

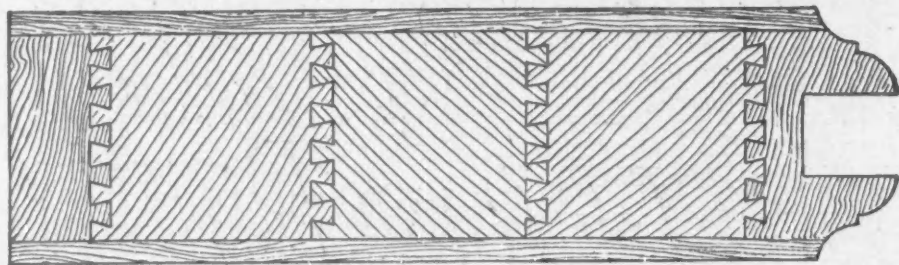
# AMERICAN CARPENTER AND BUILDER



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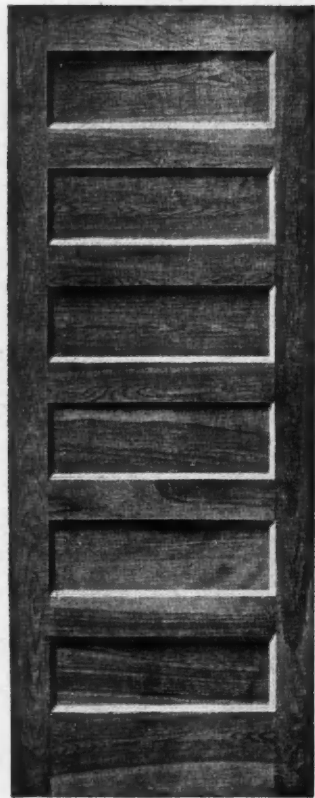


THE **KORELOCK** CORE

The

**KORELOCK**

DOOR



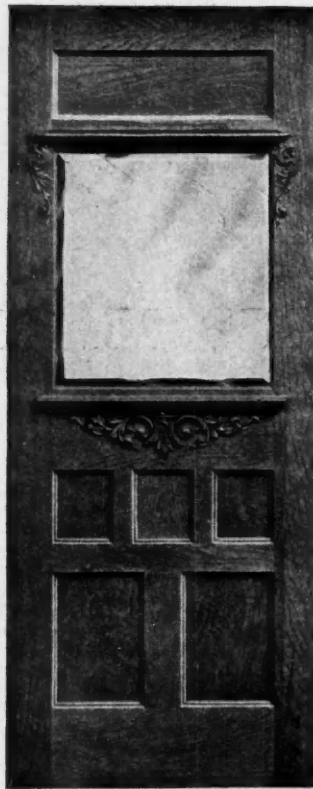
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Birch,  $\frac{3}{4} \times \frac{7}{8}$  — \$2.75, F. O. B. Cincinnati  
Oak,  $\frac{3}{4} \times \frac{7}{8}$  — 3.40, F. O. B. Cincinnati

Every

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door is guaranteed not to  
bind, twist, swell  
or shrink.



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No. 381

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What will you use for trim? **Buy gum.** We carry full stocks of gum, birch and plain oak trim. Our **fireproof** cement fluid is now ready—90c per gallon—for roofs, buildings, iron and steel.

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Station M, CINCINNATI, OHIO



# What is Roofing Tin?

## How is it Made?

As a Property Owner or Architect, did you ever ask these questions and receive a satisfactory reply?

We know there are many men who would like some definite information along these lines, and have, therefore, compiled a book entitled "From Underfoot to Overhead," which carefully describes the process of making Roofing Tin from start to finish. The information it contains is invaluable to you if you are interested in building, and we will promptly send you a copy if you will write for it and mention this publication.

By using any of the Brands shown below you can procure the very best protection from the elements. These stencils appear in the corner of the sheet, and you will notice the amount of coating carried per box of 20x28-112 sheets is clearly shown. This protects you from substitution—a point which we believe you will fully appreciate.

AMERICAN OLD STYLE  
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40 POUNDS COATING

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AMERICAN SHEET & TIN PLATE  
COMPANY

1406 Frick Building

PITTSBURGH, PA.

## The top of the house protects the sides, therefore, it pays to use care in selecting the material to be used for Roofing.

The value of any roof depends wholly upon two things: the protection it gives, and the length of time it gives it—and over 75 years of constant test under varying conditions in all climates has proven that Roofing Tin has no superior.

Extremes of heat and cold will not affect it in the least; it cannot decay, as do shingles; crack and blow off, as tile or slate; nor melt and run, or dry out and crack, as do all slag and composition roofs. However, for the very best protection and service, it is essential that only good Roofing Tin be used.

The first cost of this may be slightly more than other materials brought to your attention, but if properly laid and given reasonably good attention afterward, it will give you practically unending service and in the long run cost far less than any other material you can select.

Our experience in the past has proven these assertions to be true, and if you are interested as all architects, property owners and prospective builders should be, we would suggest that you write to our President, who will gladly give you more detailed and conclusive information.

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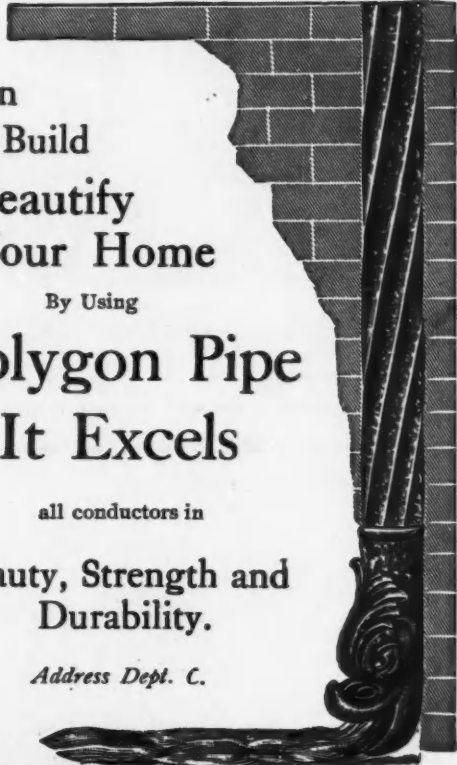
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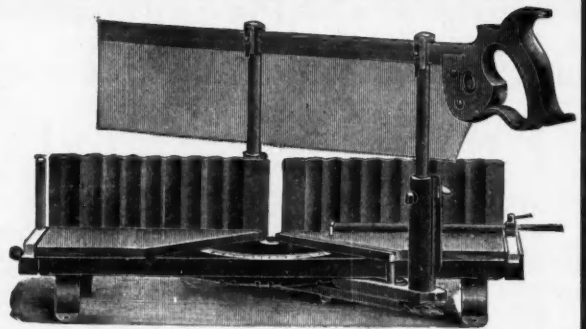
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MADE ENTIRELY OF STEEL

NO MORE BREAKING  FIRST  
in QUALITY and IMPROVEMENTS

Automatic Stops for Holding up Saw. Corrugated Backs. Graduated Gauge for Duplicate Cuts and many other features

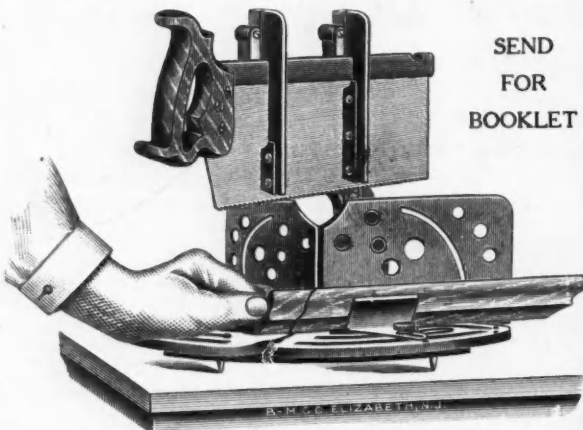
If you want the best you will take no other  
Send for Circular C



GOODELL MANUFACTURING COMPANY

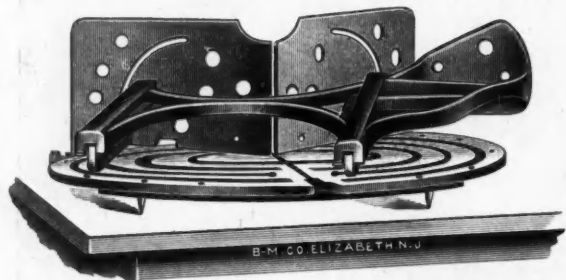
 Greenfield, Mass.

## REVOLVING MITRE BOX



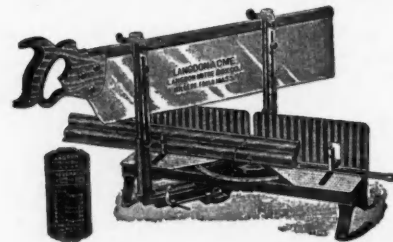
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Manufactured by  
**BRAUNSDORF - MUELLER CO.**



1091 E. GRAND STREET . . . . . ELIZABETH, N. J.

We recommend as a perfect tool and one that will give the utmost satisfaction



## The Langdon Acme Mitre Box

This cut shows the Size 2 Box with the saw suspended by the elevators, the moulding held by the supporting guide on one side, and brought against the length gauge on the other.

The bottom boards to this Mitre Box are made of sheet steel, slightly roughened.

The elevators (as shown in cut) may be used for extreme heights or for varying depths for cutting tenons, etc.

The graduated arc indicates all angles. Attached to the box is a metallic index plate, explaining these angles.

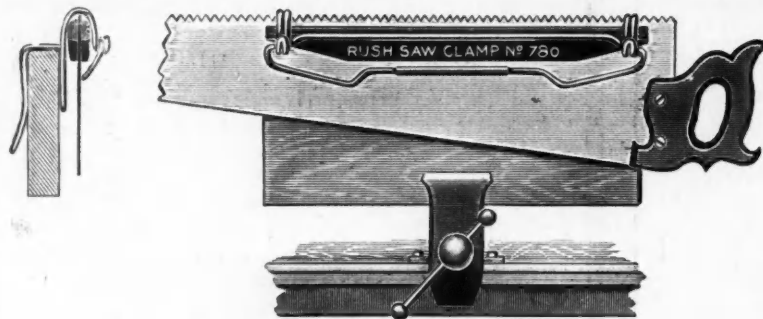
The supporting stock guides and length gauge will be found very useful.

Polished parts are nickel plated.

These Boxes are made in three sizes with varying lengths of saws.

Send for catalogue C, giving full description and prices.

**MILLERS FALLS CO., No. 28 Warren St., NEW YORK**



## NEW! NEW!! NEW!!!

Rush Noiseless Saw Clamp (Vise). Only four parts—two wood and two wire. Can be attached instantly to any 3/4-inch board. Sharpen any length of saw. No castings, no screws.

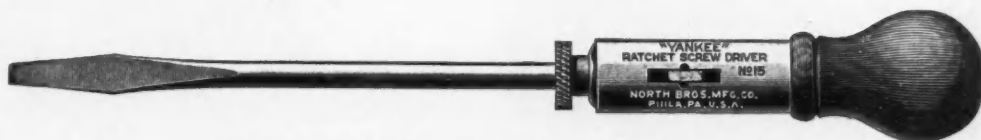
Ten Thousand (10,000) Sold the First Month. Special offer for this month.

Send 50 cents for this Dollar Clamp, together with this ad., and we will ship you one only.

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The newest, cleverest and most satisfactory in use, and the first to be offered at so reasonable a price that every up-to-date mechanic could buy tools of their quality and character. Other tools are very good tools but "Yankee" tools are better. "Yankee" tools are sold by all leading dealers in tools and hardware everywhere. Ask your dealer to see them.



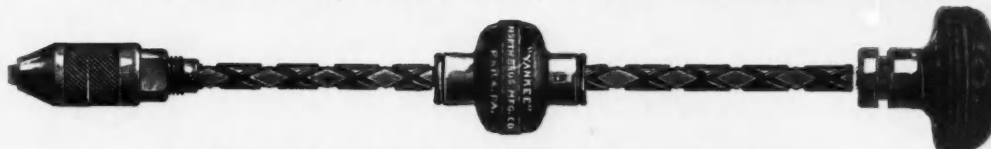
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ing a true polished surface. It is preferable and more expeditious than chisel, gouge, scroll-saw, or lathe tool combined, for core-boxes, fine and delicate patterns, veneers, screen work, scalloping, fancy scroll twist columns, newels, ribbon moulding and mortising, etc.

Specially Adapted for Hardwood Working.

The Forstner Labor-Saving Auger Bit, unlike other bits, is guided by its *Circular Rim* instead of its centre; consequently it will bore any arc of a circle and can be guided in any direction regardless of grain or knots, leaving a true polished surface.

