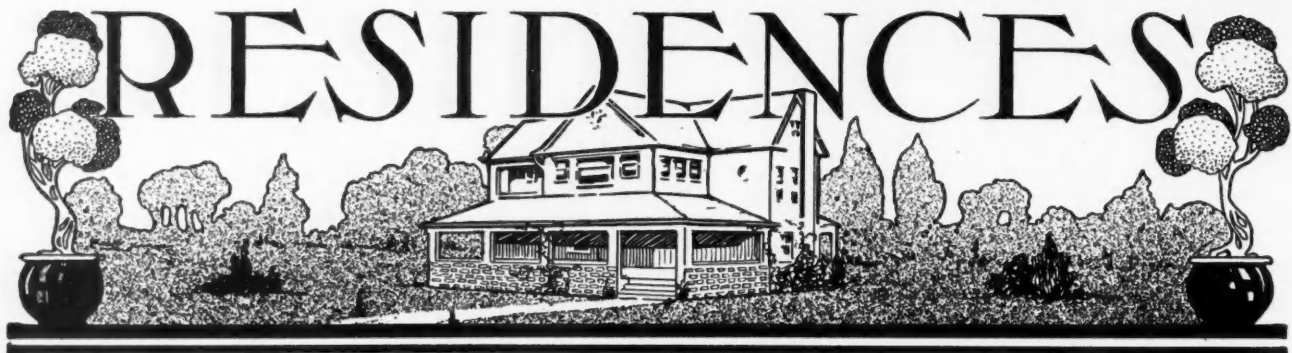


### A Terrible Threat

Immature Conductor (to clarinet player)—See here, Herr Schlag, why don't you follow my beat?

Veteran Clarinet (solemnly)—If you don't look owid, I vill!"—*Puck*.





## Plans for Six-Room Cottage

COMPLETE SET OF ARCHITECT'S DRAWINGS FOR A NEAT STORY AND A HALF FRAME COTTAGE—INTERESTING POINTS IN THE DESIGN

ACCOMPANYING this will be found the complete set of architect's drawings for the attractive little clapboard house illustrated on this page. This is a design that will exactly suit many who want to build a home of their own. While it is simple and in no way expensive, it has a touch of

There are three good rooms, besides the large reception hall, on the first floor,—living room, dining room and kitchen. The porch extends around the corner and gives entrance into the dining room also. This is a feature very often desired. On the second floor are three good large bed rooms, with abundant



Attractive Story and a Half Cottage being Built for Mrs. Chas. Crowe, at Riverside, Ill.

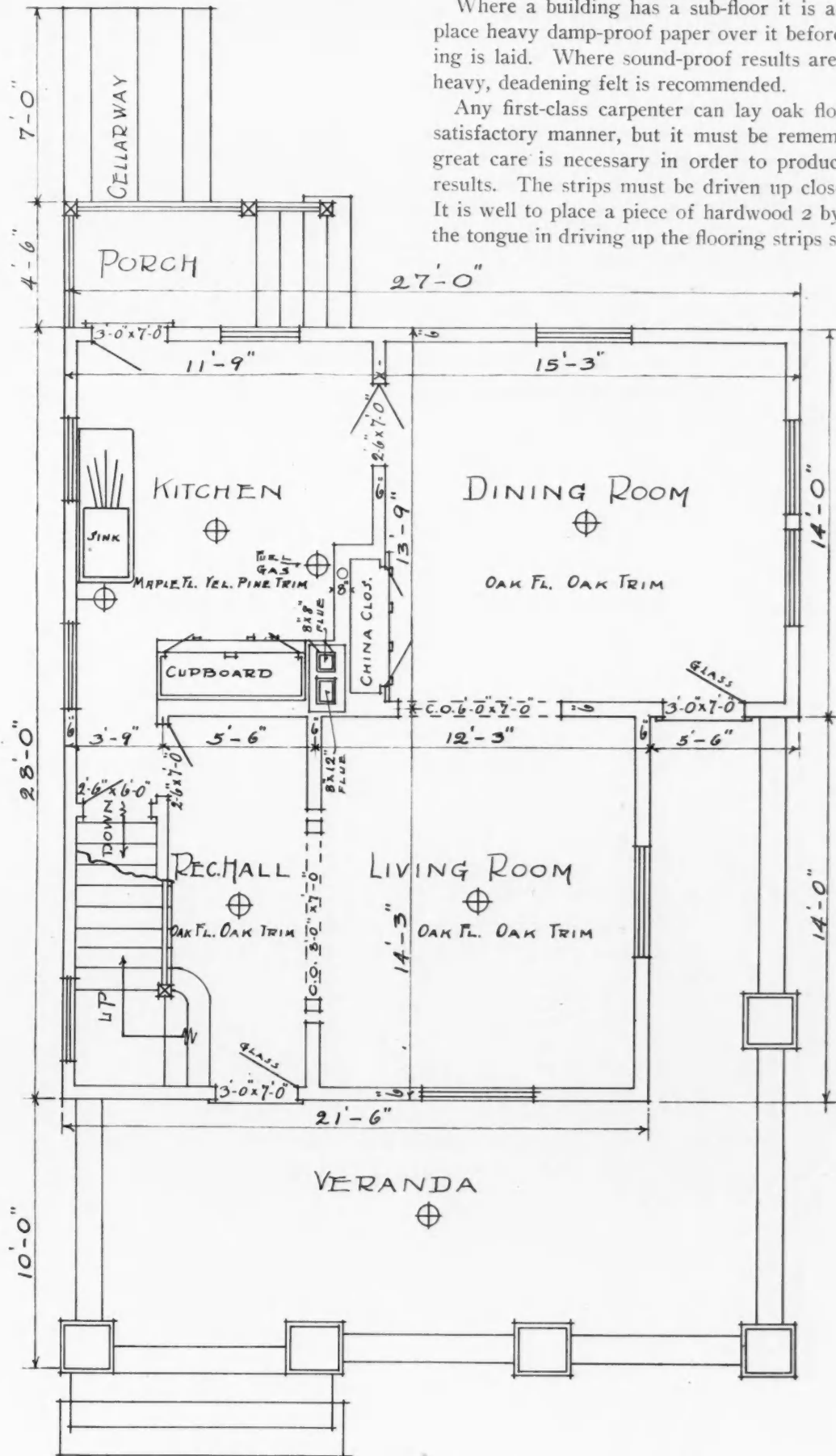
the unusual in the flaring cornice lines at the ridge and in the pointed rafter ends; and at the same time there is a very homey and inviting look about the large porch. It is a design that never would be called commonplace; and a little story and a half cottage of this kind always has the advantage of appearing trim and neat.

closet space. The bath room on this floor is conveniently located, and at the same time finds itself directly above the kitchen. This groups all the plumbing together, and effects quite a saving in that item of the expense. Too often the men who design the house do not give proper thought to such seemingly trivial points; but much money can be saved by *planning right*.

**Laying Oak Flooring**

Where a building has a sub-floor it is advisable to place heavy damp-proof paper over it before the flooring is laid. Where sound-proof results are desired, a heavy, deadening felt is recommended.

Any first-class carpenter can lay oak flooring in a satisfactory manner, but it must be remembered that great care is necessary in order to produce the best results. The strips must be driven up close together. It is well to place a piece of hardwood 2 by 4 against the tongue in driving up the flooring strips so as not to



FIRST FLOOR PLAN—HOUSE PAGE 56

en-  
ctly  
to-  
the  
ouse  
vial  
ght.

damage or bruise the top edge.

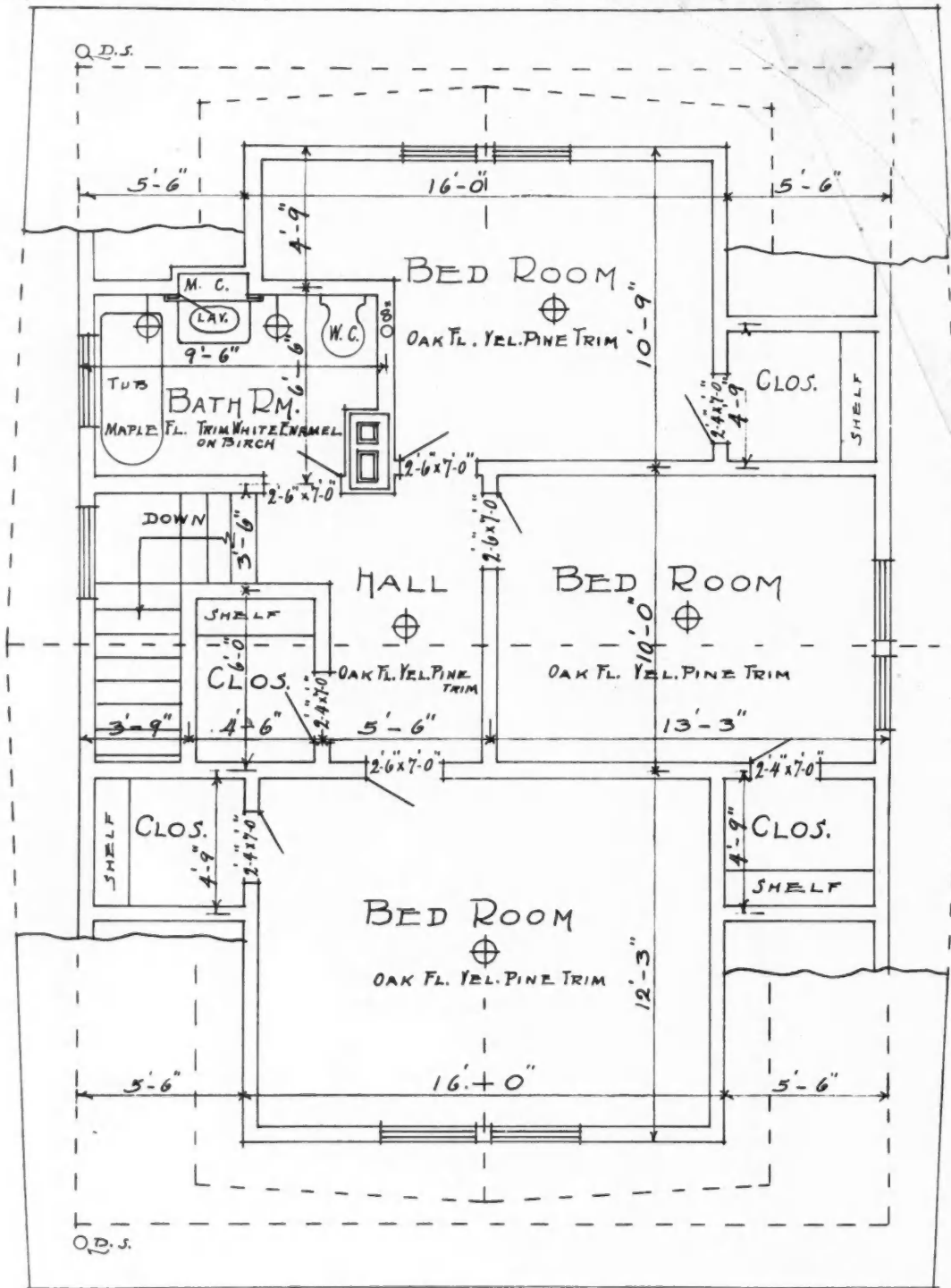
The nailing of a floor is another important feature. When not properly nailed the strips often work out of place, marring the finish and frequently making a most disagreeable squeaking noise when the floor is walked upon.

It is very essential that the proper kind and size of

flooring effects a much better anchorage than a like number of wire nails.

The sizes of cut steel nails for the different thicknesses of flooring are as follows:

- 13/16-inch thickness.....8d flooring nail
- 7/16-inch thickness.....4d flooring nail
- 3/8 -inch thickness.....3d flooring nail



SECOND FLOOR AND ROOF PLAN—HOUSE PAGE 56

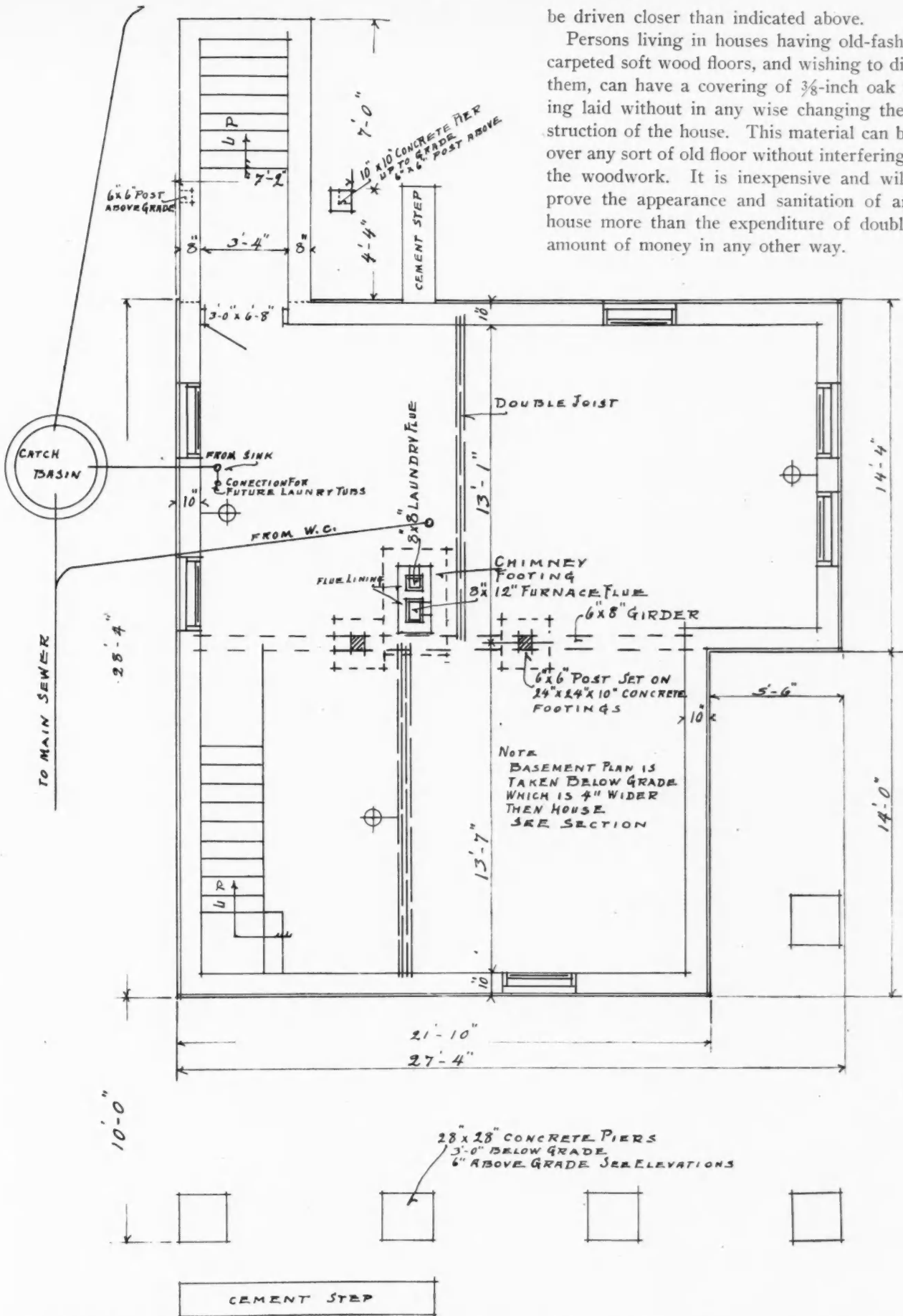
nails be used. Practical test has demonstrated that the very best nail to be employed in laying oak flooring is the steel cut variety for all blind nailing, and all tongued and grooved flooring should be blind nailed. The same number of cut nails driven into a strip of

The maximum distance between nails in the various thicknesses of flooring should be as follows:

- 13/16-inch thickness.....16 inches
- 7/16-inch thickness.....12 inches
- 3/8 -inch thickness.....10 inches

For even better results it is recommended that nails



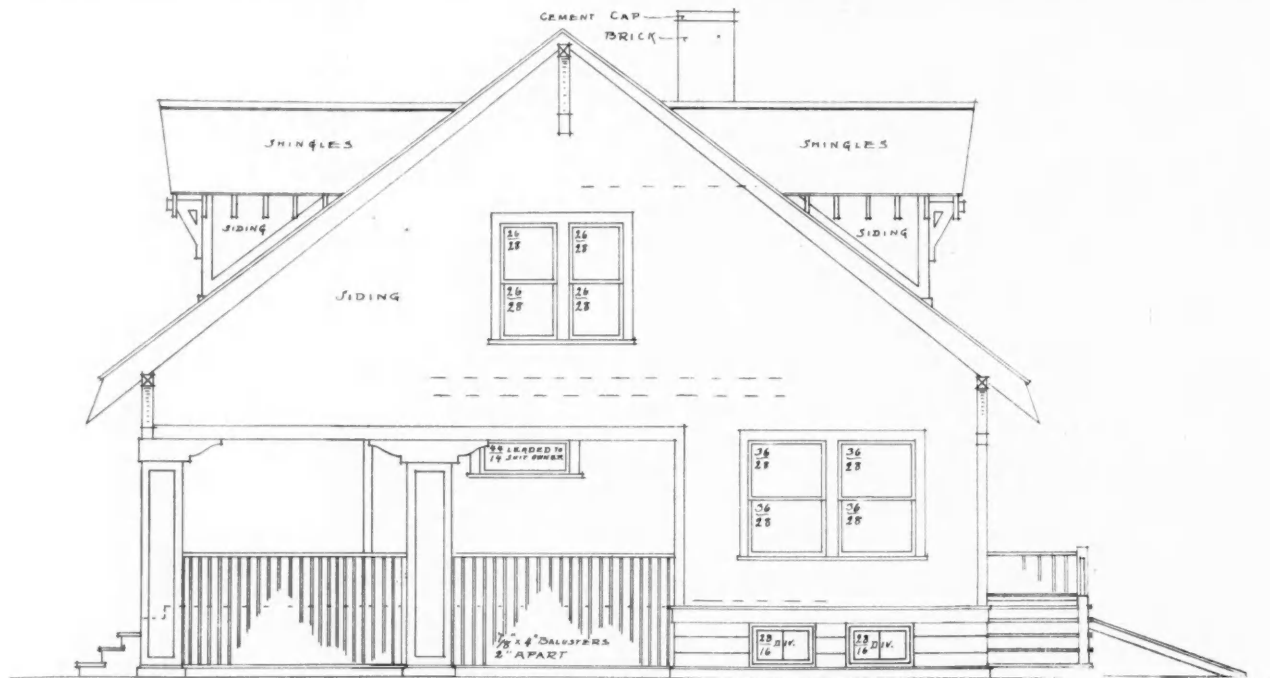


be driven closer than indicated above.  
 Persons living in houses having old-fashioned carpeted soft wood floors, and wishing to discard them, can have a covering of 3/8-inch oak flooring laid without in any wise changing the construction of the house. This material can be put over any sort of old floor without interfering with the woodwork. It is inexpensive and will improve the appearance and sanitation of an old house more than the expenditure of double the amount of money in any other way.

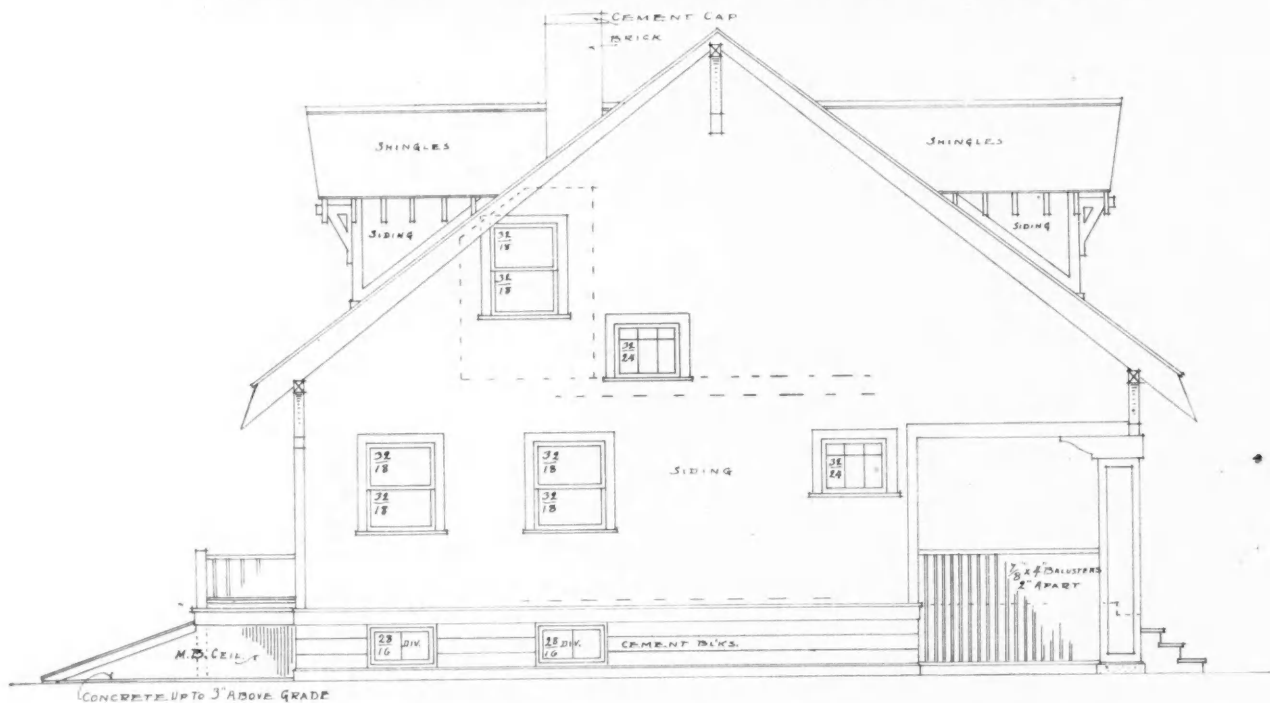
BASEMENT AND FOUNDATION PLAN—HOUSE PAGE 56

### Why Good Tin Sometimes Fails

1. Acid used in soldering the seams.
2. Nails driven through the sheets. This prevents sufficient play to allow for expansion and contraction of the metal, causing broken seams.
3. Allowing the roof to stand without paint. Every tin roof is scratched more or less in laying, and rust may start at these points if a coat of paint is not applied promptly.
4. Injurious effect of paints containing graphite or tar.
5. Under side of the tin unpainted. Moisture often condenses here, and at least one coat of good paint should be applied before the roof is laid.
6. Use of tar-paper under the tin. If any sheathing-paper is used it should be waterproof, but should



RIGHT SIDE ELEVATION—HOUSE PAGE 56

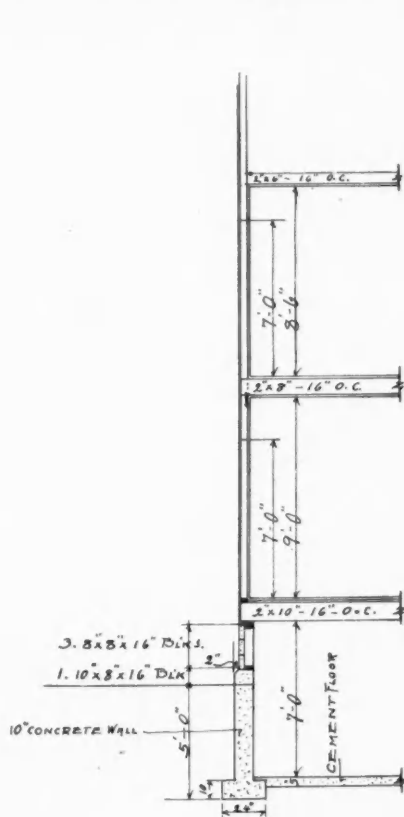


LEFT SIDE ELEVATION—HOUSE PAGE 56

3. Allowing the roof to stand without paint. Every tin roof is scratched more or less in laying, and rust may start at these points if a coat of paint is not applied promptly.
4. Injurious effect of paints containing graphite or tar.
5. Under side of the tin unpainted. Moisture often condenses here, and at least one coat of good paint should be applied before the roof is laid.
6. Use of tar-paper under the tin. If any sheathing-paper is used it should be waterproof, but should
7. Employing ignorant or careless workmen. Beware of the low bidder.
8. Abuse of the finished tin roof. Few people realize that scratches damage the soft lead coating of tin. Keep workmen off the roof after it is finished.

Too often the tin gutters and decks are used as a general thoroughfare for workmen. Rust will start where a scratch is deep enough to cut through the paint and

of the Department. All four sets of specimens were tested under equal conditions, with the result that variations to the extent of 100 per cent were revealed.



SECTION

the lead coating.

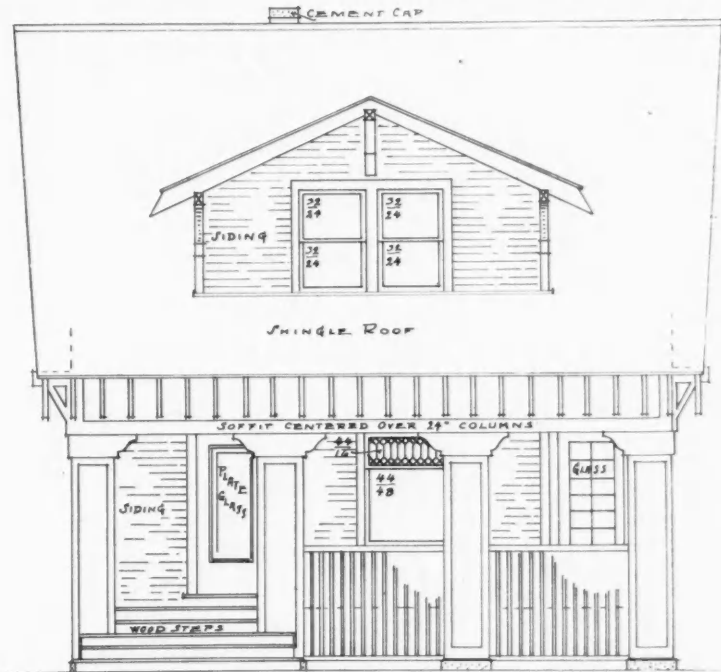
9. Laying the tin roof too flat, without sufficient pitch to allow water to drain off. Gutters and decks are often found so flat that water and dirt collect in shallow puddles. For long service, the steeper the pitch, the better.

10. Neglect or abuse of the roof in service. In winter time it is the usual custom for the property owner to go up on the roof with a steel spade or shovel, and clear off the snow, perhaps to take a hatchet and chop the ice off the tin. A good tin roof, like any other good article, deserves some attention. To keep it in perfect condition, paint at four or five-year intervals, and occasionally clean out the gutters.

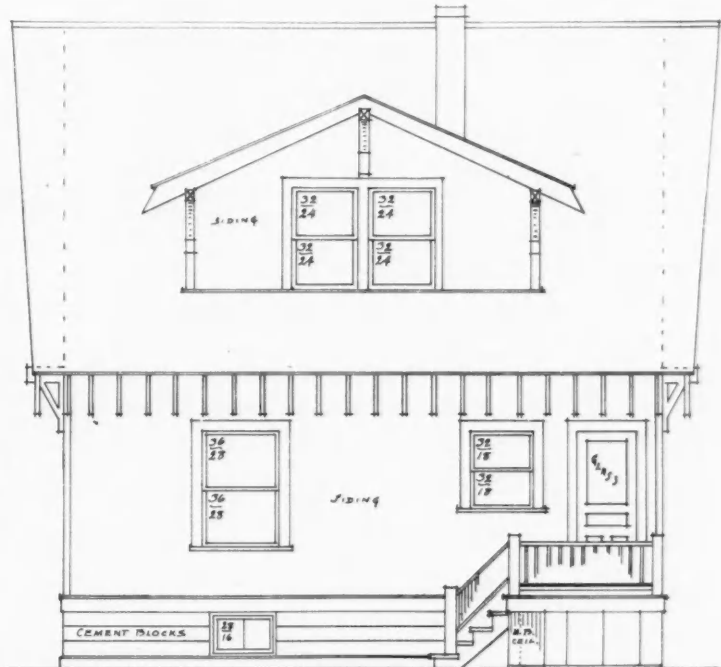


**Workmanship and the Strength of Concrete**

With the object of obtaining data as to the effect of workmanship on the strength of concrete, a series of test has been conducted by the United States Geological Survey. Three contracting firms were requested to undertake the preparation of concrete cubes and beams, the materials and proportions being identical one with another and with those employed in similar specimens prepared by the Laboratory Staff



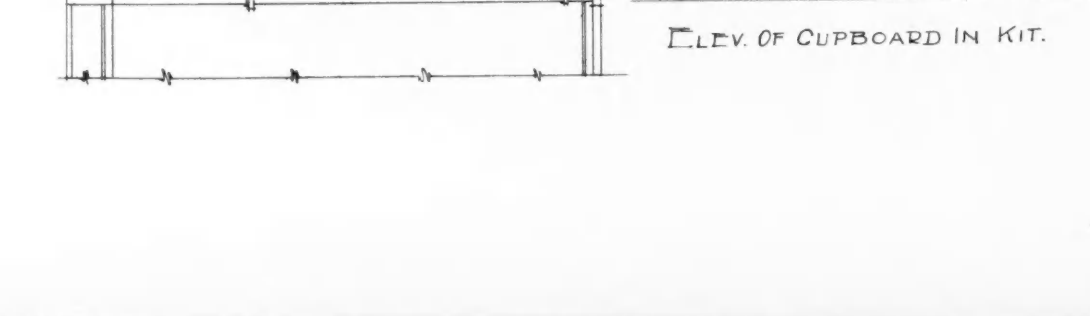
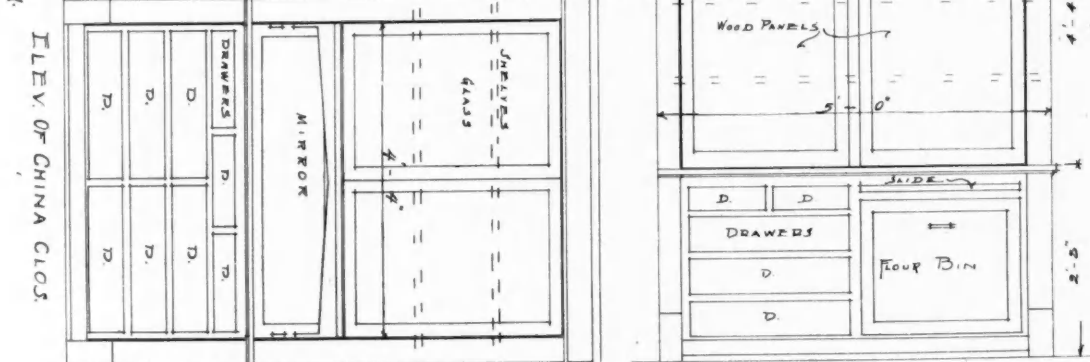
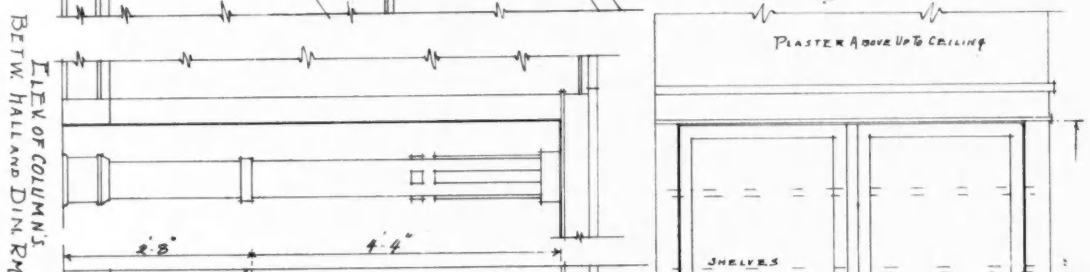
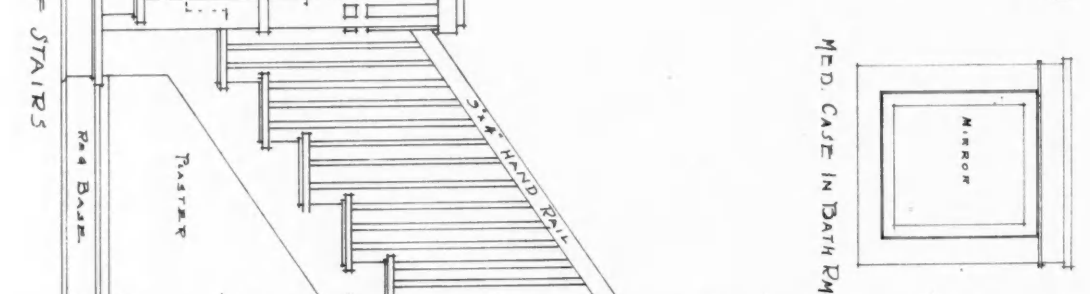
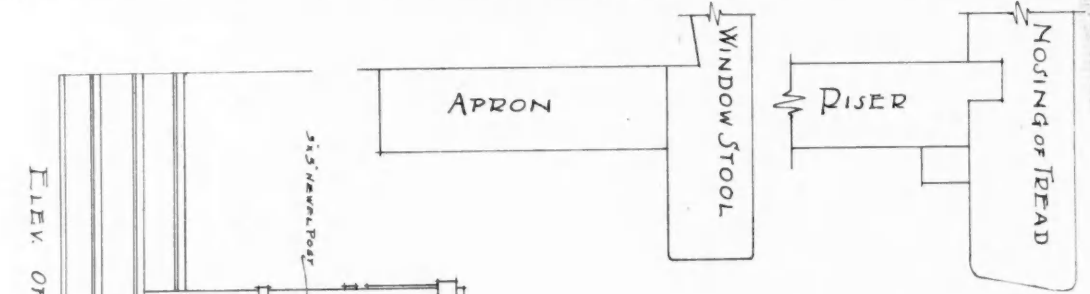
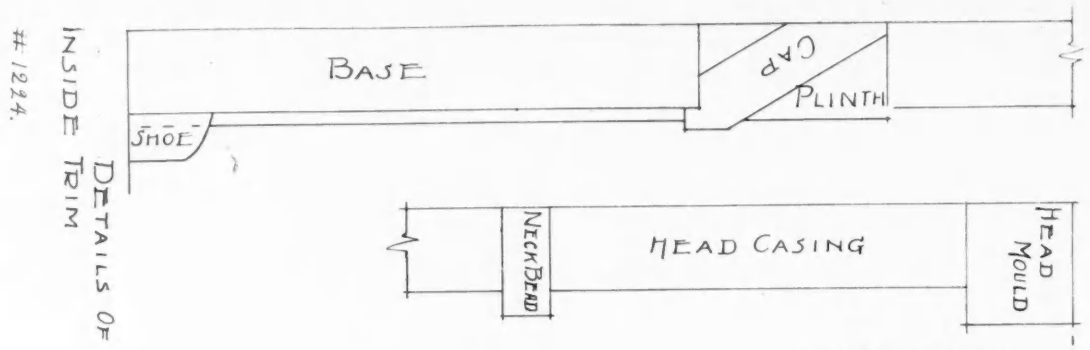
FRONT ELEVATION



REAR ELEVATION—HOUSE PAGE 56

These tests emphasize the point that no designer can predict absolutely what will be the actual strength of the concrete in practical work. It may be that while relying upon 4 as the factor of safety he may only actually have the factor of 2, owing to indifferent workmanship, or perhaps a still smaller factor in the case of an inexperienced contractor





# 1224.

DETAILS OF INSIDE TRIM

DETAILS OF INTERIOR FINISH—HOUSE PAGE 56

ELEV. OF STAIRS

ELEV. OF COLUMN'S BTW. HALL AND DIN. RM.

ELEV. OF CHINA CLOS.

ELEV. OF CUPBOARD IN KIT.

# CORRESPONDENCE



## How About Diagonal Boarding

To the Editor:

Missoula, Mont.

The other day, passing by, I saw a friend laying the rough first floor of a building and laying the boards diagonally. I had just passed several buildings where the sheeting was being put on diagonally (for diagonal boarding seems to be the universal custom in this particular section) but had not felt sufficiently well acquainted to ask impertinent questions. Here, however, the case was different, for I knew the man well—and he was small.

"Why are you laying these boards diagonally?" I asked.

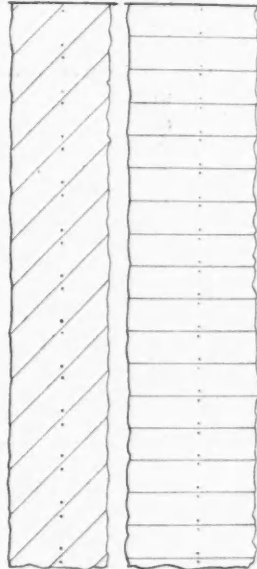
"Well, I can work up the short pieces better, break joints better, and they tell me it is stronger."

"Except for two very short pieces at the corners, your pieces will have to be longer than though you laid them square, they will have a longer span and consequently be weaker, and you break joints not at all; for the cracks of your top floor must cross these."

As he was a "pig headed" man it took some little time to prove these statements to him, and after I had, he said: "Well, they tell me it is better," and went on laying his floor diagonally. How many of us are doing work in the way "they tell us" is best, without ever having spent a moment in thought as to whether it really is best?

In the case of wall sheeting there is ground for argument that placing it diagonally makes the wall more resistant to a racking strain; but will it? Because one board placed diagonally will stay studding better than the same board placed level does not prove that the diagonal sheeting as a whole is stiffer than horizontal. If the ends of the diagonal boards abut firmly against the foundation they will, it is true, offer greater resistance to any strain acting in the direction of a thrust; but as they rarely do so, and as the extra resistance in such a case would be in only one direction, this condition may be omitted from general consideration. As a general proposition it may be safely asserted that all racking strain on a wall resolves itself into a shearing strain on the nails.

Let us suppose, then, that we are using 8-inch boards for sheeting, and consider a space twelve feet high on a stud. Referring to the sketch it will be seen that, in the diagonal boarding, there will be twenty-five nails used; while thirty-five will be used in the same height of horizontal boarding. This shows a saving of a fraction over 28% in nails, it is true, but it is doubtful if that will offset the extra work in cutting and placing and the waste of lumber. It is true, too,



that two nails spaced (approximately) nine inches apart will hold more than two spaced six inches apart; but the twenty-five in twelve feet can hardly hold more than the thirty-five in the same space. There is also to be considered the fact that the length of board between bearings is, in the diagonal work, about 22.6 inches as against 16 inches in the horizontal; which certainly does not add strength.

While it is true that there are certain circumstances and conditions under which it is expedient to lay sheeting diagonally, and possibly some under which it might be advisable to lay flooring the same way; these are far from being universal. In any case it is well to take thought as to why one is using any special method, rather than to use it because "they all do so" or "they tell me" so and so.

W. D. GRAVES.



## Method of Erecting Stave Silos

To the Editor:

Breckenridge, Mich.

As I was reading the request of Mr. John P. Kramer wanting to know how to erect stave silos, I will tell him my way. The first thing I do is to nail my scaffold together as long as the silo is high. I nail on the brackets about seven feet apart. I nail these all together one on top of the other so there will be no up and down to the scaffold boards. I nail up six sets of brackets and when I get them done, I raise the door frame. Get it plumb and straight up and down.

After I get the door frame raised and well stayed, I raise my scaffold around the foundation and then put up the staves. Start at the door frame; put up the lower half first. The best thing I find to hold the staves together is to nail barrel staves on in the inside. Shingle nails will hold them.

When I get around with the tower half I put on the hoops. But do not tighten them up too tight or you cannot slip the top staves down to join the bottom staves. Then proceed with the top half the same as you did with the bottom.

I would advise Mr. Kramer, if he has many silos to erect, to make a set of scaffolds as long as his highest silo; then he can move them from one job to the other and save a lot of time making scaffolds.

I am a charter member of the AMERICAN CARPENTER AND BUILDER and have read every paper but two or three.

E. F. SENSABAUGH.



## Laying Cement Floor Over Wood

To the Editor:

Montrose, Pa.

What is the thinnest coat of cement that can be put on top of a wood floor and have it stay? There is a man here that wants a cement floor put on top of the wood floor around his soda fountain about 6 by 15 feet and he does not want the floor raised any to speak of, not more than 1 inch if it can be helped. I told him that I did not think this could be done. I think 2 inches with a 1/4-inch gal. wire mesh 1/2 inch from top and 1/2 inch from bottom making two reinforcements, would stand. Do you think this would do it if

the cement is mixed about 1 part Portland cement and two of good sharp clean sand.

GORDON DEPUÉ.

Answer: The method you suggest would be sufficient if there is a stiff and substantial floor to lay the cement floor on. We would advise the nailing down of any loose boards and a strengthening from below if the floor is the least bit shaky. It would also seem to be a good plan to divide this 6 by 15-foot slab into four equal parts, leaving joints to be filled with pitch or tar to allow for temperature changes or for any movement of the floor.

It is often recommended that batten strips be nailed to the floor over the floor joists so as to bring the reinforcement towards the top of the slab at these points. It is also recommended that the reinforcement be fastened by staples to the floor at frequent intervals. Common thicknesses for such cement flooring are  $1\frac{1}{2}$  to  $2\frac{1}{2}$  inches, and the mixture a one to two as you suggest.

One objection which we have to this method of laying the floor direct upon the wood is the liability of the wood floor beneath rotting out through dampness. It would seem that a coat of tar or asphaltum spread over the floor before the cement was put in place and before the reinforcement was fastened down, would be beneficial. Again we wish to state that it would be practically useless for you to try to lay this floor unless the wood floor beneath is absolutely rigid and of sufficient strength to hold up both the load which was originally upon it and the weight of the new cement floor.

EDITOR.



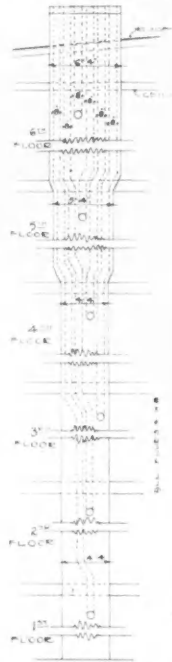
### Direction of Flues

To the Editor:

Brooklyn, N. Y.

Would you please inform me if the attached drawing for carrying up chimney flue pipe is correct? I made it for a brick job on which I am foreman. Architects never give us details like this and we often have to use our wits laying out the work. As shown it gives the width of the chimney breasts at all stories, widening by corbelling as it is carried up. I think this idea would be found useful by all mason builders.

OWEN B. MAGINNIS.



### Concrete Street Crossings

To the Editor: Harbor Springs, Mich.

We are having considerable trouble here in building cement street crossings. I have built a number which are standing intact; other makes are going to pieces.

Crossings have been built here by excavating 14 inches, filling with stone (thrown in loosely) and then pretending to slush this with concrete with the idea that it would work down among the stone. Cover this with 4 inches concrete and 2-inch top dressing. They don't last as long as a plank crossing.

I have crossings of several years standing without a crack. I excavate to clean sand or gravel (we have no clay); remove all surface soil, fill with clean gravel; saturate with water and shovel in some concrete and bed stone firmly in same, not over 8 inches high. Fill with concrete within 2 inches of grade, cover immediately with 2-inch coat of 2 and 1 top dressing, finish with float and trowel and corrugate. The work stands well.

JEFF LOSINGER.

Answer: While we are in no position to criticise the work of your competitors, we submit the following as an example

of what is considered to be good practice by some authorities:

First—A layer of well tamped broken stone, gravel, cinders or sand 6 to 8 inches thick. This should be well drained to prevent undermining later. Often in the better class of work a 6-inch layer of lean concrete is placed over this well tamped foundation and made a part of same.

Second—Lay the base slab about 5 inches thick and consisting of a 1:3:5 concrete. This should also be well tamped.

Third—Place immediately on top of the base a coat of 1:1½ or 1:2 Portland cement mortar 2 to 3 inches thick. This mortar should be mixed rather stiff and care should be taken not to trowel enough to bring cement to the surface.

Expansion joints should be left either at each end of the crossing to allow for the lengthening due to temperature, or divide the crossing into blocks by inserting wood strips about ¼ of an inch wide at intervals of not over 6 feet when placing the concrete, and allow them to remain there. This effect is often varied by using a metal parting strip of the same thickness when placing the concrete, removing the strip after concrete has set, and filling the space left with loose sand. This joint should extend through top coating and base to the foundation.

EDITOR.

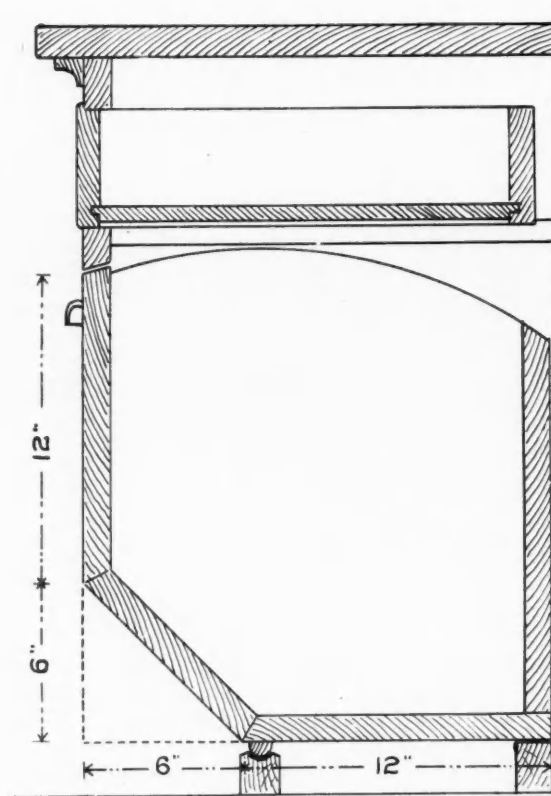


### Another Flour Bin

To the Editor:

Calgary, Alta, Canada.

This simple flour bin may be of help to some of your readers. I have found it to be a very perfect bin and one



that will balance with any desired quantity of flour or sugar. It has its advantage for the woman to stand in front of the work table as there is plenty of room for the feet. It can be removed at any time simply by partly opening the bin and raising it out.

R. D. CURDY.



### Setting Marble in Plaster-of-Paris

To the Editor:

Warren, Ark.

I have a job in which I am to use an old marble mantel



which is in several pieces that have to be set together with plaster-of-paris cement. As there is no plaster-of-paris worker available, will you kindly inform me how to manage this job.

PAUL H. CARR.

Answer: Have all surfaces clean and free from loose particles of any kind. Then mix plaster-of-paris into a paste; and, using same as a cement, carefully but quickly place the slab, thoroughly backed up with the paste, in the position where it is to go. The marble slab should have anchors of copper wire or some non-corrosive material firmly embedded in the back, or wall side. Care should be taken that these anchors are firmly embedded in the plaster-of-paris backing, and that sufficient number of anchors are used to hold the slab in place when backing has hardened.

Another point to be noticed is that the slab touches the plaster-of-paris at each anchor. On account of the rapidity of hardening of the plaster-of-paris, the work will have to be done very quickly in order to obtain good results. The slabs should be supported firmly in position while the backing is drying, or hardening, in order that they may not become loosened by jarring at some subsequent time.

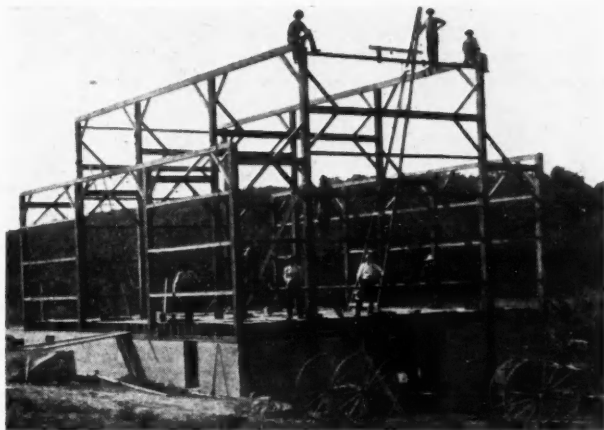
EDITOR.

### ✦ Barn Framing

To the Editor:

Wasco, Ill.

Enclosed find photo of heavy timber barn frame I am building near Wasco, Ill. It is 34x48 feet. I build large ones after the same plan; it is a plan that takes well in these



parts. The plates are 6 by 8 inch, sills 6 by 8 inch, posts and tie beams 8 by 8 inches, girts 4 by 6 inches, braces 4 by 4 inches, rafters 2 by 6 inches. The girder is 8 by 10 inches, running lengthwise of building and supported by 8 by 8 inch posts.

C. W. MILLEN.

### ✦ To Erect Stave Silos

To the Editor:

Ames, Iowa.

The inquiry as to how to set up a stave silo comes about a month too late to be of the most service, as all silos should be filled this month. However, it does not seem that a good mechanic would destroy a copy of the AMERICAN CARPENTER AND BUILDER, so the information will come handy next fall.

There are two ways of setting up a stave silo. If it is small, 14 by 30 feet or less, and the tongued and grooved staves extend full height of the silo, it may be set up without a scaffold.

The door frame is first raised and braced or guyed to place; then, by means of a pulley hooked over the door frame and a light rope running through it, each successive stave is drawn up and held to place by means of salt or lime barrel staves tacked on the outside. This should proceed half way round from each side. Then, when opening up to get in the last stave or closing to make connections as the case may be,

each side may be moved half way without moving the door frame. As the building progresses, braces may be run out from the door frame tacked to the top by occasional staves. The workman at the top sits upon a plank which rests on the door frame and a few of the outer staves. In windy weather the bracing from the door frame will not be sufficient and occasional staves or top braces will need guying from the ground.

In erecting a large silo, the door frame must be erected and secured as in a small one, then the scaffold must be built. This will consist of uprights of 2 by 6 or select 2 by 4 material 16 feet long. For a silo 30 feet high which is the most common height, the upper scaffold plank should be at least 26 feet high, and these uprights which are outside of the silo should not be more than 6 or 8 feet apart. The scaffold plank should be supported by brackets. At least two sets of these should be used and the steel at different heights may be reached more conveniently if there are four sets of brackets and scaffold planks. The scaffold must clear the final circle of the silo by 4 to 6 feet, as it cannot be drawn to its proper diameter until the steel is drawn up. When building a silo which will be exposed to severe summer winds it should be framed into the barn or thoroughly guyed to posts set at considerable distance from the base of the silo. This last precaution will eliminate nine-tenths of the difficulties encountered in making a stave silo hold its shape during the summer.

I have had but a few minutes in which to write this out, but hope that it may serve the purpose. Stave silos are becoming very common in this state.

M. L. KING.

### ✦ Rope Splicing

To the Editor:

Manito, Ill.

Would say that I have been taking your valuable paper for over two years and have received a lot of benefit. I saw, in July's issue knots, bends and hitches illustrated, and think it was a good article for everybody using rope; but I didn't see anything about splicing rope. Now I have a splice that I use, but it takes about two hours to make. What I want to get is a splice that does not take so much time. I make a splice about 9 feet long. Now I want to hear from brother chips, as we have ropes to splice very often.

J. M. ROUST.

### ✦ Substantial House Design

To the Editor:

White Hall, Ill.

I am sending you herewith photo of my house which I built, following a design published in the Dec., 1905, number of the AMERICAN CARPENTER AND BUILDER, the plan being by John J. Beuffer. In its construction there is but very little wood. Porch floors are re-enforced concrete. Cornice is galvanized iron. Roof is of asbestos shingles. Walls and



porch are concrete blocks. The total cost of this house was \$4,000. The floor plans are the same as those published before, except they are larger.

WM. STEVENSON.

### Erecting Stave Silos Without Scaffolding

To the Editor:

Dinuba, Cal.

Drive a stake, 4 inches in diameter by 3 feet long, 18 inches into the ground at the center of where the silo is to stand. Take a 1 by 3 inch strip, say 12 feet long (for a silo 20 feet in diameter), measure 10 feet from one end and nail a 1 by 3 inch piece 3 feet long across it for a leg; with other end against stake, describe a circle with long end of leg. If ground is level, this is all that is necessary; if not, make a trench 2 feet wide, level with the lowest part one-half of trench on each side of circle.

Put short pieces of 2 by 12 inch in bottom of trench (or on the ground), for staves to stand on. Have one of these pieces long enough so you can dig a hole under it large enough for a man to crawl under silo when staves are all set up.

Get enough pieces of  $\frac{1}{2}$  by 3 inch 12 feet long to make two temporary hoops with plenty of length to lap past each other and soak them in water over night, or wet them well and cover with wet straw.

Get 14 or 16 pieces of 1 by 6 inch, 16 feet long for braces.

Make a ladder two feet longer than your staves. (I make it of 1 by 4 inch Douglas fir clear). Make two legs for ladder same length of ladder; bolt them together at top same as step ladder; spread legs out to six or eight feet at bottom by nailing two or three braces across them.

Peg one of your blocks to ground so it can not slip, stand up first stave, set ladder with its side to the stave on outside of circle, one man on ladder, one on ground; tack end of stave to the block you have pegged down, then plumb stave both ways. Take a 1 by 6 inch stick 16 feet; cut one corner off top end so you can toe-nail it to stave. Nail bottom end to the center stake, top end to stave wherever it will reach. Drive another stake anywhere outside of circle so you can brace the first stave the other way from it. Get two of your wet pieces of  $\frac{1}{2}$  by 3 inch by 12 feet; give one to man on ladder; let him nail it 2 feet from top of stave; nail yours  $4\frac{1}{2}$  feet from ground. These are your temporary hoops. Nail them with 4d nails so they can be easily removed.

Proceed with next stave. Let it come against first one, tack wooden hoops to it and proceed with the others in same way. When five are up, make bottoms conform to circle and tack, put up five more; tack bottom to circle; plumb it flat way; brace it with your 1 by 6 inch by 16 feet to center stake same as first. Proceed in like manner until all are up. Plumb and brace every tenth stave.

Put first iron hoop on 4 feet from ground, next one 2 feet from ground. Next put bottom hoop on and tighten up. Then set a few 20d nails around silo just above wooden hoop. Put a hoop on over them very loose; then with a piece of 1 inch gas pipe each two men can run this hoop up against top wooden hoop. Tighten it up so it will not slip down, or tack some nails under it; then proceed with the other hoops, putting a hoop every 2 feet for a 20-foot silo.

The first four hoops should be 3 inches wide and heavy;  $2\frac{1}{2}$  inches will do for others.

Hoops should be in two pieces spliced with two patent lug tighteners, so as to give ample room for taking up slack. The top hoop can be put on when the silo is nearly full. Be careful and do not put the lugs over one another, as that will make a flat place, which must not be allowed in any event. While tightening hoops, have man inside pounding any staves that may project in back against hoops, or any flat places that may occur. When wooden hoops buckle, remove them altogether. When inside braces spring, remove them. Tighten up until you cannot see through the joints, unless it is just a short kink—it will swell airtight.

Staves should be made of 2 by 6 inches, milled to the proper bevel, clear of knots and planed.

I generally build them 20 feet in diameter and 24 feet high. This size will hold nearly 150 tons of ensilage.

No scaffold is needed with this kind of silo, as the man on the ladder can take care of several staves without moving ladder. Then come down and move ladder farther around circle, and so on, until finished, when legs are removed and ladder can be used in filling silo.

If Mr. Kramer wants more specific information, he can write me a personal letter and I will take pleasure in giving it.

R. N. ALLEN.

### To Glue Marble

To the Editor:

Cincinnati, Ohio.

In your correspondence column of August I see one of your readers in want of some kind of glue for marble. For this I recommend the use of sealing wax. The broken parts must be well heated, the wax as well. When good and soft it should be poured in the joint, and the broken pieces pressed together and allowed to cool. The wax must be the same color as the marble and there will be no joint visible. When dry the marble should be rubbed with a hone and then polished with oxalic acid.

A READER.

### Painting on Copper and Galvanized Iron

To the Editor:

Malvern, Pa.

I note the question in last month's issue concerning a method of painting over copper and galvanized work.

The copper may be prepared for painting by sizing it with a solution of copper sulphate, four ounces to the half-gallon of warm water, adding also an eighth of an ounce of nitric acid. This will roughen the surface of the copper and allow the paint to get a hold. Make the first coat of paint flat with turpentine, or nearly so; say one-third raw oil to two-thirds turpentine. On this foundation you may apply any good oil paint you wish, sure that it will wear about the same as good paint wears on wood.

Galvanized iron is all right for paint if it has stood to the weather for a year or so, but if the galvanizing is rather fresh it will be necessary to size it, as follows: Make up a solution of two ounces each of copper chloride, copper nitrate and sal ammoniac, dissolved in one gallon of soft water in an earthen or porcelain vessel; to this solution add two ounces of commercial muriatic acid. With a broad bristle brush, say a whitewash or kalsomine brush, apply a coating of this solution, covering all parts perfectly, and then let it stand until next day. It will appear black, but gradually the color will become lighter, assuming a grayish tone finally, when it may be swept off and coated with any good paint. This method of treating galvanized iron has been in use for over fifty years, and gives perfect satisfaction.

A. ASHMUN KELLY.

### Painting Soil Pipe

To the Editor:

Sante Fe, Isle of Pines, W. I.

Can you tell me what mixture to use on a soil pipe? I have a soil pipe to paint that comes up on the outside of the house which is painted white. They also want the pipe white. The tar on the pipe turns the paint a nasty yellow.

CLARE C. WASHBURNE.

Answer: The only way we consider practical in overcoming the difficulty is to first thoroughly remove all traces of the tar paint which is now on the pipe, either by burning with gasoline torch or by scraping. Then after the metal is entirely clean, apply as many coats of your paint as are necessary to bring it up to the color and quality desired.

EDITOR.

### A Circular Splayed Frame with a Circular Head

To the Editor:

Springfield, Ill.

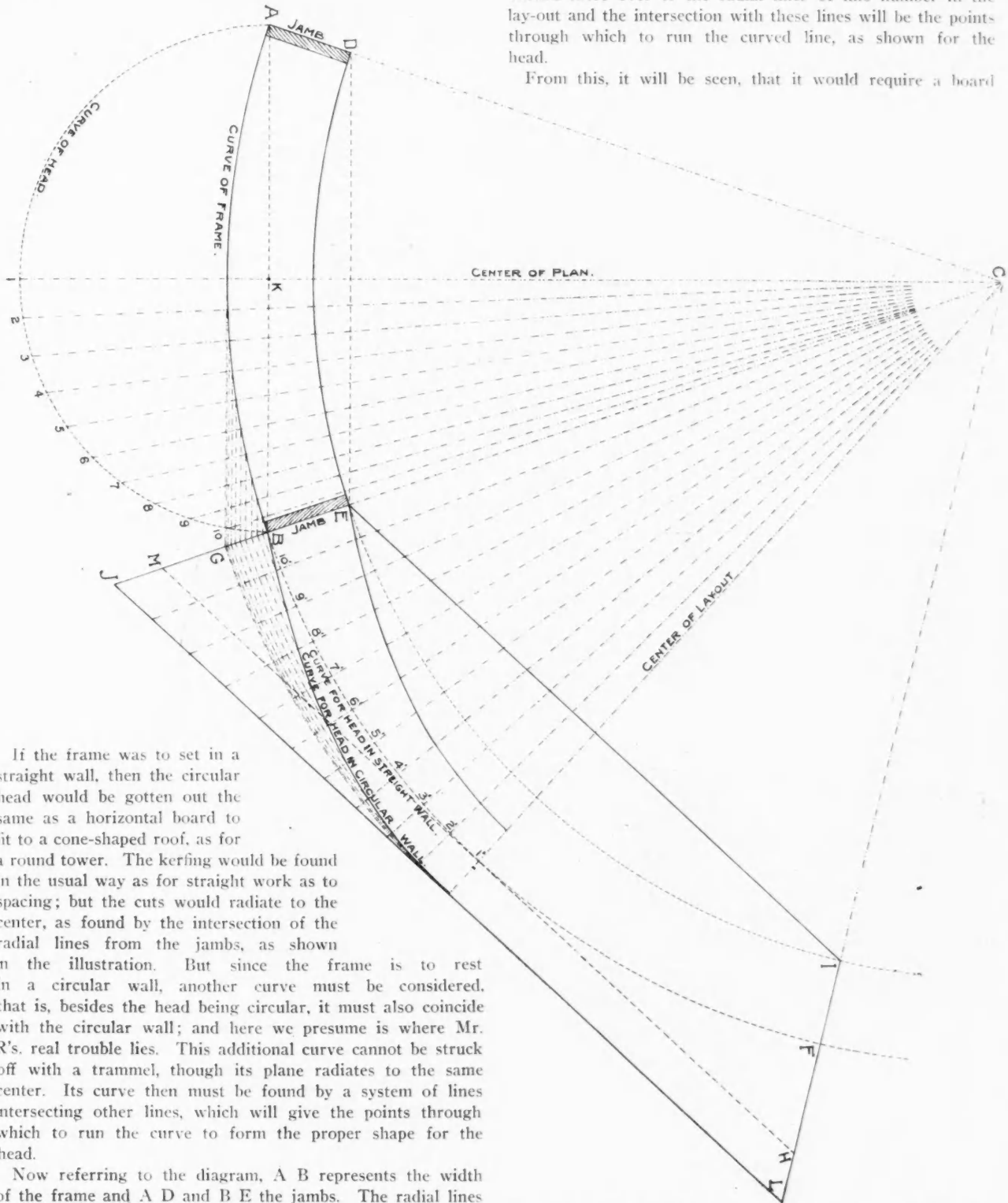
I would like to know a rule for kerfing the head jamb for a splayed frame with a circular head and to go into a circular wall.

HENRY C. RENTSCH.

Answer: Mr. Rentsch's problem, while seemingly simple presents a problem more difficult than would appear at a casual glance.

with the line AB as at K. This being done, lay off on this semi-circle, any number of the radial lines, as 1, 2, 3, etc. Continue the curve of the frame, as shown by the dotted line BF and on this space off 1' 2' 3', etc., equal to the spacing 1, 2, 3, etc., as before mentioned, on the circle for the head: but should extend beyond the circle, as shown. Now draw lines at right angles from the center line of the plan from each of the radial lines where they cross the curve of the frame, to the jamb line BG and from this with C as center, extend these over to the radial lines of like number in the lay-out and the intersection with these lines will be the points through which to run the curved line, as shown for the head.

From this, it will be seen, that it would require a board



If the frame was to set in a straight wall, then the circular head would be gotten out the same as a horizontal board to fit to a cone-shaped roof, as for a round tower. The kerfing would be found in the usual way as for straight work as to spacing; but the cuts would radiate to the center, as found by the intersection of the radial lines from the jambs, as shown in the illustration. But since the frame is to rest in a circular wall, another curve must be considered, that is, besides the head being circular, it must also coincide with the circular wall; and here we presume is where Mr. R's. real trouble lies. This additional curve cannot be struck off with a trammel, though its plane radiates to the same center. Its curve then must be found by a system of lines intersecting other lines, which will give the points through which to run the curve to form the proper shape for the head.

Now referring to the diagram, A B represents the width of the frame and A D and B E the jambs. The radial lines from these, intersecting at C which is the common center for all of the radial lines. The center for the circular head is struck from the center line of plan where it intersects

as bounded by EMHI from which to cut the head to fit the frame in a straight wall and EJLI to cut the same to go into a circular wall.

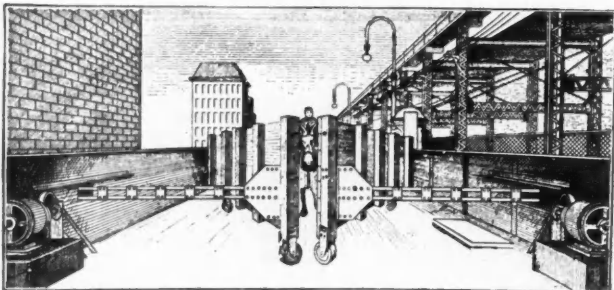
A. W. WOODS.



# TRADE NOTES AND ITEMS OF INTEREST

### A Gate to Stop Runaways

A device to check runaway horses has been devised and put in successful operation on the Williamsburg Bridge, New York, which on account of its wide roadways and lack



Gate to Stop Runaways on the Williamsburg Bridge, New York

of trolley-cars seems to have acquired an unusual record in the matter of runaways, far exceeding the number on the Brooklyn Bridge. In four years 185 runaways took place, 53 horses were killed and 47 injured, while at the same time 96 persons were injured, says *Popular Electricity*.

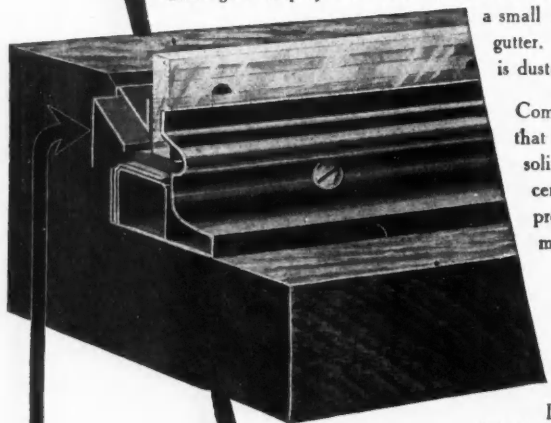
On April 14, 1910, a "runaway gate," the idea of a laborer on the bridge, was put into operation. The device consists of two leaves built of plank as shown, 40 feet long and 6 feet 9 inches high, mounted on wheels. The officer in charge needs only to close a switch which sets in operation motors which cause racks and pinions to push the two ends of the leaves toward each other, forming a V with the opening facing the direction from which traffic is coming, except that a space through which a man may pass is left at the apex. In the one runaway which occurred since its installation the horse started 150 feet distant, and by the time it had reached the gate the leaves were nearly closed. The horse breaking away from the harness passed through the opening without injury, leaving the wagon in the apex of the V. The leaves swing back parallel with the sides of the bridge when not in service.

### Suess Art Glass

For more than 30 years the Suess Glass Company of Chicago has been known to the building trades throughout all the north central states as the headquarters for art glass of every kind and for every purpose. Leaded and ornamental

## ARE YOU FAMILIAR WITH THE *Kawneer System* of Store Fronts

Do you know that it is now possible, by means of our No. 30 sash, to regulate the ventilation and drainage of display windows? And it does not require complicated mechanical devices to do it—only a small angle slide which opens and closes the vent holes in the gutter. Show windows can be kept clear in Winter and the sash is dust-tight in Summer.



Combine constant window service for your client with the fact that the Kawneer System is most attractive and longlived (only solid copper, brass, bronze and aluminum used) and the result is certain and large returns on his money invested. He will appreciate a modern store front because he knows it is his best salesman—it works for him 365 days and nights of every year.

*"It stays and pays"*

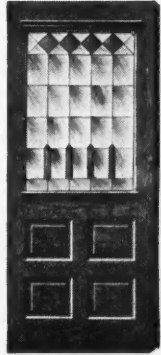
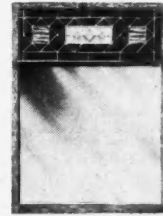
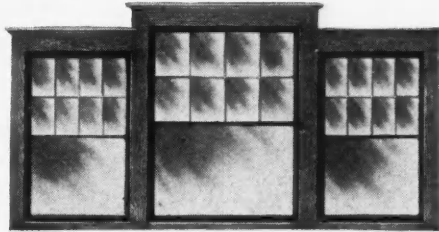
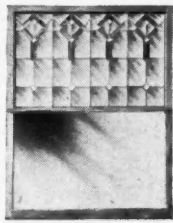
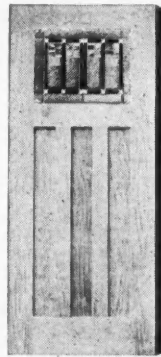
We have a Booklet for you containing full size details of the different bars, sash and mouldings, also photographic reproductions. It describes the spring friction grip on the glass, method of reinforcement of division and transom bars by steel channels, and all other points that are essential to a good store front construction. Ask for No. 2.

**BRANCH OFFICES**  
Chicago  
New York  
Philadelphia  
Kansas City  
St. Louis  
Milwaukee  
Detroit  
Washington, D.C.  
Pittsburg  
Indianapolis  
Lincoln, Nebr.  
San Francisco  
Spokane  
Minneapolis

**KAWNEER MFG. COMPANY**  
Factory and General Office  
**NILES, MICHIGAN**

**BRANCH OFFICES**  
St. Paul  
Sioux City Ia.  
Vancouver, B.C.  
Atlanta  
London, Ont.  
Los Angeles  
Denver  
Cincinnati  
Syracuse, N. Y.  
Salt Lake City  
Des Moines Ia.  
Portland  
Houston  
El Paso

**CONTROL  
SLIDE OPERAT-  
ED FROM INSIDE**



# Beautiful Doors and Windows

## SHIPPED From **STOCK!**

### A Wealth of Styles, to Correspond With Any Architectural Scheme

In addition to all the regular "stock" styles and sizes of doors and windows, which are as staple in the building line as sugar and flour among groceries, *we have designed a wide variety of special Doors and Windows harmonizing with the very latest and most popular architectural schemes developed in the last five years.*

The "Mission," the "Craftsman," the "Colonial," the "Old English," the ornate "Italian" and "French" *keynotes in architecture* are splendidly represented in our immense stock, ready for *immediate shipment* to any point on the map.

### Our Stock Designs Do Away With "MADE-TO-ORDER" Expense

Hundreds of Contractors and Builders are saving large sums of money by using Gordon-Van Tine fancy Doors and Windows in place of expensive "special order" millwork. You can buy these elegant Doors and Windows for a *fraction* of what you pay for similar styles *made to order*.

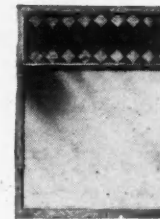
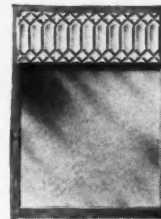
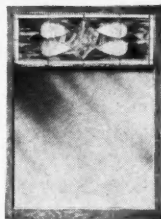
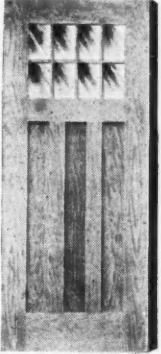
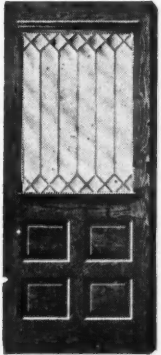
They are up to the highest standards in design, construction and finish. We guarantee the quality of every item we ship. This means **YOUR MONEY BACK AND FREIGHT PAID BOTH WAYS** if anything is not found satisfactory! We pack with extreme care, insure *safe transit*, make good any breakage that may occur in shipment.

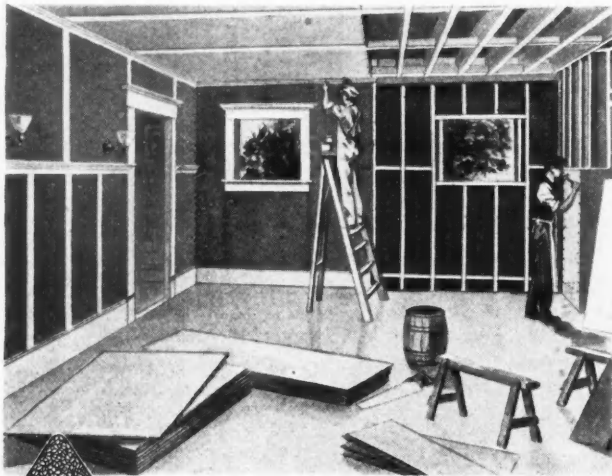
### Ask for Latest Edition of Gordon-VanTine Co.'s GRAND FREE MILLWORK CATALOG!

The New Catalog offers over 5,000 Bargains in Plain and Fancy Doors and Windows, Inside and Outside Finish, Flooring, Mouldings, Mantels, Builders' Hardware and all kinds of miscellaneous Millwork.

**SAVE 50%** by buying direct from America's largest Millwork plant. Our new 5-story concrete Warehouse affords unexcelled storage and shipping facilities. *We can load 20 cars at a time.* Try us a whirl and we will more than make good on every claim. (71)

**GORDON-VAN TINE COMPANY, 542 Federal St., Davenport, Iowa**





Nailing BEAVER BOARD to the studding of a new room. It can also be put over the lath and plaster of old rooms.

**Every carpenter in the country  
should know how to put up  
BEAVER BOARD**

It offers a big opportunity to the man who can turn out a good job, as it is rapidly increasing in use for the walls and ceilings of every type of new and remodeled building.

In practically every community people are looking for good workmen who can handle BEAVER BOARD right, and get good results.

BEAVER BOARD costs less than lumber or lath and plaster; does not crack or deteriorate; it resists heat, cold, sounds, strains and vibrations; it is easily and quickly put up.

Sold by hardware, lumber, paint, wall paper and builders' supply dealers and decorators. If your dealer doesn't handle we shall be glad to see that you are supplied promptly.

Write today for free booklet "Beaver Board and Its Uses," and full instructions for application.

**The BEAVER COMPANY of BUFFALO**

In U. S., address 217 Beaver Road, Buffalo, New York.  
In Canada, address 167 Beaver Triangle, Ottawa, Ontario.



glass, both for public buildings and for residences, is coming more and more into use, and at the same time art glass is more freely used today than ever before for table lamps and



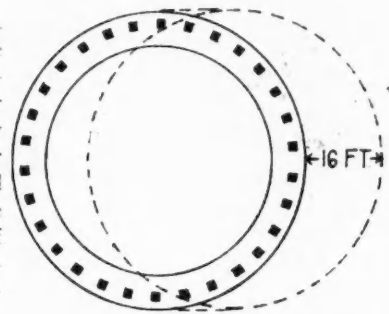
for other objects of interior adornment. In the face of this great activity in favor of art glass the long experience of the Stuess Glass Company should be of great advantage to practical builders, since it enables them to design and fabricate the most attractive and pleasing ornamental pieces at factory prices. They are ready to figure on any kind of art glass job and are equipped to furnish sketches and estimates promptly.

**The "Leaning Tower" Overdoing It**

The sword-swallower, the lion-tamer, and other daring performers who finally come to grief by carrying their specialties too far, seem likely to be joined soon by Pisa's leaning tower, which has lately shown a tendency to lean more than ever. Frightened Pisa has appointed a commission to look into this alarming inclination, and the commission reports that a new foundation must go under it if it is to stand any longer. Otherwise, after serving to illustrate the stability of inclined structures to generations of school boys, it would doubtless give one final sad demonstration of what happened to such structures when the center of gravity falls outside the base line. The *Literary Digest* reports the following from a writer in *Cosmos* (Paris):

"The leaning tower of Pisa, renowned throughout all the world, is leaning more and more and is causing anxiety; it has even been necessary to stop ringing its bells. At the opening of the nineteenth century its inclination was 8.6 per cent of its height; today it has reached 9.2 per cent, and what is still more disquieting is the fact that this increase of departure from the vertical has taken place almost all at once.

"A commission has been appointed to study the situation, and its report is most pessimistic. It states that the foundations, instead of consisting of a large, massive base, as has been believed since the studies of Grassi in 1831 and those of Rohault de Fleury in 1859, are formed only of a ring exactly the size of the walls, and go down only about ten feet below the ground—a depth absolutely insufficient for a monument of this importance.