Manufactured by

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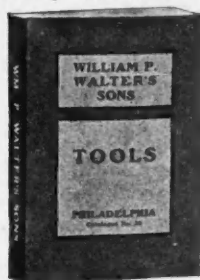
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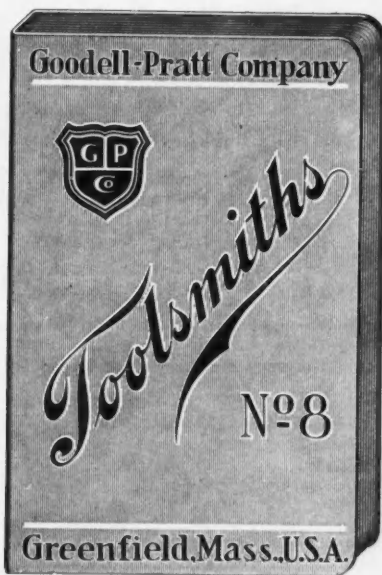
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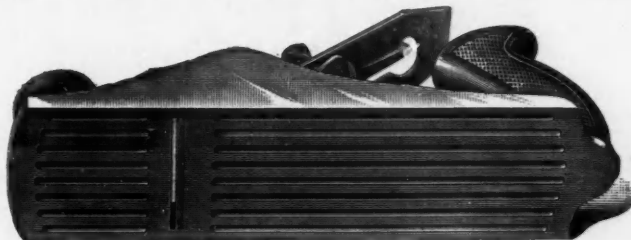
**GOODELL-PRATT COMPANY**  
GREENFIELD, MASS., U. S. A.

FAR AHEAD for Smooth, easy work and holding edge will be YOUR VERDICT ON TRYING

## CHAPLIN'S IMPROVED PLANES

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Severest  
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We want you to have a copy of  
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We want you to have a copy,  
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Such tools—the kind that does not give down in the midst of an important job—are worth insisting upon. All progressive Hardware Dealers handle the "Ohio" line.

Every Tool Covered by a Broad Guarantee

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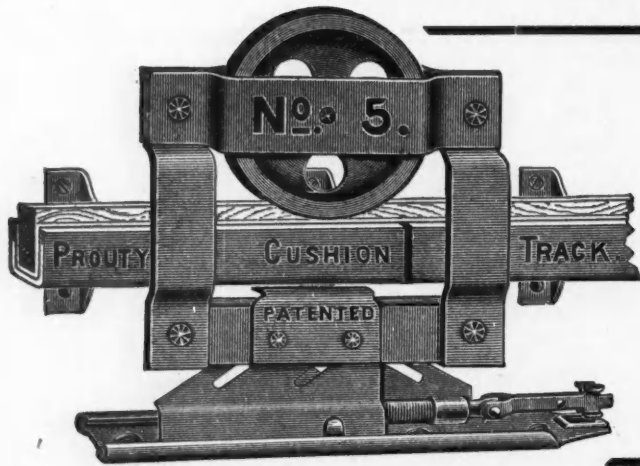
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The cost of the instrument is so low that it is within the reach of all. Write for book of testimonials. Agents wanted on liberal terms.

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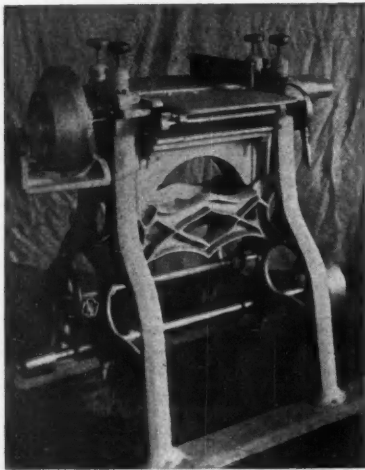
Time is money to all busy men, and you can save hours by using Prouty Parlor Door Hangers.

The PROUTY No. 5 CUSHION TRACK HANGER does not require any cutting of the door, and our adjustment is positive, so when once in place it never requires further attention. It is noiseless, easy-running and strong, and if you use it once you will have no other.

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THE cut here-with represents the Planer with the Buzz Attachment on, to dress lumber out of wind, or straighten the edge for glue joints, etc. The rest is made to set at any angle, to use for cutting bevels, or guide the lumber square. The depth of cut is regulated in a moment at at your right hand by a handle moving back and forth. By moving the handle back, that part of the table is

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It embodies all that is desirable in furnace construction. Our Direct-from-factory-to-user selling plan gives you every advantage in price which any dealer could command, and it insures satisfactory results, for we supply plans free, showing just how the apparatus should be arranged in your house, and we guarantee its success. Our 40-page booklet "Modern Furnace Heating" is yours free, if you will drop us a card and ask for it. It is full of heating information of value to you.



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Send us the names of three or more owners who will buy furnaces, and we will mail you two of the best carpenter's pencils you ever used.

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This No. 45 Steel Furnace, with firebox 18x21, \$49, freight prepaid anywhere east of Omaha. Pipes and registers extra. Five other sizes proportionately low.



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**ROUND TRACK DOOR HANGERS**

Impossible to Derail  
Easy Running, Great Strength

— FOR —  
**BARN, WAREHOUSE and FIRE DOORS**

Send for Catalog "A"

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CHICAGO, ILL.

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**The Very Latest With Every Improvement**

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Watrous Screen Hardware saves you time and money.



## No. 17. Combination Storm Sash Hanger and Screen Hinge

All carpenters want it.  
Put on in half the time needed for any other.  
Only four screws to set instead of twelve.  
Simple and extra strong.  
Easy to locate.  
A gauge on every pair makes mistakes impossible.  
Points set in with a hammer, leaving both hands free to set in screws.  
The points afford a much stiffer and more rigid grip on the wood than screws.  
No loose joints, they don't let the hinge give and work loose.  
Tested for strength up to 300 pounds.

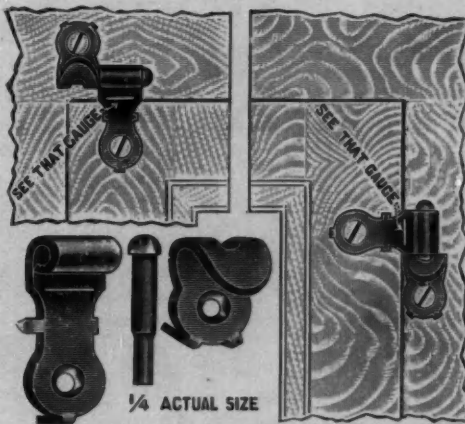


This is the only way to hang a screen.

You can't drive out flies with a top hung screen, for a fly won't go down.

A screen that can be unlatched and swung out puts the flies outside the house in one motion.

A screen hung in this manner will *not* sag, for the casing holds it in position, especially if our No. 3 screen catch is used on the opposite side.



Windows easily washed.  
Awning cords accessible.  
It will hang either a full sized sash or screen or a half screen.  
It is the only hanger that will do this.  
Either side works either way.  
Every part japanned, even the screws.  
No rusty streaks down the casing.

Price per doz. Sets, postpaid, \$1.75

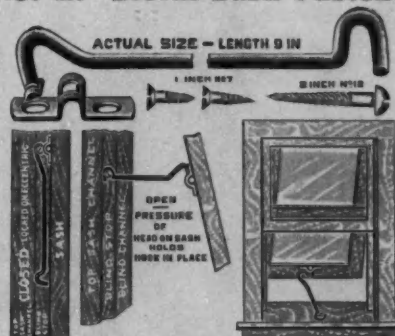
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Locks on eccentric, draws sash tight and holds it fast.

When sash is opened for ventilation, the rod slides out over the screw, and locks automatically at the end.

No danger of sash being blown off in the hands of children or careless servants.

Simple and easy to put on.



It cannot rattle.  
Whether window is open or shut the fastener is on a tension which holds it tightly in place.  
Extra strong and has no small delicate parts to break or get lost.  
Can be used on either the side or bottom of the sash. No other can.  
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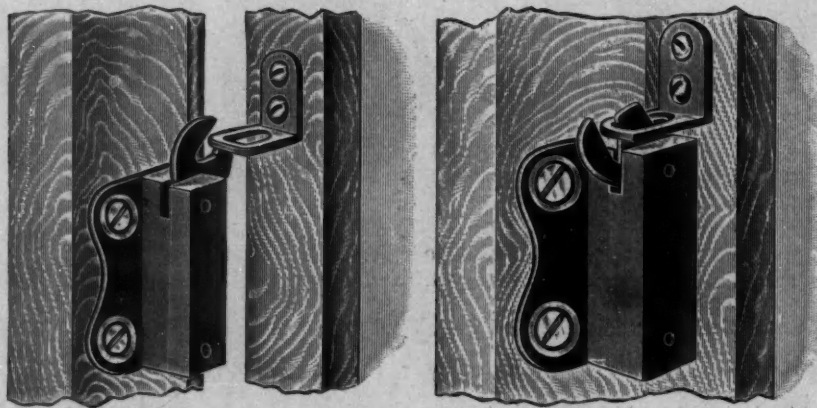
**Insist on Having Them**

Nothing else gives quite the action or quite the satisfaction of the Watrous goods.

**E. L. Watrous Mfg. Co., Des Moines, Iowa**

# Watrous Storm Sash and Screen Hardware

We prefer to furnish you through your dealer, but if he cannot supply you we will send you the goods, postpaid, upon receipt of prices given below.  
Watrous Screen Hardware saves you time and money.



TWO-THIRDS ACTUAL SIZE

Price per doz., postpaid, \$2.00

## No. 5. Watrous Automatic Door Catch

For storm doors, screen doors, office gates, cupboard doors, etc.

Holds the door tight shut, and prevents standing ajar or sagging open at the top.

It does not show from the outside.

No diagram is needed with it, anyone can see at a glance how to put it on.

A light trip and a strong hold.

The neatest, best looking and cheapest door catch on the market.

## No. 3. Watrous Screen Window Catch



ACTUAL SIZE

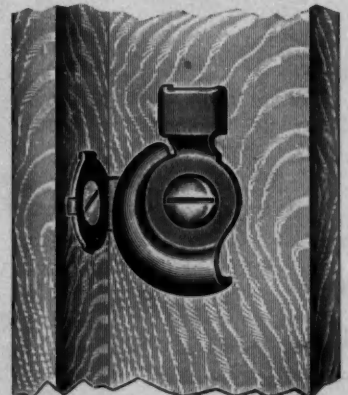
For screens, storm, sash, casement windows, cupboard doors, etc.

Makes a cheap and good storm sash fastener where it is not desired to prop the window open, or where the window does not have to be opened during the winter, four of them make a complete storm sash set.

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The action is eccentric, and when fastened sash cannot be moved in any direction.

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Unbreakable.  
Twice the strength and half the weight of cast iron.  
Cost no more.  
Take a finer finish.  
Every one perfect.

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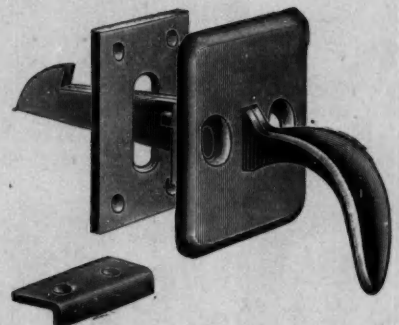
Works like an elbow catch.  
Never fails to latch.  
Opens at a touch.  
Cannot be broken by slamming the door.  
Strong, neat and ornamental.  
A joy to the housewife.  
Old copper, or dead black finishes.

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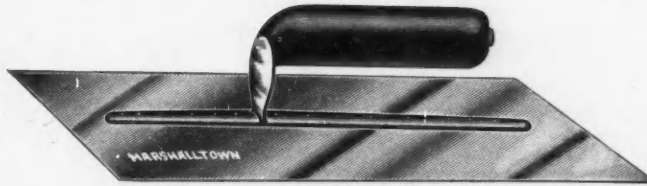


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Steel Sidewalk  
Edgers and  
Bronze Groovers,  
All Sizes

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Finishing and  
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Made of the best quality tool steel,  $\frac{3}{4}$  in. Octagon, 30 in. long.

Will pull any size nail.

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## Marshalltown Trowel Co.

Marshalltown, Iowa.

U. S. A.

## "CHAMPION" TELESCOPIC STEEL RODS

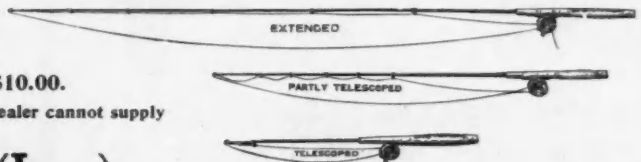
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The only telescopic rods made of tapered steel tubing with outside line delivery through guides exactly as on a jointed rod.

Can be telescoped or extended without removing reel line or hook. No locking device necessary. The joints are simply pulled out as far as possible and the rod is ready for use.