**Build to last**

See that your roofing is made of material that lasts as long as the building. Be sure it is made of Trinidad Lake asphalt—Nature's everlasting waterproofer.

**Genasco  
Ready Roofing**

is made of Trinidad Lake asphalt. It doesn't crack, rust, rot, or go to pieces. It gives lasting protection to all your buildings.

**The Kant-leak Kleet** makes application doubly easy. Saves time. Makes seams absolutely water-tight without cement or large-headed nails. Gives fine finish. Supplied in rolls of Genasco when you ask for it.

Mineral or smooth surface. Don't be misled by the similar surface of other roofings. Time tells the tale. Ask your dealer for Genasco. Look for the trade mark—your real guarantee. Highest award, Seattle, 1909. Write for the Good Roof Guide Book and samples.

**THE BARBER ASPHALT PAVING COMPANY**

Largest producers of asphalt, and largest manufacturers of ready-roofing in the world.

**PHILADELPHIA**

New York San Francisco Chicago

**Cross-section, Genasco Stone-surface Ready-Roofing**

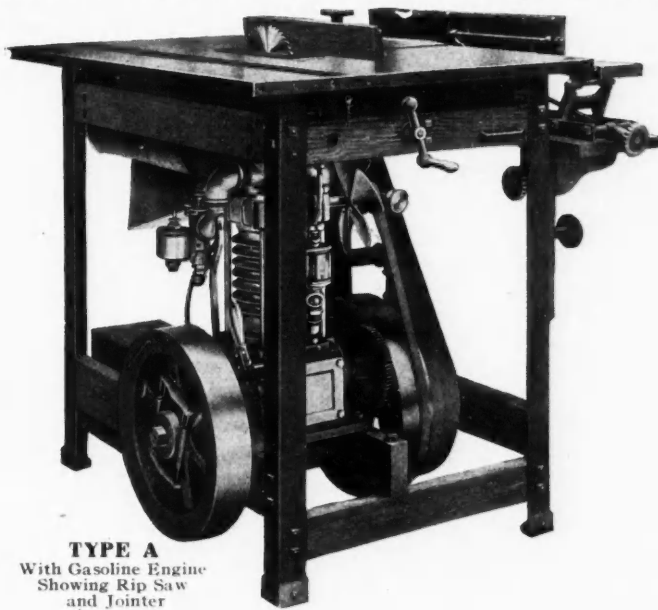




# The Grimm Woodworker

## On the Job

It is now getting to the point where the Contractor, Builder or Concrete Constructor who lands the best contracts, is the man who has the most up-to-date labor-saving facilities at his command.



**TYPE A**  
With Gasoline Engine  
Showing Rip Saw  
and Jointer

The GRIMM WOODWORKER is a machine for the up to-date contractor.

Its power is built in, a dependable gasoline engine.

It is portable, weighs only 400 pounds.

It is ready to run, always, with a turn of the starting crank.

It will do all the light work on the job that ordinarily has to be done by hand.

The Rip Saw attachment alone would make the machine worth its price to you, but there are eight other attachments.

**Rip Saw**                      **Jig Saw**  
**Cross Cut Saw**          **Jointer**  
**Dado Head**                **Sander**  
**Boring Machine**        **Moulding Knives**  
**Emery Wheels**

You can order all of these or any selection.

### In the Shop

THE GRIMM WOODWORKER equipped with direct connected electric motor is built in two sizes, each carrying the nine attachments, a complete woodworking and power plant standing on four legs.

All attachments secure to the left or right ends of one mandrel.

All adjustments are made by interchangeable hand wheels.

Motor is protected from dust and dirt by galvanized iron hood.

The machine is built to wear indefinitely.

Construction: Angle iron frame supported by selected oak girders. Table top. Narrow birch strips glued together and bound with iron. Mandrel has long babbit bearings. All attachments are of first quality.

The GRIMM WOODWORKER is built to save you time, labor, material, power and floor space. And it will make such saving whether you have occasion to do the common ordinary or the skilled expert things with wood.



**TYPE B**  
With Electric Motor  
Showing Rip Saw  
and Jointer

Write for our Attractive Booklet and Prices

**Littlefield & Clark, 46 Erie St., BUFFALO, N. Y.**

"The examination has made it possible to clear up the familiar question—was the tower built intentionally with its present inclination, or is this due to settling?

"Both hypotheses have elements of truth in them.

"The construction was begun A. D. 1170 and was not completed until 200 years later. It was to have been carried up vertically, but the work was interrupted after some time and not begun again until 1298. It was then seen that the part that had been built had taken a certain slant. To preserve the existing structure the work was resumed by modifying the mode of building. The line of inclination was followed, but the horizontal level of the stories was kept by gradually increasing the height of the arches on the lower side. This artifice, odd though it appears, does great honor to the architects who dared to apply it to so important a structure. Besides being very bold, it gives to the edifice an aspect all its own, much surpassing in the picturesqueness and harmony that of a regular tower, simply inclined.

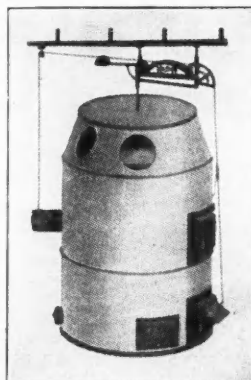
"The sinking is attributed to undermining by water and also to human imprudence, which opened drains, and even excavated a cistern, at the foot of the tower."

### Headquarters for all Tools and Hardware

The Orr and Lockett Hardware Company was established 'way back in 1872, thirty-eight years ago. Their store is located on Randolph Street, near State, and they want you to come in and see them the next time you are in Chicago. Any reader of the AMERICAN CARPENTER AND BUILDER, or his friend, is assured of a hearty welcome at their store. As being probably the largest and most complete retail hardware establishment in the country, a visit will be worth your while. All the latest designs in builders' hardware are on exhibition and practically every form of mechanic's tool that was ever devised is carried in stock.

### Opportunity for Carpenters

In their advertisement in this issue, the F. D. Kees Manufacturing Company suggest a profitable side-line for carpenters during the fall and winter. This is: Selling and installing their Automatic Furnace Regulator.



Saves Coal Bills

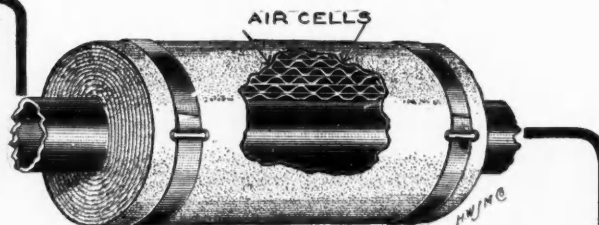
Some people who have used it for the past three seasons say that it makes a difference of 25% in their coal bills. At any rate no more coal is burned than is needed to keep the house at the temperature desired. None is wasted in over-heating.

On account of the carpenter's knowledge of builder's hardware, he is especially fitted to install the machine. No expert knowledge of furnaces is necessary. And carpenters are well acquainted with the people who are most likely to buy.

It will pay our readers to investigate this. Anyone whose home is heated with a furnace will be interested in it on his own account, aside from the possibilities of selling the machine to others. The profit is said to be large enough to make it worth while to put in one's time at this work. The

## Economy in Heating

The greatest factor in economical heating is an efficient pipe covering. When steam or hot water are delivered through uncovered or poorly insulated pipes the loss by radiation and condensation, and the consequent waste of fuel, is enormous. Unfortunately, radiation and condensation, cannot be observed, consequently many who realize the necessity of covering pipes do not realize that many pipe coverings are but little better than none and are only deceiving.



## J-M Asbestocel Pipe Covering

For Hot Water and Low and Medium Pressure Steam

Costs practically the same as ordinary pipe covering, but is many times as efficient because it is made on a different principle.

The insulating properties of pipe covering depends on the amount of dead (motionless) air it confines.

J-M Asbestocel is built on the principle of an arch, with the air cells running around the pipe, preventing the circulation of air, while other coverings have the cells running from end to end allowing the air to travel back and forth. By actual tests, J-M Asbestocel has shown that it will pay for itself in fuel saved in an average of eight and one-half months.

Being made of asbestos, it is light in weight, fireproof, and not affected by heat, dampness, acid or chemical fumes. It cannot crack, break or lose its insulating efficiency from rough handling or vibration. It is as good an insulator at the end of ten years as when first put on.

May we send you sample 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

Toronto, Ont.

For Canada:—THE CANADIAN H. W. JOHNS-MANVILLE CO., LIMITED  
Montreal, Que.

Winnipeg Man.

875

Vancouver, B. C.

# The Big-Chuck Brace with the Tight Grip that Releases Easily

**T**HE Ball-bearing Chuck that has bored ten-penny nails through solid oak, and that even a weak wrist can tighten and release with ease, is found only in the well-known **P. S. & W. SAMSON BRACE**

The Samson Brace also has the Alligator Jaw that parallels itself to the shape of any drill-shank, round, square or taper; and the Steel-clad Head with dust-proof ball-bearings—the head that will not split, work loose or come off.

Our Large Line of Guaranteed Hand Tools for Carpenters includes Braces, Auger Bits, Chisels, Gouges, Drawing Knives, Squares, Calipers, Hammers, Hatchets, etc., etc. Every one of our guaranteed Hand Tools is branded with

## The MARK of the MAKER

Write today for our free "Mechanics' Handy List," a 165-page book, now in its third edition. Over 30 pages of valuable information and a catalog of over 200 Guaranteed Hand Tools for Carpenters, Machinists, Electricians, Tinsmiths, etc.

**The Peck, Stow & Wilcox Co.**  
**MANUF'RS** of the Largest Line of Mechanics'  
Hand Tools offered by Any Maker.

Established 1819.

Five Large Factories.

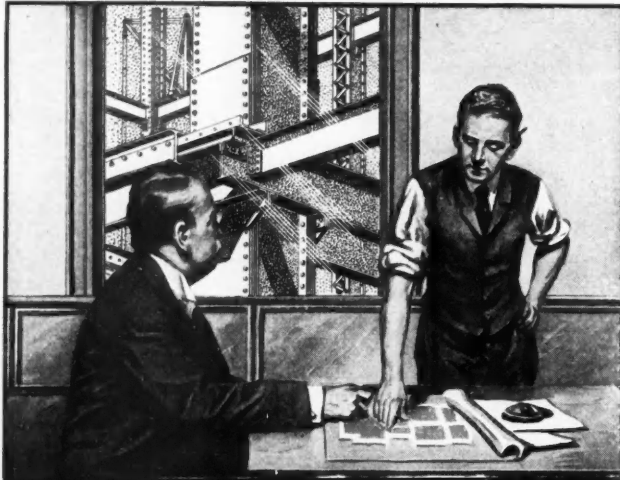
Address Correspondence to 22 Murray Street, New York City



REG. U. S.  
PAT. OFF.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER





## Have YOU Salary-Raising Ability?

That's the kind of ability that brings promotion, keeps positions safe in times of trouble, and wins success. That's the kind of ability the International Correspondence Schools can give to you—whether you're a young man or an old man, an office man or an outside man, a day worker or a night worker—and no matter where you live nor how little spare time you have.

You do not have to be a college man to secure a salary-raising ability. If you can read and write, the I. C. S. can train you for a better position. Nor is it necessary that you have a bank account to get this training. There is a way that suits your case exactly.

You will never gain a salary-raising ability by sitting still and thinking what you could do if you only had the other fellow's chance. You **must** make the chance by learning to do some one thing better than the other fellow. And the best way to do this is through the help of the I. C. S.—an institution that will make you an expert in the occupation of your own choice without requiring you to leave home, and without interfering with your regular work.

**The trained man has the advantage every time.**

As surely as the I. C. S. have raised the salaries of tens of thousands of others, they can raise your salary. Read the list of positions in the attached coupon, mark the one you like best, and mail the coupon to the I. C. S. Doing so places you under no obligation whatever. **Send the coupon NOW.**

### International Correspondence Schools

Box 910, SCRANTON, PA.

Please explain, without further obligation on my part, how I can qualify for a larger salary and advancement to the position, trade, or profession before which I have marked X.

Architect	Estimating Clerk	Automobile Running
Arch'l Draftsman	Civil Engineer	Foreman Machinist
Contract'g & Build.	Surveying	Sh -Met. Pat. Drafts.
Building Inspector	Mining Engineer	Textile Manufact'g
Structural Engineer	Mechanical Eng.	Bookkeeper
Struct'l Draftsman	Mechanical Drafts.	Stenographer
Plumb. & Heat. Con.	Stationary Engineer	Advertising Man
Supt. of Plumbing	Electrical Engineer	Window Trimming
Foreman Steam Fit.	Electric Lighting	Commerc'l Illustrat'g
Plumbing Inspector	Electric Railways	Civil Service Exams.
Heat & Vent. Eng.	Concrete Construct'n	Chemist

Name \_\_\_\_\_

Street and No. \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

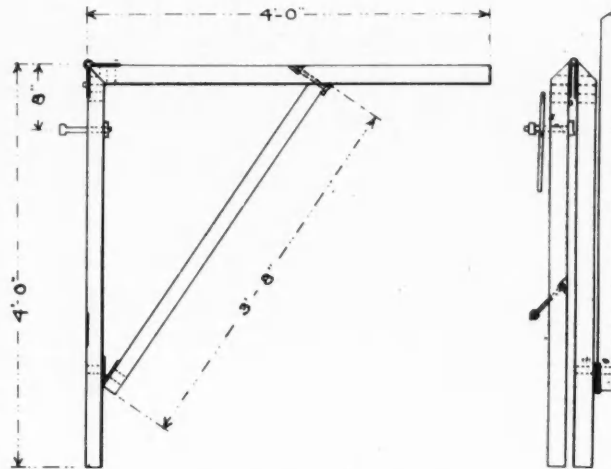
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Kees Manufacturing Company of Beatrice, Nebraska, is well known by our readers as makers of the Gossett Hinges for screens and storm sash which have been advertised in the AMERICAN CARPENTER AND BUILDER for years.

When writing to them please mention this paper.

### Folding Wood Scaffold Brace

Mr. H. C. Lott of Morrow, Kansas, sends a diagram of a scaffold bracket that he has perfected. It is simple in

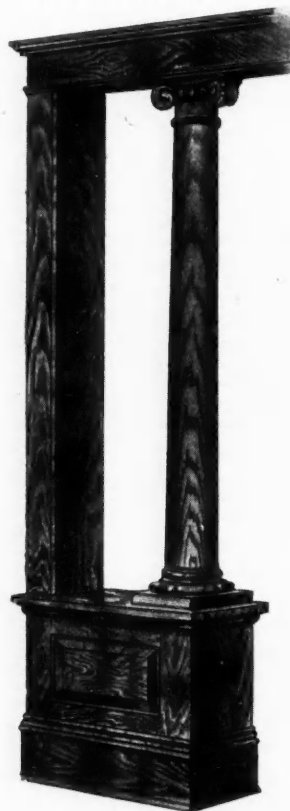


Easily Made Folding Bracket

construction and when not in use, it can be folded up to the minimum space, thereby making it handy for transportation or storing away when not in use.

### Bertelsen Adjustable Grilles

The Bertelsen Adjustable Grille Co., 306-308 So. Clinton St., Chicago, has issued a very complete and well illustrated booklet of convenient size for use, showing 60 of their designs for grilles and arches. Among these are a number of their famous patented "Adjustable" grilles. The designs for these are so contrived in an ingenious way that any width of opening can be fitted. The designs are exceptionally pleasing and should be much appreciated by builders who want to finish their houses with artistic wood grilles.



In this catalog all prices with trade discounts are given, so the builder can tell without any difficulty or delay just what any grille will cost. This feature, together with the convenient size of the catalog and the large assortment of styles shown, make this a very valuable reference book for the carpenter and contractor to have. The Bertelsen Adjustable Grille

Co. will mail you a copy promptly on request.

# FAMOUS

## Universal Woodworker

# 25% to 50% Reduction!

Here's a Woodworker for small Contractors.  
Sold at a Low Price for Ninety Days. No  
Competitive Machine can compare with  
it for High Quality and Low Price.

To meet low-price competition we are making a special proposition to small contractors. We offer a Universal Woodworker, equal in every way to our higher priced machines except in size, guaranteed in every respect, which costs less than inferior machines and does more—an ideal machine for small carpenters, builders and contractors. We will sell this machine during the next three months, 25 to 50 per cent. below our regular price. You must act at once.

### See What it is!

The machine comprises:

- 20" Band Saw
- 8" Jointer
- Vertical Shaper
- Pole and Felloe Rounder
- Emery Grinder
- Saw Table with Raised or Lowered Arbor
- Boring Machine
- Dadoing Machine

### Every Contractor Needs One

These eight machines are combined on the one frame and can be operated by anybody. With the addition of attachments the machine will do sixteen different kinds of work.

No contractor can afford to do without one of these machines. The cost can be saved within a short time, to say nothing of time saved and added convenience.

### A Complete Machine-Shop in Itself

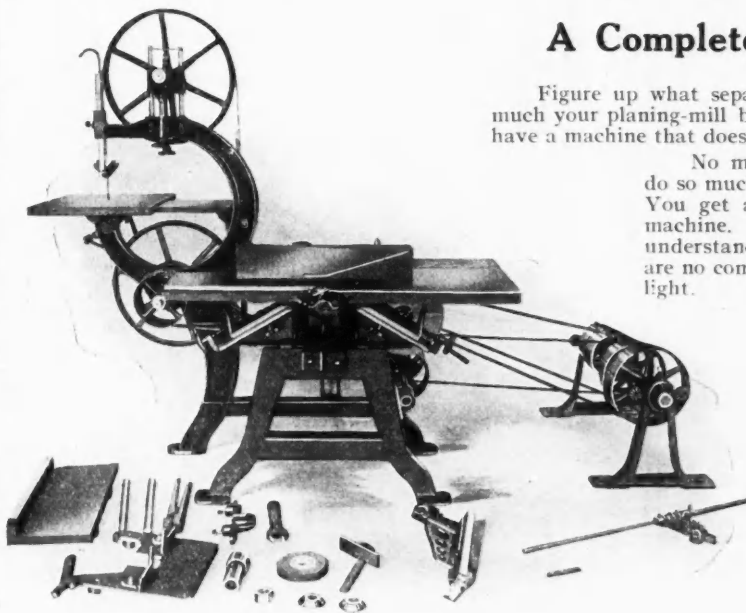
Figure up what separate machines would cost you. Consider how much your planing-mill bills amount to. Think how convenient it is to have a machine that does everything, with only one investment.

No machine is like the FAMOUS. No machine can do so much or can be bought or operated so economically. You get a complete machine-shop for the price of one machine. And it's so compactly built that anybody can understand it and nothing can get out of order. There are no complicated parts—everything is as plain as daylight.

### Send for Particulars at Once!!

Remember you get a reduced price if you order within the next ninety days. This machine has no equal but we are offering it as a special proposition in order to meet the competition of inferior machines.

To understand what you are getting you need our catalog. Send your name and address for full literature and we will place your name on the mailing list for "FAMOUS TALKS"—a monthly publication that tells all about woodworkers. Don't delay, because time is money—send today.



## The Sidney Tool Co.

Sidney, Ohio



**UNION  
METAL COLUMNS**

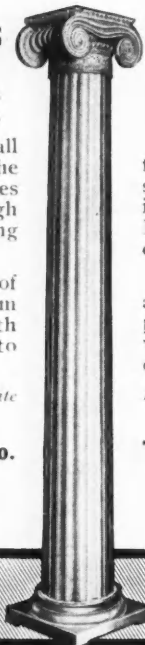
**Most Durable Columns  
for Porches and Pergolas**

They are made in all required sizes, from the smallest up to 40 inches in diameter and as high as 35 feet, following classic designs.

In use on homes of every type and size from mansion to cottage, with absolute satisfaction to every owner.

*Every carpenter should write for catalog and prices.*

**The Union Metal Mfg. Co.**  
532 Clifton Street  
CANTON - OHIO



**UNION  
METAL COLUMNS**

**Splitting, Warping and Rotting are Impossible**

They are made with fluted and tapered steel shafts and best gray cast iron bases and capitals. Broadly protected by patents allowed and pending.

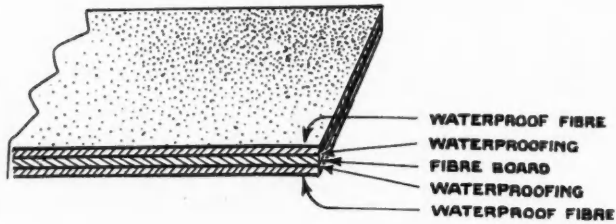
Union Metal Columns are not expensive and support far more weight than wood columns of same diameter and last longer.

*Every carpenter should write for catalog and prices.*

**The Union Metal Mfg. Co.**  
532 Clifton Street  
CANTON OHIO

**Utility Wall Board**

During recent years there has been a growing feeling among carpenters and builders that the ordinary lath and plaster we have been accustomed to does not form the ideal material for the finishing of building interiors. The lath is too expen-



sive to put on; and, owing to the ever-increasing scarcity of first-class lumber and the accompanying increase in blue, sap-stained, "dead" lath in every bundle, there has been a growing demand for something better. In response to this, wall boards have been developed to take the place of the lath and plaster, and are offered as being more easily applied, and at the same time making a stronger, warmer and more satisfactory wall.

The newest of these improved building materials is the "Utility Wall Board," a product of the well-known Heppes Company, 4503 Fillmore St., Chicago. This wall board pos-



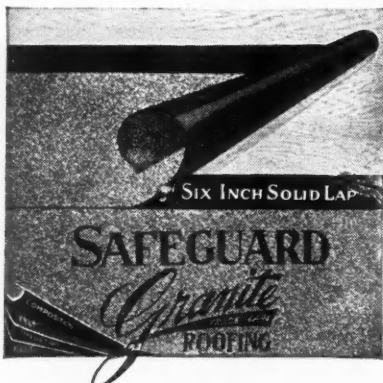
**Paneled Interior Using Utility Wall Board**

sesses a great deal of merit and seems to be admirably adapted for use in modern building, especially for neat and attractive paneled effects for interiors.

Utility wall board is made in sheets 32 inches wide and runs from the baseboard to the ceiling, making the joint on every other stud. The board is furnished in lengths of 6, 8, 9, 10, 11 and 12 feet long and where longer lengths are required it can be furnished.

The accompanying photograph is of a room built with "Utility Wall Board" and shows the handsome panel effect that can be secured by this method. The studs are 2 by 4's set on 16-inch centers, and the strips of wall board were nailed to them, running the sheets full length from floor to

**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.**  
Chicago 16 Battery Place, New York Pittsburg





# Vacuum Cleaning

## A Money-Getting, Tenant-Attracting, Property Improvement

A well-known New York City Construction Company has within the past four years installed the "RICHMOND" Vacuum Cleaning System in four high-class Apartment houses. The President was heard to thus express himself: "Why do I have vacuum 'on tap' ready for immediate service at any moment the tenant desires? It is because I have found that the prospective tenant looking for desirable quarters will chose from a number of Apartment houses (every thing else being equal), the one where perfect Vacuum service is available."

This gentleman merely voices the opinion of owners and builders in all parts of this country who

have learned from experience of the rapidly growing demand for Vacuum Cleaning.

TODAY, all owners and builders recognize the need of perfected Vacuum service, on account of its labor-saving and sanitary features.

TODAY, the prospective tenant is begining to ask: "Have you a Vacuum plant installed in the building?" In a short time this progressive tenant will change this inquiry to: "What vacuum service have you 'on tap' in the building?"—referring, of course to the highly efficient, built-into-the-house "RICHMOND" Stationary Vacuum Cleaning System.

## "RICHMOND" Stationary Vacuum Cleaning Systems

THE McCRUM-HOWELL Co., at a large expenditure, has brought together under one control, all of the important Vacuum Cleaning patents.

Thus enabling the public, for the first time, to obtain in a single system, all of the ingenuities of many inventors.

This modern and sanitary method of dust disposal is applicable to buildings of all classes, large and small, old and new, and particularly hotels, hospitals, theatres, office and apartment buildings, stores, residences, churches, etc.—for we make systems suitable for every condition and capacity.

The "RICHMOND" Stationary Vacuum Cleaning System thoroughly removes dust and dirt and thereby prevents its accumulation. It is cleanly, efficient and economical, and saves time, expense and labor as compared with any other method.

No better evidence can we offer of the high mechanical perfection, excellent efficiency and operative economy of our "RICHMOND"

System than the fact that during the comparatively few years it has been on the market, hundreds of these plants have been installed in the leading buildings, in every city of importance in the country. Architects and engineers of highest standing in their profession endorse and specify it, recognizing its superior merits over any other system in existence.

### Ask Your Plumber or Steamfitter

Any plumber, or steam fitter, can install our "RICHMOND" Stationary Vacuum Cleaning System, or give prices and descriptions.

Or we will be pleased to place our engineering department at the disposal of any architect, builder or owner with vacuum cleaning problems to be solved.

The convenient coupon will bring full information regarding The McCrum-Howell Vacuum Cleaning Systems.

### WARNING

All persons are warned that henceforth all authorized stationary vacuum cleaning plants will bear The McCrum-Howell Company license plate. Systems offered without The McCrum-Howell Company license are infringements and will subject not only the makers thereof but also the purchasers and those who use them to damage suits, which in all cases will be promptly instituted. Please be sure to look for The McCrum-Howell Company license plate, which is to be found in each case on the vacuum producing apparatus.

### THE McCRUM-HOWELL CO.

GENERAL OFFICES: Park Ave. and 41st St., N. Y. City  
Branches and Agencies in All Cities

#### MANUFACTURERS OF

"RICHMOND" Heating Systems—"RICHMOND" Bath Tubs,  
Lavatories and Sanitary Plumbing Devices—"RICHMOND"  
Concealed Transom Lifts—"RICHMOND" Suds Makers—  
"RICHMOND" Suction Cleaners—"RICHMOND" Vacuum  
Cleaning Systems.

FIVE PLANTS: One at Norwich, Conn.—Two at Uniontown, Pa.  
One at Racine, Wis.—One at Chicago, Ill.

### Memo Coupon

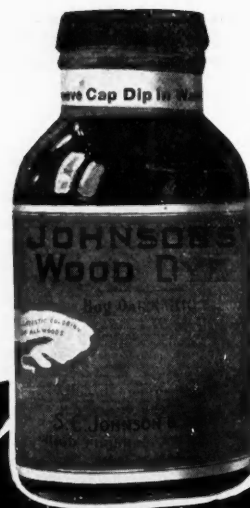
Residence	Libraries
Apartments	Churches
Hotels	Theaters
Schools	Factories
Office Buildings	Stores.

Name .....

Address .....

Simply mark an (X) before the subject in which you are interested. Mail the coupon to The McCrum-Howell Co., Park Avenue and 41st Street, New York, and full descriptive matter will be sent.

Amer. Car. & B. Oct. 10.



# Free

We want you to test Johnson's Wood Dye and Under-Lac at our expense. A single trial will convince you of their merits.

## Johnson's Wood Dye

is not a mere stain—it is a real, deep-seated Dye that penetrates the wood, giving a rich and permanent color. It will not raise the grain in the slightest.

Johnson's Wood Dye is made in 14 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. 172 Flemish Oak
No. 129 Dark Mahogany	No. 178 Brown Flemish Oak
Half Gallons, \$1.50 each	

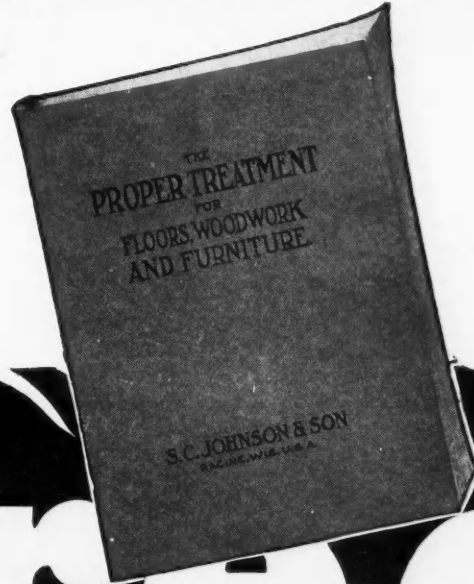
Any other shade may be easily produced, as each shade may be lightened by adding alcohol and darkened by adding No. 172 Flemish Oak Dye.

### Mail the Coupon Now

Use the coupon on next page for *free samples* of Johnson's Wood Dye and Under-Lac. Be careful to state number of shade of Dye wanted. On request we will also send you a set of our Wood Panels and a copy of our booklet, "The Proper Treatment for Floors, Woodwork and Furniture," showing all shades of Dye.

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

*"The Wood Finishing Authorities"*



**Free**

## 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. Neither is it thick and sticky like varnish — it dries in a half hour. Gallons \$2.50 each.

## Johnson's Wood Panels

In addition to sending free samples of Johnson's Wood Dye and Under-Lac, we are glad to supply painters and contractors with panels of various woods finished with Johnson's Wood-Dye, Under-Lac and Prepared Wax. If you care for a set of these panels drop us a line—and we shall be pleased to send them to you without any obligation whatever on your part. You will find the panels very convenient to show prospective customers and they will assist you in procuring contracts at *Good Prices*. Mail the coupon now for samples, panels and book, "The Proper Treatment for Floors, Woodwork and Furniture."

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 samples, and if they are satisfactory, will use and recommend them in my work.

Name.....

Address.....

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

*"The Wood Finishing Authorities."*

A.C.B.-10.....



ceiling. The trim was put on after the wall had been painted, as that way it makes the painter's work easier. The base board and chair rail were of usual stock dimensions, while the strips were of ordinary yellow pine, surfaced four sides,  $1\frac{3}{8}$  inches wide and  $\frac{1}{4}$ -inch thick. Under the chair rail the strips were placed 32 inches apart, while above the chair rail they were placed 16 inches apart. The color scheme was yellow and dark olive green, using two coats of ordinary oil paint.

The sketch shows the construction of "Utility Wall Board" and makes clear its durable and waterproof character. Still, to really appreciate its structure a sample should be examined; which samples may be had from the manufacturer on request.

"Utility Wall Board" is applied by the carpenter, being nailed right to the studs. It is easy and clean to handle; it cuts with a saw and fits any space; and can be put on in winter or summer. With it there is no waiting for plaster to dry and no cracked walls. The Heppes Company, 4503 Fillmore St., Chicago, Ill., desire every reader of the AMERICAN CARPENTER AND BUILDER to write at once for free samples and circulars.

### Lubrication Preserves Wire Rope

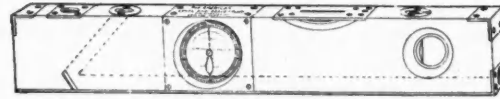
Lack of proper lubrication is the greatest cause of disintegration of wire rope. The corrosion is particularly noticeable on the inside wires of the strands, due to the fact that the lubrication has failed to penetrate to them.

The scientific lubrication of wire rope, according to the *American Wire Rope News*, is a matter which has not been given the attention it deserves. A wire rope is very complex, requiring constant lubrication not only on the surface, but inside of the strands. Many wire ropes fail because of the complete corrosion of the inside wires, while the outside wires are apparently in good condition.

### New Level and Grade Finder

An instrument of great interest and value to architects and engineers, as well as to carpenters, bricklayers and masons, has been perfected and placed on the market by Edward Helb, of Railroad, Pa. It is called the American Combined Level and Grade Finder.

It is an instrument, with which at one glance you can get the true slant of any line or grade, either in degrees, inches or percentages or all at the same time, and will at once indicate, and give the exact distance out of true level. It proves serviceable in all forms of grading, laying out roads, land-



scape gardening, placing of pipes for drainage, getting fall of water, getting grade of hills for automobilists, cutting of rafters, laying off and leveling buildings, getting height of any object, etc.

The construction is simple and durable. It is built on sound scientific principles.

A card mentioning the AMERICAN CARPENTER AND BUILDER and addressed to Edward Helb, Railroad, Pa., will bring full description and explanation of the use of this ingenious tool.

### Menace of Roof Signs and Water Tanks

The placing of a water tank, weighing, with its contents, anywhere from ten to fifty tons or even more, upon the top of a building, is an extremely serious undertaking, one which certainly calls for the oversight of an architect or the consulting engineer. The usual method of support adopted involves the concentration of this load upon a few points, fre-



### Does It Look Familiar?

This is the invariable condition of the average wood shingle after a few years usage. The entire roof must be replaced after a short length of time, to say nothing of the constant repair bills during the intervening years.

The other picture above shows what a new Cortright Metal Shingle looks like and what it will look like *twenty years from now*—if it has the average care.

And what protection from fire is the wood shingle—*none*.

Only the other day one of our foremost insurance experts in talking to the Chamber of Commerce in a leading eastern city expressed the sentiment prevailing among those students of the subject that *the greatest evil, productive of the heaviest fire losses was the use of wood shingles*.

Isn't it logical when you think of it?

Now we have two free illustrated books which enlarge on this subject and which will give you some profitable information.

We're waiting for you to send your name on the attached coupon.

**CORTRIGHT METAL ROOFING COMPANY**  
Philadelphia and Chicago

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 tell you something about slate as a form of roofing.

Cortright  
Metal Roofing  
Company  
Philadelphia, Pa.  
Gentlemen:  
You may send me the two free books, offered by you in the October issue of the American Carpenter and Builder

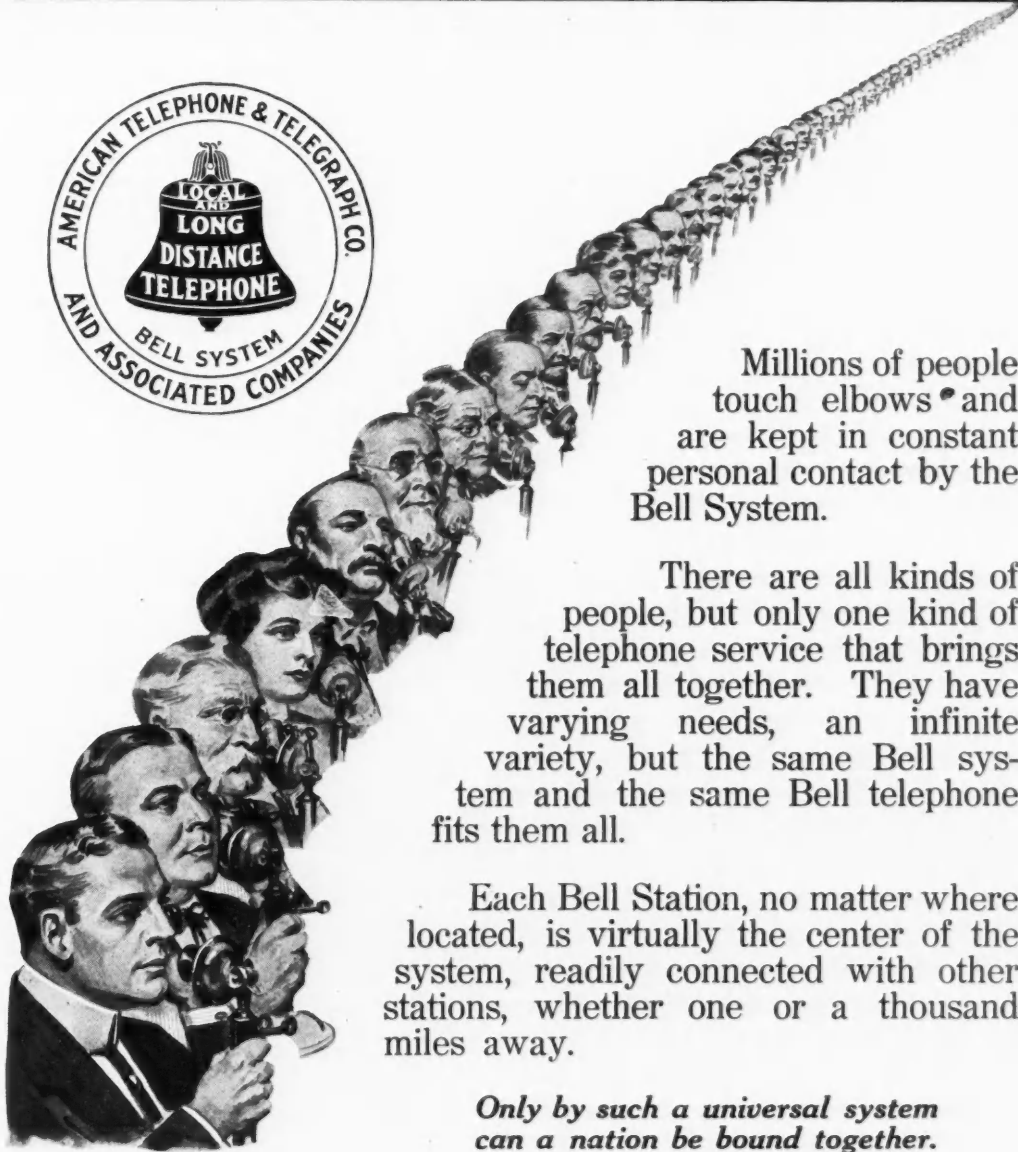
Name.....

Street Address.....

City.....

Business.....

# A United Nation



Millions of people touch elbows and are kept in constant personal contact by the Bell System.

There are all kinds of people, but only one kind of telephone service that brings them all together. They have varying needs, an infinite variety, but the same Bell system and the same Bell telephone fits them all.

Each Bell Station, no matter where located, is virtually the center of the system, readily connected with other stations, whether one or a thousand miles away.

*Only by such a universal system can a nation be bound together.*

**AMERICAN TELEPHONE AND TELEGRAPH COMPANY  
AND ASSOCIATED COMPANIES**

quently not over four; and too often this concentrated load will be allowed to bear directly upon the top of a brick wall that was never intended to serve as anything more than an inclosing or a partition wall of the building, and therefore was not designed even to carry more than the distributed load of the ordinary roof construction. Hence, it must frequently happen that the brickwork is subjected to crushing stresses much higher than safe practice would allow, and undesirable buckling stresses also are brought to bear upon the expanse of wall below.