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Will cut an opening  
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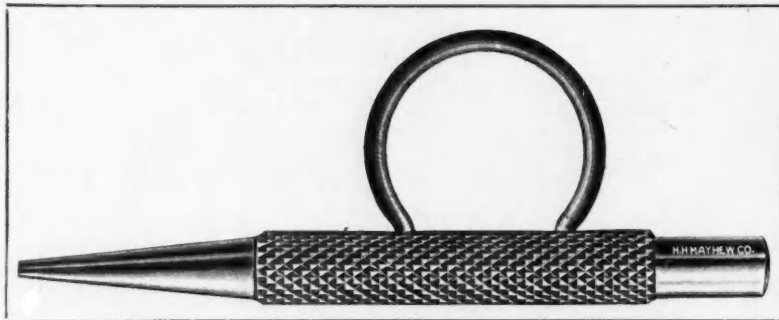


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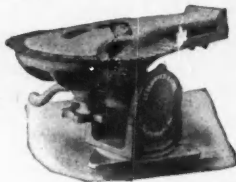
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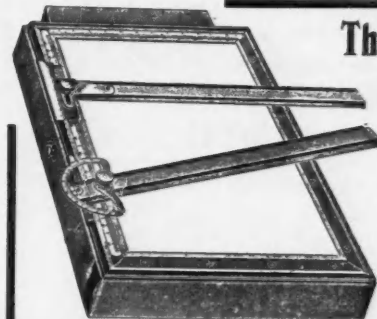
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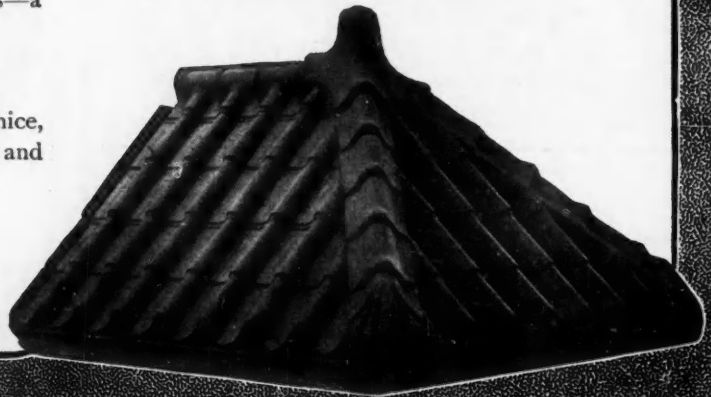
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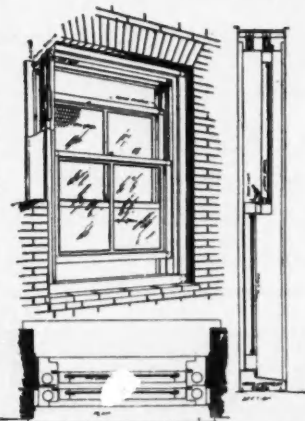
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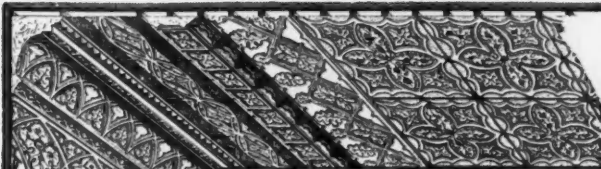
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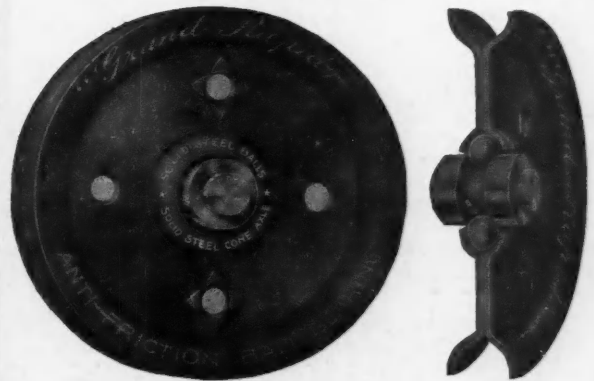
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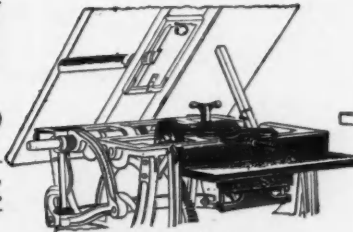
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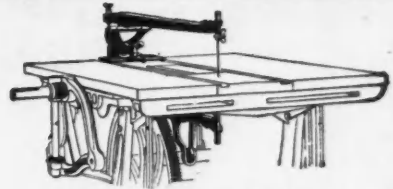
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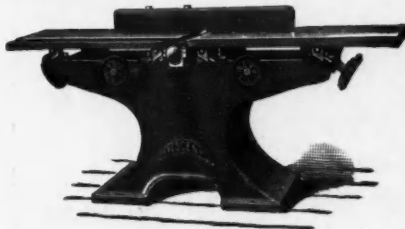


(91-H)

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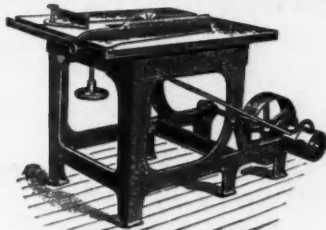
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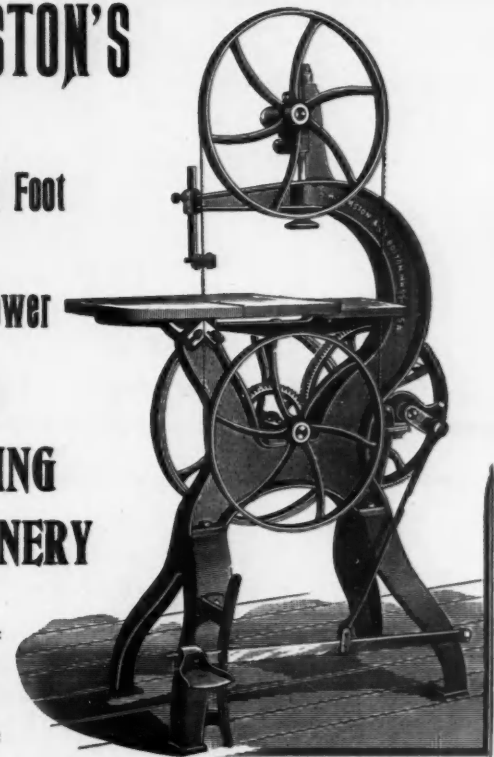
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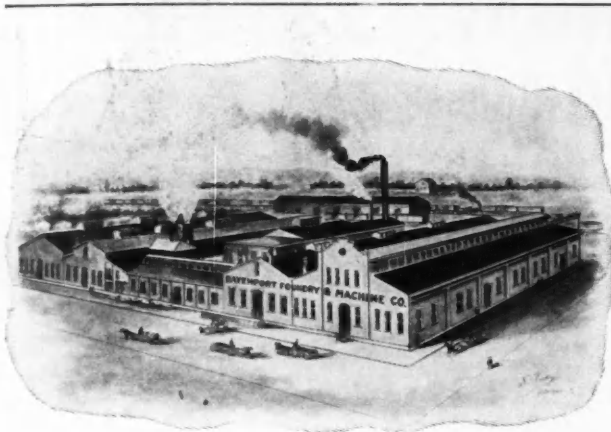
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# CEMENT WORLD

## A New Trade Magazine

**T**HE first number of this new trade magazine, the CEMENT WORLD, will make its appearance on April 15, 1907.

This publication will cover every branch of the great Cement Industry. Its purpose will be to tell by words and pictures of every method of manufacture, of every appliance and of every use of this wonderful product. The subject will be thoroughly, carefully and practically treated by the best writers and illustrators that money can procure.

### Months of Preparation

The publishers of the CEMENT WORLD have been working for many months to prepare for the introduction of the new periodical. Plans have been developed and perfected to start at the point where most trade publications arrive after they have been before the public for years.

### A Large Subscription List

As a result of these active preparations and a vigorous circulation campaign, it can be safely predicted that the first number of the CEMENT WORLD will be mailed to 10,000 paid subscribers. A complete business organization, aided by an exceptionally able editorial staff, will force the CEMENT WORLD to the front at once.

### The Editor-in-Chief

The CEMENT WORLD will have Mr. Wm. A. Radford at its Editor-in-Chief. Mr. Radford's name and writings are probably better known than that of any other authority on technical subjects in the country.

His keen perception and untiring zeal have made the *American Carpenter and Builder* the world's greatest building paper, the Radford Architectural Company the largest architectural company in the world, and his new books on "The Steel Square and Its Uses" and "Practical Carpentry" the best books on these subjects ever published. Mr. Radford's connection as Editor-in-Chief of the CEMENT WORLD is a positive guarantee that this trade magazine will begin its existence with nothing left undone to make it the world's Greatest Cement Paper.

### The General Manager

The big business organization of the CEMENT WORLD has been completed, with Mr. E. L. Hatfield as General Manager. Mr. Hatfield is well known in newspaper as well as trade paper circles, having been for several years connected with prominent publications, among them being the Bridgeport (Conn.) *Post*, the Scranton (Pa.) *Tribune*, the Boston *Globe* and the New York *Sun*, besides being actively associated for the past two years with the management of the *American Carpenter and Builder*.

### An Able Editorial Staff

Every number of the CEMENT WORLD will have regular departments and special articles by the best writers. A thoroughly capable editorial staff, composed of experts in this particular field, has been secured. Questions by our subscribers will be answered promptly, and, where essential to the better understanding of any subject, the answers will be profusely illustrated.

Charter Subscribers of the American Carpenter and Builder — When renewing your subscription this month, send 50 cents extra and subscribe for the CEMENT WORLD also. Begin with the first number and be a Charter Member of this great paper as well.

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The steadily diminishing supply of lumber and the ever-increasing price asked for it will soon make it absolutely necessary for carpenters and builders to seek a substitute for wooden structures. This time has already arrived in many sections of the United States and Canada.

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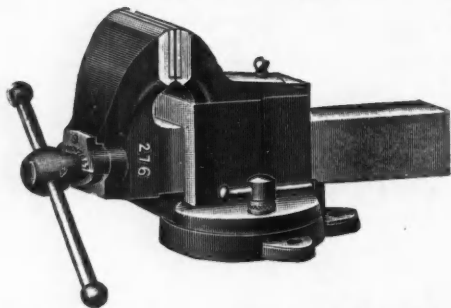
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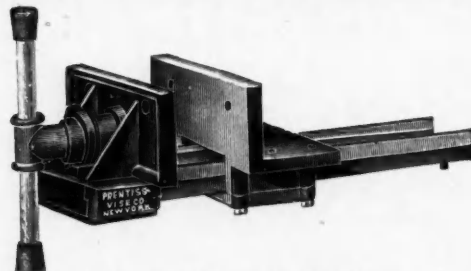
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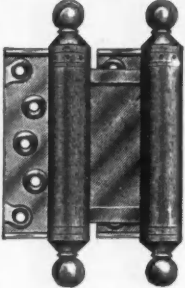
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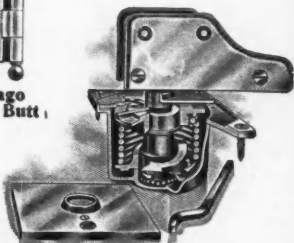
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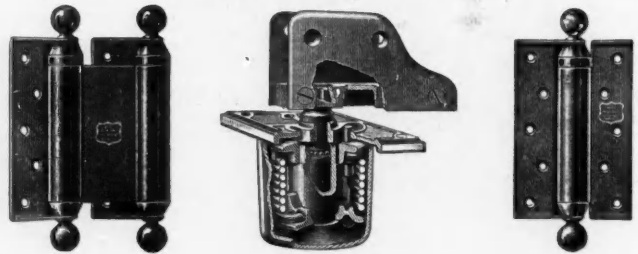
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**American Carpenter and Builder**

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

WILLIAM A. RADFORD, EDITOR-IN-CHIEF,  
WILLIAM REUTHER, EDITOR.  
ALFRED W. WOODS, ASSOCIATE EDITOR.

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Short practical letters and articles on subjects pertaining to the carpentry and building trades are requested.

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**Past and Future**

**W**ITH this issue we conclude volume two of the AMERICAN CARPENTER AND BUILDER. It has been an interesting and inspiring year in the field for it has brought us in touch with a greater number of you, either by letter or personally, than ever before.

This is what makes the work a pleasure for it shows you are interested and pleased with our endeavor and it encourages us to try and surpass our past efforts. That we will endeavor to do so goes without saying for it is our aim to continually improve and keep not only abreast but a little ahead of the times.

In this we are being aided by our subscribers more and more by the kindly suggestions which we receive from you as to what you most desire. It is through these suggestions of yours that we have been able to present so many helpful articles during the past year and we can frankly say that during the coming year we will not only keep up our reputation of having the "World's Greatest Building Paper," but will add to it in a way that will be a surprise and a pleasure to you. Hereafter more space will be devoted to the correspondence column for it is here that our members have the best opportunity to become acquainted with each other. Help to make it better every month.