A similar investigation should be made whenever display signs of great magnitude are erected above the roof line, where they are exposed to the full sweep of the winds. That this is not always done, is proved by the number of signs that are torn down when heavy storms pass over a city. Few people outside of those whose duty it is to have expert knowledge of the subject, understand how quickly a heavy wind blowing on an exposed surface will develop tons of pressure.

### World's Output of Metals

The world's metal statistics, compiled annually in Germany, give the production for the year 1909 as follows: The production of copper was 844,100 tons, or an increase of nearly 100,000 tons over 1908. Of this amount the American output was 498,200 tons, and the American increase over 1908, 66,300 tons, or more than half the total increase for the whole world.

The output of lead amounted to 1,081,900 tons, of which the United States produced 339,700 tons; the output of tin was 108,300 tons; the production of zinc was 783,200 tons, of which the United States was responsible for 240,445 tons; the total output of nickel was 16,100 tons, the United States being credited with 9,000 tons, and the output of aluminum was 24,200 tons.

### Jahant Down-Draft Furnace

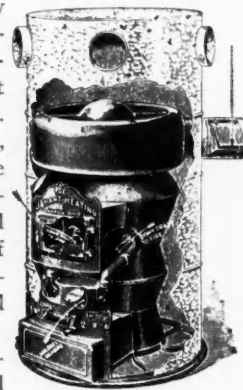
The accompany illustration of the Jahant Down-Draft Furnace brings to mind the fact that in securing a heating system for any building, the best policy is to deal direct with the manufacturers and thus have them responsible for the results obtained and at the same time save the dealer's profit.

The Jahant Heating Co., of Akron, Ohio, manufacture and sell direct the celebrated Jahant Down-Draft Furnace. This furnace is so constructed as to give the maximum amount of heat at minimum fuel cost. This furnace combines perfect heating and ventilating.

By writing for their 32-page furnace book, which is sent free, and then sending them the required information as per instructions, you will receive a detailed description of the proper furnace outfit for your building, together with the exact cost to you for the complete outfit delivered at your freight station, charges prepaid. The price named will include everything needed including the tools to be used in setting up the furnace. The only thing you will have to supply is the small amount of labor necessary to install the outfit.

When your order is received, a detail plan showing the proper location of each fitting and pipe is prepared by one of their expert heating engineers. This plan and complete working blue prints are shipped with the outfit and makes the work of proper installation an easy matter for any man handy with tools.

This company takes all the risks and allows you one year's free trial at their expense. You can buy a furnace and com-



## ASBESTOS "CENTURY" SHINGLES

*"The Roof that Outlives the Building"*

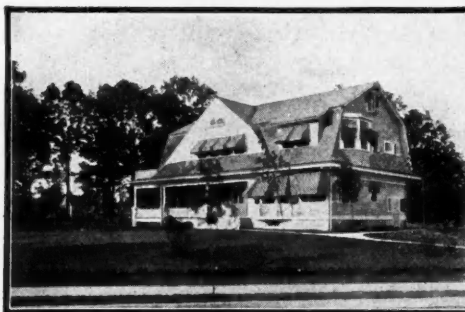
Here is the client who prides himself on "buying with his eyes wide open." Keen on getting full value for his money. The most troublesome man to deal with—but the best worth satisfying in the long run.

Probably he has had some experience with the trouble-breeding old-time roofings—with their high upkeep cost, painting and repair charges.

Tell him all the facts about Asbestos "Century" Shingles—the first practical *light-weight* roofing of reinforced concrete.

Asbestos "Century" Shingles are made of hydraulic cement reinforced with interlacing asbestos fibres—compacted by tremendous pressure.

**The KEASBEY & MATTISON COMPANY, Factors, Ambler, Pennsylvania**



Asbestos "Century" Shingle Roof—Residence of A. W. MacCallum, Merchantville, New Jersey; A. W. MacCallum, Merchantville, Architect; Thomas Oliver, Chester, Pa., Contractor.

Weatherproof—fireproof—timeproof. They cannot rot, rust, crack, split or blister.

Asbestos "Century" Shingles literally outlive the building—without repairs.

You can get Asbestos "Century" Shingles in shapes and sizes to fit any architectural scheme. Three colors, Newport Gray, (silver gray), Slate (blue black) and Indian Red. Ask your Roofer for new quotations. Write for Booklet "Everlasting 1910."

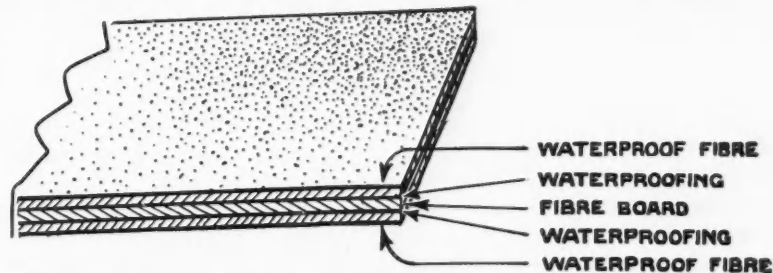


# UTILITY WALL BOARD

**A Fibrous Waterproof Board in Sheets  
To Be Used Instead of Lath and Plaster**

## CANNOT CRACK—NO DIRT

For New  
Buildings  
or  
Repair  
Work



Warm in  
Winter  
and Cool  
in  
Summer

**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—

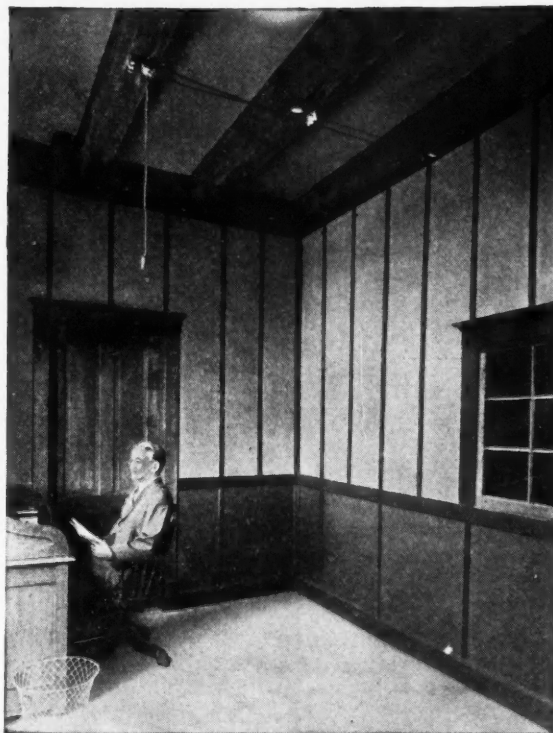
### Mr. Contractor:

This is your chance to make more money and finish your jobs quicker.

Every up-to-date builder should see 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.

*Samples are Free*



### 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 ruined decorations.

*Send for free samples and circulars quick.*

**THE HEPPE'S COMPANY, 4503 Fillmore St. CHICAGO, U. S. A.**

**I never saw  
a saw, saw  
the way this  
saw, saws.**



From tip to handle the Simonds Saw shows the result of utmost care.

The very fit of the handle is exactly right to give a perfect grip with an easy "balance" and just the right "hang."

The steel from which the saw is made is the famous *Simonds steel*, made expressly for and used only in the Simonds Saw.

Its temper is as nearly perfect as human thought has yet achieved. Tempered by our own secret process it holds a keen cutting edge in a marvelous manner, requiring but little attention or sharpening.

When you buy the Simonds Saw you are getting the highest grade saw made.

Thousands of experienced carpenters testify that

**SIMONDS SAWS ARE THE BEST**

**And They ARE The Best**

Protect yourself against imposition in buying saws by looking for Simonds trade mark. Whatever saw you find that on you are safe in buying, and *don't buy any other* unless you are prepared to be disappointed.

If your dealer does not keep the Simonds, let us know and we will see that you are supplied.

**SEND FOR "SIMONDS CARPENTER GUIDE" MAILED FREE**

This booklet will tell you about Simonds Saws and give other information of real interest and value.

**SIMONDS MANUFACTURING CO.**

**Fitchburg, Mass.**

Branches in leading cities

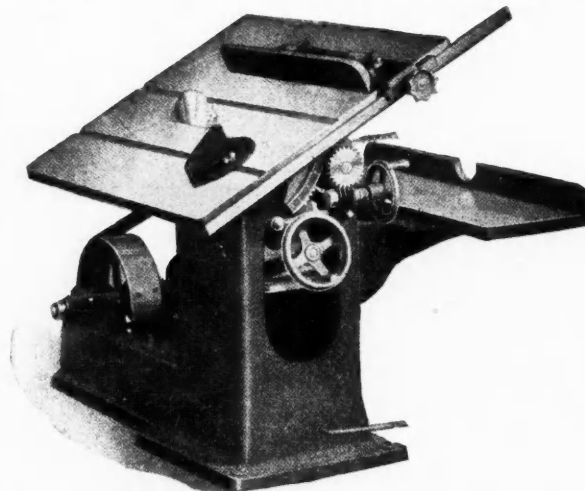
plete outfit of them on monthly payments without additional cost. They guarantee satisfaction or money refunded, and back up their offer with a guarantee bond. Write today for their free furnace book. Address The Jahant Heating Co., 200 Howard St., Akron, Ohio.

### Maxims of a Machine Woodworker

- Don't say "that's good enough."
- Don't use a screwdriver for a cold chisel.
- Don't be too important to do insignificant jobs.
- Just remember that the boss has some rights, too.
- Don't make a practice of being late to your work.
- Don't take off your overalls before quitting time.
- Don't try to cover up your mistakes.
- Don't wear jewelry on your hands; it is dangerous.
- Don't wait until Monday morning to fill your oil can.
- Don't deny spoiling a piece of work if you have done it.
- Don't be too eager to make an impression on the foreman.
- Don't think yourself above asking questions for information.

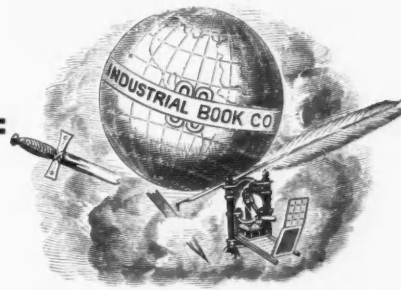
### No. 2 Crescent Combination Saw-Table

This machine is excellent as a rip-saw table; it is equally handy for grooving, rabbeting, beveling, cutting off, etc. The saw is raised and lowered by handwheel under table, and will stop at any point without fastening, but can be clamped fast at any point by use of a hand screw, for grooving to a



positive depth. The table tilts to any angle up to 45 degrees by means of a handwheel and worm-gear. A scale and pointer indicates the angle. The fence also tilts to any angle up to 45 degrees. The entire fence can be instantly removed from the table, leaving it clear for special work. An adjustable cut-off fence is also provided for cutting off square or to any desired angle. The machine may be belted direct to line-shaft in any direction; countershaft with tight and loose pulleys and belt-shifter being provided on bed of machine. This countershaft is adjustable, permitting the use of an endless belt to saw-mandrel. This saves all the annoyances common to laced belts and makes a smooth-running machine. The machine will swing a 14-inch saw, and will cut through a piece 4 inches thick. Saws larger than 14-inch cannot be used. The table is of iron, planed true. A groover-head 2 inches wide can be used, and it requires a head 8 inches in diameter to groove 1 inch deep. The mandrel is made of steel, having collar and pulley shrunk on. The bearings are 1 1/4 inches in diameter, 4 inches long, ground absolutely true.

Dimensions are as follows: Size mandrel-hole for saw, 1 in.; size of table (iron), 32x44 in.; height of table from floor, 34 in.; size of tight and loose pulleys, 10x5 in.; speed of countershaft per minute, 650 rev.; giving saw a speed per



*The Pen is Mightier  
Than the Sword*

*Knowledge Wins in the  
Battle for Success*

# Practical Books for Building Mechanics

**ONLY 50 CENTS EACH**

**Any Book Sent Postpaid on Receipt of Price or Any Five for Two Dollars**

The books described below are up-to-date manuals written by practical men who know how to state difficult matters in the simplest language, so that the books can be successfully used for home study.

These books are nearly all 12mo in size, well printed on good paper, and artistically bound in cloth, and are finely illustrated wherever the subject needs it.

## SHORT CUTS IN CARPENTRY

By ALBERT FAIR, 90 pages, 75 illustrations.

The book contains remarks about the carpenter and his work, a large-folding plate showing the interior of a house with each part named, the use of geometry, mitering, bending mouldings around circles, rake mouldings, kerfing, brackets for eaves, use of the steel square, use of 2-foot rule, use of glue, working hardwood, hanging and fitting doors and windows, laying floors, dished floors, roof framing simply explained, braces, hoppers, etc.

## PRACTICAL HOUSE FRAMING

By ALBERT FAIR, 100 pages, 100 illustrations.

Explains how to lay out and erect balloon and braced frames, sizes of joists, trussing, partitions, floors, bay windows, towers, bracing, together with remarks on fire stops, sheathing, clap-boarding, etc. All explained in the simplest language, finely illustrated, including a large folding-plate giving the names of the various sills, studs, plates, rafters, etc.

## HINTS FOR CARPENTERS

By ALBERT FAIR, 90 pages, 100 illustrations.

This book brings together some of the best schemes on making special tools, such as the carpenter needs for doing his work. Describes various kinds of scaffolding, tool-boxes, door-holders, besides many other little hints that will lessen work both in laying out and erecting.

## STEEL SQUARE AS A CALCULATING MACHINE

By ALBERT FAIR, 80 pages, 25 illustrations.

This book gives simple directions for using the common steel square for the solution of many complicated calculations that occur in the every-day work of Carpenters, Builders, Plumbers, Engineers, and other Mechanics.

## A NEW SYSTEM OF HAND RAILING

By an OLD STAIR BUILDER, 64 pages, fully illustrated.

Tells how to cut hand-railing for circular and other stairs, square from the plank, without the aid of a falling mold.

## STAIR BUILDING MADE EASY

By DAVID MAYER, 128 pages, 111 illustrations.

Gives a full and clear description of the art of building the bodies, carriages, and cases for all kinds of stairs and steps.

## STEEL SQUARE POCKET BOOK

By D. L. STODDARD, 159 pages, 150 illustrations.

The size of this book enables it to be carried in the pocket; hence the carpenter can always refer to it for the method of finding the different cuts used in roof framing, stair work, hoppers, towers, bicycle tracks, etc.

## HAND SAWS

By F. T. HODGSON, 96 pages, 76 illustrations.

A complete guide on the selection, care, filing and use of hand saws, together with remarks on files, clamps, sets, etc.

## CARPENTERS' & JOINERS' POCKET COMPANION

By F. T. HODGSON, 144 pages, 300 illustrations.

A handy reference book and a guide to the correct working and laying out of all kinds of carpenters' and joiners' work, to which is prefixed a treatise on "Carpenters' Geometry."

## CARPENTERS' STEEL SQUARE AND ITS USES

By F. T. HODGSON, 112 pages, 90 illustrations.

Being a description of the square and its uses in obtaining the lengths and bevels of all kinds of rafters, hips, groins, braces, brackets, purlins, collar-beams, and jack-rafters, also its application in obtaining the bevels and cuts for hoppers, spring mouldings, octagons, stairs, etc.

## STEEL SQUARES AND THEIR USES

By F. T. HODGSON, 80 pages, 65 illustrations.

Being a description of the various steel squares and their uses in solving a large number of mechanical problems in constructive carpentry, joinery, sheet-metal work, cut-stone or brick-work; also showing how many geometrical and other problems may be solved by the use of the square.

## HOW TO READ PLANS

By CHARLES G. PEKER, 46 pages, 43 illustrations.

Many building mechanics are handicapped from getting more pay because they are unable to read plans and work from a drawing, and it is for these men that this book was prepared, as the author simply explains the meaning of the various lines, plans, views, elevations, sections, scales, blue prints, devices, symbols, etc., to be found on a set of plans.

## HOW TO MEASURE UP WOODWORK

By OWEN B. MAGINNIS, 79 pages, 161 illustrations.

This book was written so as to place in handy and concise form reliable directions to enable builders and mechanics to measure up the quantities of woodwork for brick and frame houses accurately and without hesitation.

## EASY LESSONS IN ARCHITECTURE

By THOMAS MITCHELL, 96 pages, 150 illustrations.

The present work is probably the best architectural textbook for beginners ever published. It consists of a series of questions and answers explaining in simple language the principles and progress of Architecture from the earliest times, etc.

## DICTIONARY OF ARCHITECTURAL TERMS

By VARIOUS AUTHORITIES, 108 pages, 120 illustrations.

A practical, handy, concise and reliable reference book for Architects, Builders and Students of building construction, as it tells the correct meaning of over 1,100 terms relating to architecture and building.

## BUILDING PLANS AND HOW TO DRAW THEM

By I. P. HICKS, 75 pages, fully illustrated.

This book presents a simple series of practical lessons, showing every step necessary to drawing the full working plans of cottages, barns, store-fronts, and various details of building construction. All described in the simplest language, so that the book will be very valuable for home study.

## ARCHITECTURAL PERSPECTIVE

By I. P. HICKS, 36 pages, fully illustrated.

Directions are given in this book so that one can draw the correct perspective views from the floor-plans and elevations of houses.

## PRACTICAL CONCRETE-BLOCK MAKING

By CHARLES PALLISER, 75 pages, fully illustrated.

This new practical book is written by a well-known authority who gives reliable information in simple language, so that the workman thoroughly understands every step necessary to make good blocks.

## MODERN CEMENT SIDEWALK CONSTRUCTION

By CHARLES PALLISER, 64 pages, fully illustrated.

The construction of cement sidewalks, curbs and gutters is thoroughly explained in this book.

## PLASTER AND PLASTERING

By F. T. HODGSON, 108 pages, fully illustrated.

A complete guide for the plasterer in the preparation and application of all kinds of plaster, stucco, portland, hydraulic, and other cements, together with rules for measuring and valuing plaster and stucco work.

## THE PRACTICAL STONE CUTTER

By F. T. HODGSON, 54 pages, 100 illustrations, paper cover.

A collection of every-day examples showing arches, retaining walls, buttresses, skew arches, vaults, domes and semi-domes, quoins, groins, etc.; with explanations of the most approved and economical methods.

## HOW TO MIX PAINTS

By C. GODFREY, 64 pages, fully illustrated.

A simple treatise prepared for the wants of the practical painter, telling him how to mix his paints so as to get the various tints and shades of reds, blues, yellows, greens, browns, grays, etc.

## THE HARDWOOD FINISHER

By C. GODFREY, 112 pages, fully illustrated.

This book gives, in the simplest language, rules and directions for finishing in natural colors, and in antique, mahogany, cherry, birch, walnut, oak, ash, redwood, sycamore, pine and all other domestic woods. Finishing, filling, staining, dyeing, varnishing and polishing.

## THE WORKSHOP COMPANION

By JOHN PHIN, 164 closely printed pages.

This book forms a dictionary of practical information for mechanics, amateurs, housekeepers, farmers—everybody. It is not a mere collection of newspaper clippings, but a series of original treatises on various subjects, such as alloys, cements, inks, steel, signal lights, polishing materials, and the art of polishing wood, metals, etc.; varnishes, gilding, silvering, bronzing, lacquering and the working of brass, ivory, iron, steel, etc.

SEND FOR OUR CATALOGUE OF BOOKS ON BUILDING

**INDUSTRIAL BOOK CO., - - - 178 Fulton Street, NEW YORK**



minute of 3,000 rev.; floor space required, over all, 39x72 in.; domestic shipping weight, 975 lbs.

Each machine is furnished with one 12-inch rip-saw, one ripping-fence, one cut-off fence, one mandrel wrench, and one 4-inch endless belt from countershaft to mandrel.

For further information address the Crescent Machine Co., 224 Main St., Leetonia, Ohio.

### Are "Sky Scrapers" Rust Proof?

The demolition of the Gillender building, twenty stories high, on Nassau and Wall streets, New York City, to make room for a still loftier structure, has been widely commented on by the daily press, but only on account of its obviously sensational features. It has special points of interest to engineers and builders which have not been insisted upon. As the building has stood fourteen years, this seems an excellent opportunity to see how badly, if at all, the steel frame has rusted, and what may be learned about the best conditions for its preservation. It will be remembered that some engineers have asserted that no steel-frame building can possibly escape rust, and that all will tumble down sooner or later. A preliminary on this subject, by Maximilian Toch, of the department of chemistry of the College of the City of New York, appears in *Engineering News*.

He finds, on the whole, that the steel is generally in a good state of preservation, although some rivets are corroded. The paint used to "preserve" the steel, made of pure linseed oil, has entirely disappeared, owing to chemical action with the mortar—a fact that shows linseed oil to be unfit for this purpose. The cement in which the steel was encased seems to have preserved it perfectly—an interesting and valuable fact.

The main feature of the preservation of the steel was the

fact that the columns were encased in brick and a rich mortar or grout came in contact with the steel. Wherever there was insufficient contact between the grout and the steel, rust formed; but in view of the fact that the construction of the building was such that moisture was very largely excluded, we have only two or three instances where bad rust pitting took place.

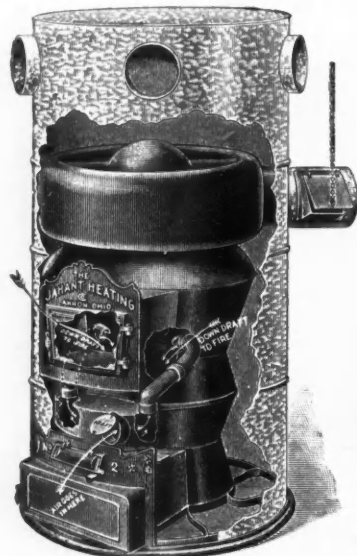
The one great lesson to be learned from the examination of this steel is the fact that those architects who prescribe a cement mortar one inch thick around a column of steel are very wise in their precautions; but linseed-oil paint should not be used when such a provision is made. There are alkali-proof paints which at the same time electrically insulate and serve a better purpose than the linseed-oil paints.

### A Thousand a Day

A thousand pumps a day is the mark aimed at by F. E. Myers & Bros. for their plant at Ashland, Ohio. Rapidly expanding foreign and domestic trade and the well-merited, world-wide reputation of the firm are demanding larger quarters and increased output and with characteristic energy the firm has taken up the question.

A few years ago their aim was to reach the "pump a minute" mark. That point has been reached, but it does not meet the demand. Now the aim is to make it "a thousand pumps a day." To do this a new foundry has become imperative and additional purchases of land will give them the site for this branch of their works.

Not only has the business of the firm grown in the number of pumps constructed, but also in their size, calling for castings of great weight and requiring much more floor space. The new quarters will also add to the comfort and convenience of the employees.



**6  
TONS**

You can install the Jahant yourself. We ship you the complete outfit, specially designed for your building, which includes all pipings, boxes and fittings cut just right, together with detailed directions and the necessary tools for installing it.

### OUR 360 DAY GUARANTEE BOND

Every Jahant Furnace is sold under a positive guarantee of absolute satisfaction. Use it 360 days—test it thoroughly and if it is not perfectly satisfactory in every way we will refund your money. We never had a single case of dissatisfaction with the Jahant Furnace. That's why we can afford to make such a strong guarantee.

### Write Now For Our Big Furnace Catalogue

and liberal Special Offer to Carpenters, Contractors and Builders.

**THE JAHANT HEATING CO. 200 Howard St. Akron, O.**

## Less Coal—More Heat

Don't let your money "go up in smoke." When an ordinary furnace is used, much if not more heat goes up the chimney than into rooms.

## Jahant <sup>Down</sup> <sub>Draft</sub> Furnace

is the most economical, efficient, durable and easily regulated furnace ever built. The down draft reduces fuel bills  $\frac{1}{3}$  to  $\frac{1}{2}$ . The Jahant is the perfect system of heating and ventilating buildings.

We sell direct to you. You save the dealer's and middleman's profit and commission. We sell you the Jahant Down Draft Furnace at factory cost plus a small profit, and ship it freight prepaid.



# Cement and How to Use It

A big, practical, up-to-the-minute book for the cement user, dealer and manufacturer, as well as the architect, draftsman, construction man, contractor, builder, carpenter and prospective home owner. This book contains the "boiled-down" essence of all the accurate information on the subject of "**Cement and How to Use It**" possible to obtain. It is indispensable to the man who in any way has anything to do with construction or the use of cement in any one of its multitude of applications.

## Every Known Use of Cement Described

**370 Pages—350 Illustrations**

"**Cement and How to Use It**" is the largest book of its kind ever published. It consists of 370 pages, 6 x 9 inches, and is printed from large, clear type on a high-grade book paper. It is illustrated with over 250 drawings, diagrams, details, etc., including many pages of full-page plates reproducing architects' original drawings and details of construction.

**2,000 Topics Discussed**

Two thousand topics relating to cement are discussed in this great, new book. No book attempting to treat this important subject has ever before so successfully covered the ground. Every phase, part and use of this wonderful twentieth century building and paving material is treated fully and completely, with details showing each step to be taken.

### PRACTICAL INFORMATION FOR EVERY-DAY USE

This book contains only practical information. By practical is meant information that can be successfully applied to the every-day work of the average builder, contractor and cement user. The book presents and solves problems as they have been met and worked out by well known architects and the man on the job.

### FREE FROM TECHNICALITIES

"**Cement and How to Use It**" is written so that any reader can understand every page, every term used, and every detail shown. It is entirely free from technicalities and yet its pages are full of instruction for all classes of cement users. It shows the easiest and most common-sense way to do the work. Its methods, formulas and tables can be relied upon to be absolutely correct.

### HANDSOMELY BOUND IN CLOTH, REGULAR PRICE \$1.00

*The Cement World* will send a copy of this valuable book, "**Cement and How to Use It**" **At Half Price, Express Prepaid**, to all new and old subscribers whose subscriptions or renewals are received before November 15, '10. In all cases cash in full to cover one year's subscription to the **Cement World**, and 50c additional for book, \$1.50 in all, must accompany the order. All renewals will be credited from the date present subscriptions expire.

USE THIS COUPON

**Cement World, 241 Fifth Avenue, Chicago, Ill.**

Gentlemen:—Enclosed find \$1.50, for which send me the CEMENT WORLD for one year, and one copy of your big, new, illustrated, 370-page book,

### "CEMENT AND HOW TO USE IT"

Name

Post Office  State

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



# DISSTON Principles

Seventy years of activity in manufacturing and selling; seventy years of uninterrupted development, imparts to any organization a good many common sense ideas of business.

For nearly three-quarters of a century we have been formulating, from time to time, and setting down in simple language some of the ideas and ideals which, carefully followed, have contributed to our growth.

They may be of interest to *you*—they have been to a good many of our friends. Here they are:

"We have always striven to manufacture the best saws. Now we manufacture not only the best, but the largest line in the world."

"Our aim is to manufacture Disston Goods of superior quality and at a price to make them purchasable by all users."

"Perfection comes with long experience."

"The manufacturer who makes his own steel can watch the quality the closest."

"What do you put into your saws that makes them so good?" Henry Disston was often asked. "Good steel and honest work," was his invariable reply."

"A man who has made a reputation for his goods, knows its value as well as its cost and will maintain it."

"The world recognizes Disston Saws as the standard by which all others are judged."

"Having a thorough knowledge of the requirements of saws, we make them to meet those requirements."

"A constantly increasing demand is the best evidence of efficiency."

"Quality is the best selling agent."

"Strictly first quality goods may be slightly higher in price, but give better satisfaction and longer service to the user. Thus, in the long run they cost less than cheaper grades."

**If you are unable to obtain the Disston Brand, write us and we will see that you are properly supplied.**

**Henry Disston & Sons**  
 INCORPORATED  
**Keystone Saw, Tool, Steel & File Works**  
**Philadelphia, Pa., U. S. A.**

## Test for Cylinder Oil

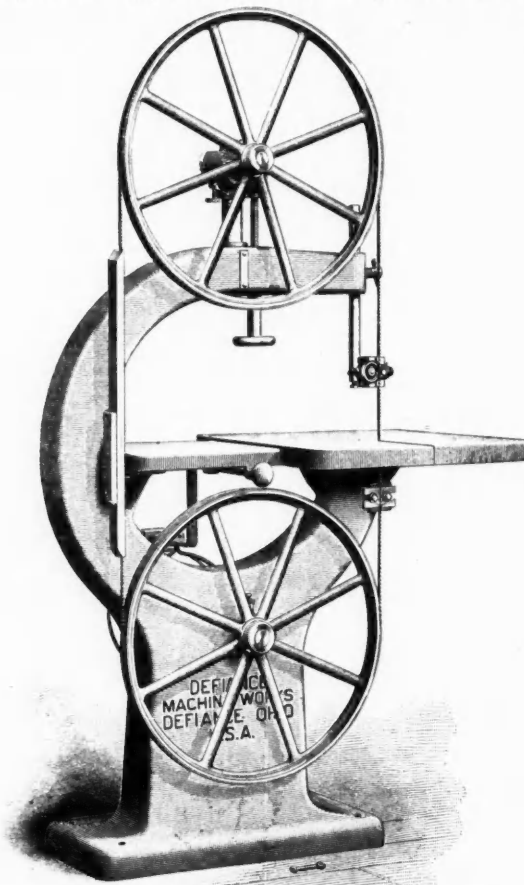
A good cylinder oil will hardly change color when heated to 480 deg. F., or practically the temperature existing in an engine cylinder. Low-grade oils, however, will darken when so tested.

## New Twenty Eight Inch Band Saw

The accompanying engraving represents the new Patent 28-inch Band Sawing Machine of the Defiance Machine Works. It contains many patented feature and improvements. Every detail of construction embodies the highest grade of workmanship rendering it one of the smoothest running and handiest machine offered of this kind. It is built by the use of automatic machines and skilled workmen, and it therefore can be sold at a moderate price. It will be found a most desirable tool for pattern work and wood workers in general.

The frame is handsomely designed, cast in one piece, with cored center, making it very stiff and reliable and a broad floor base to stand firm.

The wheels are 28-inch diameter, 1½-inch face covered with pure rubber bands, ground true after fitting to the wheels and



given a running balance, and they are supported upon ground steel spindles of large diameter running in long bronze self-lubricating bearings of the reservoir system.

The tension device is an ingenious affair. It maintains automatically a uniform tension to the saw blade, so that light or heavy sawing in hard or soft wood can be accomplished without fear of the saw blade breaking or running off the wheels.

The table, of iron, in one piece planed perfectly true, is 24-inch by 28-inch and can be instantly tilted to any angle to 45 degrees for conical or bevel sawing.

The saw guides are of the patent non-friction type and they will not heat or injure the saw.

This machine will take material up to 12 inches thick and

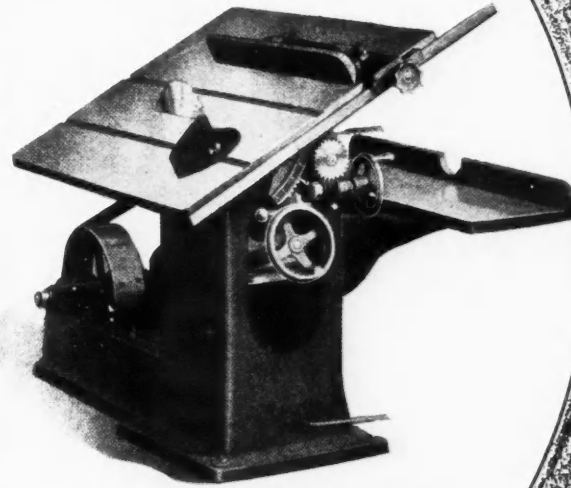


# CRESCENT Combination Saw Table

The No. 2 Crescent Saw Table is built for service. The vast number of these splendid machines that are being ordered by those particular, discerning wood workers who buy machines for service, is the highest tribute to the efficiency, strength and durability of the machines.

The price is \$93.75. Boring attachment \$15.00 extra. At this figure you cannot get better value for your money. When you want a substantial, dependable saw table you should order a **Crescent**.

Ask for catalog. It tells about our line of Band Saws, Jointers, Shapers, Swing Saws, Planers, Disk Grinders, Variety Wood Workers.



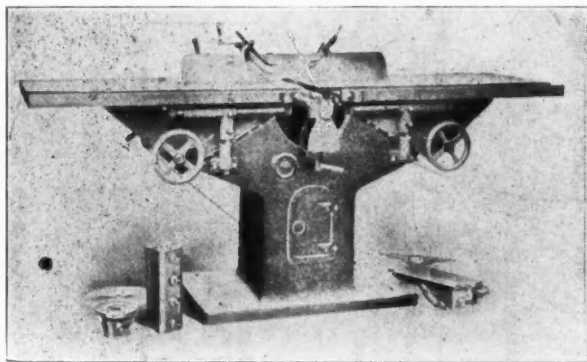
No. 2 Crescent Combination Saw-Table  
(Saw and Belt are included with this machine)

## The Crescent Machine Co.

224 Main Street, LEETONIA, OHIO

### Universal Wood-Worker

Planes, Joints, makes moulding, Rips, Cross-cuts, Gains, Dadoes, Rabbets, 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

### PARKS' No. 620 and 622

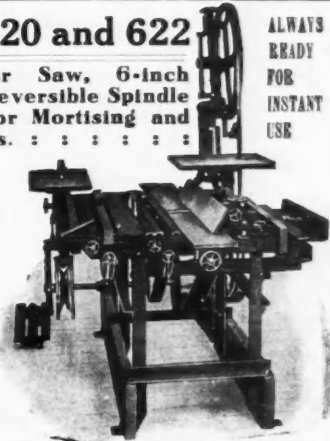
Combination Circular Saw, 6-inch Jointer, Band Saw, Reversible Spindle Shaper with Boring or Mortising and Rabbeting attachments. : : : : :

Six Machines in One and all in Plain Sight  
No unbolting or bolting is necessary before you can see or use all the attachments. Economical, cheap, and a constant money maker for Carpenters and Contractors.  
Write for Circular and Prices.

Parks' Ball Bearing Machine Co.  
Fergus & C. H. & D. Ry.  
Cincinnati, Ohio

Originators of the Circular Saw, Band Saw and Jointer Combination, also Foot and Hand Power Machine.

Canadian Agents,  
Journal & Co., No. 10 Beasonsfield Ave.  
Toronto, Ont., also St. Barnabe, P.Q. Can.



ALWAYS  
READY  
FOR  
INSTANT  
USE

### CARPENTERS

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

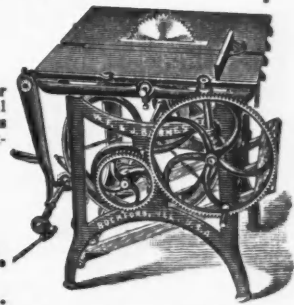
#### Barnes' Hand and Foot Power Machinery

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

SEND FOR OUR  
NEW CATALOGUE

W. F. & John Barnes Co.

74 RUBY ST., ROCKFORD, ILL.



under, and the saw blade used is 14 feet 10 inches long.

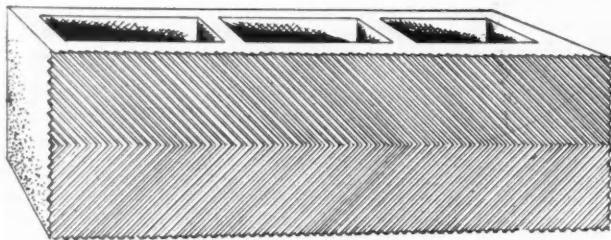
The tight and loose pulleys are 10-inch diameter, 4-inch face, speed 700 revolutions per minute, with the loose pulley constructed with self-oiling reservoir hub and bronze bearings. Each machine is furnished with one 3/8-inch band saw blade, brazing tongs and vice, with the necessary oil cups and wrenches.

Horse power to drive, 1; floor space occupied, 34 inches by 46 inches.

For further information address The Defiance Machine Works, Defiance, Ohio.

**Corrugated or Tooled Concrete Blocks**

The tooled or grooved face, commonly known as corrugated concrete blocks, has been very popular the past few years, both in vertical and horizontal grooves; we here present a diagonal groove. With but one style of face it is capable of producing a variety of designs, four of which are shown. This



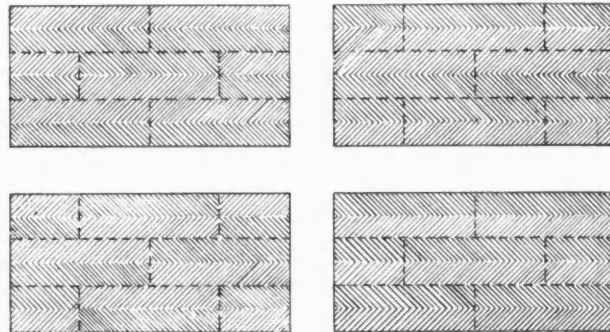
fact enabling the block maker to make a number of designs with a smaller stock of blocks, will make this very popular.

Being original, it is not hampered by patents, and

is equally well adapted to all sizes and shaped blocks.

To the block machine manufacturer it costs but the price of one face plate and one end plate; and will often be the means of selling a complete machine.

The block maker who cannot obtain this design from his manufacturer can convert the plain face of his ma-



Grooved Blocks Laid in the Wall

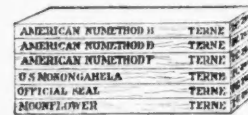
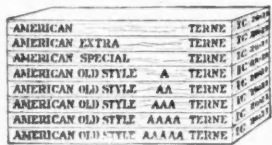
chine into this style by the use of a half yard of corrugated rubber floor matting and a few ounces of rubber tire cement.

When this block is used in combination with rock-face, or panel blocks, a great variety of wall designs is possible. They are neat and attractive, and relieve the sameness so noticeable in walls made of one design in any other pattern.

Six grooves per inch is perhaps the best when fine sand is used; but for coarse sand a better groove and ridge is produced with five or four and one-half

# GOOD TERNE PLATES

are unquestionably the best roofing material obtainable—light, strong, fireproof, weatherproof, reasonable in cost and durable. Careful builders and particular owners who want the roof of service and satisfaction should insist on having the thoroughly dependable brands shown below.



**32 POUNDS COATING**

**MF ROOFING TIN**—noted for giving good service and splendid satisfaction. MF is the original Old Style, carefully manufactured and high in quality—32 pounds coating.  
**AMERICAN OLD STYLE TERNES**—strictly high grade. Each A represents an additional weight of coating, that on the 5-A being 40 pounds.  
**AMERICAN NUMETHOD TERNES**—three grades B, D and F, 20 to 40 pounds coating. Made by the New Method process.  
**CONTINUOUS ROOFING TIN**—made from select coated sheets, in rolls 10, 14, 20 and 28 inches wide. Write nearest District Sales Office for full information and booklet.

## 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

## What the President of a Building Company Writes Concerning the Use of Murphy Varnish.

"We build houses to sell. We finish them with Murphy Transparent Wood Finish, and we so advertise. The Murphy Finishes help to sell the houses more quickly. Sometimes we are obliged to foreclose, but we find the Murphy Varnish is still there. We don't have to re-finish for the next customer."

Varnish that sells houses and rents apartments and saves the cost of re-finishing, and that costs less by the job than lower-price varnish, is surely the varnish that you want.

*"Quality and Economy in Varnish and Varnishing."*

Our Free Book.

Address us at 222 McWhorter St., Newark, N. J.

**Murphy Varnish Company** FRANKLIN MURPHY, President  
NEWARK, N. J.      BOSTON      CLEVELAND      ST. LOUIS      CHICAGO

Associated with Dougall Varnish Company, Limited, Montreal, Canada

**The Varnish That Lasts Longest**



You will soon be wanting varnishes, stains, shellacs, fillers etc. and only the Best will satisfy you. There is only one Best and Berry Brothers make it. Insist upon having above mentioned goods with Berry Brothers trade mark.

Write today for our free book—  
*"Natural Woods and How to Finish Them."*

**Berry Brothers, Limited**  
Factory and Main Office: - DETROIT, MICH.

BRANCHES:—

NEW YORK  
BOSTON  
PHILADELPHIA  
BALTIMORE

CHICAGO  
CINCINNATI  
ST. LOUIS  
SAN FRANCISCO

Canadian Factory—Walkerville.

## GLIDDEN'S GREEN LABEL VARNISHES

### VELVET WHITE ENAMEL

(Egg Shell Finish)

This is a pure white enamel of the very highest quality. It dries with an egg shell gloss producing a natural rubbed effect without the necessity of rubbing. Is waterproof and not affected by washing or changes in temperature. Can be successfully used on new or old woodwork.

Price \$5.00 per gallon; quarts \$1.35 each



For sale by paint dealers everywhere. If not at yours, we will send by express prepaid on receipt of price.

Full Descriptive Price List on Application  
**THE GLIDDEN VARNISH CO.**

Makers of High Grade Varnishes for  
all purposes  
Glidden Building  
CLEVELAND, O.



# This Slate Roof 35 Years Old— Never a Leak— Not One Cent for Repairs

Mr. A. G. Barnard of Seville, Ohio, walked into the Cleveland office of the American Sea Green Slate Company the other day expressly to say:

"Gentlemen, thirty-five years ago, as chairman of the board of trustees of our church at Seville, I got the board to put a roof of your slate on the church. That roof today is in tip-top shape—just as fine condition as the day it was laid—and I am delighted to tell you that in all this thirty-five years it has never had a leak and hasn't needed one penny's worth of repair. I just wanted to congratulate you on selling such a satisfactory roof."

But Mr. Barnard is only one of hundreds. Every owner of a slate roof who has watched his roof out-wear two, or three, or half a dozen times the shingle, the tin, the iron, copper or composition roofs of his neighbors is just as enthusiastic about nature's best roofing—the roofing that never wears out—Sea Green or Purple Slate.

Here is what other slate-roof owners have to say of

## SEA GREEN AND PURPLE ROOFING SLATE

The following letters—all written from the town of Wilmot, Ohio, prove the economy of using slate for roofs:

Thirty-four years ago this summer I roofed my house with American Sea Green Slate. It has never leaked since and I never paid out anything for repairs. There is nothing equal to such a roof for durability and service.—**URIAH MEESE.**

This is to certify that the undersigned had personal knowledge of placing an American Sea Green Slate roof upon a building of his grandfather, Gabriel Putnam, in the year 1877, and also one upon the dwelling of his father in the same year. Said roofs are

You will find Sea Green or Purple Roofing Slate the best material for all your roofs because it is solid rock, and so resists absolutely the action of air, water, fire, sun and lightning. It alone is never affected by rot or rust, it will not crack or warp.

A well laid roof of Sea Green or Purple Slate will cost in the beginning a trifle more than shingles, iron or felt, but will save you both money and anxiety from the day it is laid.

### HOW SLATE OUTWEARS OTHER ROOFS

Sea Green or Purple Roofing Slate wears better than galvanized iron—seven times better. A copper roof—costing more than slate—has only one-third the life of a slate roof. Slate outlives shingles seven times. Felt roofing, cheapest of all, has practically no life whatever. A slate roof will outwear a tin roof four times.

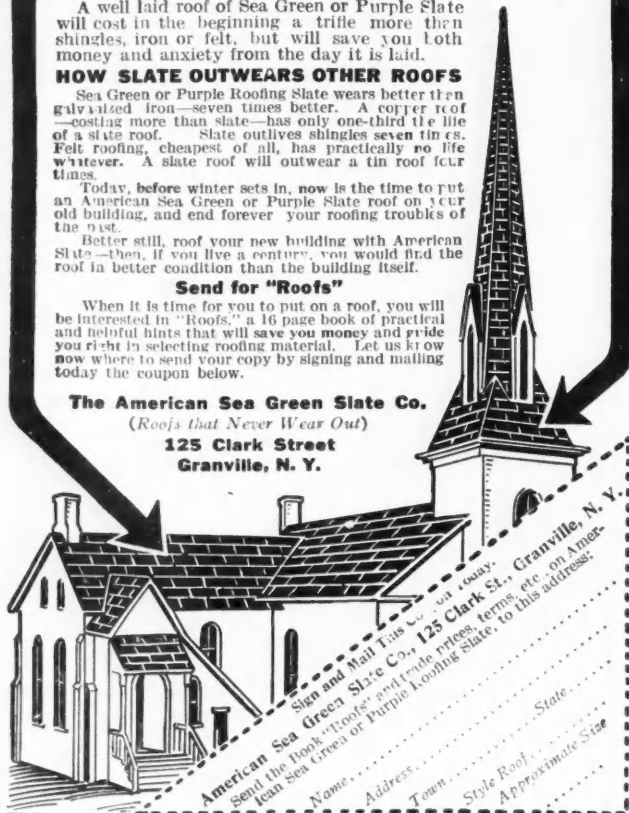
Today, before winter sets in, now is the time to put an American Sea Green or Purple Slate roof on your old building, and end forever your roofing troubles of the past.

Better still, roof your new building with American Slate—then, if you live a century, you would find the roof in better condition than the building itself.

### Send for "Roofs"

When it is time for you to put on a roof, you will be interested in "Roofs," a 16 page book of practical and helpful hints that will save you money and guide you right in selecting roofing material. Let us know now where to send your copy by signing and mailing today the coupon below.

**The American Sea Green Slate Co.**  
(Roofs that Never Wear Out)  
125 Clark Street  
Granville, N. Y.



grooves per inch; while for fine work, grooves one-eighth inch centers is best, and if not cut too deep will work well with ordinary sand. The depth of the cut in each case is proportional to the width.

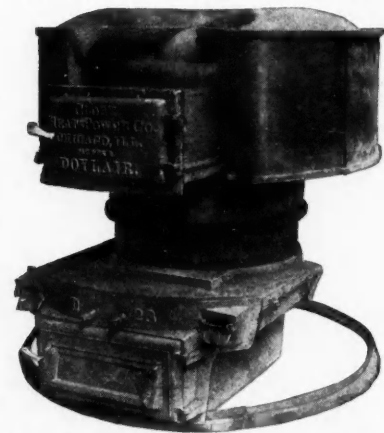
### For Perfect Combustion

For many years scientists and engineers have tried to invent something which will burn coal in a manner that will transmute each combustible particle into heat. Practically, their aim has been to bring about the nearest thing possible to perfect combustion. It is evident that when this achievement is accomplished and the appliance is on the market, it will have the field all to itself. The saving in fuel will lessen the expense of heating homes and reduce the cost of manufactured products to a minimum.



Mr. Francis J. Doyle, a Chicago inventor, has recently come into prominence through his devices for utilizing his discovery of a new principle of combustion which seems to go far along this line. His warm air furnaces and stoves, manufactured by the Globe Heat Power Co., 213 E. Randolph St., Chicago,

are said to save fully 50 per cent of the fuel cost. In fact, to the ordinary, observer his new principle accomplishes what we might call perfect combustion. The combustion is perfected in a series of 3 "zones" by the aid of a certain quantity of heated air uniting with the gases, as they are set free from the coal. These burn with an intense heat. The burning of so much air consumes all the carbon, which is usually wasted, thus preventing all smoke and insuring a saving in fuel which is worthy of consideration.



All readers of the AMERICAN CARPENTER AND BUILDER would do well to investigate this improved heating apparatus. A card will bring full particulars.

### Cost of Roofing

Because it is used so generously on the finest homes in this country, and on the pitched roofs of the best buildings, churches, museums, libraries, etc., everywhere in fact, where the roof must fittingly finish with a chaste uniformity the construction of the building beneath, slate has the reputation of being an expensive luxury. Its many excellencies, its cleanliness, its orderliness, its smart, high-class and prosperous look, and the fact that it is fireproof, have gained it many an admirer who had not previously given it consideration on his own buildings because he thought it too costly.

True, to put on a roof of Sea Green and Purple Slate (the most durable of all varieties) does cost a little more than one of tin, iron or shingles—on the average only a few cents a square foot more—but once on it begins instantly to cost less. For while tin is said to cost 27c, shingles 35c, and iron 57c to maintain 100 square feet a year, the

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

Makers of

**Fine Hand Made Hand Saws**

The Purest of Quality Our  
"GREYHOUND" Hand Saw



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



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

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

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

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



No. 254—Bench Hand Planer

**YOU ARE IN A HURRY**

*You may be a Carpenter, Contractor or a Retail Lumberman; at any rate you are in a hurry to get out a certain quantity of material. You go to the planing mill and find that you cannot get the lumber in time to fill the order.*

The above is only an illustration of every day occurrence. What we want you to know is, that we are prepared to set you up in the business of doing your own planing mill work.

With our No. 254 Bench Hand Planer you can plane, surface straight or tapering, joint, edge, etc., in the most rapid and perfect manner.

Our No. 254 is not expensive—the price is within the reach of all  
Write for large illustrated circular.

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

**Do You Know "THE SHELBY CHIEF"**



"Chief" Floor Hinge

double acting, ball-bearing spring floor hinge? If not, better get acquainted. It is the leading surface floor hinge on the market. It is built to give satisfaction to the carpenter and builder. It is easily and quickly applied and will out-wear any other floor hinge. A trial will convince you.

We also make the Shelby Spring Butts which have no equal. An important feature about these spring butts is the way the weight of the door is carried upon ball-bearings set in hardened cups which have no perceptible wear after years of service. All frictional wear of parts are thus avoided. The carpenter's gauge on each hinge saves time in hanging a door.



Spring Butt

Ask your dealer or write us to tell you more about them. We also manufacture a fine line of builder's hardware specialties.

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

same area of slate costs 3½ cents only—or less.

The editor of a trade journal, an expert on building and materials, says:

"The value of a roofing is determined by a variety of considerations among which the most important are first cost, durability, appearance, resistance of fire, and *expense of maintenance and repairs*. We think it is safe to say that nothing equals Sea Green and Purple Slate, quarried by the American Sea Green Slate Company of Granville, N. Y. Properly put on, it requires no further attention—it is practically permanent and requires comparatively no repairs."

Because of this utter absence of repair expense, a Sea Green and Purple Slate roof becomes cheaper even than wood shingles after only six years. The rich man who covers his mansion with aristocratic slate is, therefore, not extravagant nor arrogant, but sensible. Slate costs him less than anything else—eventually; and not such a very long "eventually" either. Furthermore, while it is saving him money every year after the first, it is giving him appearance, safety from fire, freedom from worry and annoyance, and weather protection of the most perfect sort, year after year, without fail, for nothing extra.

So long as the building of which it forms the roof, endures, Sea Green and Purple Slate will give perfect service as a roof. The day that building comes down, the slate develops into an investment. Slate, especially Sea Green and Purple Slate, being the hardest of all rocks, ages very, very slowly. It neither rusts, rots nor wears. If dismantled carefully, therefore, it will come off the building practically as good as ever—hence saleable. Length of service as a roof destroys the market value of every other kind of material. It affects Sea Green and Purple Slate roof practically not at all. For example, in 1805 some slate quarried in 1800 was used to roof a church near Delta, Pa. In 1893 the church had to be demolished, becoming mere debris;

all except the slate, which was sold for use on other buildings.

In reality a good slate roof is an asset rather than an expense. It actually increases the value of all property on which it is used.

Architects, carpenters and builders are urged to write the American Sea Green Slate Company, Granville, N. Y. By so doing they will receive—free—information that will be of great value to them.

### Light As a Burglar Expeller

Some time ago one of the engineers of Chicago's largest electric lighting company, devised a system of emergency lighting for residences, by which the turning of a master switch at the head of the bed turns on the lights all over the house. These lights may be ordinarily operated by their respective switches in the usual way, but in case the master switch is turned on, they cannot be turned off by means of the individual switches. This means, of course, that once the master switch has been thrown, any intruder in the house must beat a retreat.

The system is now being used in many Chicago homes.

### Of Interest to Concrete Block Men

The Ideal Concrete Machinery Co., South Bend, Ind., are issuing each month a very interesting and helpful paper called "Ideal Ideas." It is intended to keep the users of concrete block machinery, especially Ideal machines, and others interested in concrete work well informed concerning the developments of the business. The paper is nicely illustrated and the articles are well written. We understand that "Ideal Ideas" will be mailed regularly to all interested parties who will write the Ideal Concrete Machinery Co., 416 N. Emerick St., South Bend, Ind.

*For Quick Work*

**"YANKEE" Drill No. 44**

*With Adjustable Spring—Saves Drill Points*



*Have you seen  
all our New Tools?*

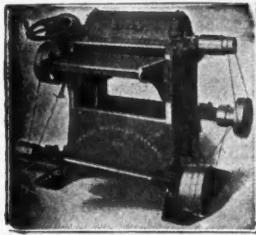
Get our Tool Book full of new ideas in reliable time and labor-saving tools for all classes of mechanics. Illustrated with photographic reproductions of the tools in use. It's worth having. FREE to mechanics who mention the "American Carpenter and Builder."

*All hardware dealers sell "Yankee" Tools*

**NORTH BROS. MFG. CO.**  
**PHILADELPHIA, PA.**

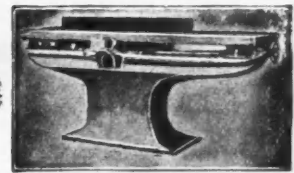
Quickly adjusted to the proper tension for hard or soft woods, or the 8 different Drill Points furnished with each tool. No other Drill made has this feature. A very handy and reliable tool. Just the thing for awkward places. Strong and durable. Weighs only 11 oz.





Chicago No. 35 Pony Planer

# Machines for Contractors



Chicago Hand Jointer 8, 12 and 16 in.

## Do Your Own Millwork!!

Stop paying somebody else profit — put it in your own pocket. Be in a position to estimate below your competitors. You can do this by installing your own Machinery.

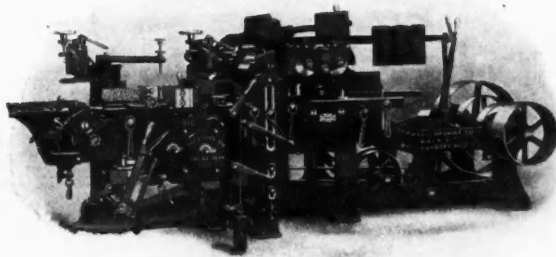
## Money Saving Machinery

The contractor and builder who installs his own woodworking machinery can easily estimate under his competitors. Modern economic conditions **demand** it. Money you expend in millwork is profit for somebody else — the profit that rightfully belongs to you.

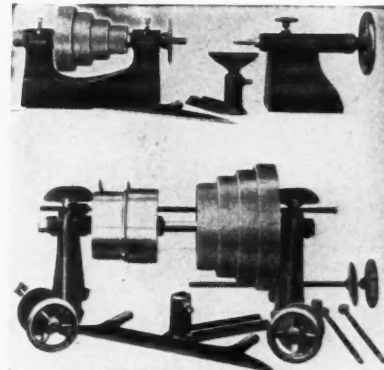
**Prices are Favorable** Our line is the most complete in the country and our prices are most favorable. All our machinery is of special construction to secure fine finished surfaces and reduce sand-papering to the minimum.

**Send for Lists and Circulars** Our monthly list of rebuilt machines (free to contractors) shows just the machines you ought to have. Write today.

**Chicago Machinery Exchange, 159-161 North Canal Street Chicago**



Hermance New 1910 "Wide-Open" Moulder  
*Up-to-date and a little ahead.*



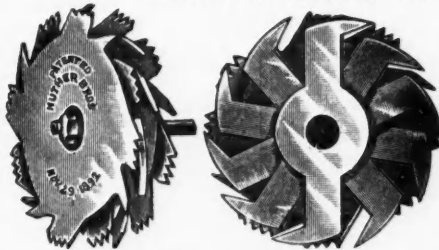
Wood Turning Lathe and Countershaft  
16 and 20 inch



Chicago No. 7 Improved Swing Saw

## Huther Bros. Patent Groover or Dado Head

Will save it's cost in three days' time



Showing Arrangement of Cutters

of concave ground, smooth cutting circular Mitre Saws, for either rip or cross cut; Grooving Saws for all kinds of special work; Lock, Corner Cutters, Concave Saws, etc.

Try our Scraper Blades and you will use no others:

**HUTHER BROS SAW MFG CO.**  
1000 University Ave. ROCHESTER, N. Y.

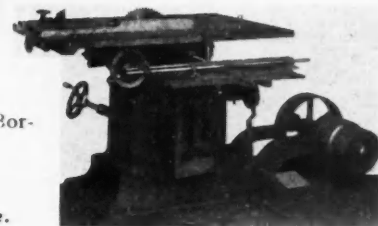
Can be used on any Circular Saw Mandrel

For cutting any width groove from 1/2" 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

## VARIETY SAW

with or without Boring Attachment.

Write for Catalogue.



## B. M. ROOT CO.

Wood Working Machinery

New York Office,  
136 LIBERTY STREET

YORK, PA.



## 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.

### Draftsmen Wanted

CONSTANT DEMAND FOR PRACTICAL TRAINED DRAFTSMEN OFFERS PERMANENT POSITION WITH BEST SALARY.

It is perhaps not known to most of our readers, but especially to the ambitious, wideawake and progressive man, and to the large number of mechanics reading our paper that there is no better field or opportunity for advancement than there is to the practical and well-trained draftsman in this line.

But not that man is wanted who has the largest or most expensive library of technical or school books "at home," neither the one that carries along with him under his arm when applying for a position a nicely engraved "beautiful diploma" on paper (costing \$50 to \$75 per square foot), nor the "would be" draftsman that can "copy" a nice looking picture from another picture with given dimensions.

No, the demand is for draftsmen with practical drafting room training, such draftsmen are wanted badly all the time, and the better the man the better the salary, \$25-\$75 per week, and more for the best men.



F. V. DOBE.

The quickest and best way to be trained on practical drafting room work and to get the required practical experience is to receive personal and individual instruction from a high-grade, practical man at the trade, with a reputation as the most experienced man in training men to become competent and successful draftsmen.

An ordinary draftsman, even the best draftsman, cannot teach this trade unless he has many years' experience as an instructor, and has ability to impart knowledge that is understood and that will stick forever—a special gift that ninety-nine out of 100 do not have.

Mr. F. V. Dobe, Chief Draftsman of the Engineers' Equipment Co. (Inc.), Chicago, with twenty years' experience in training and handling men has for a good many years given personal individual instruction by mail with the most deserving success, because his instruction work consists of actual practical drafting room work that gives his personal student and apprentice the required practical experience.

Mr. Dobe has been an advertiser in our paper for a good many years, and will send his "Successful Draftsmanship" Prospectus, 6x9, also list of 250 open positions for draftsmen, and full information free.

### Buildings that Stand on Water

The house built upon sand is proverbially unstable, but apparently we are trusting in many cases to a foundation even more insecure, namely, water. That the solidity of the ground on which a large building rests may depend largely on the water it contains, and that the safety of the structure may be endangered by drawing off this water, are clearly shown by recent events, noted in *The Engineering Record*.

The lowering of ground-water levels by pumping operations carried on in connection with subway construction may seriously affect foundations of adjacent buildings which are not supported on rock. In fact, deep excavations in soft materials in city streets, which are somewhat removed from bodies of water, are often the source of considerable trouble because of the settling of the buildings. As the water is removed from the subsoil there may be not only a vertical settlement, but a horizontal motion as well. The movement of a building near an excavation is largely due to sliding of the earth which underlies the building, but where the structure is at a considerable distance from the digging operations it may be that removal of water from the soil allows the latter to be compressed, thus resulting in a settlement.

Cases are on record where the water table has been lowered several feet at a distance of 200 feet from a subway excavation with an accompanying settlement in buildings of several inches.

### Oak Flooring vs. Carpets

The ordinary home builder is often misled in regard to oak flooring prices. Oak flooring is cheaper than carpets. A yard of carpet is 27 inches wide by 3 feet in length; thus a carpet yard contains  $6\frac{3}{4}$  square feet. Carpet sells at from \$2.00 to \$9.00 per yard. A fair average of good quality of carpet would be about \$3.00 per yard. Clear quartered oak flooring  $\frac{7}{8}$  inch thick by  $1\frac{1}{2}$  or 2 inch faces can be bought, laid and polished for \$1.00 per carpet yard. This is about one-third the price of good carpet. Oak flooring beautifies any house, and exhibits more taste and a greater degree of elegance than any carpet that was ever made.

The living, renting and selling values of any building is vastly increased by oak flooring. Three-eighths inch thickness is used very extensively for reconstruction work, where it may be laid over old floors very economically, taking the place of carpets without in any way interfering with the woodwork of a room. A parlor, library, hall or dining-room is half furnished when it is laid with handsome oak flooring. It gives an air of refinement and elegance to a home, is rich in color, and if given some attention will never wear out.

Thirteen-sixteenths inch thickness makes a much more substantial floor, and can be used with or without a sub-floor.

The  $\frac{3}{8}$ -inch thickness when laid has all the appearance of heavy flooring.

Oak flooring is hygienic and is very easily and economically cared for after being laid. No modern home nowadays is complete unless floored with hardwood flooring, and undeniably oak flooring is the monarch of all.

### Carpenters' Carborundum Stone

A sharpening stone, made exclusively for the use of the carpenter, is decidedly a novelty. But when the stone has all the advantages and characteristics of the new Carborundum round combination bench stone, it becomes more than a novelty—it becomes almost a practical necessity.

The new round bench stone has been recently put on the market by The Carborundum Company, the only manufacturers in the United States of carborundum, the hardest, sharpest abrasive material, and no doubt will soon be in big demand.



**SLAP HALF THAT ROOF MONEY INTO THE BANK! And call it PROFITS —not EXPENSE!** Roof the homes you build with the famous *Edwards Metal Roofing* at **Manufacturers' Wholesale Factory Prices!**

Edwards Metal Roofing cost but little more than ordinary roofing. And it's the most marvelous home beautifier ever designed for particular

home-owners! It's a **PROVED FACT** that it results in an *instant leap in CASH VALUE* of the home it crowns! **THE EDWARDS SPANISH TILE** gives everything that is desirable about the Spanish Terra Cotta roofing tile without many of the objectionable points.

While it has all the beauty of form and color, the weight, breakage and difficulties of setting have been entirely eliminated.

Our Metal Spanish Tile are made of the best quality of Worcester grade Terne plate furnished painted or galvanized (*regalvanized after formation*) size 10x14 in.

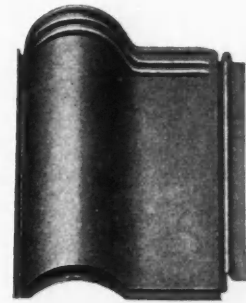
Take advantage of this amazing opportunity in a hurry! Roofing the homes you build with *Edwards Metal Roofing* is the sure, quick route that *Hits The Trail To BIG ROOF PROFITS!*

A business proposition of immense proportions has just opened up for *Builders!* Ask us for confidential information about it when you write for further details about *Edwards Famous Metal Roofing. Act QUICK! TO-DAY!*

**THE EDWARDS MANUFACTURING COMPANY**

"The Sheet Metal Folks"

401-417 Eggleston Ave., : : : : : CINCINNATI, OHIO  
 The Worlds Largest Manufacturers of Metal Roofing, Metal Shingles and Metal Ceilings.



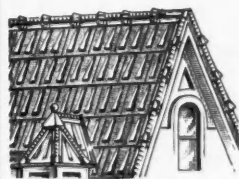
Note the construction of patented side lock, the "Lock that Locks," used exclusively on all Edwards Shingles and Tile.

**DURABILITY SERVICE ECONOMY**

Consider these three Most Important points when you think of roofing and remember that **Montross Metal Shingles** offer you all three. 21 years test proves it to be so. Carpenters and Builders should recommend



**MONTROSS METAL SHINGLES**



Montross Victor Metal Shingles

They last the life of the building and give first-class service. Are Fire, Lightning, Storm and Wear-Proof. Embossed, then galvanized or painted. Easily laid; no soldering. Outwear wood, shingles and composition roofing. Lighter than slate or tile. Suitable for all kinds of buildings.

Send for a copy of our illustrated catalogue; it contains prices and testimonials, and explains why it will be to your interest to lay Montross Metal Shingles.

**MONTROSS METAL SHINGLE CO., 102 Erie St., CAMDEN, N. J.**

**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

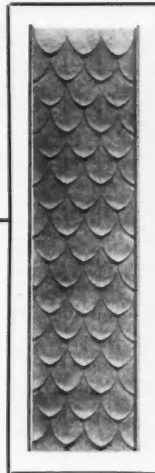
**Agents Wanted THE SCOTT ROOFING & MFG. CO.**

Eastern Office Parkersburg, W. Va. 235-236 East Front Street Cincinnati, Ohio

**Our Metal Cost No Wooden**

Suitable for any roof having a pitch of at least 3 inches to the foot.

- Weatherproof
- Lightning-proof
- Fireproof
- Lasting



**Shingles More Than Shingles**

Picture shows 2 x 8 ft. sheet of 28 gauge galvanized iron, with pressed standing seam edges. Made in 6, 8 or 10 feet lengths. Shipped anywhere west of Mississippi river.

**CLUSTER METAL SHINGLES**

—make a much *better* roof than the best of wooden shingles, and the erected *cost is the same or less.* Our Cluster Metal Shingles, with the standard P. S. S. edge, are just as attractive and as durable as the small metal shingles with the patent side-locks, and the cost is *less.*

Honestly now, why pay more?

**All Kinds of Roofings and Metal Roof Trimmings**

**St. Paul Roofing, Cornice & Ornament Co.**

"The Leading Sheet Metal Plant of the West."

St. Paul, Minnesota



Aside from the fact that the stone is made from carborundum, and especially for the carpenter, there are several original and practical features about it which will appeal at once to the workman. The ordinary oil stone used by carpenters is not over two inches wide and four or six inches long, and the result has always been that, when he used the rotary motion necessary in sharpening chisels, plane iron, etc., he could only use about two square inches of the stone. The rest he scarcely ever touched and the stone, of course, soon presented an uneven, wavy surface.

The new stone is perfectly round, four inches in diameter and one inch thick. The sharpening area contains about twelve square inches, plenty of room for the largest tools the carpenter uses. All of this surface is brought into play during the process of sharpening the tool. There is plenty of room for a long sweeping circular motion and there is absolutely no uneven wearing of the stone, as every part of the surface of the stone is used. One side of the stone is made in the coarser grit for taking out nicks and the other side is made in the fine grit for bringing the tool to the desired, keen finished edge. Like all carborundum stones, it is absolutely uniform as to grit, and it embodies all of the carborundum fast cutting qualities. The new stone can be ordered with or without the quartered oak box holder. Further details may be had from the Carborundum Company, Niagara Falls, N. Y.

### Good Furniture Polish

The character of the furniture and work required to be done will determine what kind of polish should be used when it is desired to revive the finish. One of the most popular polishes now for old furniture is made from beeswax and turpentine to about the consistency of soft butter. It is applied by means of a rag in a thin film, then in a few minutes the surface is well rubbed with a dry woolen rag, pro-

ducing a fine polish. But such a finish is affected by water. A better finish, one not affected by water, is made by melting three or four bits of gum sandarac about the size of a walnut each and adding one pint of boiled oil, boiling the mass for one hour. When taken from the fire and allowed to cool, add in the meantime one dram of Venice turpentine and if too thick add also a little ordinary turpentine spirits. Apply a coat of this to the furniture and let it stand for a few hours, after which rub off clean. The furniture then should be rubbed daily to keep it clean, but a fresh application of the polish will not be necessary more than once in two or three months, possibly longer. Scratches may be removed with the rubbing in of a little of the polish. This recipe is very highly recommended.

### North Western Grille Catalog

We have received the new 1910 catalog of the North Western Grille Works, 1820-24 Milwaukee Ave., Chicago. They state that neither time nor expense have been spared to make it the very best of its kind. Old time-worn designs have been eliminated, and only such have been retained as meet with public favor. They desire particularly to call attention to the many new and beautiful designs and to their surpassing facilities for the manufacturing of special work. They make a feature of furnishing special designs, and cheerfully give estimates on Architect's plans and specifications.

All woods used are carefully selected from thoroughly seasoned and perfectly kiln dried stock, which is very essential. This, combined with the best workmanship, enables them to guarantee all their work. Careful attention is given to small orders, their aim being to satisfy everyone dealing with them, as they know a satisfied customer is the best advertisement.

Every reader of the AMERICAN CARPENTER AND BUILDER should write for this beautiful catalog showing designs in grilles, columns, arches, consols, sideboards, buffets, china-cases, etc.



## Hardwood Floors

**BUILDERS and CONTRACTORS** know the vital importance of **OAK FLOORING** in a home, and are fast learning the difference between a house floored with old fashioned soft wood or cheap substitutes in **Hardwood Flooring**, and the home-making qualities of a house with **OAK FLOORING**. The living, renting and selling values of any building, large, or small, is vastly increased by **OAK FLOORING**.

**Oak Flooring.**  $\frac{3}{4}$  inch thickness by  $1\frac{1}{2}$  inch and two inch faces may be laid over sub-floors or over old floors very economically. It has the appearance of heavy flooring. Can be bought, laid and polished for about half the cost of a fair quality of carpet.

**Oak Flooring.**  $\frac{3}{4}$  inch thickness by  $1\frac{1}{2}$  inch, 2 inch and  $2\frac{1}{2}$  inch faces make very substantial floors, and is adaptable for all sizes of rooms.

Write us for further information.

**Oak Flooring Bureau**  
413 Hammond Building Detroit, Mich.

**EVERY CARPENTER KNOWS WHY**

***Dwight Special***

Is the Best Thin Flooring

**DWIGHT LUMBER COMPANY**

DETROIT, MICHIGAN

**Makers of the Best Hardwood Flooring**  
Parquetry and Mouldings

When You Want Large or Small  
Quantities of

**High Grade Oak Flooring, Oak  
Parquetry Strips, Field, etc.**

—Write to—

**R. M. CUNNINGHAM**

Cor. Fourth and Market St., LOUISVILLE, KY.



# 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.

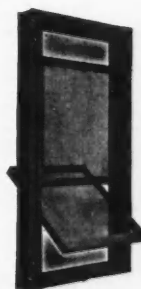
This handsome metal tile roofing is used on many of the finest buildings in the United States. It is beyond question the most attractive and satisfactory roofing made.

## 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.

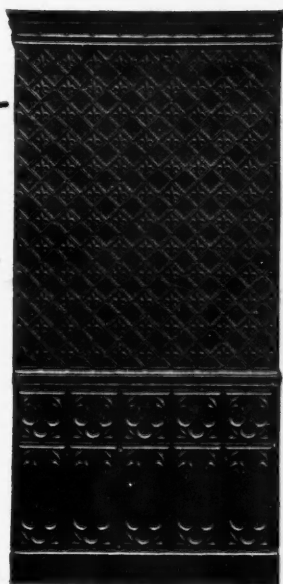
We have catalogues showing our various lines of product. Please specify the particular class of sheet metal work you are interested in and we will send you the proper catalog for same.



**W. H. Mullins Company**

214 Franklin Street,

Salem, Ohio.



## Mr. Builder!

### This New Side wall is a dandy for a Nice Room

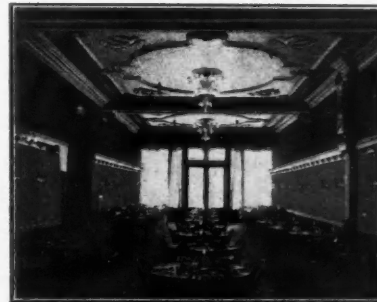
This is only one of the many handsome designs shown in our new catalog of metal ceilings and side-walls. **Your copy is waiting for you.** Write for it today.

Our plain instructions make measuring and erecting easy for the carpenter and builder; we also furnish detailed drawings showing just **how** to do it.

We make the best fitting and nicest looking **Spanish Metal Tile Roofing** in the market. Sample and prices free. Send us a letter today, asking for catalog and special inducement to new representatives. We want one carpenter or builder to handle our products in each town, everywhere. Get the Metal Ceiling business in **your town** now.

**The Kanneberg Roofing & Ceiling Co., Canton, Ohio**

Manufacturers of Art Steel Ceilings and Sidewalls; Metal Roofing; Architectural Sheet Metal Work; Eave Trough and Conductor. Catalogs Free.



Dining Room in Broadway Central Hotel  
New York

This is a cut of one of the many full page illustrations in our

. . . Big Illustrated Catalogue of . . .

**"BERGER'S"  
Classik  
METAL CEILINGS**

It will get business for you.

Write for it.

**The Berger Mfg. Co.**

**Canton, O.**

New York, N. Y.  
Philadelphia, Pa.  
Boston, Mass.

BRANCHES:  
St. Louis, Mo.  
Atlanta, Ga.  
Kansas City, Mo.

Chicago, Ill.  
Minneapolis, Minn.  
San Francisco, Cal.



*The door  
for you to  
Specify*

Why?  
Because it costs  
less than other reliable soft  
wood doors—keeps perfectly in  
stock—best built—takes artistic finishes  
of Mahogany, Walnut, Oak, other brown  
woods—

**Chehalis Fir Doors**

**Faultless in make; flawless in grain**

The only door made in which a like grain is chosen for all five panels affording great beauty and uniformity. Built with vertical stiles, rails and slash grain panels.

To the home owner Chehalis Fir Doors afford advantages of expensive hard woods at less cost than Spruce or Pine. To you they offer durability—least cost—least risk. While more beautifully figured than pine or spruce, the panels won't fuzz from dampness. In a flood at Kansas City the only part of our dealers stock that was not damaged was our Doors.

With Pine prices going up and Spruce going to paper interests, Fir is the coming Wood—Chehalis Fir Doors, the *Coming Door*. Be ahead of the times. Specify Chehalis Fir Door **Now**.

Ask for Free Catalog F.—Better still send 25 cents to defray postage and receive with catalog samples of Fir finished in Mahogany, Walnut, Antique, O.K., etc. Write at once.

**CHEHALIS Fir DOOR CO.**  
Chehalis - Washington

# Yellow Pine Siding

Costs Less  
Wears Well  
Holds Paint  
Easy to Handle  
Don't Rough Up  
Always in Stock  
Best to Use

Yellow Pine Siding is Very Desirable for the reason that it is Easily Handled and nailed. Wears well.

Does not rough up or show a "fuzzed" surface. Cheaper in price.

Will hold paint to your entire satisfaction.

Even at a more expensive price, Yellow Pine Siding is as durable as any other available wood, that can be utilized for this purpose and **Costs Less**.