**Trade Paper as an Educator**

**T**HE importance of a trade paper to the industry or occupation it represents is becoming more universally recognized. This is partly due to the papers themselves as they are making themselves more and more the mouthpiece of their trade. They spread information in a manner that could not be done in any other way, for the paper is more closely in touch with all events interesting to the trade than any other medium. It should, therefore, be the duty of every carpenter and builder to be a subscriber of a paper devoted to his trade, one that will give him the best, most reliable and modern methods of doing things in his line. It keeps him abreast of the times and stimulates an interest in his occupation which is brought about by seeing what others in his line are doing. A feature which should be avoided and that is the habit of borrowing your neighbor's paper; you would not think of asking him for his watch month after month, so why should this not also apply to his trade paper? He refers to one almost as much as the other, and it is just as important. One tells him what time of the day it is and the other tells him where he stands with reference to the rest of his fellow workers.

## Important Buildings in England

VIEWS OF THE PRINCIPAL BUILDINGS IN LIVERPOOL SHOWN AND FULLY DESCRIBED—SOME OF THE BUILDINGS IN LONDON NOT SO WELL KNOWN ALSO SHOWN

By George E. Holt

**B**ECAUSE of St. George's hall, Liverpool has for some years held the palm for having the finest public building in Britain. But Liverpool is building new edifices which are worthy of atten-

late English Renaissance, treated in a dignified manner. Architecturally its chief feature is the magnificent dome, 220 feet high from the street level. This dome covers an octagonal hall 72 feet in diameter and rising internally 120 feet. Running around the hall are a series of communicating galleries, leading to the various departments. There is a grand staircase, and electrical lifts are grouped on two sides of the hall. Though the building is of such large proportions the convenience for business purposes is simplicity itself, as every department radiates, as it were, from this central hall.

At each of the four corners of the building is an octagonal tower 140 feet high, and these towers are distinctive features of the general design. Taking the building as a whole it may

be described as moderately elaborate. There is nothing lavish about it, it is a fine commercial building for commercial purposes. Accommodation is provided for 400 to 500 clerks; there are offices for the various departments, rooms for the chairman and general manager; luncheon rooms for members of the board; a dining room for the clerks, and a magnificent board room. Marble is the material used for the interior decoration of the halls and corridors, and the floors

tion. One of these and the latest, is the Dock Board Offices, which in its state of new cleanliness shows up prominently amidst the general blackness of the city. It is about three years since the site of this magnificent structure formed a portion of one of the ugliest parts of the city, and, to an expert probably not the most suitable foundation for a building of immense weight. Before a single stone was laid excavation work exposed the rock in every part of the site, in many places 40 feet below the level of the street.

In March 1903, the contract for 277,000 pounds was signed, and Messrs. William Brown & Sons, of Salford, England, undertook to have the building finished by March of 1907, a contract which will be more than carried out.

Leaving the new cathedral out of comparison, the Dock Office building is second in size to St. George's hall only, in Liverpool. It is said to be the largest and finest purely commercial building in the country and occupies the most commanding position in the city. The style of the building is the



St. George's Hall, Liverpool



Lime Street, Liverpool

are made of marble mosaic. The exterior of the building is of Portland cement. Around the site is an enclosing balustrade of granite. The extreme dimensions of the building are 264 by 216 feet, and from the street to cornice, 80 feet.

Following is a list of statistics regarding the building and its equipment which will interest American builders:

Electric lamps, 3,200; insulated wires, 35 miles; heating pipes,  $6\frac{1}{2}$  miles; electric passenger lifts, 7; goods lifts, 2; dinner lifts, 2; book lifts, 1; ordinary and glazed bricks, 7,500,000; Portland stone, 25,000 tons; cement and concrete in foundations, 35,000 tons; plastering, 15 acres; plaster cornices, 8 miles; steel work, 1,800 tons; asphalt,  $2\frac{1}{2}$  acres; woodblock flooring, 3 acres; mosaic flooring,  $1\frac{1}{4}$  acres; glazing, 1 acre; glazed tiles,  $\frac{1}{2}$  acre; marble matting, 300 tons; granite, 1,000 tons.

Messrs. Briggs & Wolstenholme, F. B. Hobbs and Arnold Thornely are the architects of this building.

St. George's hall, mentioned in the first paragraph, aside from being one of the finest public buildings, is also reckoned as one of the finest architectural masterpieces of the empire, if not of the world, according to Liverpool experts. In consequence it is of more than ordinary interest. A peculiar fact is this: that while the average British building does not appeal to the casual American visitor, St. George's hall does so at once and almost without exception—which goes to prove that even the ordinary American traveler has an eye for the best in art. The foundation stone of this hall was laid in 1838 on the day of the coronation of the late Queen Victoria. It took 16 years to build the edifice, and an expenditure of \$1,600,000 was required. The length of the hall is about 500 feet. It is built in the Graeco-Roman style and huge Corinthian columns in front enclose a spacious colonnade, the effect being to render the appearance of the building massive, but not too heavy. Experts regard the southwest view, which is the one

shown in the photograph, as the best. The finely sculptured tympanum of the pediment adding greatly to the beauty of the general design. The main part of the building is occupied by a great public hall, 169 feet long and 74 feet wide. Enormous granite columns support the exquisitely adorned roof, which is 82 feet and 9 inches above the floor. Besides this great hall the building contains the assize court rooms and other suites. Industrial exhibitions are often held here, and public gatherings of all sorts. The surroundings of the hall are partly shown in the picture of Lime street—the Wellington monument, 115 feet high, being a prominent feature.

Another public building of prominence in Liverpool, is the Exchange building, which forms three sides of a quadrangle, of which the fourth is formed by one side of the town hall. The cost of the exchange is estimated at about \$3,000,000, and it is of the French Renaissance style, ornately decorated—altogether too much so to please the modern taste. The interior decoration is also carried to unlimited extent, and the surroundings are filled with statuary, the whole being prone to cause architectural indigestion.

The Colonial house is another of the fine public office buildings in Liverpool. It is a rectangular building the dimensions of which are: Front, 81 feet 6 inches; rear, 74 feet 6 inches; length, 203 feet 6 inches. The whole covering an area of 1,750



St. Paul's Cathedral, London

square yards. The style of the architecture is pleasing and free from the monotony of outline to be seen in so many modern business buildings. The front elevation is elegant and attractive. Six massive red granite columns form a striking feature and effectually decorate the center of the building. Two mosaic panels, representing the old and the new worlds of shipping (for this building is occupied principally by a shipping concern) are placed over the two principal windows in the main floor frontage, while many of the windows are surmounted with cleverly carved crests of various colonies, such as Canada,

India, Australia, New Zealand, Cape Colony, Natal, New Foundland, Sierra Leone, and Jamaica. The base of the building is also in polished red granite,

can also be reached by electric elevators, two being at one entrance and one at the other.

The largest city in the world is so filled with noteworthy buildings, each of interest because of some peculiarity or advantage not possessed by its neighbors, that it is difficult to pick out even a few interesting examples of architecture, for one must leave so many others which are equally entitled to recognition. The leading buildings, such as the House of Parliament, Hampton Court Palace, Westminster Abbey, St. Paul's Cathedral, and Buckingham Palace, are almost as well known to the American builder as to his British brother. Our illustrations show three London



Exchange, Liverpool

two pillars of which material support the main entrance, which is of imposing dimensions and lined with massive polished marble slabs. The whole of the side elevation is faced with white porcelain enamel brick, while the rear elevation harmonizes with the front view, being of Cefu stone, with red granite pillars. The main office on the ground floor is 140 by 70 feet and extends the entire width of the building. It is lighted from both sides and also by seven domes which surmount the general office in the center. The furnishings throughout are of solid mahogany, and the massive frame work columns have been covered with polished marble. The private offices of the principal firm are situated in the front of the building with waiting rooms and private offices for correspondence and confidential clerks conveniently placed. The floors are in mosaic and wood blocks, the main office floor being covered with India rubber in order that all noise might be reduced to a minimum. Perfect ventilation is assured by electric air propellers erected in the domes.

The whole building is lighted by electricity and warmed throughout by means of hot water on the low pressure system, as well as by fireplaces built in the several offices to add cheerfulness to the apartments. There are two principal staircases in the building giving access to the suites of commodious offices on the upper floors, which are seven in number. These

views which we believe are rather less known than others: Albert hall, The Marble Arch, and Hyde Park Corner.

Albert hall, which is used principally for concerts on a large scale, gives one an impression of a wedgewood sugar bowl, undoubtedly because of the procession of figures about the top, and the rounded, dome like roof. It will comfortably seat 10,000 people and the orchestra accommodates 1,000 performers. Hyde Park corner at the end of Picadilly, and the Marble Arch, are the fashionable entrances to fashionable Hyde Park. The picture of St. Paul's was taken from a height sufficient to clearly show every detail of the architecture of the front elevation, and will be of



Marble Arch, London

interest for that reason. The present St. Paul's is the successor of a temple erected upon the same site by a Saxon king in the 7th century and destroyed by fire



in 1086. In 1087 a Gothic cathedral was begun by the Bishop of London. It was of great extent and completed in 1315, and destroyed by the great fire of London in 1666. The present building was begun in 1675 on June 21st. It was designed by Sir Christopher Wrenn. The dome was completed in 1710, the total cost being about \$5,000,000. The length of the cathedral is 515 feet; of the transept, 250 feet; width of the western facade 189 feet. The exterior of the dome is 145 feet in diameter; interior, 108; height to top of cross, 364 feet from the ground.



### Cement for India

Consul-General Wm. H. Michael, of Calcutta, reports that a great deal of cement is used in India in building operations.

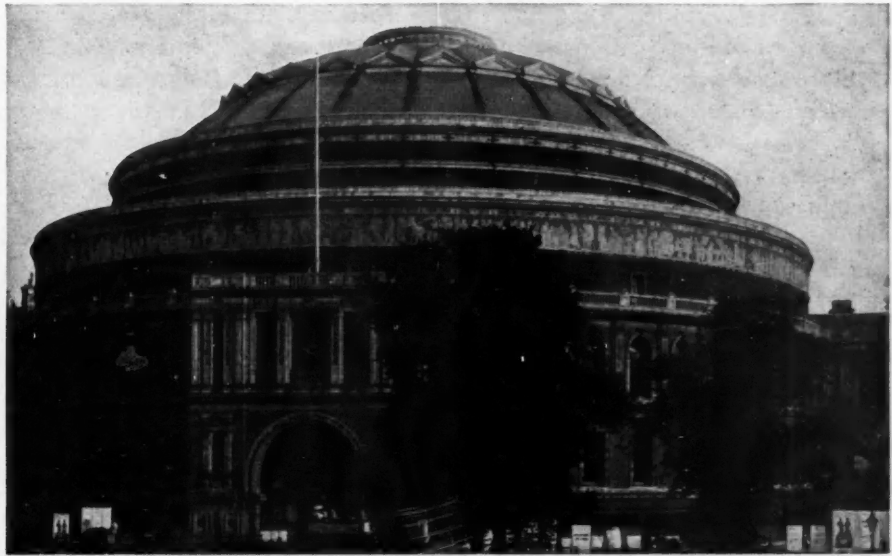
Portland cement is considered the best and is used for all particular work. It is used in laying brick walls in foundations, and wherever wood is used for structural purposes it is laid in cement whenever possible. Floors, moldings, cornices and outside and inside trimmings are made of sand and cement. Wherever cement can be used to guard against vermin, especially white ants, it is freely used. Houses that have flat roofs are covered with brick dust and particles of brick mixed with cement and stamped down hard. Pitched roofs are covered with corrugated iron or tile and then solidly covered with cement and sand. These roofs last well and require little repair.



Hyde Park Corner, London

Artificial stone is extensively manufactured and used in India for building purposes and for pavements and walks. Floors are laid in cement, and made orna-

mental by embedding broken glass and china in figures in the body of the cement. The outsides of temples are made in the same way and are very



Albert Hall, London

attractive.

Thus cement is in general use and always will be in India. The imports of cement as long ago as 1870 were valued at \$50,342.



### Hubby Had the Habit

"Do you take many periodicals?" asked the young minister, on his first visit to one of his parishioners.

"Oh, no, sir," replied the woman, "I never do, but I'm sorry to say that my husband takes a periodical about once in every month. I do wish you could get him to take the pledge."—*Exchange*.



### Gives Mother All He Earns

Billie had secured work in a carpenter shop and at the end of his first week he applied to the boss for a raise in his salary.

"We are giving you five dollars now, Billie, ain't we?"

"Yes, but I give to me mother all I earn."

"All you earn," repeated the proprietor thoughtfully; "and what do you do with the other four dollars and a half? And how long were you at it before you came here?"

"Three weeks," says Billie, "and the way I'm treated makes me wish sometimes I

had never learned the business at all.



Nothing helps philosophy like a steady job.