ALWAYS FOR SALE BY FIRST CLASS  
LUMBER DEALERS AND PLANING MILLS

For any information regarding Southern Yellow Pine, address

**Yellow Pine Manufacturers' Association**  
Suite 707-Wright Bldg. ST. LOUIS, MO.

## Offers Graduate Course in House Decoration

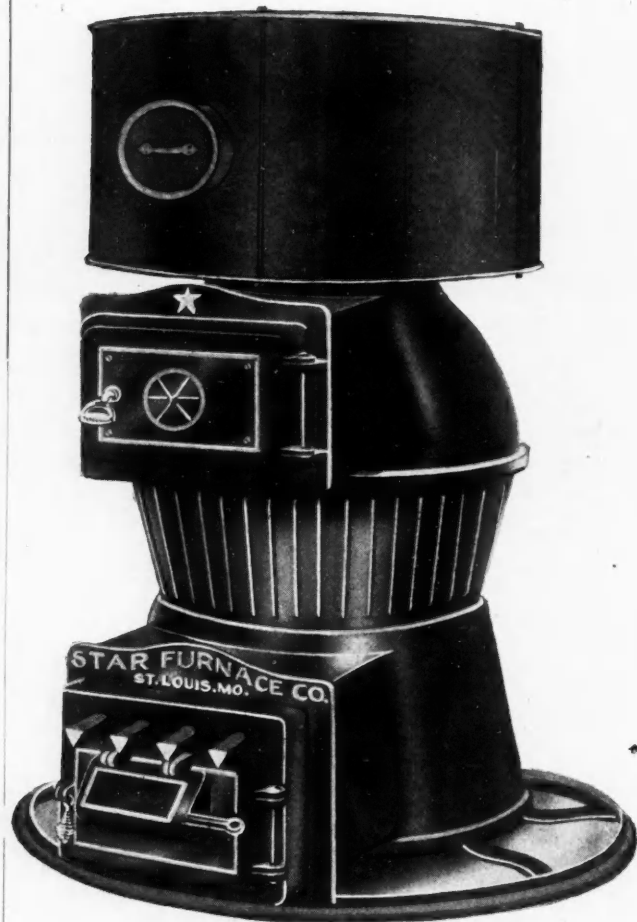
The Teachers' College of Columbia University has a course in practical house decorative study, the successful graduates from which receive a diploma. The preparation for this diploma requires two years' study at the Teachers' College followed by an additional year of practical work with professional decorators under the supervision of the college instructors.

The studies include art appreciation, the history of art, history and principles of design, design drawing and painting, mechanical drawing, clay modeling, house decoration and furnishing, and construction.

## A New Star Found

This new star spoken about on the headline of this article, refers not to a heavenly body, that gives light at night, but to a strictly earthly body that gives heat both day and night.

The Star Furnace first and foremost, does its work efficiently and economically, which is just about all that is required



of any furnace. Not only that, its cost is not prohibitive; it comes within the reach of the small householder and is equally desirable for the owner of the more pretentious house. A card addressed to the Star Furnace and Foundry Co., 3491 Forest Park Boulevard, St. Louis, Mo., will bring a catalog and detailed information.

## Magnets for Handling Huge Weights

The use of lifting-magnets where large masses of iron are to be handled quickly and readily has already been described in these columns. An article in the *American Exporter*



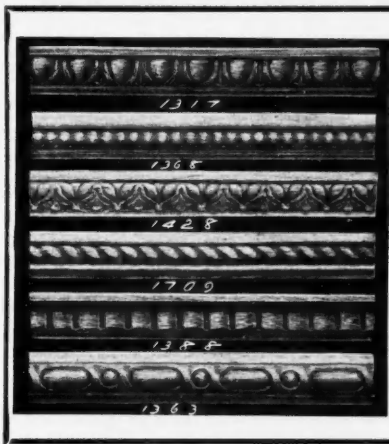


**Acme Woven Wood Lath**  
**For Interior and Exterior Use**

When applied and plastered or concreted  
 In accordance with our specifications,  
 Is guaranteed to make a perfect wall  
 Free from lath cracks and lath buckles

BOOKLET FREE ON REQUEST

**Acme Woven Wood Lath Co.**  
 Suite 1015 New Bank of Commerce Building  
 ST. LOUIS, MO.

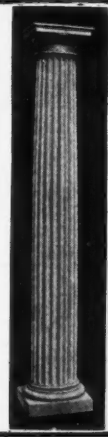


**Wood Carvings for Interior Finish**

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



**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.

**COMPO-BOARD**

A substitute for Lath and Plaster.  
 Can be put on by any Carpenter.  
 It is Warmer, more Durable,  
 Quicker and more Easily Applied.  
 Manufactured all 4 ft. wide, 8, 9, 10,  
 11, 12, 13, 14, 15, 16, 17 and 18 ft. long.

For Sample, Price and full Description, Write

**Northwestern Compo-Board Co.**  
 4800 Lyndale MINNEAPOLIS, MINN.



shows how greatly this use has extended of late and gives an idea of the enormous size of the masses handled by these great electromagnets.

For loading and unloading rails, tubes, and large plates it has been found an advantage to operate the magnets in pairs. In this manner twenty to twenty-five rails at a time may be lifted while nested together and dropped in the exact location desired without disturbing their arrangement, enabling a whole car of rails to be loaded neatly in a few minutes. It is in such special uses of the lifting-magnet that the saving of time and labor is most marked. The grip by simply magnetic force, by saving space occupied by the old hooks and chains, enables the magnet to do work which is impossible to the old method, as, for example, the close and accurate piling of rails and structural steel without rehandling.

The magnet may be used advantageously in loading and unloading large quantities of loose scrap, matted masses of scrap iron, lathe chips, and the like at a profit in the handling, whereas the labor cost under the old method would be prohibitive. The cost of handling iron and steel is from 5 cents to 50 cents per ton, according to the nature of the material. The use of lifting-magnets cut down this cost about 90 per cent. Other interesting special uses are in handling iron and steel goods packed in cases and barrels, such as kegs of nails—notwithstanding the wood between the magnet and the metal to be lifted, and extra margin of electric power being provided to make up for the absence of direct contact between the magnet-poles and the load.

**New Handy Saw Clamps**

Henry Disston & Sons, of Philadelphia, have just announced that they are beginning the distribution of two new saw clamps made so light and compact that they can be carried in a tool chest with no trouble or inconvenience.

The new No. 5 handy saw clamp is a strong, dependable implement made of grey iron. The arches are reinforced so they possess all the strength that can possibly be required. An eccentric lever for tightening, promotes quick and positive action. There are three points of pressure on the jaws so that proper contact with the blade is obtained along the entire length, insuring the holding of the saw blade firmly and rigidly in position.

This clamp is fastened to bench by screws.

The length over all is 14 3/4 inches. Filing length of jaws is 13 inches. Weight of the clamp is 3 3/4 lbs.

Disstons are also making a new No. 6 Saw Clamp which is of the same general design as No. 5, with the addition of screw lugs for fastening to the bench. The lugs fold snugly to the body of the clamp, thus taking up small space in a tool chest.

**Flood Precautions in Paris**

The havoc caused in Paris during the early part of this year by floods resulted in the appointment of a commission to investigate and adopt measures to prevent a recurrence of the disaster. The report of this commission, the engineering plans of which will probably be carried out to the letter, provides for the widening of the smaller arm of the Seine above the bridge St. Michel, the reconstruction of the Archeveche, Double and Petit bridges, the displacement of the Orleans railway near the bridge St. Michel, the modification or suppression of the Monnaie dam and lock, the raising of the embankment walls 20 in. above the highest water level during the flood, and the adoption of suitable means for hermetically closing the openings into the Seine when a rise in the water level threatens.

The sewers discharging into the Seine are to be fitted with sluice gates, which may be opened or closed from above. An additional collector and siphon under the Seine to receive



## A Word With You Mr. Carpenter:

If we could *show* you how you could increase your earnings and profits through the laying of our thin hardwood flooring, you would grasp the opportunity, wouldn't you?

If we show you that through the use of our flooring, you could take the place of the high priced hardwood floor laying specialist, it would be worth your while, wouldn't it?

Now here is your opportunity to create a local reputation in your community as an expert floor layer, and thus reap the profits from your energy and endeavor.

Our thin hardwood flooring is the result of *twenty years* of hard and conscientious study and work, and is absolutely perfect.

During this time we have laid floors of all kinds and studied their strong and weak points and have in this way been able to produce flooring that is perfect.

Through our special tongue and groove and the never varying uniformity we have produced a flooring that lays absolutely level, usually needing but a little sandpapering to prepare it for finish.

**Send for our booklet**

"Profitable Opportunities to Carpenters" which tells you all about our hardwood flooring and how to lay and finish it.

In this way you will gain an insight into a new field of endeavor that will appeal strongly to you from a standpoint of profits and more money earned.

Send today and start the ball a-rolling.



Cincinnati Floor Co.  
228 W. 4th St.,  
Cincinnati

Please send me "Profitable Opportunities to Carpenters," with no obligations to me whatever.

**Cincinnati Floor Company, 228 West Fourth Street CINCINNATI**

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

# IMPERIAL "SPIRAL" "AMERICAN" INGOT IRON LATH

THE MOST SUPERIOR RUST-RESISTING

**Government Approves It---Architects Specify It, Contractors Demand It.**

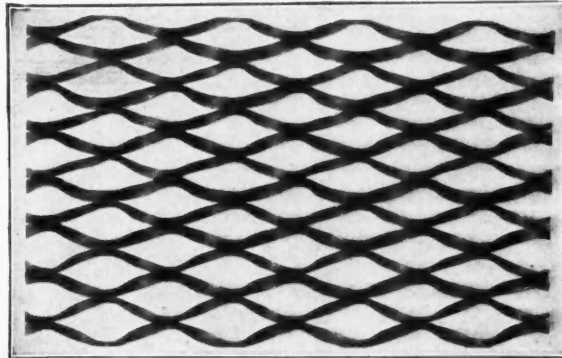
## RUSTPROOF

Made From

**"AMERICAN  
INGOT IRON"**

The Attainment  
of the  
Highest Purity  
in Iron

**99.94% PURE**



Imperial "Spiral"

## FIREPROOF

Equal Distribution  
of the Metal  
Giving Maximum  
Rigidity

Is unequalled by any expanded lath made, NOTE that "Spiral" Twist SAVING of THREE to FOUR cents Per Yard IN labor AND Plaster.

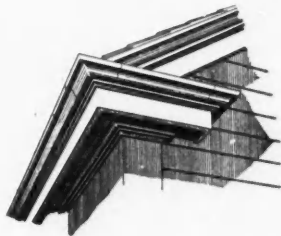
MADE IN ALL GAUGES, ONE STANDARD SIZE 18 1/2 INCHES x 96 INCHES

*Samples and Prices Furnished on Request.*

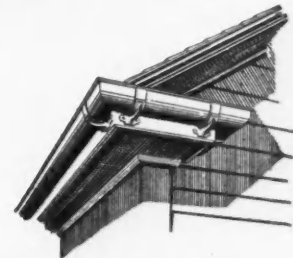
WRITE DEPT. R. C.

**THE AMERICAN ROLLING MILL CO. - Middletown, Ohio**

# Cast Iron Gutters Last



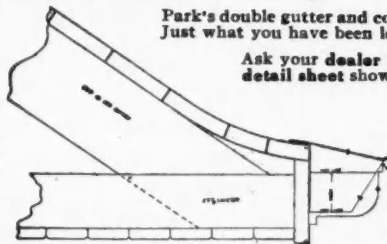
Easily put up. Once up, always up. Do not bend or break by pressure of ladder against them. Will stand greater weight of snow or accumulation of ice than any other gutter. Not affected by acid fumes that in some vicinities play hob with all other metal gutters. They are adaptable to any kind of building or type of construction. Cast with moulded face to form part of cornice, or rounded to serve as a hanging gutter. Used almost exclusively in England and all over Europe. Supplied in 6 feet lengths. Joints fitted ready to erect. No soldering required. Send at once for circular and prices.



**HITCHINGS @ COMPANY, Elizabeth, N. J.**

## A Detail Drawing Of The Only Practical Double Gutter Ever Made

Park's double gutter and cornice mould combined. Just what you have been looking for.



Ask your dealer or write to us for the detail sheet showing our eight styles of this gutter and a complete line of sheet metal roof trimmings. Every architect should have his detail sheet to specify from. We manufacture a complete line of sheet metal work for buildings (watch this space).

**MESSENGER & PARKS MFG. CO.**  
*The Prompt Shoppers.* Aurora, ILLINOIS

## Practical Art Metal Ceilings



Quickly and easily applied. We are the only manufacturers who cut the heads in the dies after casting. Result—Square and accurate plates—which will save you time and labor in cost of erection.

Send for Catalogue No. 2 which shows 200 new and original designs.

Manufactured by  
**Wm. Foster & Son Co., Inc.**  
Springfield Illinois

Also manufacturers of Radiator Shields, Fire Proof Window Frames and Sash, Gal. Iron Fronts, Hip Shingles, Cornice, Skylights



# ART GLASS



We manufacture



**Clear, Bevel Plate, Mitred Bevel Plate & Colored Glass**

—Set in—

Lead, Zinc, Copper or Brass

—For—

Residences, Public Buildings and Churches

Special designs quickly and satisfactorily executed.

Write today for our beautifully illustrated catalog.

**Clinton Glass Co.** 1001 W. 21st St., Chicago, Ill.

## 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.



**No Dust  
Dirt  
Smoke  
Cinders**

Travel Over the Road of Good Service

... THE GREATEST INTERURBAN SYSTEM IN THE WORLD ...

**THE MCKINLEY LINES**

**EXPRESS SERVICE AT FREIGHT RATES!**

the waters from Javal and Grenelle is also proposed. Besides widening the smaller arm of the Seine, it is proposed to deepen the bed of the river between Suresnes and Bougival, at a cost of \$6,000,000, and to construct a canal from Annette, on the River Marne, to Epinay on the Seine, at an approximate cost of \$35,000,000. This would pass much of the water of the Marne around Paris, thus relieving the Seine of it, until after the latter had passed through the city.

### Makers of the Best Hardwood Flooring

With this caption the Dwight Lumber Company of Detroit, Michigan, have for many years advertised their flooring, and in all of the years that this company has been doing business they have always kept up the standard of their product.

The claim is made that "Dwight" flooring is always manufactured from the very best stock, thoroughly kiln-dried, and in addition the milling is as nearly perfect as modern machinery and method can produce. It is in thin hardwood flooring that the Dwight Company specializes, and, in fact, the name this thin flooring bears, "Dwight Special," carries with it a reputation deserved by long years of careful attention to stock and milling, and matching that easily entitles it to the name "Best Thin Hardwood Flooring." The great strength of the tongue is its strongest recommendation; and that carpenters like to lay it, makes it easy selling on the part of the dealer.

Some of the special products of the Dwight Company embrace clear quartered and plain oak, parquetry squares and line borders in various woods, fancy corners and inlaid strips.

The value of thin hardwood flooring, and parquetry squares and strips as floor coverings is now an accepted fact; and instead of one or two rooms being covered with this fine flooring, the floors of whole buildings are now thus covered, giving every floor a handsome and permanent covering, better than any carpet could possibly be, and with a life probably ten times that of the carpet.

One large department of the Dwight Company plant is devoted to the manufacture of moulding, in which the company make all of the standard designs.

### A Mantel Line of Merit

We recently received a copy of the "Mantel Catalogue," issued by Moormann and Otten, of Cincinnati, O., and were greatly impressed with the extensive variety of up-to-date designs illustrated therein.

This firm has a reputation of turning out work of the best character and at the most reasonable prices.

Their 50-page handsomely illustrated mantel catalogue can be had free upon application.

### New Pennsylvania Terminal and Tunnels

No less an authority than August Belmont declares that "a distinct epoch in the railroad history of New York" dawned with the completion of the Pennsylvania Railroad's new tunnels under the Hudson and East rivers and the opening of the great station in the heart of the city. The New York papers congratulate the rest of the country on their improved facilities for reaching the metropolis, and the rest of the country congratulate the New Yorkers on their improved facilities for getting away. Only the tubes under the East river are open at present, the opening of the ones under the Hudson being set for about January 1. The eastward tunnels are to handle 600 trains a day and the westward tunnels 400. The *Brooklyn Eagle* is jubilant over the fact that it is now only twenty minutes from "the noise and grime of busy Manhattan" to the green fields of Long Island,

# Honeywell Hot Water Heating is the Best

## THE HONEYWELL SYSTEM

It is not only the cheapest system to install, but by far the most slightly, 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 radiator 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  $\frac{3}{4}$ " 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.



HONEYWELL TIME CLOCK THERMOSTAT

### 34,000 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 is revolutionizing hot water heating.



## Honeywell Heating Specialty Company

Plant and General Offices

WABASH - INDIANA

This is the inner radiator of the **HESS STEEL FURNACE**. It's all steel and contains the fire, with its gas, smoke and dust. Radiator leakage in other furnaces sends gas and dust to the rooms, but never in the **HESS**, for every joint and seam in a **HESS** radiator is sealed tight WITH MELTED STEEL. **EVERY JOINT IS WELDED AND STAYS TIGHT FOREVER**. Inferior furnaces are not built that way. Cemented radiators always open after a while and give trouble. It's impossible with the **HESS**.

## HESS FURNACE

You can buy our furnace direct from our factory, at the factory price, and test it 60 days in winter weather. If not pleased, return it at our expense for freight both ways and pay us nothing. This offer and lots of good furnace information will be found in our free 48-page furnace booklet. Ask us for one. A postal card will do.

**HESS, 920 Tacoma Bldg. - CHICAGO**

### CONTRACTORS and BUILDERS

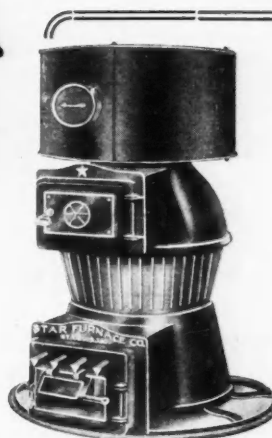
THIS WILL INTEREST YOU

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.



### 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'FG & F'D'Y CO.**  
Forest Park Boulevard  
St. Louis, Missouri

and it predicts that populous suburbs will soon replace the cornstalks and scarecrows. The truth of the maxim that "time is money" has a new emphasis in the report, unofficial but approximate, that the tunnels and station, which will land the passengers in the city in three minutes, have cost no less than \$150,000,000. It is "a greater expenditure than was ever before incurred by a private corporation for a single undertaking," we read in a descriptive booklet issued by the railroad, and the new station "covers more territory than any other building ever constructed at one time in the history of the world."

"The Vatican, the Tuileries, the St. Petersburg Winter Palace, are larger buildings, but they have occupied centuries in their construction. The Pennsylvania Station is unique, covering eight acres of ground, with exterior walls extending approximately one-half of a mile, all told, and having been erected in less than six year's time."

### Not Imitators But Leaders

A very important suit was decided in U. S. Court of Appeals, at Cincinnati Ohio, July 18th, 1910, by Judge Severeance, Warrington.

The XXth Century Heating & Ventilating Co., of Akron, Ohio, sued The Taplin, Rice-Clerkin Co., of Akron, Ohio in U. S. Courts, Northern District of Ohio, about three years ago, on an invention claimed to be owned by complainant company, covering certain grate construction and attachments.

The case was first tried before Federal Judge Taylor, in June, 1909, and decided by him in favor of the defendant, The Taplin, Rice-Clerkin Co. The complainant, the XXth Century H & V. Co., not satisfied with Judge Taylor's opinion, appealed the case to the U. S. Court of Appeals, at Cincinnati, Ohio.

The case came for hearing in April last, and after carefully reviewing the whole case, the Court of Appeals decided

that the Defendant, the Taplin, Rice-Clerkin Co., *did not infringe the complainant's construction*; and to ones who are interested a copy of the opinion can be obtained from The Taplin, Rice-Clerkin Co., Akron, Ohio.

This is a great victory for the defendant, The Taplin, Rice-Clerkin Co., who have always claimed to be "original" in all stoves, furnaces and machinery construction—and claiming never to appropriate "old-copied construction" as used by others; in other words, "Not Imitators," but rather "leaders" in improvements.

It is learned, on good authority, that the defendant, The Taplin, Rice-Clerkin Co., having been injured in their business, will bring suit for the sum of \$100,000 for damages against the complainant company. No doubt that will be a long-drawn out suit, and will be watched by interested parties as to the final outcome.

### America's Lead in Telephones

The United States leads the world in its intelligent use of the telephone, having eight instruments to every 100 inhabitants, while no other country has half as many. Canada stands second and Sweden third. Herbert N. Casson informs us in *The Electrical Review* and *Western Electrician*, that Germany has as many telephones as the State of New York, and Great Britain as many as Ohio. Chicago has more than London, and Boston twice as many as Paris. In the whole of Europe with her twenty nations, there are one-third as many telephones as in the United States. In proportion of her population, Europe has only one-thirteenth as many.

The average European family sends three telegrams a year, and three letters and one telephone message a week; while the average American family sends five telegrams a year, and seven letters and eleven telephone messages a week. This one nation, which owns 6 per cent of the earth, and is



## 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.

# MANTELS      MANTELS

## DIRECT FROM FACTORY

Send for our 50 page illustrated Catalogue

### SPECIAL DISCOUNT TO CONTRACTORS AND BUILDERS

# MOORMANN & OTTEN,

611-613 MAIN ST.,      -      -      -      CINCINNATI, O.



WATER-FIRE AND  
LIGHTNING PROOF

TRADE  
**TITELOCK**  
MARK

**METAL  
SHINGLES**

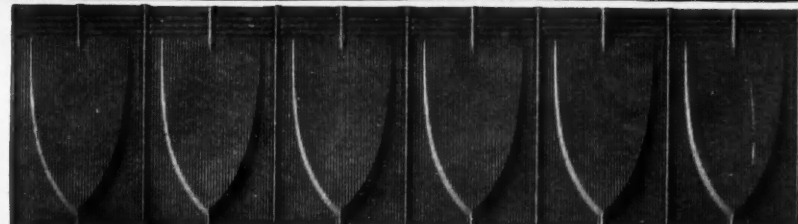
MAKE THE BEST  
ROOF COVERING

NOTE THIS  
LOCK-JOINT!



LAYING  
SHINGLE

SHINGLES LAID  
IN PLACE



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

SEND FOR SAMPLES  
AND BOOKLET.

*"Invisible Joint"*  
STEEL CEILINGS  
SEND FOR CATALOG.

**MILWAUKEE CORRUGATING CO.**  
MILWAUKEE, WIS. - KANSAS CITY, MO.

EAVES TROUGH, CONDUCTOR  
PIPE, ELBOWS, RIDGE  
ROLL, SHEET METAL  
ROOFING AND SIDING, ETC.  
SEND FOR PRICE LIST.

# ERECTION      COST

**Cut One-Half**  
—BY USING—

## "Canton" Ceiling

Manufactured by

**THE CANTON ART METAL CO.**

CANTON, OHIO

Eastern Branch  
525 W. 23rd Street, New York City

Western Branch:  
206 S. Third Street, Minneapolis, Minn

## Walter's Metal Shingles



**WALTER'S**  
Shingles That Last. Never  
Leak. Never Need Repairs.  
Made in Painted Tin. Gal-  
vanized Tin and Copper.

Won't Rot Like Wood  
Won't Crack Like Slate

1883    1910

It is a superlative article that increases  
in demand after 27 years in use.

We want an Agent in every city and town.  
A profitable business and satisfied custom-  
ers is the experience of the man who han-  
dles WALTER'S Shingles and Tiles.  
Write for Catalogue, Samples and Price.



**The only absolutely pro-  
tected or covered Lock.**  
No chance here for the  
lock to flood and leak.

**NATIONAL SHEET METAL ROOFING CO.**  
JERSEY CITY, N. J.

## "Radford's Artistic Homes"

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

### Homes to Suit Every Taste

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

### Homes Designed by Best Architects

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

### Great Advance in Home Architecture

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

### Homes Planned for Comfort and Convenience

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

### Accurate and Economical Plans

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

This book will be sent to any address, express prepaid, together with the Cement World for one year, for \$1.50. Address

**Cement World, 241 Fifth Ave., Chicago**

## Mail us this Coupon below and Receive our Great Book on Ideal Concrete Machinery

Every ambitious carpenter and builder wants to push that feature of his business that pays the biggest profits. This is the reason that hollow concrete block construction has become *universal* throughout this country.

People have learned that they can build more beautifully, cheaply and satisfactorily with concrete than with any other material and now they *demand* this construction.

Ideal Concrete Machinery provides the most *complete* equipment for this line of work. The wonderful Ideal Concrete Block Machine, absolutely interchangeable and with its marvelous attachments, the Ideal Automatic Power Tamper, the Batch Mixer, Veneer Block Machines, Brick Machines, Sill, Lintel and Dimension Stone Machines, Sewer Pipe and Drain Tile Molds, Fence Post Molds, Ornamental Molds and special equipment for any kind of work, make the concrete business *unlimited* in range and opportunity for success.

If you will tear off the coupon below and mail it to us, we gladly will send you our book which tells the story of hollow concrete block construction and how we work with you to make this work the biggest kind of a success. This book is free and you put yourself under no obligation. *Send the coupon today.*

## Ideal Concrete Machinery Co.

London, Ont.

416 Emerick St., South Bend, Ind.

### IDEAL CONCRETE MACHINERY CO.

416 Emerick St., South Bend, Ind.

Gentlemen:

Please send me your free book on Ideal Concrete Machinery.

Name \_\_\_\_\_

Address \_\_\_\_\_

State \_\_\_\_\_

5 per cent of the human race has 70 per cent of the telephones. And 50 per cent, or one-half, of the telephony of the world is now comprised in the Bell system of this country.

There are only six nations in Europe that make a fair showing—the Germans, British, Swedes, Danes, Norwegians and Swiss. The others have less than one telephone per 100. Little Denmark has more than Austria. Little Finland has better service than France. The Belgian telephones have cost the most—\$237 apiece, and the Finnish telephones the least—\$81. But a telephone in Belgium earns three times as much as one in Norway. In general, the lesson of Europe is this, that the telephone is what a nation makes it. Its usefulness depends upon the sense and enterprise with which it is handled. It may be either an invaluable asset or a nuisance.

Mr. Casson states the reason for failure in most countries in three words—"Too much Government!" Before the telephone was invented, the telegraph had been a State monopoly; and the telephone was regarded as a kind of telegraph. Wherever a group of citizens established a telephone service, the Government officials looked upon it with jealous eyes, and usually appropriated it.

The telephone thus became a part of the telegraph, which is a part of the Post-office, which is a part of the Government. It is a fraction of a fraction—a mere twig of bureaucracy. Under such conditions the telephone could not prosper. The wonder is that it survived at all.

## "Perfect Fit" Steel Ceilings

We have just received our copy of the beautiful new catalog showing the Eller Mfg. Co.'s "Perfect Fit" ceilings and side walls. This is the most complete book this company has ever issued and it does them great credit. The orderly arrangement of the different designs is such that the catalog will be very much valued by all dealers and users of architectural sheet metal. Readers of the AMERICAN CARPENTER AND BUILDER will do well to write at once for their copies.

From the introduction to this catalog we learn some very interesting things about the development of the "Perfect Fit" idea. To quote:

"The manufacture of metal ceilings is but twenty years old, and at first they were quite crude, but as we paid particular attention to the complaints, suggestions and practical ideas which were advanced by erectors and architects from time to time, we soon attained that high state of proficiency and excellence which created a world-wide demand for Eller's metal ceilings. Not being satisfied with this, one of the members of our firm spent several months—without himself or his mission being known—calling on a great number of expert erectors in all the large cities in the country, gathering from them any comments that were detrimental or otherwise, to the different makes of metal ceilings. In so doing, we learned that there was still lacking that degree of accuracy in the manufacture of different members of which a ceiling is composed, so that the membering and alignment would be perfect. After careful study as to the best way to attain this accuracy, we decided it could be done by having the material stamped with steel dies, and at very great expense we ordered this done, and today each and every piece that enters into any of our designs is stamped on steel dies, which gives you the assurance that an article stamped today can also be stamped in five years from today, and will fit perfectly with that previously manufactured. This does not seem important, but listen! Suppose we stamp 1,000 plates of a design today and in a few months another thousand, and your order comes in for 100 plates and you get 50 of the first stamping and 50 of the second; if these plates are not all stamped alike, don't you see there will be trouble getting

# CHICAGO GRILLE WORKS

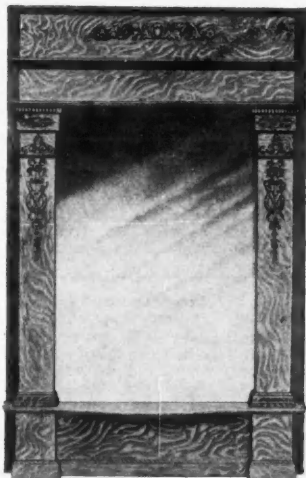
1890 1910

18 years in our present location satisfied customers in every state in the union.

We can satisfy **YOU** if you will give us a chance to figure on your needs in our line of work.

Our 48-page catalogue will be mailed on request.

(FREE) It contains **Seventy-two** designs of Grille Work, Colonnade openings, Consols, and Parlor Columns.



Consol Design No. 5

826-838 Wells Street Chicago, Illinois

Get our price on Consol DESIGN No. 5.

We have others.

\$8<sup>50</sup>

FOR THIS COLONNADE

A VERY LOW PRICE

for this

Striking New Colonnade

Materials and workmanship first-class throughout.

Description of Colonnade

(Side casings and cap trim not included)

Made for 5½-inch jambs. Made in oak or yellow pine, in the white, hand smoothed, ready for finishing.

Prices

(Any height not over 9 feet.)

Style No. 1-2, Each \$8 50

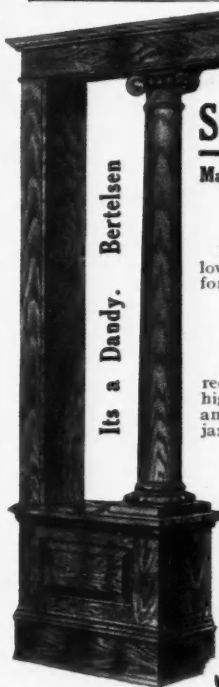
Columns are 6 inches in diameter, tapering to receive 5-inch compo. cap, pedestals are 20 inches high over all and the width is 24 inches over all, and when set in to receive casings extension from jamb is 18 inches. Top shelf is 10 in. wide.

Style No. 2-2, Each \$9 00

Same measurements as above, only pedestals are 30 inches wide over all and when set in to receive casings extension from jamb is 24 inches.

Send your order now. Don't let it get away from you.

Its a Dandy. Bertelsen



COLONNADE No. 1-2

BERTELSEN ADJUSTABLE GRILLE CO.

619 S. CLINTON ST., CHICAGO



## 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

## HESS MEDICINE SANITARY LOCKER

The only modern Sanitary Steel Medicine Cabinet or Locker.

Handsome beveled mirror door. Snow white, everlasting enamel, inside and out.

FOR YOUR BATHROOM

Costs less than wood and is better. Should be in every bathroom.

Is dust, germ and vermin proof and easily cleaned with warm water.

Made in four styles and three sizes. Price \$7.00 and up. Send for illustrated circular.

HESS, 920L, Tacoma Bldg., Chicago

Makers of the Hess Steel Furnace. Sold on Approval. Free Booklet.





them to fit? Consequently the great advantage of using steel dies.

"With this equipment we now felt that we had reached the highest perfection in the manufacture of metal ceilings, and on the next trip of this same member of the firm, he interviewed the different erectors in the same manner as he had done before, and found a greater demand than ever for Eller's ceilings, because they fitted perfectly, causing a better looking piece of work and saving considerable time in erecting.

"This sentiment being so universal, we conceived the idea that the proper name to apply to Eller's ceilings was 'Perfect-Fit,' and today among the different metal ceiling erectors if you ask them which ceilings they prefer to erect, they will tell you in their own words, 'The Perfect-Fit kind.'"

### Two New Offices for Johns-Manville

Owing to the great increase of business in the vicinity of Atlanta, Ga., and Rochester, N. Y., the H. W. Johns-Manville Company has recently opened a new office in each of these cities.

The Atlanta office is located in the Empire Building, in charge of Mr. W. F. Johns, who has been traveling this territory for the Company for a number of years, and the Rochester office is located at 725 Chamber of Commerce, in charge of Mr. H. P. Domine, formerly with the Buffalo branch of the Company.

### Free Sample of Amatite—The Roofing That Needs no Painting

There are doubtless many readers of this paper who are users of ready roofing, who are not familiar with Amatite.

This is a new type of roofing which came upon the market a few years ago and has found wide favor on account of its mineral surface which needs no painting. This mineral surface is embedded in pitch, which grips the stone firmly and makes a kind of pitch-concrete surface. This surface is abundantly able to withstand all sorts of weather year after year without any painting.

Its price is no higher than that of the old-fashioned painted kinds. In fact, in many cases it will be found to cost considerably less.

Next time you paint your roofs remember that painted roofings are no longer the only kind you can buy.

In the meantime it is a good idea to look up Amatite. You can get full information and a free sample from the manufacturers on request. Address Barrett Manufacturing Co., New York, Chicago, Philadelphia, Boston, Cleveland, Pittsburgh, Cincinnati, Minneapolis, St. Louis, Kansas City, New Orleans, London, Eng.

## CLASSIFIED DEPARTMENT

Do You Want Help?  
Do You Want a Situation?  
Have You Anything for Sale?  
Do You Want Machinery or Supplies?

An advertisement in the "Classified Department" of the AMERICAN CARPENTER AND BUILDER will be the least expensive and the most thorough way of letting your desires be known. Rates 5 cents a word each insertion.

CASH MUST ALWAYS ACCOMPANY ORDER

#### Patents

C. L. PARKER, Patent Attorney, Ex-Examiner Patent Office, 920 G St., Washington, D. C. Write for inventor's handbook.

#### Situation Wanted

SITUATION WANTED—By carpenter with twelve years' experience. Any contractor north of the "M. and D." line, in a city not less than 25,000, who can give me steady employment the year round. Please write me at Glass, Obion Co., Tenn. John H. Rigby.

#### Miscellaneous

LOOK HERE!—Don't you want to make \$5 or more a day? Then sell Ford's Wood (no rubber, felt or metal) Air-Tight Weather Strip; readily applied to doors and windows; lowers the coal bills; samples and terms free. Ford Mfg. Co., 13 Burns Block, Holyoke, Mass.

## SLATE WE HAVE WHAT YOU WANT

*In Roofing Slate, Slate Blackboards  
Structural and Plumbers' Slate*

SATISFACTION GUARANTEED IN QUALITY AND PRICE

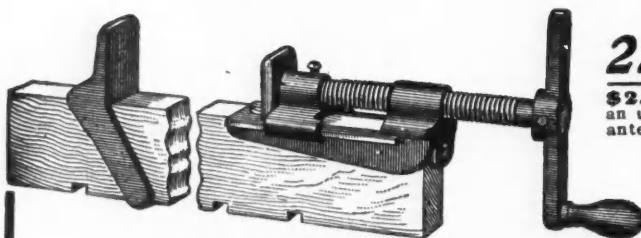
ASK FOR DELIVERED PRICES

J. K. HOWER, Station C., Slatington, Pa.

R. J. KICHLINE, Sales Agent

### 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. JAMES CRAIG, Manager



Patent Malleable Clamp Fixture

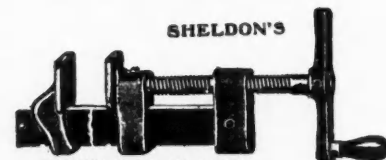
E. H. SHELDON & CO., Chicago, Ill.

Gentlemen:—We are pleased to state that the 25 dozen Clamp Fixtures which we bought of you a little over a year ago are giving excellent service. We are well satisfied with them and shall be pleased to remember you whenever we want anything additional in this line.  
Yours truly,  
Sioux City, Iowa.

CURTIS SASH & DOOR CO.

22,000 Sheldon Steel Rack Vises

\$2.80 and up, sold on approval, an unconditional money-back guarantee.

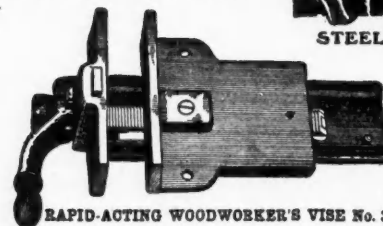


STEEL BAR CLAMPS

Guaranteed Indestructible

We solicit privilege of sending samples and our complete catalogue.

E. H. SHELDON & CO.  
84 N. May St., Chicago



RAPID-ACTING WOODWORKER'S VISE No. 3

Just a word with you, if you please

# “DEFIANCE”

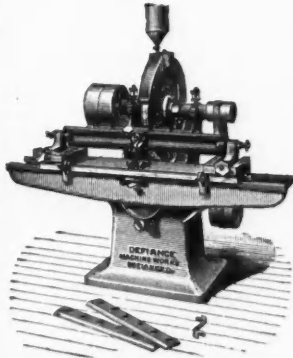
That's the word and it stands for the very highest class of **WOOD WORKING MACHINES** on the market

Sawing, Shaping, Planing, Boring, Mortising, Turning and Sanding Wood of Every Description.

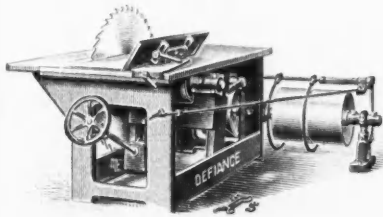
## THE DEFIANCE MACHINE WORKS DEFIANCE, OHIO

Specialists in wheel and handle machinery of every description. Carriage, wagon and automobile woodwork.

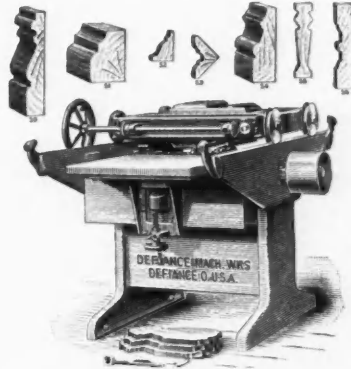
Send for Catalog. : : Ask for Quotations.