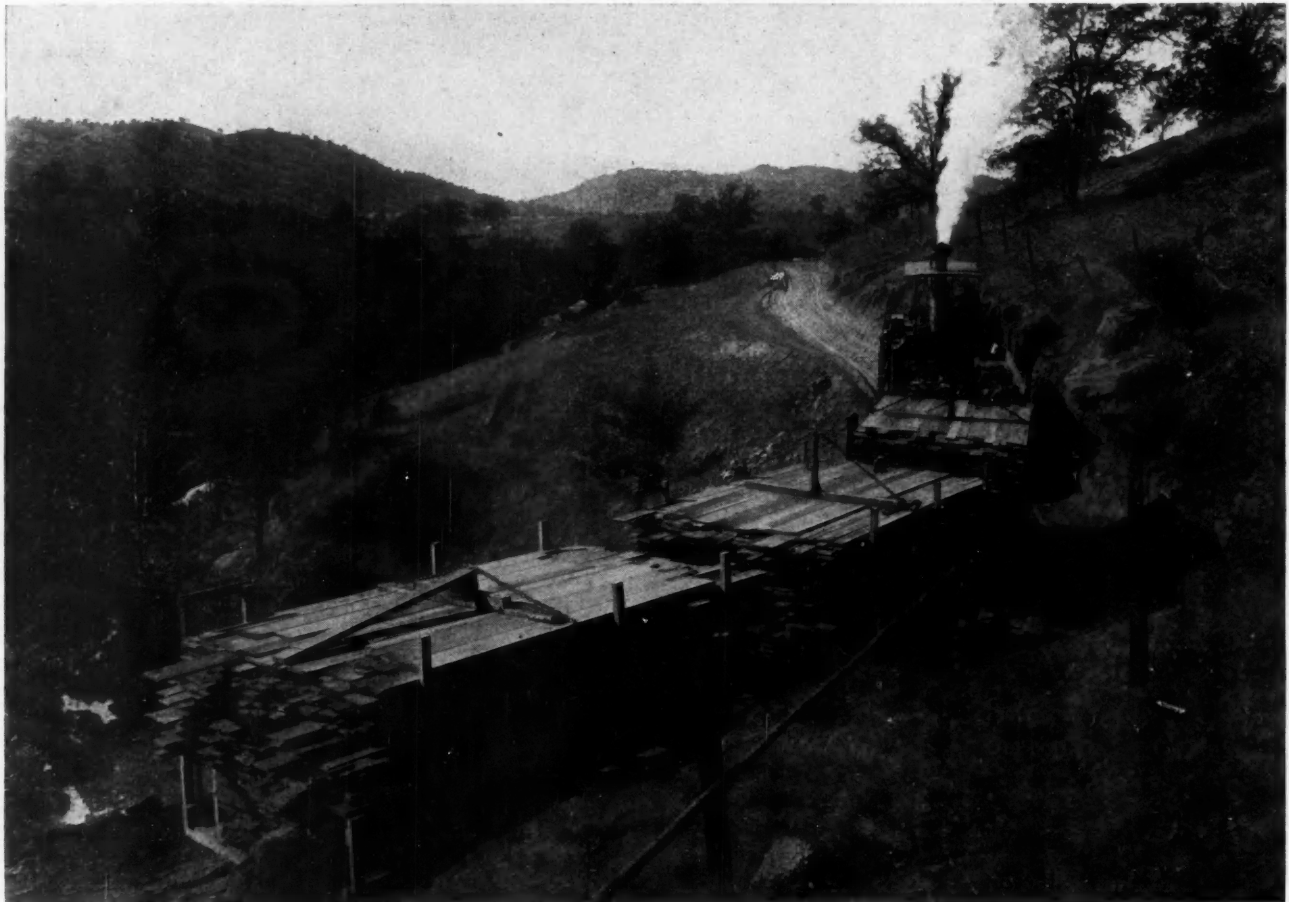
## Traction Engines in Lumbering

BY WALDON FAWCETT

ONE of the most interesting exemplifications of twentieth century progress that can be cited in connection with present day manufacture and delivery of building material is found in the employment of powerful traction engines in the transportation of lumber. This novel employment of what might be termed modern industrial automobiles originated in California, but was soon adopted in other parts of the West and now bids fair to speedily come into vogue in other sections of the country as its

to do the same work with horses or up to say one hundred tons per day will do the work for less than it could be done by means of railroads. Incidentally the freighting outfits make ideal feeders for railroads.

There are various types of traction engines thus acting as mechanical aids to the building trades, but the design which has been universally adopted is the invention of Engineer Holt of Stockton, Cal., and was devised especially for lumber freighting and logging. It is a sixty horse power burden bearer with wheels



Traction Lumber Freighter in Oregon

time and labor saving advantages come to be realized.

The transportation of logs from forest to mill and the movement of the lumber from mill to railroad cars or, mayhap, direct to consumers, is accomplished by means of what are known as traction engine freighting outfits, each consisting of a monster road engine and four, five or six trucks. Loads too large to be hauled by the ordinary six and eight horse freight teams and yet too small to make it pay to build a railroad are hauled expeditiously and economically by these tractors. Indeed, these outfits are proving the most economical motive power for transporting heavy freight over distances up to fifty or sixty miles. They do heavy hauling for less than half what it costs

seven and one-half feet in height fitted with tires twenty-four inches wide. Each main wheel is driven independently from the engine by means of frictions and chains which take the place of the ordinary equalizing gear. An intelligent manipulation of the friction clutches enables an engineer to control his tractor on any kind of a curve. An entire train can be operated on curves with as much safety as an ordinary ten horse freighting team.

The propulsive power for each of these tractable tractors, as they have been aptly termed, is furnished by a plain, single cylinder American balance valve engine. It is placed on the top of the boiler so that it is in its operation in full view of the engineer at all

times. For use in the mountainous districts of the West where good water is procurable the average traction engine is fitted with a return tube water-leg firebox type of horizontal boiler. In some other localities these odd lumber carriers are fitted with Scotch marine corrugated flue boilers. The boilers have a working pressure of 165 pounds and three different kinds of fuel—oil, wood and coal—are in use by such road engines now in service beyond the Rocky Mountains.

A great majority of these tractors are of the three-wheel type, the frame being constructed of 8-inch steel I beams and 10-inch channels well braced to the

tant provision is found in the fact that each truck is fitted with an automatic brake operated by the engineer, thus affording full control of the train on any kind of a hill.

Traction engines of the type described will haul loads of from 40 to 60 tons, depending on the character of the road, at a speed of from two to three miles per hour, loaded—returning the empty trucks at a speed of three or four miles per hour—and will ascend with a full load on good roads, grades up to 10 per cent, climbing proportionately steeper grades with smaller loads. That a freighting train of this kind can be maneuvered admirably is attested by the



Lumber Transportation by Means of Traction Engine

boiler and fastened solid to it. The two main wheels are given great flexibility in order to take practically all the strain off the frame and boiler. The front wheel is hung in a circle, guided by friction rollers, and is operated by power. The main wheels of the tractor are placed so far forward that in working hard there is practically no weight whatever on the front wheel and under such circumstances the steering is done almost entirely by the frictions.

The trucks which with the traction engine go to make up the freighting train are especially designed for the work in hand, and have a capacity of ten or twelve tons each. The latest approved type has three wheels arranged in triangular position as in the case of the engine, it being claimed that such trucks offer immense advantages in loading and unloading by reason of the fact that they enable low, broad loads instead of the high, narrow loads that are necessary with four-wheel wagons. The principal portion of the load is carried on the two main wheels and the front wheel acts as a steering wheel. The front wheel has a 12-inch tire while the rear wheels are fitted with tires 16 inches in width so that these trucks really act as road rollers and materially improve any highway over which they are regularly operated. An impor-

tant fact that a train consisting of an engine and five lumber trucks can turn in a circle having a diameter of only forty-nine feet. In making such a turn the wheels of the rear truck cut across a space of only two feet.

Some remarkable records have been made by these freighting trains in actual service. On one occasion a tractor in California hauled 15,000 feet of logs on two trucks down a 17 per cent grade, traveling through the forest without having the road previously prepared, but merely picking a pathway where the trees were far enough apart to allow the trucks to pass. Loads of 50,000 feet of lumber have repeatedly been moved on six trucks and recently 30,000 feet of green lumber, weighing over 60 tons, was hauled on three trucks up a 10 per cent grade. As illustrating the rapidity with which lumber can be handled by means of the specially designed trucks it may be cited that on one occasion 50,000 feet of lumber was unloaded from six trucks and the engine took on fuel and water for the return trip in a total elapsed period of 55 minutes.

In the Sierra Nevada Mountains there are employed in logging and lumbering some especially powerful tractors—some of them being of 110 horse power and able to haul 24,000 feet of green logs at each trip.



J.A.F. Cardiff.

## Casement Window Construction

GOOD FORM OF CONSTRUCTING CASEMENT WINDOWS OPENING OUTWARD IN BRICK WALLS — COMPLETE DETAILS SHOWN AND DESCRIBED

**T**HE illustration herewith shows a somewhat better form of construction than shown last month, for casement windows opening outward in brick walls. It has been designed with a view to show only a narrow margin of wood frame about the sashes and for this purpose the masonry opening is rebated to receive the bulky part of the frame.

The wall, which is sixteen inches in thickness, is of brick, and the opening is spanned on the top with a flat arch of brick ground to the proper radius. Back of this face arch a rowlock relieving arch is turned over a timber back lintel and the space between the top of the lintel and the soffit of the relieving arch is filled in with brick and is known as the "core" of the arch. When the head of a window extends nearly to the ceiling of the room it is necessary to provide a steel or cast iron lintel, instead of the timber lintel and relieving arch, to support the ends of the beams.

A stone sill is provided at the bottom of the opening, and is cut with a wash so as to pitch off water and at each end has raised stools or lugs to receive the brick imposts. It is tailed into the masonry four inches at each end, extends under the wooden sill at least two inches, and has a drip cut on the under-side of the projecting portion.

The window frame is gotten out of three-inch by three-inch stock, rebated for sash and ploughed for jamb and head linings. It is set in the masonry rebate and is anchored in place by means of galvanized wrought iron anchors of the form shown, screwed into the frame and built into the joints of brickwork.

The wall is furred on the inside with one-inch by two-inch strips set sixteen inches on centers, and to these strips are nailed grounds for base, trim, etc., and wood lath for plastering. When expanded metal or wire lath is used, the furring strips should be set twelve inches on center.

The trim is molded and worked out of one-inch by four-inch stock and has a plain back band, a face mold and a small wall mold. Wall molds should be small enough to be pliable so as to fit the unevenness of the finished plaster. The trim finishes on a molded stool, tongued into the wooden sill and finished with an apron. Where deep jambs occur on the inside of

windows, paneled head and jamb linings are preferable to the plain linings shown.

In important work it frequently happens that the window frames are not built in as the walls are carried up, because of the danger of damaging them by hauling in materials through the windows. In such cases rough timber bucks about two inches by four inches are built into the masonry and the frames are set and nailed to the bucks after all of the rough structural work of the building is completed. The heads and sills of the bucks are allowed to project three or four inches over the jamb bucks and the projecting portions are built into the masonry so as to securely anchor them in place.

The sashes are channeled at "X" so that any water, which may beat in between the sashes and frame during driving rain storms, will be caught and conveyed to the window sill. The lower rail of sash has a lip and undercut to prevent water from entering at that point.

The wooden sill should be well bedded in mortar and any spaces about frames should be wind-proofed by caulking with oakum or filling with mortar. The sizes given for sashes and frames are suitable only for ordinary windows. For larger windows, both frame and sash would have to be increased in size, or, if this would be objectionable, would have to be made of hardwood. In any case the stiles and rails of casement sashes have to be larger than for the sashes of a corresponding double hung window for the reason that there is a greater strain on them, owing to their being hinged on the side. For the same reason, it is preferable to bed the glass in putty and secure it in place with wood beads, rather than using putty only.

Fig. 165 is a vertical section showing the construction at the head of the window, Fig. 166 shows the jamb construction and Fig. 167 shows a detail of the sill.

✦

### How to Make a Rust Joint

Mix ten parts iron filings and three parts chloride of lime to a paste by means of water. Apply to the joint and clamp up. It will be solid in twelve hours.

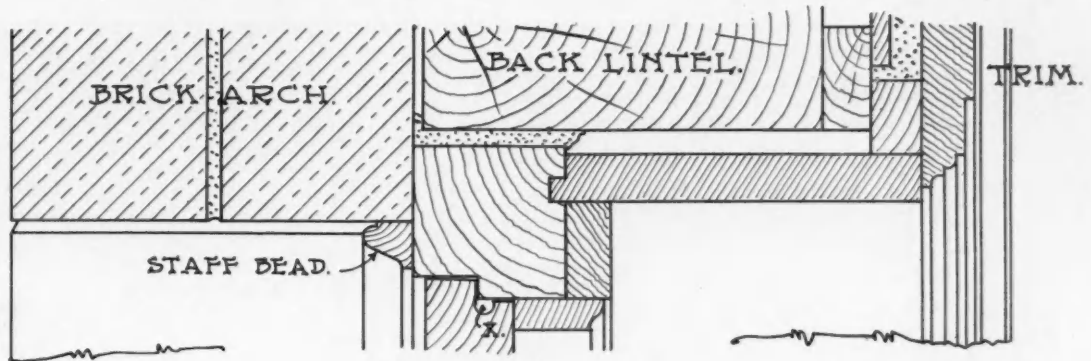


FIG. 165.