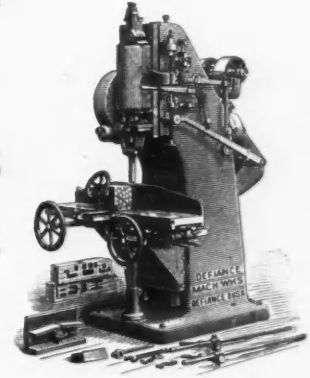
Automatic Knife Grinder



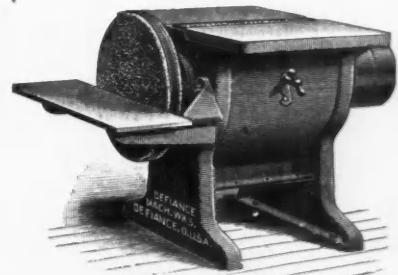
No. 9 Heavy Rip Saw



Transverse Moulder



Hollow Chisel Mortiser



24" Drum and Disc Sander

# “Diamond” Mortiser

For Foot Power

Will mortise  $\frac{1}{8}$  to 1 inch wide, 3 inches deep or 6 inches deep by reversing the work and with our patent adjustable tenoning tool will cut tenons  $\frac{1}{8}$  to 1 inch wide. Has rigid iron column, powerful foot motion and accurate action. The table has horizontal, vertical and angle adjustments.

It takes up but little space, is light and can be easily moved about to accommodate your work.

We make a complete line of Foot, Hand and Light Power Wood Working Machinery suitable for Carpenters, Builders, Cabinet Workers and other Wood Workers. It will pay you to investigate their merits.

Send for catalog “A”

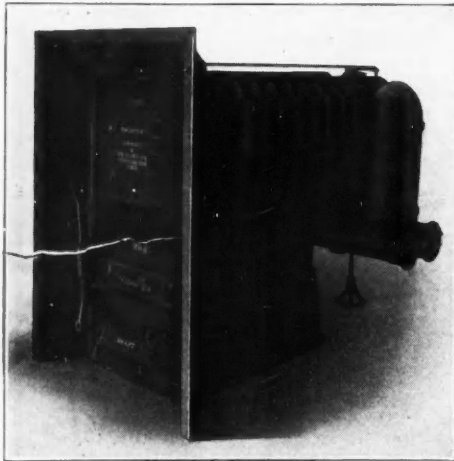
**The Seneca Falls Mfg. Co.,**

218 Water St.,

Seneca Falls, N. Y., U. S. A.

163





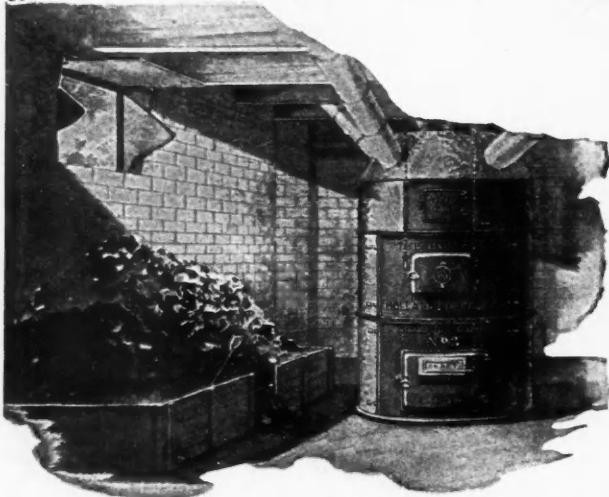
## DOUBLE Down DRAFT All Cast Iron Church and School Furnace

Will burn hard or soft coal or four foot wood. The most powerful and economical heater made. Our Radiator extracts all the heat possible out of the smoke and can be cleaned in a moment. Send us plans for any class of work, either residence, school or church and we will submit price on complete job including all fixtures. Write for Catalog M.

**Majestic Furnace & Foundry Co., HUNTINGTON, IND.**

### A LIGHT BASEMENT

With all the conveniences of the coal chute, can be obtained by using the Window-Chute—"the one with the glass." It's different from all others because it's a window and a chute all in one. Saves the cost of a frame and sash otherwise necessary. Saves another opening through the wall—You've sometimes found it difficult to locate another.



Notice the plate at the top of the frame? That covers the glass when the chute is open. It swings at the outer end and drops down, forming the bottom of the chute.

**Beware of Infringement.**

We also manufacture the famous "Holland Furnace." "The Holland Furnace makes Warm Friends."

Write for Booklet

**HOLLAND FURNACE CO.**

Dept. "A" Holland, Mich.

Clare Bros. & Co., (Ltd.) Preston, Ont.

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 Cross-roads in the United States, for more than forty Years.
2. Because the line we sell directly, or indirectly, and have field Agencies to look after, and take care of our business, as well as that of our customers.
3. Because you get a Factory Guarantee on your whole outfit.
4. Because your heater is made by, and installed by practical men—ones WHO KNOW HOW TO DO IT.
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—or no pay:—BEWARE OF TRAPS FOR THE UNWARY.

**THE TAPLIN RICE CLERKIN CO., MFRS., AKRON, OHIO**

The Only Stove and Furnace Folks

Send for Catalog

### Doylair New Principle Warm Air Furnaces and Steam Heating Devices

**FIFTY PER CENT FUEL SAVERS  
BURN SOFT OR HARD COAL**

Heat your home at lowest possible cost with least attention, least fuel, perfect combustion, greatest radiating surface, most heat, no wasting direct draft, hot blast in your home—not up the chimney.

SEND FOR CIRCULARS

**GLOBE HEAT-POWER CO.**

213 E. Randolph Street

CHICAGO





# ANDREWS HOT-WATER HEATING

## Hot Water Heated \$183

In Minneapolis and Vicinity.

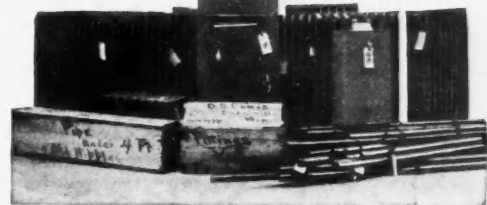
This price includes the complete plant for heating this 8-room house except the kitchen. Any carpenter or handy man can put this in for you for \$18. For five plants in one place we will send a man from Minneapolis to do the work for \$24. per job this size.



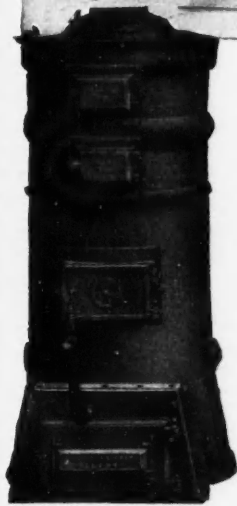
**BOXED AND TAGGED**

ANDREWS STEEL BOILER

**READY FOR SHIPMENT**



This shows the plant as you will get it at your station. All fittings, short pieces of pipe and miscellaneous material are boxed; long pipes are tied in bundles. Everything is complete ready to use without cutting, trying or waste of time.



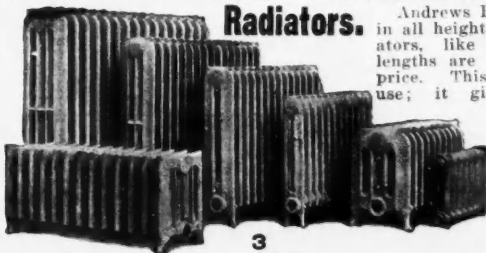
Andrews Cast Iron Boiler

Andrews Cast Iron Boiler furnished for this plant is 22 1/2 inches in diameter, 50 inches high; it is made of best grade gray castiron. Every boiler before it leaves our factory is subjected to cold water pressure of 80 pounds per square inch. It has an 18-inch circular grate with triangular rocking and dumping grate bars of the most approved pattern. There are two clean-out doors, front and back, and three clean-out holes on top. This boiler is rated at 500 square feet. The fire pot is slightly corrugated to expose the most surface to the burning coal and gases. The boiler has been on the market for years and proven most satisfactory. The large waterways inside allow a rapid circulation of water. It is guaranteed in every way to be the best. It will burn hard or soft coal or wood. It is very economical. Andrews hot water plant will save 1-3 to 1/2 the coal used by a hot air furnace. **GET A FREE ESTIMATE.**

**NOT IN ANY TRUST**

The plant includes six standard highly ornamented cast iron radiators 9 inches wide and 38 inches high, containing 56 sections, equivalent to 420 square feet as ordinarily used. Andrews Regurgitating Safety Valve System of circulation, which makes it possible to heat the radiators as hot as steam in very cold weather. In mild weather a little wood fire in the boiler in the morning will keep the house warm all day. Group system of piping makes the radiators heat very quickly. The pipe is cut to fit at the factory, no cutting or trying to do on the job. The only work in putting in is to bore holes with auger in floor and ceiling and screw pipes together. We send all fittings and material complete with plain simple plans and directions. You can put the job in yourself after working hours. Gold or silver bronze with brush to finish the radiators is also included so the plant shall be absolutely complete in every respect without any extra expense to you. This plant weighs 3,500 pounds and takes third class freight from Minneapolis. Get the third class rate from your freight agent and multiply by 35 to get freight delivered at your station. Terms of payments 20 per cent with order; balance on receipt of material.

**Sold Directly From FACTORY to YOU**



**Radiators.**

Andrews Radiators are furnished in all heights and sizes. Six radiators, like No. 3, of different lengths are included in the above price. This is the best size to use; it gives the most heat. Smaller sizes cost more in proportion. All our radiators are the best quality, highly ornamented and make a fine appearance finished in gold or silver bronze.

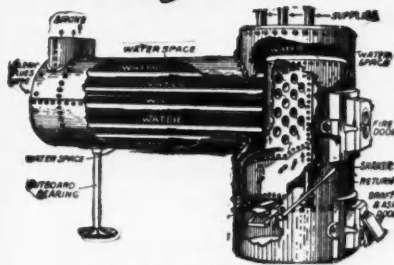
**GUARANTEED BY 360-DAY FREE TRIAL GUARANTY BOND**



Make a sketch of each floor of your house like this, and send to us:

Make a sketch of each floor of the house. Give height of ceiling, size of windows, construction of house, or better, get architect's plans if you have them, and send to us for Free Estimate. This puts you under no obligation.

**CUT OUT AND SEND TODAY**



Sectional View—Locomotive Style

**FREE ESTIMATES**

**BIG BOOK ON HEATING FREE**

Send names of two parties going to buy heating plants and we will send book.

ANDREWS HEATING CO.,

1134 Heating Bldg., Minneapolis, Minn.

Enclosed find sketch or plans of house for free estimate and (if you wish immediate shipment) enclosed find check for \$..... Balance payable upon receipt of complete plant.

Name .....

Address .....

1134 Heating Building

**ANDREWS HEATING CO.**

Minneapolis, Minn.



**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 **SERVICEABLE 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**  
TO  
**\$95.00**

SEND FOR FOLDER 26

**OTIS ELEVATOR COMPANY**  
NEW YORK CHICAGO  
SAN FRANCISCO  
And All Principal Cities



**DUMB WAITERS AND HAND ELEVATORS**  
*OF THE MOST IMPROVED AUTOMATIC CONSTRUCTION*

**INVALID LIFTS TRUNK, CARRIAGE, SIDEWALK AND FREIGHT ELEVATORS**

**SEDGWICK MACHINE WORKS**  
128 LIBERTY ST. NEW YORK

*CATALOGS AND ESTIMATES FURNISHED SEE SWEET'S INDEX*



**This DUMB WAITER**  
complete ready to erect for - **\$18.50**

**SELF RETAINING MACHINE HARDWOOD CAR SECTIONAL WEIGHT ROPE, GUIDES, HARDWARE,**  
knocked down and shipped with the only complete directions for erecting ever issued

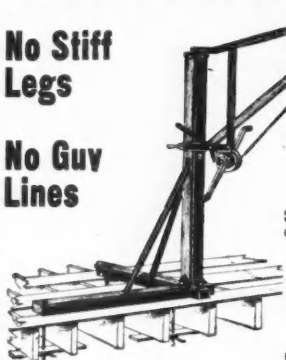
SEND FOR SPECIAL PAMPHLET

**R. M. Rodgers & Co.**  
174 Washington Av., BROOKLYN, N. Y.

### THE NEW SASGEN CIRCLE SWING DERRICK

No Stiff Legs

No Guy Lines




Light in weight, speedy in operation, all malleable castings; weight 250 lbs., capacity 1000 to 1500 lbs.

Fully equipped. Ready for F. O. B. Chicago  
**\$35 00**

Sold on trial to all reliable contractors. Catalogue FREE.

Manufactured by  
**SASCEN BROS.,**  
2053-2057 Racine Ave.  
CHICAGO, ILL.  
New York Office: 103 Park Ave., N. Y.



A Booklet telling how to get water Fresh from the well for suburban homes. How to avoid storage of water. The most economically operated independent water system, etc.

*Sent Free on Request*

**UNITED PUMP & POWER CO.**  
495 Old Colony Bldg. CHICAGO

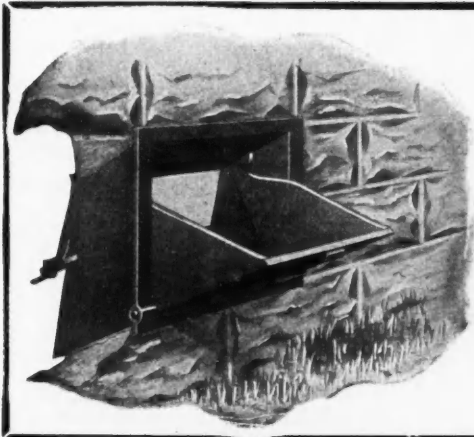
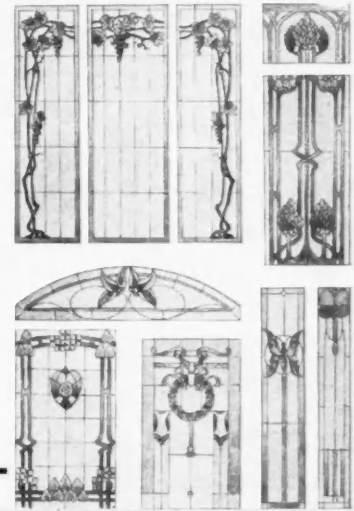
# ART GLASS

Leaded, Window, Plate (plain and bevel) Mirrors, and a complete line of glass for building purposes.

THIRTY YEARS' practical and business experience has enabled us to perfect most artistic and pleasing designs at FACTORY prices.

Sketches and estimates furnished promptly on application.

**The Sues Glass Co., Station C, Chicago, Illinois**



## Roenius Wood and Coal Chutes

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

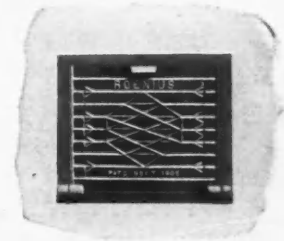
Roenius Chutes are equally desirable for houses of low or high cost.

Nearly 20,000 in Use

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

Write for Catalog

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



**DOW**  
Wire & Iron Works  
(Incorporated)  
LOUISVILLE, KY.

## IRON LINTELS

Beams, Angles, Anchors, Hangers.  
Ornamental Cast Iron Fronts and Stairways.



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.

## 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.

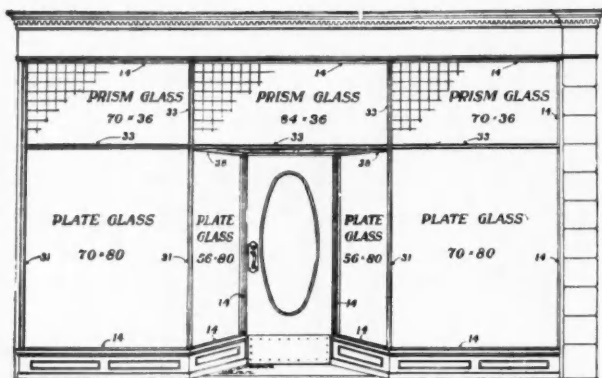
## LIVE AGENTS WANTED

To take subscriptions. Liberal commission.

**American Carpenter and Builder**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER





## THIS BAR HOLDS

Petz Bars are like bull dogs — they never let go. Afford utmost strength and rigidity to your plate glass, and give more light. Petz Bars make the most artistic form of store front construction, increase the display space, and can be rapidly and easily installed.

Insurance experts recommend them which is a good reason why you should insist on their use.

Let us send our booklet, "Modern Store Front Construction," which gives full details. Write for it today

### DETROIT SHOW CASE CO.,

Sole Makers,

491 West Fort St., Detroit, Mich.

## SHULTZ'S Modern Store Fronts

of Steel and Brass  
CORK BEDDED  
CORNER POSTS, MULLIONS AND TRANSOM BARS

Handsome, Strongest and most Practical Bar on the Market. Long Life—Nothing to rot out. Glass bedded on Spanish Cork preventing cracking or crushing of glass. No putty, ye. Absolutely Water and Dustproof.

Simply incomparable with old fashioned styles. They add immensely to the Beauty, Utility and Rental Value of Buildings.

ARE LOW IN COST  
Architects, Contractors and Owners are invited to write me for descriptive literature, prices or estimates.

Also Shultz Patent Burglar Proof Coal Chute. All Steel Cork Bedded and Ventilated Bottom Bar.

C. H. SHULTZ, MANUFACTURER, ST. JOSEPH, MO.

## ALL-STEEL BURGLAR-PROOF COAL CHUTE



The Neatest, Strongest and Most Convenient Coal Chute Made. Prices also Lowest. No modern residence complete without it. Locks itself when closed up. Can only be opened from inside. Architects, Contractors and Owners are invited to write for descriptive circular.

C. H. SHULTZ, Manufacturer, St. Joseph, Mo., U. S. A.

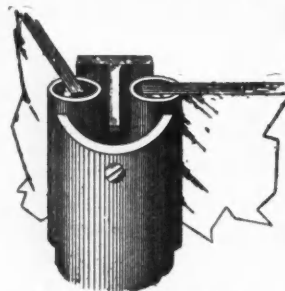


If you are designing a store front for a new building, or for remodeling an old one, you of course will want to set the glass in the construction that will give the best satisfaction, so specify "The Coulson," which is the only practical construction of its kind on the market.

Write for Catalog "E 800"

J. W. COULSON & CO.

234 No. 3rd St. Columbus, Ohio



## The Universal Sash Bar

Makes any angle, allows for setting of building, keeps windows from frosting.

Standard Store Front Construction of the World

Glass set from the outside

Write for latest catalogue

Voltz Manufacturing Co.

1101-1103 S. 8th St. St. Joseph, Mo.

## PLUMBERS' SUPPLIES AT WHOLESALE



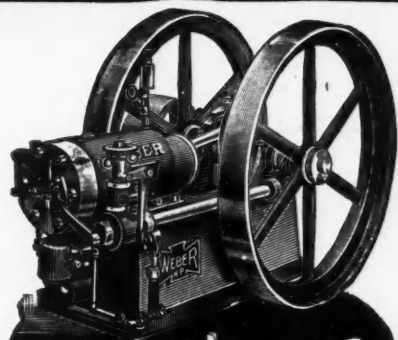
When in the market for Plumbing Supplies and you wish to

SAVE 20 to 40 Per Cent

on 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.



**The Engine of Reliable Records**

Getting the most engine for your money, Mr. Carpenter, does not mean buying the cheapest. It is securing an engine that will give reliable results year in, year out—speed must be steady and uniform—absolute interchangeability of parts assured—actual power must equal rating. Every requirement of the man who wants a simple, reliable, powerful engine is met by the

**Weber Gas or Gasoline Engine**

Some of its special features are—underground gasoline reservoir for main gasoline supply—gasoline pump, pumping supply to engine; surplus returning to reservoir—electric igniter—heavy and rigid construction (see cut)—a perfect control governor by which the operator can change speed instantly—all parts easy of access and guaranteed interchangeable.

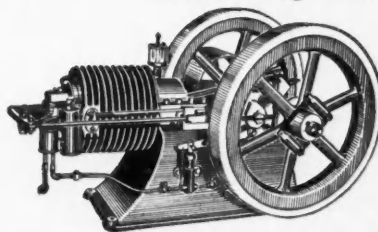
Sold Under Our Absolute Guarantee

*It will pay you to find out just how much a Weber Engine will increase the capacity of your shop and at an actual saving of cost in operation. Write us today for our new illustrated catalog and allow us to send a list of the inexpensive time saving, labor saving shop machinery you can operate with a Weber.*

Sheffield Gas Power Co.  
127 Winchester Place Kansas City, Mo.

**Let it Furnish Power for You**

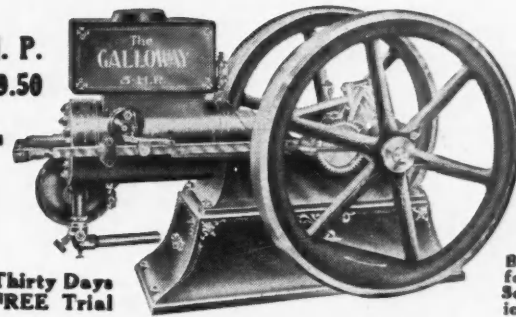
**Sold on Trial for Ten Years No Money Down**



We pay freight both ways, if not satisfactory. For the past ten years we have been selling the Gade engine on trial. It has to talk for itself. Just ask us to send you an engine on 30 days trial. Ask us how we cool the cylinder without the use of fans or water. Find out why we use one-third Less Gasoline than other makes.

Gade Bros. Mfg. Co., Main Street, Iowa Falls, Iowa

5 H. P.  
\$119.50



2-28 H. P.

Thirty Days FREE Trial

Built for Service

**The Galloway Gasoline Engine**

Owned and made exclusively by the William Galloway Co., Waterloo, Iowa.

will run your shop at several times its present capacity and enable you to take lots of jobs that you have to turn down now because you have not the capacity.

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.

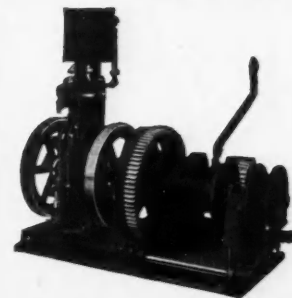
The price given is for the five-horse power only, but we make these engines in seven sizes.

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.**

1145 Galloway Station WATERLOO, IOWA

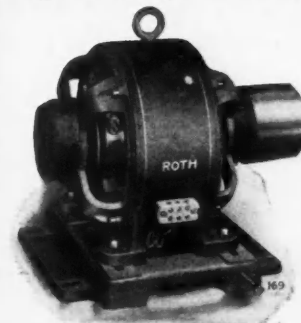
**EVERY CONTRACTOR AND BUILDER**



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

**Begin Early. Get Some Experience.**



We feel assured that with a little experience you will ultimately operate each of your machines with an individual

**ROTH MOTOR**

— Ask —  
ROTH BROS. & CO.,  
1422 W. Adams St.,  
CHICAGO, ILL.  
N.Y. Office: 136 Liberty St.

**Just Off the Press**

# ASHBY'S

**Designs of Schools and Libraries**

display a composition of utility, durability and good, pure architecture without any "gingerbread."

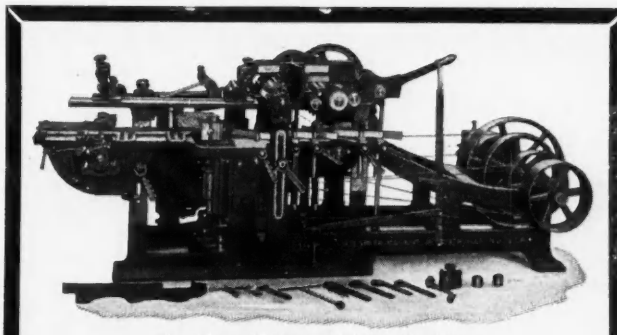
No buildings are too large or too small for our personal and prompt attention.

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

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

**G. W. ASHBY—ARCHITECT**  
 11th Floor, Medinah Bldg.  
 CHICAGO, ILL.





No. 134-A 8" Heavy Molding Machine

**60 YEARS' EXPERIENCE**

This cut shows Smith's new **Heavy 8-inch Molder** which is the result of much careful thought and many years of experience.

The **Frame** is cast whole without inherent strains.

The **Cutter-Spindles** are all made of high carbon steel, carefully turned and ground.

The motion from the clutch shaft is communicated to the train of feed gears by a hardened steel Automobile Roller Bearing Chain, which makes a very powerful and positive feed.

FOR FURTHER PARTICULARS, ADDRESS

**H. B. Smith Machine Company**

Smithville, N. J., U. S. A.

NEW YORK CHICAGO ATLANTA MEMPHIS

**"TRUS=CON"**  
TRADE MARK

**JOIST HANGERS**

**Strongest**  
as shown by  
University Tests



Made from OPEN HEARTH STEEL.

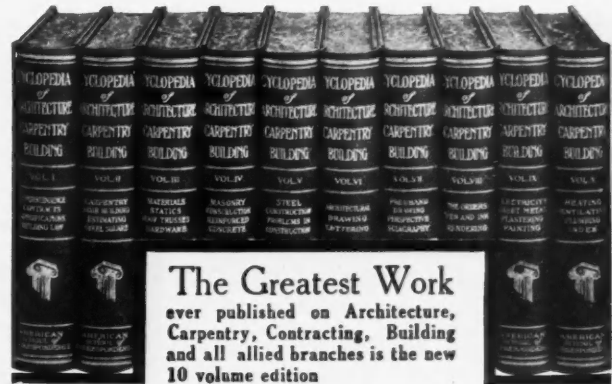
**SAVES** cutting and weakening of timber. ∴ ∴ ∴

**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.**  
**TRUSSED CONCRETE STEEL CO.**  
344 Trussed Concrete Bldg., DETROIT, MICH.



**The Greatest Work**  
ever published on Architecture,  
Carpentry, Contracting, Building  
and all allied branches is the new  
10 volume edition

**Cyclopaedia of  
Architecture, Carpentry and Building**

Ten massive volumes; 4,670, 7x10 inch pages; 3,000 full-page plates, detail drawings, plans, color plates and photos of buildings completed and in course of construction. Bound in half morocco leather and printed on special enameled paper in large, clear, readable type. Titles beautifully engraved and stamped in 23 carat gold.

No work so comprehensive, so authoritative, has ever before been placed on the market. This great work is a complete review of architecture, carpentry and building. 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, this Cyclopaedia will show the most economical and practical method of handling the work and purchase of materials.

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 scope of this work—how thoroughly it covers the building trades.

**Read Our Liberal Offer**

To prove our absolute confidence in the superiority of this work over all others, we make this liberal offer: upon receipt of the coupon below, we will place the entire cyclopaedia of ten volumes in your home or office—you keep the books five days—examine them thoroughly, critically—subject every formula and problem to a severe test. If you are satisfied, send \$2.00 after examination and \$2.00 every month until you have paid the special \$24.00 price. The regular list price is \$50.00. As a further guarantee, we will remove the books at our expense if you are not satisfied. We pay all express charges.

**PARTIAL LIST OF CONTENTS**

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:

Please send set Cyclopaedia 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.

NAME.....  
ADDRESS.....  
OCCUPATION.....  
EMPLOYER.....  
Amer. Carp. and Bldr. 10-70

## A mantel to harmonize with every room

In the wide variety of Voss Mantels—in every style from the Colonial to the Mission—you will find the mantel exactly adapted to any room in the home you are building or remodeling.

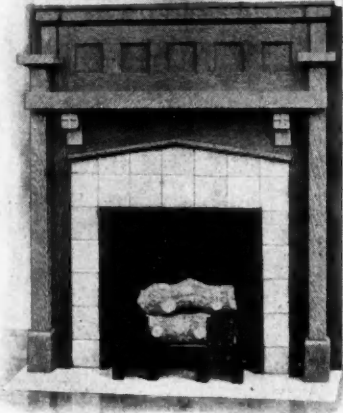


**Mantels** are made from carefully seasoned woods, machined and finished by expert cabinet makers. That is why they are unaffected by alternate damp chimneys and hot fires.

Write for our booklet, "Mantels for the Home." It contains many suggestions for the selection of mantels to obtain harmonious design and finish. Get the book today. A postal will bring it free.

**Voss Mantel Company, Inc.,** 828 S. 16th St. LOUISVILLE, KY.  
"Master Mantel Builders for 25 years"

We also make special designs from architects drawings.



**\$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, 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

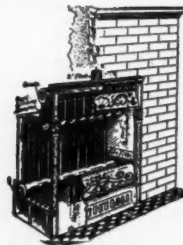
### CENTRAL MANTELS

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.

## Mantels of Wood, Brick or Tile



furnished direct from factory at attractive prices, freight paid.

### TILE and GRATES of every description

Our No. 51 Grate is guaranteed to heat from 8,000 to 10,000 cubic feet of space in zero weather.

### CATALOGUE FREE

Contractors and Architects, send us the names of your clients requiring Mantels, Grates and Tile for same, as well as Tile Floors and Wainscoting of every description. We will make it interesting for you. Send plans for estimates.

## HEITLAND GRATE & MANTEL CO.

No. 102 South Fifth St. Quincy, ILL.

## Mr. Contractor:

The man you build for depends largely on you to advise him about the use of certain materials.

You are the Practical Man. You handle or direct the placing of every scrap of material used in the building.

You should and do know quality. Can you afford to stake your reputation on a poor or cheap Roofing? The best are none too good, and nothing short of the best should pass your inspection.



### MASTIC ROOFING

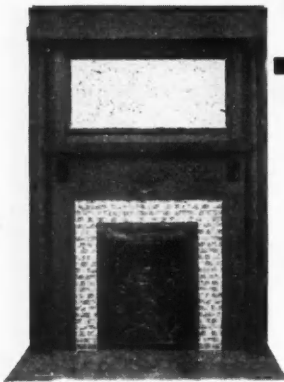
is a safe anchor for your reputation. It costs but little more than the cheap stuff, and you don't have to keep after it with a paint brush.

Ask us today for a sample and our proposition. It will make you money.

## National Roofing Materials Co.

Office & Factory, EDWARDSVILLE, ILL.

## WHITE MANTELS make home-like homes



Price of Mantel only \$14.85.  
Price of mantel as shown above with combination coal burning grate and first quality enamel tile, any color for hearth and facing—\$22.40.

### Mr. Contractor:

Our Catalog should be in your hands. It shows Mantels of Wood or Tile of every description every one of which can be installed AT A GOOD PROFIT.

### Our Designs Are Exclusive

Every one can and should install a White Mantel. They are made to accommodate the small cottage or the modern mansion at prices to suit any purse.

White Mantels are made to Heat as well as Beautify  
Our Catalog is worthy of a place on your Desk

## WHITE MANTEL & TILE CO.

100 Jackson Ave.

Knoxville, Tenn.

**CANTON MANUFACTURING CO.**

*We can save you money on*  
**Cornice, Skylights,  
 Ventilators,  
 Metal Ceilings,  
 Roofings, Sidings,  
 Eave Trough,  
 Conductor Pipe**

1320 E. 2d  
 Street  
 CANTON  
 OHIO

**ABSOLUTELY STORM PROOF**

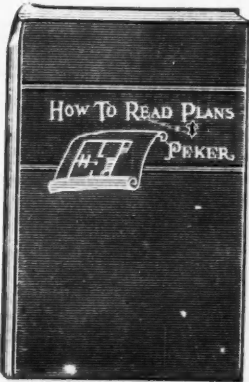
No. 2  
**Catalogue FREE**

No. 3

**STANDARD—Lock Joint—METAL SHINGLES**  
 Ornamental, Easily Applied Guaranteed Weather Proof

## HOW TO READ PLANS

A Valuable New Book  
 By  
**Charles G Pekar**



60 Pages (5 x 7 Inches)  
 43 Drawings in Text  
 8 Large Folding Plates  
 Handsomely Bound in Cloth

**PRICE, 50 CENTS**

— Sent post-paid on receipt of price. —  
 Your money back if you are not pleased.

**M**ANY building mechanics are handicapped from getting more pay because they are unable to read plans and work from a drawing. It is for these men that this book was prepared, as it simply explains the meaning of the various lines; plans, views, elevations, sections, scales, blue prints, devices, symbols, etc., to be found on a set of plans. The book is finely illustrated by 43 illustrations in the text, and 8 large folding plates giving the full plan of a 6-room frame house. This set of plans alone is worth many times the cost of the book; an architect would charge at least \$25 for their equal. It is one of the most valuable books ever got out for building mechanics, as its information means increasing a man's salary. It is pretty safe to say that to the man who cannot read a drawing now this book will mean at least \$50 more pay during the first year he has it.

**INDUSTRIAL BOOK COMPANY**  
 178 Fulton Street, NEW YORK

# SYKES METAL LATH




The lath that is positively different to any-thing 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

## Everything in Plumbing and Steam Goods at Cut Rates to Everybody

**SAVE YOU 30 TO 45 PER CENT**



**\$8.50 and up**  
 This Magnificent Enamel one piece Sink. Latest design.



**\$7.50 and up**  
 Artistic Lavatories. Various designs.



**\$10.95 and up**  
 Luxurious Enamel Bath Tub of guaranteed quality. Will wear forever.



Superb Bath Room Outfit. None better. at any price. **\$35.00**



**\$3.00 and up**  
 Laundry Tubs all styles and sizes.



Low-down and high combination Closets. Guaranteed to be equal to the best in the market. Use d in the most palatial homes. **\$11.50**

**HEATING PLANTS.**  
 Let us make you an estimate on a heating plant. With instructions from our engineering department, you can install it yourself. Simple and safe as a stove. No expense after once installed. The only healthful economic method of heating your home. Plans free. Tools loaned. Boiler only **\$65.00 and up**

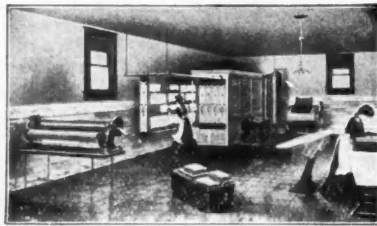


**JOHN HARDIN CO.,** One-Quarter Century at **4549 Cottage Grove Avenue, Chicago**  
 Send for Catalog A, Dept. 13



# Clothes Dryers Modernize the Building

For Use in Public Institutions, Apartments, Hospitals, Hotels, Clubs.



A Modern Residence Laundry Room Showing Installation of "Chicago Francis" Dryer and Laundry Stove.

## Ideal for the Large or Small Home

Costs little to install. No extra operating expense.

The "Chicago Francis" Excels Them All in construction, efficiency, and economy of operation.

### SUNSHINES ONLY SUCCESSFUL RIVAL

It succeeded because it is always ready. Winter or Summer Sunshine or Rain. Write for Catalog, L-12 Address nearest Office

**CHICAGO DRYER CO. OR DRYER M'F'G. CO.**

Dept. L OR Dept. L.

383 Wabash Ave., Chicago, Ill. 206 E. 26th St., New York City

## 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. 11011 The Temple CHICAGO, ILL.**

ESTABLISHED 1852

## A ROOFING SLATE

with a Record

## Genuine Franklin Tunnel

Uniformity and Durability Unexcelled

Write for Price List No. 25

SOLE PRODUCERS

**SLATINGTON SLATE CO.**  
SLATINGTON - - - PENNA.

## TURN YOUR SPARE TIME INTO CASH

When your regular building work gets slack this fall you will find it decidedly pleasant and profitable to sell and install the **Kees Furnace Regulator**.

There's a real need for an arrangement that will control the drafts of hot air furnaces and keep the heat even without constant watching and attention. The **KEES REGULATOR** fills this need at a price that any furnace owner can afford. You don't have to be posted on furnaces to sell it, either.



You can make a good many dollars during the next few months if you send for full particulars today.

**F.D. KEES MFG. CO.**  
**BEATRICE, NEBR.**  
Address Box 522

# ROOF SLATES BLACKBOARDS

**E. J. JOHNSON**

38 Park Row, New York

**Quarry Operators**

BLACK, GREEN, PURPLE, RED

Booklet, Samples and Prices on Application

## GENUINE BANGOR

Roofing Slate  
Structural Slate  
Blackboards

Large Facilities, Prompt Deliveries

**EAST BANGOR CONSOLIDATED SLATE CO.** - - - East Bangor, Pa.

# Wood Mantels, Grilles, Colonades, Fireplaces, Mosaics, Tiles

## WHY NOT SAVE MONEY BY BUYING DIRECT FROM THE MANUFACTURER

CATALOGS AND DESIGNS ON APPLICATION

CHAS. F. LORENZEN & CO., 725 N. Ashland Ave., Chicago

## BURLINGTON



Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.

Venetian and Sliding **BLINDS** Screens and Screen Doors

Equal 500 miles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms. Write for our catalogue, price list and proposition to you.



Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

**BURLINGTON VENETIAN BLIND COMPANY**  
341 Lake Street, Burlington, Vermont

## PHOENIX INSIDE SLIDING BLINDS

WILKES BARRE, PA.

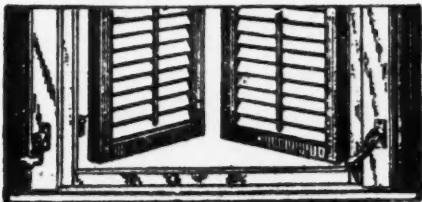
The Phoenix Sliding Blind Co. Enclosed find my check for blinds. I am pleased with them and sorry I did not have them put throughout the whole house. C. W. BURT.

**Comfort!  
Economy!  
Convenience!**

The lately improved springs and corrugated steel rods put the "PHOENIX" far in lead of less improved styles. Write for Catalogue "C" and free samples, showing construction.

**PHOENIX SLIDING BLIND CO.**  
BRIDGE & CANAL STS. PHOENIX, N. Y.

## MALLORY'S



Standard Shutter Worker

New and improved patterns and designs.