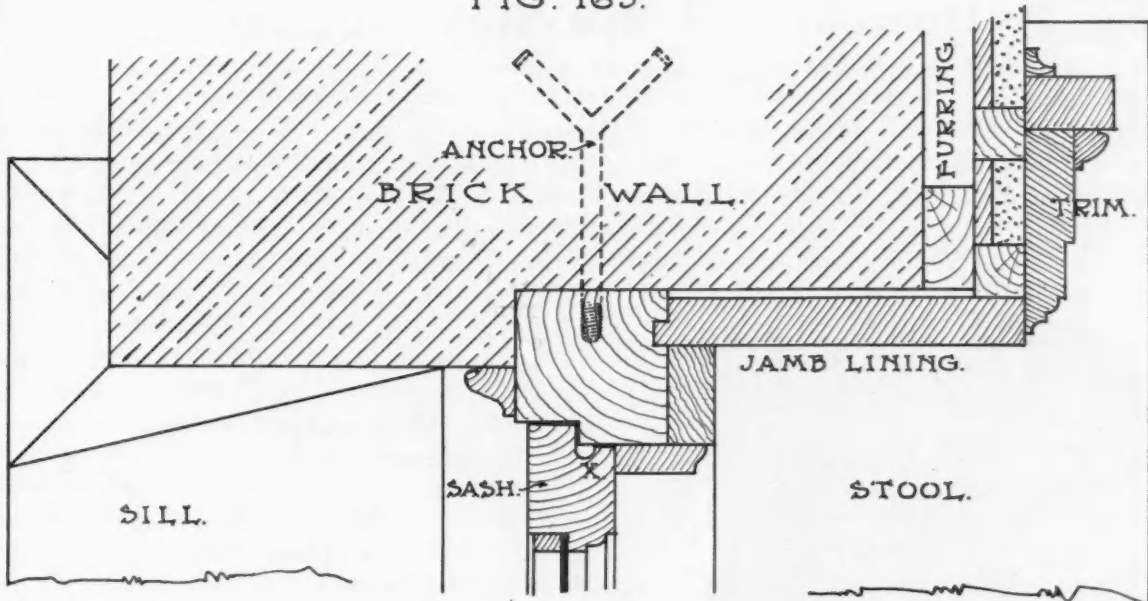


FIG. 166.

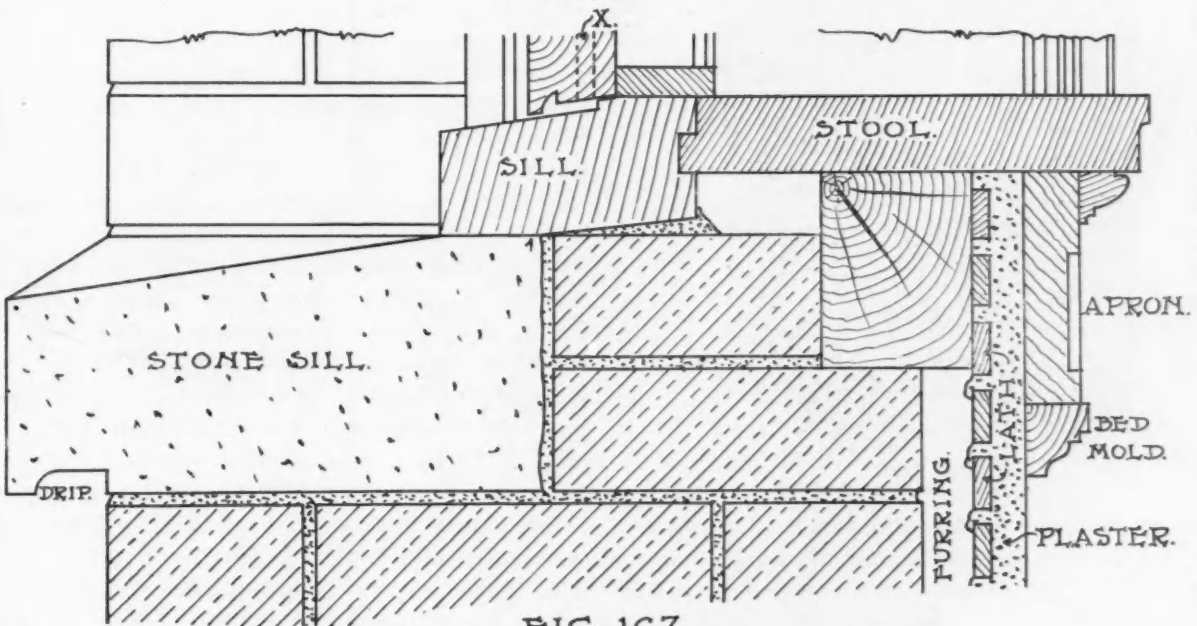
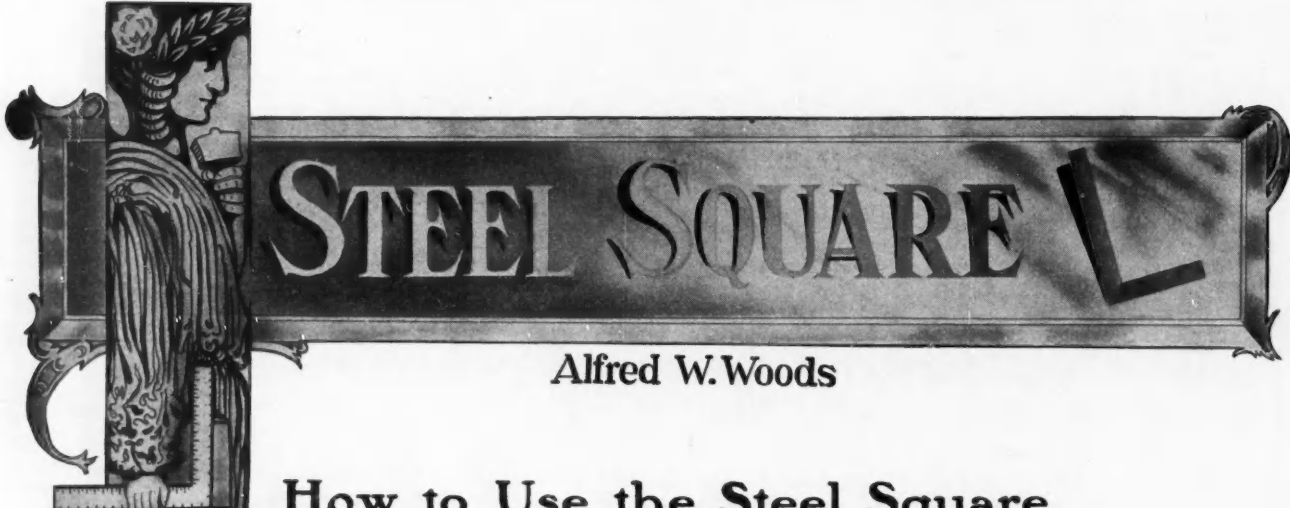


FIG. 167.

PLATE XXXVIII.

WINDOWS.



# STEEL SQUARE L

Alfred W. Woods

## How to Use the Steel Square

ILLUSTRATING ROOF LINES BY MEANS OF BLOCKS, REGULAR AND IRREGULAR IN SHAPE, ALSO A COMPARISON OF THE BEVEL AND STEEL SQUARE AS A FRAMING INSTRUMENT

**I**N OUR last article, we were talking about blocks, regular and irregular in shape, and the part their angles play in roof framing. The writer well remembers the time when he was trying to fix the position of the various rafters and cuts on his mind

layout of the diagram. From this we conceived the idea that the angles for any roof are contained in the cube, since any irregular block can be cut from the cube, or square block, it may also represent any roof. Therefore, a block with a square base represents a square cornered building. The height of the block being regulated by the rise given the roof. By its shape the imaginary rafters could be seen, the common rafter running diagonally across the face of the block, while the hip or valley resting at an imaginary line running diagonally through from a lower corner to an opposite upper corner. Figs. 72 and 73 of the July number, illustrates this clearer than can be described here. Before passing on, we have one more block we wish to show. Not that we would advise any of the readers to make one, but more to show what may be done. Here is one that we made a number of years ago. See Fig. 107. So impressed were we with this method of illustrating the figures to use on the common steel square that we thought it would be a good idea to show the length and cuts for the rafters on a cubical block. This block shows not only the length of the rafters for a one foot run, but it shows the lengths from one to twelve feet for the common rafter, also for the corresponding lengths of the hip or valley for the square cornered building, having a rise of one to twenty-four inches to the foot run of the common rafter. The illustration shows two faces of the block. The left face showing the pitch lines for the common rafter, radiating from the lower left-hand corner. On these lines, the pitches are designated by figures, also their lengths are given to the fourth decimal place, for a one foot run, which is convenient for finding the lengths of rafters for any run. The face of the block being three inches wide, the pitch lines intersect the opposite edge of the block one-fourth of an inch apart. These lines are then carried parallel across the face of the adjoining side and are divided in twelve spaces, each representing a foot in run, and in these spaces the lengths are given to

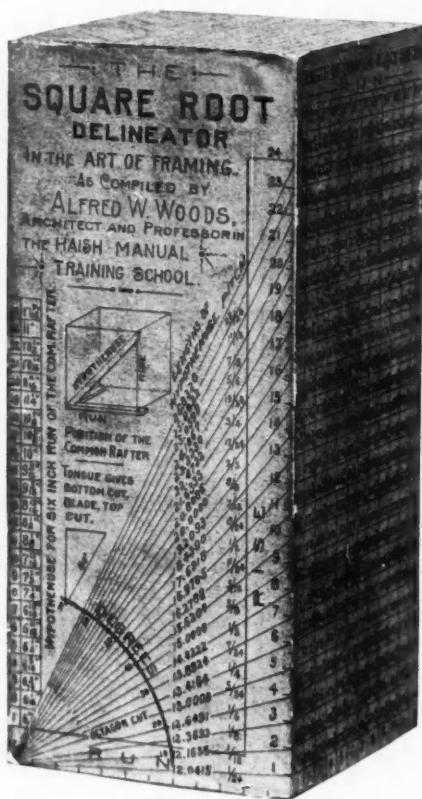


Fig. 107

and how he found the block system of much assistance, by first drawing a diagram of some particular roof. Then with shears trim to the outer lines and by folding on certain other lines, the whole would form a block with angles representing those of the desired roof; in other words, it would represent a miniature roof. If the parts failed to come together, then we knew at once that there was something wrong in the

the sixteenth part of an inch. These lengths may also represent inches in run and are read as such. Thus, for a 6 foot 6 inch run, read the length given in the sixth column twice. The first time for the feet in the run and the second time for the six remaining inches. If the run should be 6 feet 9 inches, then read the lengths given in the sixth and ninth column opposite the desired pitch, and measure off the two lengths on the timber, their combined lengths will be the correct

Cut on the length. It is more simple, however, to let 12 on the tongue represent the run and the length found in the first run opposite the pitch taken on the blade will give the desired cut. The blade giving the cut.

The opposite side of the block contains the corresponding table for the hip. Also a table for finding decimal equivalents in common fractions to the sixteenth part of an inch. One end of this block contains

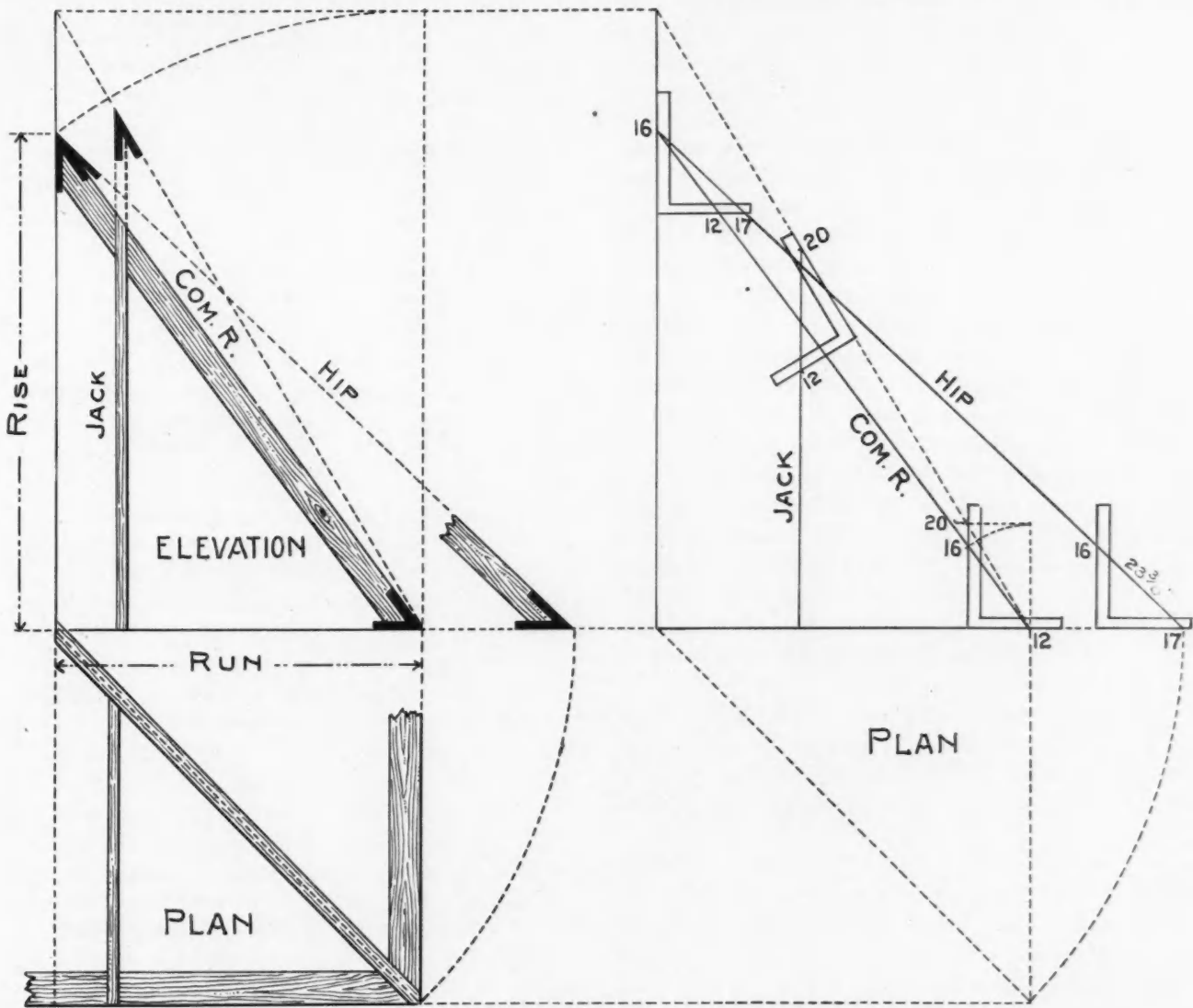


FIG. 108.

FIG. 109.

length of the rafter. These lengths given on the block may also be utilized for finding the lengths of the jack rafters as follows:

If the jacks are placed on 16-inch centers, then double the lengths found in the eighth run, or take the lengths found in any two or more runs, whose sum is equal to the desired spacing of the jack (say, 16 inches), as 10 and 6, 9 and 7, etc. Now for the cuts. The run and rise as shown on the left face taken on the steel square, will give the seat and plumb cuts. For the side cut of the jack, take any run and the length given in the said run opposite the desired rise.

the lengths of the corresponding octagon hip expressed decimally for a one foot run, as compared with that of the common rafter, while the opposite end contains the instructions of how to apply the figures given to the common steel square for the cuts and bevels. Thus, it will be seen that this little block, 3 by 3 by 7 inches, contains a whole volume of practical information. However, this does not show the rafters in position for their lengths, cuts and bevels, but instead, it gives the figures to use direct on the steel square, to produce them. Knowing that the proportions given will give correct results, it is not necessary that the

workman should have a diagram to work from, as the rafters will fit to their respective places.

The books published on framing prior to 25 or 30 years ago, rarely mentioned the steel square, as a general framing tool, but depended wholly on geometrical diagrams for arriving at the angles and to these, they advocated the use of a bevel square to set to the angles of the diagram and then placing the bevel on the timber to obtain the cuts and bevels. This being the case, this system has become so set that we dare say the greater part of framing to this day is done by first laying out a scale diagram and with the bevel square obtain the various cuts required in the structure. Though the operator may know that the result is not absolutely correct, and in most cases only approximately so, it is dismissed with the idle thought that it is near enough and good enough for anybody. But the army of young mechanics who are coming on to the field of action are not going to be so easily satisfied. They will want to know the cause and effect. The hand-me-down rules of diagrams for simple hip and valley roofs with bevel square applications that are now so largely resorted to, will become a thing of the past and the steel square as an all-round calculating instrument as applied to the fundamental laws of angles (degrees) will never be supplanted by any other instrument. However, we realize that this change cannot come about within a few weeks, or months, or even years, but it is coming, and coming to stay. We have thought perhaps, it would be well to show comparative illustrations, showing both methods. For our subject, we will take a 16-inch rise to the foot run.

Fig. 108 shows a diagram for the bevel square method. For this, it is necessary to lay out the diagram to a scale from which to adjust the bevel to get the angles to obtain the cuts and also to find the length of the rafters.

Fig. 109 is a repetition of Fig. 108, but instead of the bevel square, the steel square is shown instead to obtain the cuts. Knowing the figures to use on the steel square, it is not necessary to waste time in preparing a diagram as the knowing mechanic can manipulate the steel square, obtaining all of the lengths, cuts and bevels contained in the most difficult roof. As for the making of diagrams for roof framing, there are many ways of illustrating the same thing, or principle, but it is not the intention of these articles to present them further than in comparison with the steel square. Since it is the standard tool used anyway for obtaining the lengths of the rafters, and the more simple cuts, why not learn the principles involved so as to be able to apply it to any roof regardless of the pitch, size or shape of the building? Referring to the principles involved, see Figs. 65 and 66 of the June, 1906, number. However, these illustrations are for a different pitch, but the same rule applies in all square cornered buildings.

### The Sin of the Coppenter Man

The coppenter man said a wicked word,  
When he hitted his thumb one day,  
En I know what it was, because I heard,  
En it's somethin' I dassent say.

He growed us a house with rooms inside it,  
En the rooms is full of floors;  
It's my papa's house, en when he buyed it,  
It was nothin' but just outdoors.

En they planted stones in a hole for seeds,  
En that's how the house began,  
But I bet the stones would have just growed weeds,  
Except for the coppenter man.

En the coppenter man took a board en said,  
He'd skin it en make some curls,  
En I hung 'em onto my ears en head,  
En they made me look like girls.

En he squinted along one side, he did,  
En he squinted the other side twice,  
En then he told me, "You squint it, kid,"  
'Cause the coppenter man's reel nice.

But the coppenter man said a wicked word,  
When he hitted his thumb that day;  
He said it out loud, too, 'cause I heard,  
En it's somethin' I dassent say.

En the coppenter man said it wasn't bad,  
When you hitted your thumb, kerspat!  
En there'd be no coppenter men to be had,  
If it wasn't for words like that.

En if there wasn't no coppenter men,  
We'd all have to live in the barn,  
'Cause there wouldn't be any houses, en then,  
Then what would we do—by darn!

\* \* \* \* \*

En the coppenter man said a wicked word,  
When he hitted his thumb one day,  
En I know what it was, because I heard,  
En it's somethin' I dassent say!

—Edmund Vance Cooke in *Woman's Home Companion for March*.



### Objectionable Advertising

"I want to advertise for a man," said the lady, approaching the want advertisement counter in the daily newspaper office. "I want to get a man to carry up coal in the winter, keep up the fires, shovel snow, mow the lawn in the summer, also sprinkle it, tend the flowers, mind the children, wash dishes, sweep the front porch, run errands and all that kind of work—in short, I want a man who will always be around the place and can be called upon for any kind of hard work. He must be sober and reliable, of good appearance, not over thirty"—

"Pardon, madam," said the clerk; "we can not accept matrimonial advertisements."—*Judge*.





#### Important Notice

When your subscription expires, renew at once, using the blank enclosed in your final copy. If you are a Charter Subscriber, it expires with this issue, and your renewal must reach us before March 25 to avoid missing the next number. Use P. O. or Express Money Order if possible, but bills or 2-cent stamps may be sent at our risk.

**W**ITH this issue the AMERICAN CARPENTER AND BUILDER is two years old. Since its first issue, April, 1905, it has advanced continuously, until it is now acknowledged to be "The World's Greatest Building Paper." This number is more than twice as large as that first one, and its contents and scope have been enlarged beyond belief.

The greater portion of its tremendous success has been due to its loyal Charter Members. Eighteen thousand of them stood valiantly by their magazine last year, renewing their subscriptions promptly, and thus materially aiding in the unparalleled progress of their favorite paper. If it had not been for their gallant support not half as much could have been accomplished.

Now a second year has rolled around. We at the home office have been laboring every month to get out a magazine that would give the thousands of members of our "great family" of subscribers great pleasure and valuable assistance, and now it is again the turn of our "Charter Subscribers" to come forward with the renewal of their subscriptions to their own magazine.

#### Second Anniversary Number

You will all remember what a beautiful number we got out last year to celebrate our first anniversary. We took great pains with that cover. It was printed in three colors and gold and was certainly very elaborate. This year we have hit upon something entirely different from any of those which have gone before. The artists and engravers have been working on it for two months. We thought at first we would tell you all about it, but we have decided to make it a secret until next month and surprise you.

This April number is also to be a "Builders' Edition." So many of the members of our great family are builders that we are going to dedicate a special issue to them, and the month of April seems a most appropriate time. Our editors are working on appropriate matter and illustrations, designed to be of particular interest to the builder. They have all been cautioned to make these articles not only interesting, but particularly instructive.

We almost forgot to mention our new department headings. We have been trying for six months to find an artist who could design headings that would be appropriate and artistic. At last we found him, and

the finished drawings were delivered only a week or so ago. They are the finest we have ever had—and you know we have had some nice ones in the past.

#### Contents of Volume III

In just a few words we want to tell you something about our plans for next year. While Volume II contained a lot more reading matter than Volume I, we have arranged to still further increase the quantity the coming year.

You have all enjoyed Mr. Waldon Fawcett's nicely illustrated articles that have appeared from time to time, particularly the one in January on "The Giant Log Rafts of the Pacific Coast." Mr. Fawcett has several more in preparation of equal interest, all of which will be illustrated with the excellent photographs which he knows so well how to take.

Mr. George E. Holt, our special correspondent, who is traveling around the world on his wheel, will probably be away for at least twelve months yet, and will continue to send us his impressions of the architecture and building conditions in foreign countries. These articles will also be fully illustrated with photographs taken expressly for the purpose by Mr. Holt.

These are only a few of the good things in store for Volume III. The regular departments are improving right along, and the aim will be to make them more and more helpful. The coming year will surely demonstrate that the AMERICAN CARPENTER AND BUILDER is indeed "The World's Greatest Building Paper."

#### Use the Subscription Blank at Once

In order to aid our subscribers in sending in their subscriptions promptly, so that there will be no possibility of their missing the April issue, which will undoubtedly be one of the most important of the year, we are enclosing a subscription blank in the magazine of every subscriber whose subscription expires with this number. It is important that this should be attended to at once, as subscribers who fail to get their renewals in before March 25 run great chances of missing the big "Second Anniversary Number and Builders' Edition."

Charter Members in particular should not overlook this warning. When we count up on April 1 we hope there won't be a single one missing from the "family circle." We appreciate your loyalty of the past and we now feel sure we can count on you for the future.