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



### "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."

- |                             |                            |
|-----------------------------|----------------------------|
| ..... Book-keeper           | ..... Draftsman            |
| ..... Stenographer          | ..... Architect            |
| ..... Accountant            | ..... Civil Engineer       |
| ..... Cost Accountant       | ..... Automobile Engineer  |
| ..... Systematizer          | ..... Electrical Engineer  |
| ..... Cert'f'd Public Acc't | ..... Mechanical Engineer  |
| ..... Auditor               | ..... Sanitary Engineer    |
| ..... Business Manager      | ..... Steam Engineer       |
| ..... Commercial Law        | ..... Fire Insurance Eng'r |
| ..... Reclamation Engineer  | ..... College Preparatory  |

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

OCCUPATION \_\_\_\_\_

Am. Carp. and Bldr., 10-10

# Architects & Engineers' Supply Co.

*DRAWING & SURVEYORS INSTRUMENTS*  
BOUGHT, SOLD AND REPAIRED  
ARTISTS' MATERIALS

1010 Grand Avenue                      ::                      Kansas City, Mo.

## "Sterling" Convertible Level

Two Instruments in One



The only perfect Builders' Level made that can be converted into an Instrument for Vertical Sighting.

Price complete \$65.00  
Send for 1910 Complete Catalogue.

Sole Manufacturers  
**Iszard-Warren Co., Inc.**  
136 N. 12th St.                      PHILADELPHIA, U. S. A.

## 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.**

## Just Out—Standard HANDBOOK OF ESTIMATING DATA

invaluable for Architects, Estimators, Contractors, Carpenters, Masons, Plumbers, Tinsmiths, Painters, and all others engaged in the building trade. Full of facts, not formulas and so simple that every item can be readily understood by anyone who can read. No useless padding to make the book look bigger. Every page worth the price of the book.

**PRICE ONE DOLLAR**

**The Builders' Auxiliary Co.,** 325 Old South Bldg. 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

## GARAGES AND HOW TO BUILD THEM

A brand-new book (the only one of its kind ever published) illustrating frame, brick, stone, cement and stucco Garages, covering a great variety of types. Every design shown is the work of skilled architects of experience, thoroughly familiar with modern requirements for city, town or country.

**Fifty-five Modern Designs, Together with Estimates of Cost**

and valuable data concerning Garage Construction, Details of Construction, Garage Equipment and Accessories, Turntables, Gasoline Pumps and Storage, Oil Cabinets, Fire Protection Apparatus, Work Benches and How to Make Them, Tool Cabinets, Lockers, Electric Light Fixtures.

This book will be sent to any address, express prepaid, together with the Cement World for one year, for \$1.50. Address

**Cement World, 241 Fifth Ave., Chicago**

## 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. Amply 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.

## HOT-WATER HEATED

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.

**Andrews Heating Co.**  
1116 Heating Bldg., MINNEAPOLIS, MINN.





**Public Garage**  
The Pitless Turntable with steel approach for car kind of Garage floor. May also be equipped with electric motor for revolving at 10-15 revolutions per minute or continuously at 100 revolutions per minute.

**DOORS & GAR OVER HIS CAR.**  
Patented in U.S.A. by the Pitless Turntable Co. Kansas City, Mo. It allows the car to be driven in and out of the garage without the necessity of raising the car.

**Write today for our ART CATALOG**  
Giving full particulars, weights, dimensions, etc.

**PITLESS AUTO TURNTABLE CO.**  
FULLY PROTECTED BY PATENTS KANSAS CITY MISSOURI FULLY PROTECTED BY PATENTS

### 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

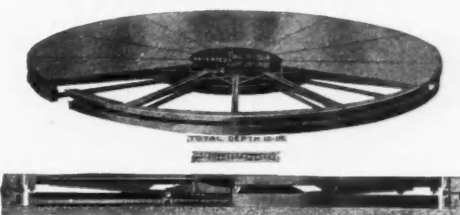
Can be installed in thirty minutes by an ordinary workman without the slightest marring or as much as a nail scratch in any public or private garage. Out of doors or in basement, on wood or concrete floor. There can only be one first cost on a PITLESS TURNTABLE because they are guaranteed FOREVER, and besides, this first cost is decidedly less than the installation expense of the hazardous, fifth 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 expanse 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.

## THE UNIVERSAL AUTO TURNTABLE

*Swings Easiest,  
Carries Greatest Load, and  
Cannot get out of Order.*



Can be erected by any careful mechanic from our plain directions.

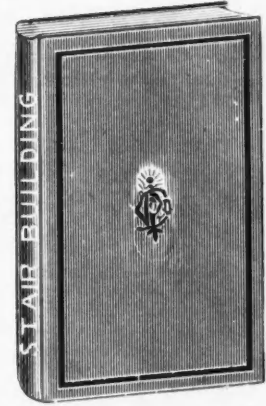
**12 Inch Pit Only is Required.**

Table comes in knock-down shape, one man easily handling each piece. No intricate parts—simply constructed. Nothing better made.

*Catalogue for the asking,  
or detailed information.*

**The Canton Foundry & Machine Co.**  
610 E. 8th Street, CANTON, OHIO

## Stair Building



### Made Easy

A PRACTICAL TREATISE FOR CARPENTERS BY **David Mayer**

127 PAGES (5x7 inches)  
111 ILLUSTRATIONS  
Handsomely bound in cloth

**PRICE 50 CENTS**

Sent postpaid on receipt of price. Your money back if you are not pleased.

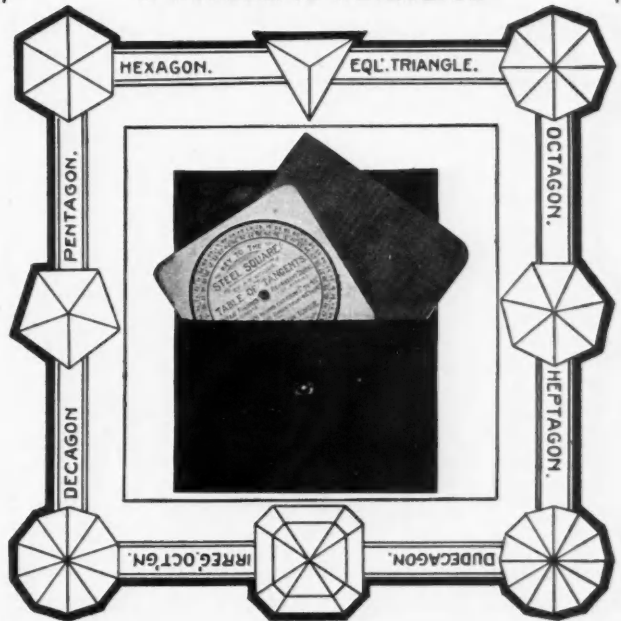
A COMPLETE and clear description of the art of building the bodies, carriages and cases for all kinds of stairs and steps, together with illustrations showing the manner of laying out stairs, forming treads and risers, building cylinders, preparing strings; carriages for common platform, dog-leg and winding stairs; also the method of setting out stairs, laying out strings, plans of stairs, pitch-boards, construction of steps, line of nosings, housing strings, placing balusters, finishing ends of wall strings, trimmers and joists, lower newel finish, well hole finish, straight platform stairs, planning stairs, dog-leg stairs, close string stairs, continuous stairs, geometrical stairs, carriages of stairs, story rod, dancing the treads, double platform stairs, straight flights and winders, solid newels, all winders, etc., etc.

This work takes hold at the very beginning of the subject, and carries the student along by easy stages until the entire subject of Stair Building has been unfolded, so far as ordinary practice can ever require.

SEND FOR OUR CATALOG OF BOOKS ON BUILDING  
**Industrial Book Co.,** 178 Fulton St. NEW YORK

## ALFRED W. WOODS' KEY TO THE STEEL SQUARE

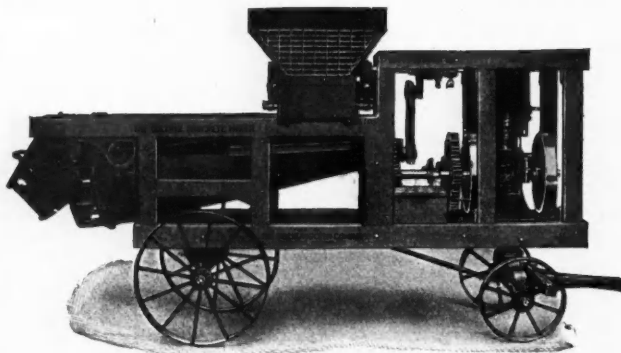
A WONDERFUL INSTRUCTOR



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

**"IT IS THE MOST SERVICEABLE, QUICKLY HANDLED AND LARGEST PRODUCER FOR ITS SIZE THAT I HAVE YET SEEN"**



No. 12 Coltrin, with Proportioning Hopper Feed

Harrisburg, Pa., April 21, 1910.  
Mr. J. B. Brunner,  
Lemoyne, Pa.

Dear Sir:—

I have used the No. 12 Coltrin Mixer at a number of jobs this spring, and find it satisfactory in every way. It is the most serviceable, quickly handled and largest producer for its size that I have yet seen.

I most heartily recommend it to any person in need of a Mixer of this capacity. You may use this for any advertisement or circular you see fit.

Yours very truly,

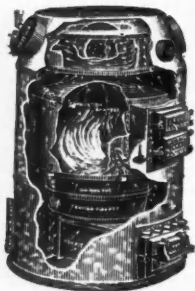
A. H. Baldwin, Jr.  
Room 2, 5 N. Market Square

**COLTRIN CONCRETE MIXERS**

— 5 Sizes —

Shipped anywhere in the United States on 5 days trial.

Manufactured Exclusively By **The Knickerbocker Co. Jackson, Michigan.**



**Bovee Furnaces at Manufacturer's Prices**

Saves 50 per cent of Cost  
Saves 40 per cent of Fuel

Most Durable, Most Economical Furnace Sold.

Has a perfect Ventilating System for every part of building.

**Residence Heating Plant**

Hot air registers in five rooms, cold air return in two rooms. 40-in. Furnace, 20-in. Fire Pot, 28-in. Combustion Chamber, 10,000 cubic feet Heating Capacity.

Special Price, \$65.00.

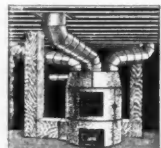


BASEMENT VIEW OF 1 ROOM PLANT. BEST WAY TO HEAT A ONE ROOM BUILDING

**Church and School Heating Plant**

One large hot air, two cold air registers, 54-in. Furnace, 30-in. Fire Pot, 40-in. Combustion Chamber, 40,000 cubic feet Heating Capacity.

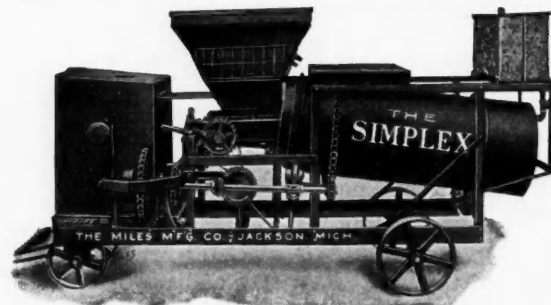
Special Price, \$95.00.



BASEMENT VIEW OF 3 ROOM PLANT FOR RESIDENCE, CHURCH OR SCHOOL HOUSE.

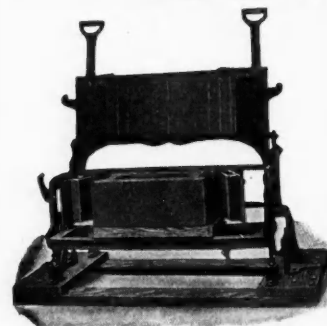
Horizontal Furnaces with large doors or larger furnaces and more piping at proportionately low prices.

**Bovee Grinder & Furnace Works**  
56 8th Street, WATERLOO, IOWA



**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

**30 Tons' Pressure** GUARANTEES Uniformity of Product

**THE SOMERS** uses the "wettest" mix of any block machine on the market

**The Somers Makes Money — We Can Prove It**  
OUR CATALOG IS FREE **SOMERS BROTHERS,**

**2 Blocks Per Minute** FASTEST MACHINE MANUFACTURED

The Machine does the work, not the man

It makes an absolutely damp-proof wall

**You Can Guarantee It**  
**Urbana, Illinois**

**CONCRETE BLOCKS FOR BUNGALOW CONSTRUCTION**



**A Moderate Priced Bungalow. Cool in Summer, Warm in Winter. Dry and Sanitary all the time.**

Use the *Miracle Famous Double Staggered Air Space Block* to insure moisture-proof walls. We lead the World as manufacturers of *Block Machines* and other Concrete Machinery.

**MARSH CO., 975 Old Colony Bldg., CHICAGO, ILL.**



**Mr. Block-Maker**

Wet Process is Right.  
Face down is Right.  
Three blocks at a time is Right.  
Triple Tiering is Right.  
Damp Curing is Right.

**The Nogul Invincible Block Machine**  
COMBINES ALL THESE

**IT IS RIGHT**

It is 48 inches long and will make three 16" or two 24" blocks at one operation. It makes sills, caps, copings, rails and steps, faster and better than a special sill machine. It has every adjustment that any other machine has and many that no other machine has.

PRICE—Machine and Outfit, \$75.00

WRITE FOR CATALOG

**THE PETTYJOHN COMPANY**  
634 No. 6th St., TERRE HAUTE, IND.

**FREE** Send for it Today **THIS BOOK TELLS**



**HOW TO MAKE THE  
BIG MONEY  
IN CONCRETE**

Send the coupon and get this **Free** illustrated book, just recently off the press and right up to the minute with information on concrete products. It will tell you how to make the most money, what the most profitable products are and what kinds sell the most readily. It will give you the actual experience of many successful concrete factory owners in their own words.

**You Should Know About Helm Presses**  
With Their 80,000 Lbs. Pressure.  
No Tamping, Easy Work, Very Rapid.

These are the strongest, simplest and most economical machines made. Operated by hand or power and adapted to every practical requirement in brick and block construction. Helm presses are **Unequaled** for producing economically and rapidly the **Best Selling** concrete product. They give the **Greatest Profits** by reducing manufacturing cost. They **Increase Sales** on account of unequalled high quality and adaptability of product.

**You Should Know** about the high grade products of these machines. **Plain and Ornamental Cement Brick and Dry Wall Two-Piece Blocks** which save the cost of furring and lathing and **always make dry buildings.**

**The Helm Press will Earn You \$20 to \$50 a Day**  
All This Fall and Winter

This is a grand opportunity for every carpenter, builder and contractor. Keep busy all the year making these **profitable, fast selling products.**

Let Our **FREE Book Inform You** about this up-to-date machinery and give you many hints on making and selling concrete. You really need this book to be fully posted. If you own a plant and want to increase your profits, or if you think of starting one, don't fail to send for this **complete book on Concrete** today. Merely sign and send this coupon. Please send me your **complete book on Concrete and the Helm Process** absolutely free and prepaid.

**Queen City Brick Machine Co.**  
170 Bank Building TRAVERSE CITY, MICH.  
Name.....  
Address.....

QUEEN CITY BRICK MACHINE CO. 170 Bank Bldg., Traverse City, Mich.



# 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.

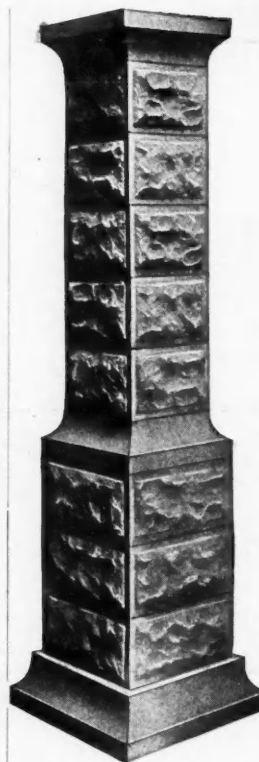
### Measured by Its Ability

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**  
268-278 St. Co. Paul Street Rochester, N. Y.



## Molds TO MAKE THIS Porch Pier AND Chimney For \$19.00

You see, it is this elastic and this interchangeable feature that makes our system of molds valuable.

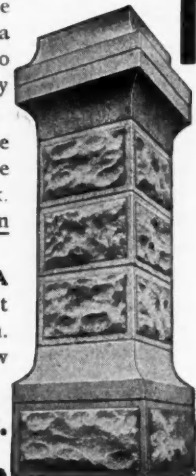
You can adapt them to a great variety of other purposes. And you always have the molds—and only a few of them—to do any work that may come up.

You ought to see these molds and see how they work. We ship on a fifteen days free trial.

SEND FOR A CATALOG. It describes them.

You'll see illustrations which show how they work.

**W. E. DUNN & CO.**  
1332 Grand Ave., CHICAGO



## ONE MAN FENCE POST MACHINE IT MOVES LIKE A WHEELBARROW



### THE MOST PRACTICAL AND ADJUSTABLE POST MACHINE MADE

<b>Adjustable</b> 2½ to 4 inches at top 3½ to 6 inches at base. Any length up to 8 feet.	<b>Reinforcing</b> Use any kind of reinforcing. Easily and quickly placed.	<b>Shape</b> Makes either straight or tapered posts.	<b>Tamped or Poured</b> Mould can be used either for tamp or poured material.	<b>Fancy Top</b> Makes Monogram, Initialed, Flat, Pointed, Oval, Roman or any fancy top.
---	---	---	--	---

Send for big 1910 Wholesale Catalog

**Northwestern Steel & Iron Works**

Box 847 EAU CLARE, WIS.



**"Crescent" Mixers Stand the Test**  
A Postal will bring our Catalog and Lowest Prices  
**RABER & LANG MFG. CO.,** 810 MILL STREET KENDALLVILLE, IND.



**REVOLVING SAND SCREENS**  
If you have sand or gravel to screen or grade you should know more about the S & S. Revolving Screens. Write us giving an idea of your requirements and we will gladly send literature, prices, etc.  
**THE CEMENT TILE MACHINERY COMPANY**  
2482 Rath Street, WATERLOO, IOWA.

## CONTENTS FOR OCTOBER, 1910

	Page		Page		Page
Another Flour Bin.....	64	Heating and Ventilating.....	44	Setting Marble in Plaster-of-Paris.....	64
Anti Bellum Building in the South.....	55	Home Workshop, The.....	48	Shaping the Copper Drip Pan.....	50
Architectural "Hand-Me-Downs".....	36	House Won at Cement Show.....	54	Slivers.....	35
Barn Framing.....	65	How About Diagonal Boarding.....	63	Soft Tar Saved Him.....	28
Beams in "Genuine" Mill Construction.....	51	How to Make an Umbrella Stand.....	49	Steel Square.....	34
Bonding New Concrete to Old.....	55	How to Make a Plant Stand.....	48	Substantial House Design.....	65
Circular Splayed Frame with a Circular Head.....	67	Laying Cement Floor Over Wood.....	63	Sumatra Brown Finish.....	49
Colonial Dining-Room Trim—Wall Sections.....	41	Laying Oak Flooring.....	57	To Erect Stave Silos.....	65
Correspondence.....	63	Method of Erecting Stave Silos.....	63	To Glue Marble.....	66
Cost of Fire Proof Walls.....	35	Mission Style Houses of California.....	24	"Too Much Fresh Air is Just Enough".....	44
Design for Small Town Hall.....	63	Notable American Residence, A.....	38	Trade Notes and Items of Interest.....	68
Development and Use of Metal Ceilings.....	50	Painting on Copper and Galvanized Iron.....	66	Two Simple Pieces of Handicraft.....	48
Direction of Flues.....	64	Painting Soil Pipe.....	66	Vacuum Cleaning.....	26
Editorial.....	23	Plans for Six-Room Cottage.....	56	Varnish—What it Is and How Produced.....	29
Erecting Stave Silos Without Scaffolding.....	66	Practical Carpentry.....	36	Voss Mantel Company, The.....	53
Fire Resistance of Cinder Concrete.....	33	Problems of Roof Framing Solved.....	34	Wages of Workmen in Building Trades.....	37
For Improved Specifications.....	23	Problem of the Steeply Sloping Lot, The.....	46	Who's Who in Business.....	52
		Rapid Rise of R. C. Hupp, The.....	52	Why Good Tin Sometimes Fails.....	60
		Residences.....	56	Workmanship and the Strength of Concrete.....	61
		Rope Splicing.....	65		

## INDEX TO ADVERTISEMENTS, OCTOBER, 1910

	Page		Page		Page
Ackermann & Co., J. B.....	8	Fox Mfg. Co.....	10	Oak Flooring Bureau.....	98
Acme Woven Wood Lath Co.....	101	Gade Mfg. Co.....	117	Ohio Tool Co.....	10
Adjustable Hanger Co.....	21	Gage Tool Co.....	10	Orr & Lockett Hardware Co.....	11
American Bell & Foundry Co.....	105	Galloway Co., Wm.....	117	Otis Elevator Co.....	114
American Floor Surfacing Machine Co.....	16	Glidden Varnish Co.....	91	Parks Ball Bearing Machine Co.....	89
American Level & Grade Finder Co.....	103	Globe Heat & Power Co.....	112	Pearson Mfg. Co.....	17
American Rolling Mill Co.....	103	Goodell Mfg. Co.....	13	Peck, Stow & Wilcox Co.....	73
American School of Correspondence.....	119-123	Goodell-Pratt Co.....	11	Perfection Mfg. Co.....	14
American Sea Green Slate Co.....	92	Gordon-Van Tine Co.....	69	Pettyjohn Co., The.....	127
American Sheet & Tin Plate Co.....	90	Grand Rapids Foundry Co.....	115	Phillips Co., A. J.....	21
American Telephone & Telegraph Co.....	81	Grand Rapids Foundry Co.....	18	Phoenix Sliding Blind Co.....	123
Andrews Heating Co.....	113-124	Hardin, John.....	121	Pitless Auto Turntable Co.....	125
Architects & Engineers Supply Co.....	124	Hartman-Sanders Co.....	101	Prentiss Vise Co.....	20
Ashby, Geo. W.....	118	Heitland Grate & Mantel Co.....	120	Progressive Mfg. Co.....	12
Atkins & Co., E. C.....	2	Heppes Co., The.....	83	Pullman Mfg. Co.....	18
Automatic Sash Holder Co.....	18	Hess Warming & Ventilating Co.....	105-109	Queen City Brick Machine Co.....	127
Barber Asphalt Paving Co.....	70	Hitchings & Co.....	103	Raber & Lang Mfg. Co.....	128
Barnes Co., W. F. & Jno.....	89	Holland Furnace Co.....	112	Rehm Hardware Co.....	17
Barrett Manufacturing Co.....	22	Honeywell Heating Specialty Co.....	105	Richards Mfg. Co.....	17
Bates & Edmonds Motor Co.....	117	Hower, J. K.....	110	Rigby, John H.....	110
Beaver Mfg. Co.....	70	Hupp Motor Car Co.....	85	Rodgers & Co., R. M.....	114
Berger Mfg. Co.....	99	Hurley Machine Co.....	9	Root Co., B. M.....	95
Berry Bros., Ltd.....	91	Huther Bros.....	95	Roth Bros.....	117
Bertelsen Adjustable Grille Co.....	109	Industrial Publication Co.....	121-125	Russell-Jennings Mfg. Co.....	16
Bishop & Co., George H.....	93	Ideal Concrete Machinery Co.....	108	St. Paul Roofing, Cornice & Ornament Co.....	97
Bovee Grinder & Furnace Works.....	126	Illinois Traction Systems.....	104	Samson Cordage Works.....	19
Brad Publishing Co.....	124	International Correspondence Schools.....	74	Sargent & Co.....	14
Braunsdorf-Mueller Co.....	15	Inter-State Equipment & Engineering Co.....	3	Sasgen Bros.....	114
Brilliant Gas Lamp Co.....	104	Izard-Warren Co.....	124	Schleuter, M. L.....	8
Brown Specialty Machinery Co.....	20	Ives Co., H. B.....	19	Scott Roofing & Mfg. Co.....	97
Brush Runabout Co.....	87	Jahant Heating Co.....	86	Sedgwick Machine Works.....	114
Builders Auxiliary Col.....	124	Johns-Manville Co., H. W.....	72	Seneca Falls Mfg. Co.....	111
Burlington Venetian Blind Co.....	123	Johnson, E. J.....	122	Sheffield Gas Power Co.....	117
Caldwell Mfg. Co.....	21	Johnson & Sons, S. G.....	78-79	Shelby Spring Hinge Co.....	93
Canton Art Metal Co.....	107	Kanneberg Roofing & Ceiling Co.....	99	Sheldon & Co., E. H.....	110
Canton Foundry & Machine Co.....	125	Karol, B. B.....	116	Shultz, C. H.....	116
Canton Mfg. Co.....	121	Kawneer Mfg. Co.....	68	Sidney Elevator Mfg. Co.....	114
Carborundum Co.....	17	Keasbey & Mattison Co.....	82	Sidney Tool Co.....	75
Cement Tile Machinery Co.....	128	Kees Mfg. Co., F. D.....	122	Silver Lake Co.....	19
Central Mantel Co.....	120	Kepplinger, G. J.....	8	Simmons Hardware Co.....	131
Century Cement Machine Co.....	128	Knickerbocker Co., The.....	126	Simonds Mfg. Co.....	84
Champion Safety Lock Co.....	19	Littlefield & Clark.....	71	Slatington Slate Co.....	122
Chehalis Fir Door Co.....	100	Lorenzen & Co.....	123	Smith & Hemenway Co.....	13
Chicago Dryer Co.....	122	Lufkin Rule Co.....	13	Smith Machine Co., H. B.....	119
Chicago Grille Works.....	109	McCrum-Howell Co.....	77	Somers Bros.....	126
Chicago Machinery Exchange.....	95	McKenna, David.....	110	Standard Screen Co.....	21
Chicago Spring Butt Co.....	22	Mack & Co.....	16	Stanley Rule & Level Co.....	10
Cincinnati Floor Co.....	102	Majestic Furnace & Foundry Co.....	112	Star Mfg. & Foundry Co.....	105
Cincinnati Tool Co.....	20	Malleable Iron Fittings Co.....	18	Starrett & Co., L. S.....	11
Clinton Glass Co.....	104	Mallory Mfg. Co.....	123	Stoddard, Dwight L.....	115
Cordesman-Rechtin Co.....	89	Marsh Co., H. C.....	22	Suess Glass Co.....	115
Cortright Metal Roofing Co.....	80	Marsh Co., The.....	6-127	Sykes Metal Lath & Roofing Co.....	121
Coulson & Co., J. W.....	116	Mastic Wall Board & Roofing Mfg. Co.....	130	Taplin-Rice-Clerkin Co.....	112
Crescent Machine Co.....	89	Mayhew Co., H. H.....	13	Taylor Coal Chute Co.....	95
Cunningham, R. M.....	98	Messenger & Parks Mfg. Co.....	103	Taylor Mfg. Co., James L.....	20
Daisy Mfg. Co.....	4-5	Miles Mfg. Co.....	126	Tower & Lyon Co.....	12
Defiance Machine Works.....	111	Millers Falls Co.....	15	Triple A Machine Co.....	9
Detroit Decorative Supply Co.....	109	Miller Mfg. Co., A. W.....	14	Trussed Concrete Steel Co.....	119
Detroit Show Case Co.....	116	Milwaukee Corrugating Co.....	107	Union Metal Mfg. Co.....	76
Diehl Novelty Co.....	21	Miotke, Jos.....	8	United Pump & Power Co.....	114
Disston & Sons Co., Henry.....	88	Montross Metal Shingle Co.....	97	Universal Floor Scraper Co.....	6
Dixon Crucible Co., Jos.....	11	Moorman & Otten.....	106	Universal Portland Cement Co.....	115
Doch Mfg. Co.....	12	Morrill, Chas.....	22	Voltz Mfg. Co.....	116
Dow Wire & Iron Works.....	115	Mullins Co., W. H.....	99	Voss Mantel Co.....	120
Dunn & Co., W. E.....	128	Murphy Varnish Co.....	91	Waddell Mfg. Co.....	101
Dwight Lumber Co.....	98	Myers & Bros., F. E.....	19	Watrous Mfg. Co., E. L.....	21
East Bangor Consolidated Slate Co.....	122	National Mfg. Co.....	132	Weber Mfg. Co.....	7
Eastern Granite Roofing Co.....	76	National Roofing Materials Co.....	120	White Mantel & Tile Co.....	120
Edwards Mfg. Co.....	97	National Sheet Metal Roofing Co.....	107	Wilkerson & Co., A. J.....	10
Engineers Equipment Co.....	96	Nicholls Mfg. Co.....	16	Willis Mfg. Co.....	124
Everson Mfg. Co.....	106	North Bros. Mfg. Co.....	94	Winshire Clamp Co.....	22
Fay & Fgan, J. A.....	93	Northwestern Compo-Board Co.....	101	Winthrop Asphalt Shingle Co.....	122
Ford Mfg. Co.....	110	Northwestern Grille Works.....	109	Yellow Pine Mfrs. Association.....	100
Forest City Bit & Tool Co.....	12	Northwestern Steel & Iron Works.....	128		
Foster & Sons Co., Wm.....	103				

## NOTICE TO ADVERTISERS

Forms for the November number of the American Carpenter and Builder will close promptly on October 20. New Copy, changes and orders for omissions of advertisements must reach our business office, 185 Jackson Boulevard, Chicago, not later than the above date to insure attention.

AMERICAN CARPENTER & BUILDER CO

# BISHOPRIC WALL BOARD

## Cheaper and Better Than Lath and Plaster

YOU DON'T HAVE TO WAIT for good building weather when you use Bishopric Wall Board. Lath and plaster is made of kiln-dried, dressed lath, imbedded in hot Asphalt Mastic under pressure of 500 pounds to the square inch, surfaced with sized cardboard and cut at the factory into 4x4 ft sheets, of uniform thickness ( $\frac{3}{8}$  inch), which are easily and quickly nailed to studding, ready for immediate application of wall paper, paint, burlap or other decoration.

Applied  
Dry,  
Winter or  
Summer



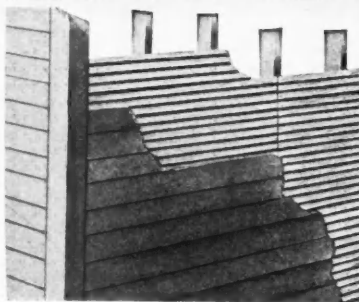
It is applied dry; is guaranteed not to swell, shrink, warp, crack, flake or blister; is clean, sanitary and odorless; is proof against moisture, cold, heat, and vermin; saves fuel in winter and keeps out summer heat; also deadens sound. Is suitable for dwellings, factories, new partitions in old buildings, finishing attics, porches, laundries, cellar ceilings, garages, etc.



**Importance of Lath** The lath forms a perfect binder—a guarantee against warping or twisting out of shape. Furthermore, insures perfect adhesion when nailed to studding. Beware of cheap imitations. Bishopric Wall Board is protected by U. S. patents. Prosecution will follow infringement.

**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



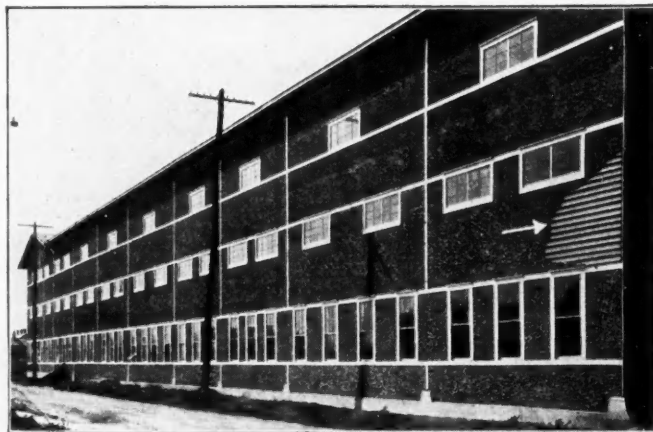
Bishopric Sheathing is made of same materials as Wall Board, but finish is not necessarily so fine, and therefore costs less. It is of uniform thickness, insuring a perfectly even surface when applied. It is nailed to studs, with lath and asphalt side exposed. Over lath weatherboards are nailed or cement 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—**A saving of about 75%**. Furthermore, 1000 square feet of wood sheathing covers but 750 feet of surface, 20% less being due to tongue and groove. In Bishopric Sheathing 1000 square feet covers 1000 feet of space. In applying ordinary lumber, heavier scaffolding, more tools and greater scaffold floor-space are required. In applying Bishopric Sheathing one man drives a few nails in each sheet; a common laborer or boy can finish the nailing. 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 results 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, \$5.12, or \$2 per square of 100 sq. ft., f. o. b. New Orleans, La., Cincinnati, Ohio, or Alma, Mich. We ship from nearest point.**



Write for descriptive booklet and samples of Bishopric Wall Board, Sheathing and Roofing—ALL SENT FREE.

**The Mastic Wall Board & Roofing Mfg. Co., 24 E. Third St., Cincinnati, O.**



# Test these Extra Slim Taper Files Yourself

Send for  
Free Samples

**H**ERE are two special slim taper files—the slimmest taper files made. Just the kind you need for fine tooth saws. They go right to the bottom of the teeth, cutting true and quickly.

These two files will be sent you absolutely free when you mail the coupon. Then test the files in every possible way. You will find

## E. C. S. **KEEN KUTTER** Special Slim Taper Files

are of a whitey-grey color throughout—a sure indication of uniform temper. You will find every tooth of the same depth. This means 100% cutting efficiency compared with the 65% of ordinary files. You will find they are very long-lived. In one particular case a single file sharpened 35 saws.

Fill out the attached coupon to-day and the two files will be sent you absolutely free. Then test them yourself. That's all we ask.

*"The Recollection of Quality Remains Long After the Price is Forgotten."*  
Trademark Registered —E. C. SIMMONS.

If not at your dealer's, write us.

**SIMMONS HARDWARE COMPANY (Inc.)**  
St. Louis and New York, U. S. A.



(Coupon)  
**SIMMONS  
HDW. CO.,**  
(Div. A. C.)  
St. Louis, Mo.

Dear Sirs:  
Please send me  
**FREE, Charges Prepaid, two**  
E. C. Simmons Special Slim  
Taper Files, as per your offer,  
with the understanding that I am  
under no obligation to buy.

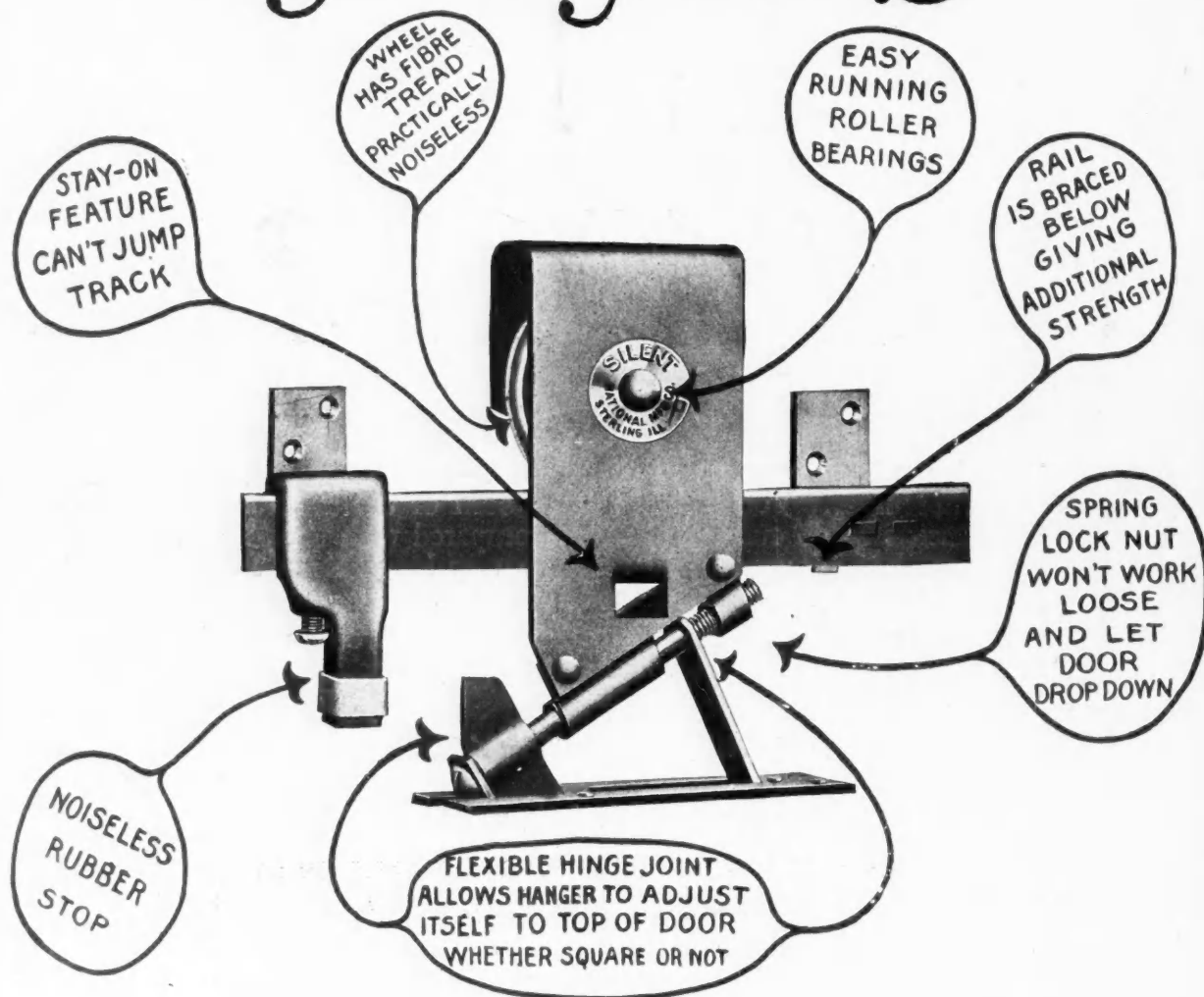
NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

We Initiate - Never Imitate

# SILENT PARLOR DOOR HANGERS

## They're Easy to Hang



Send for our General Catalog and give Dealers Name.  
National Mfg. Co., Sterling, Ill.