# PRACTICAL CARPENTRY

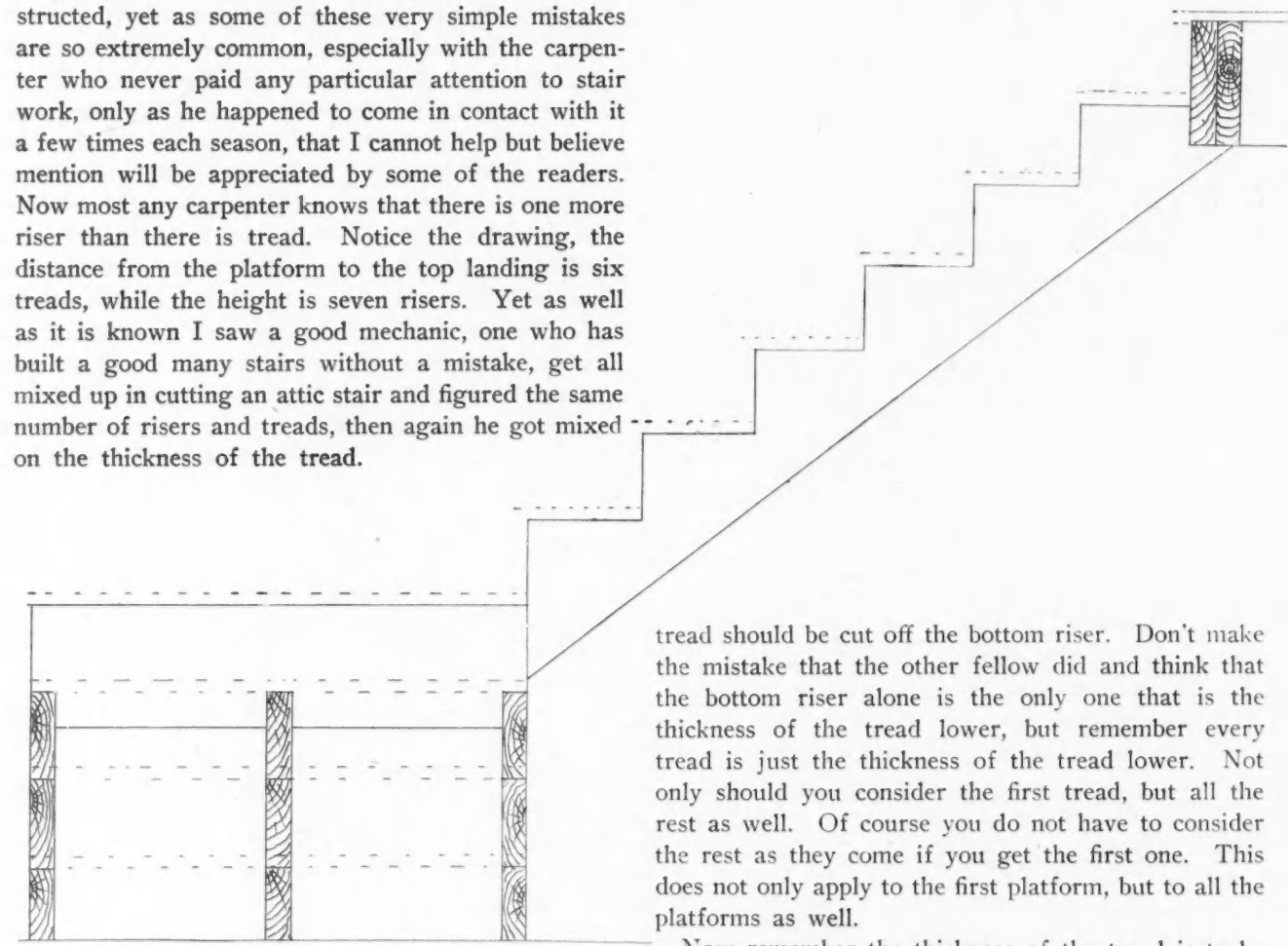
## Stair Building

MISTAKES COMMONLY MADE IN THE CONSTRUCTION OF STAIRS AND HOW TO AVOID THEM—PRINCIPLES TO BE FOLLOWED

By Dwight L. Stoddard

**I**N WRITING this brief article on stairs it is not at all my intention to go deeply into the subject that has been so well handled by others in this valuable paper. Nor do I wish to simply tell of the little mistakes made on the last two stairs I saw constructed, yet as some of these very simple mistakes are so extremely common, especially with the carpenter who never paid any particular attention to stair work, only as he happened to come in contact with it a few times each season, that I cannot help but believe mention will be appreciated by some of the readers. Now most any carpenter knows that there is one more riser than there is tread. Notice the drawing, the distance from the platform to the top landing is six treads, while the height is seven risers. Yet as well as it is known I saw a good mechanic, one who has built a good many stairs without a mistake, get all mixed up in cutting an attic stair and figured the same number of risers and treads, then again he got mixed on the thickness of the tread.

you figure the number of risers, that the distance from the starting of the first tread to the top header is just one tread less than the risers just found, and when the risers are all laid off, the thickness of the



tread should be cut off the bottom riser. Don't make the mistake that the other fellow did and think that the bottom riser alone is the only one that is the thickness of the tread lower, but remember every tread is just the thickness of the tread lower. Not only should you consider the first tread, but all the rest as well. Of course you do not have to consider the rest as they come if you get the first one. This does not only apply to the first platform, but to all the platforms as well.

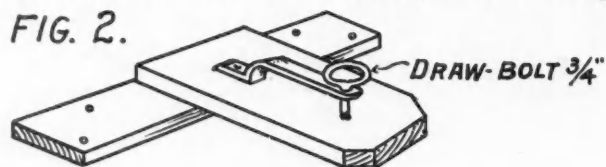
Now even another better mechanic, one that has built thousands of stairs, nailed his platform the thickness of the tread too high. These little mistakes are entirely too common and should be better understood by the average carpenter.

Remember in getting the height from the top of the first floor to the top of the second floor, that after

Now remember the thickness of the tread is to be considered when starting to build on the top of the first floor, while starting to build from the joist the difference between the thickness of the floor and tread should be considered. I have an idea a good many readers will say, don't you suppose we knew this? My reply is that I truly hope you do, yet as these little mistakes are made almost daily, it is very sure many do not fully understand it, and as they are often

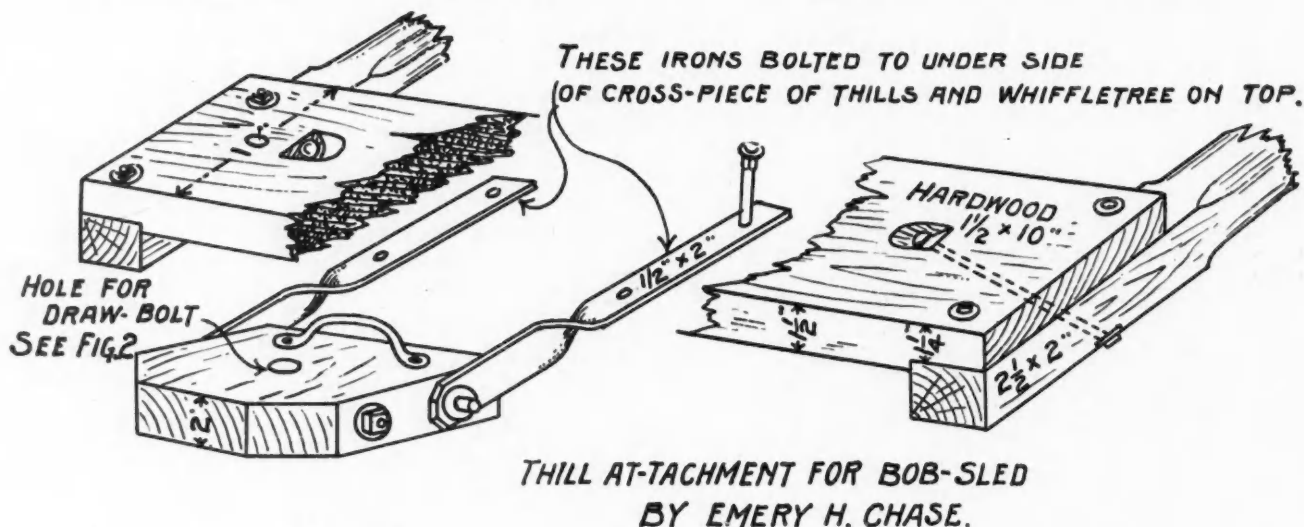


of 4 by 6 hardwood placed edgewise to the wear; and for the lower or long portion, a piece should be selected that is slightly cross-grained, and care should be taken that the wood-fiber points backward and downward; it will then wear smoothly and last a long



**FIG. 2.**  
HAMMER-STRAP ARRANGEMENT FOR NOSE OF BOB-SLED; TO ENABLE THE THE USE OF THILL ATTACHMENT SEE FIG 3.

time. In the first attempt at making these sleds, the runner was sawed whole from one piece, but this caused the wood fiber at the curve to wear roughly;



**FIG. 3.**

and the runner was nearly worn out in three months.

An ordinary carpenter can build one sled in a day, aside from the thill attachment.

The illustrations will show the sizes of some of the materials used. Where several of these sleds are used one pair of thills may serve for several, as the thill attachment facilitates quick change from one sled to another by simply pulling the draw-pin. One sled could thus be unloaded while others are being hauled to place.

### The Cement Shingle

Cement shingles are only slightly heavier than slate and not much more expensive than the best wood shingles. They are practically indestructible, are much cheaper in the end than any other material. These shingles are made in a great variety of designs and are reinforced with metal skeletons, which hold the cement together, and terminate in loops at the edges for nailing to the roof. They are practically everlasting, as moisture, the cause of decay, is the

chemical agent in the process of hardening cement. When properly mixed and tempered the cement shingles become more durable the more they are exposed to the weather. Cement roofing is growing in favor. That material is cheaper than slate and tiling and vastly more enduring than wood.

### Had Read Them All

They had just met, and conversation was somewhat fitful. Finally, he decided to guide it into literary channels, where he was more at home, and turning to his companion, asked:

"Are you fond of literature?"

"Passionately," she replied. "I love books dearly."

"Then you must admire Sir Walter Scott," he exclaimed, with sudden animation. "Is not his 'Lady

of the Lake' exquisite in its flowing grace and poetic imagery? Is it not——"

"It is perfectly lovely," she assented, clasping her hands in ecstasy. "I suppose I have read it a dozen times."

"And Scott's 'Marmion,'" he continued, "with its rugged simplicity and marvelous description—one can almost smell the heather on the heath while perusing its splendid pages."

"It is perfectly grand," she murmured.

"And Scott's 'Peveril of the Peak' and his noble 'Bride of Lammermoor'—where in the English language will you find anything more heroic than his grand auld Scottish characters and his graphic, forceful pictures of feudal times and customs. You like them, I am sure."

"I just dote upon them," she replied.

"And Scott's Emulsion," he continued hastily, for a faint suspicion was beginning to dawn upon him.

"I think," she interrupted, rashly, "that it's the best thing he ever wrote."—*Office Topics.*

# Cement Street Construction

GIVING A COMPLETE AND PRACTICAL METHOD OF USING CEMENT FOR STREET PAVING AND GUTTER CONSTRUCTION—  
PROPER PROPORTIONS OF THE VARIOUS MATERIALS TO USE IN THE MIXTURE

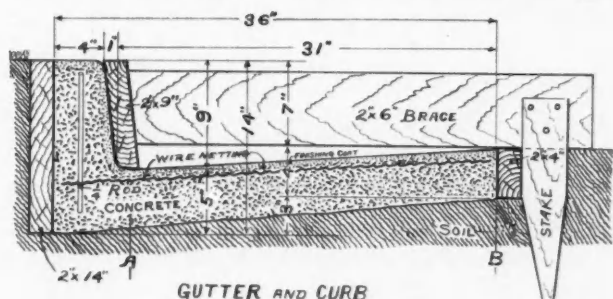
By Fred W. Hagloch

**U**NDER this heading we refer to street paving, curbing and gutters.

The first of these required is the curb, in fact, no street improvement adds more to the appearance of a street than does a combined gutter and curb, although its cost is much less than the paving.

We do not deem it necessary to illustrate the various forms and styles now in vogue as the type here given is the most practical, neatest and cheapest yet devised, and is readily adapted to the narrowest residence street as well as the broadest thoroughfare and can be constructed to withstand the severest usage of the heaviest traffic of our larger cities.

The dimensions given in the illustration are designed



to meet the requirements of the average residence and business streets, and should a high curb be required to meet the natural conditions the 9-inch curb height may be increased to 24 inches without changing any other dimensions except the thickness of the curb be increased sufficiently to maintain the width of 4 inches at the top, thus the batter of one inch to every 9 inches rise would be two inches where natural condition require a curb 18 inches high and the total breadth of concrete be increased from 36 to 37 inches.

Where natural soil is solid the 2 by 14-inch plank is unnecessary, although its use is always a saving of concrete.

Usually this type of gutter and curb needs no reinforcement, but for heavy usage these same dimensions may be kept and the strength increased by the use of wire netting and rods as shown, besides gutters should have few joints, viz.: be made in as long lengths as possible; for example, a combined gutter and curb, of dimensions shown, without reinforcements, should be made in slabs not exceeding five feet in length, but if reinforced with poultry netting 30 inches wide and twelve feet long the slab may be sixteen feet long, as it is not necessary that two feet at each end be reinforced.

Perhaps the best nettings for this purpose is the 4-inch mesh made of No. 12 or 14 wire.

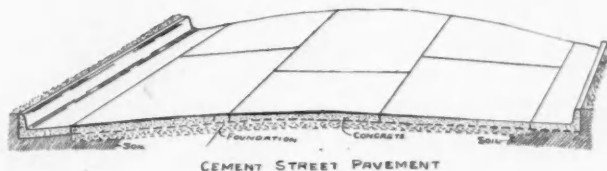
This reinforcement is placed one inch below the top surface, as at this point it offers the greatest resistance against the upheaval of frost and will prevent

cracks, although it must be remembered that this does not prevent the frost from lifting it, but only prevents its breaking, and long blocks are often very uneven at the joint ends after the frost has affected them, as blocks never return to the former position after the frost has moved them.

The round rod reinforcement is to resist both pressure from freezing the soil behind the curb and any pressure brought upon its face, such as a wagon backing against it; therefore, these rods are placed in the center, and used only when curbs are higher than ordinary or an unusual amount of side pressure is to be brought upon them. Example for curbs two feet high, use three eight-inch rods 20 inches long, spaced 16 inches apart for ordinary purposes, and spaced 8 inches apart for heavy pressure.

This curb and gutter needs no foundation except in very spongy clay soil, when a small drain tile imbedded in 6 or 8 inches of cinders or broken stone, constitutes the foundation; in every instance the drain tile must have an outlet at its lowest point, and when this is impossible it should be omitted entirely, as space for water to accumulate and freeze is more injurious than any other conditions which are liable to exist.

As street paving must be supported on a solid foundation and the gutter and curb do not necessarily require this, it is often cheaper to make a very wide gutter (say six feet) and strengthen same with wire netting: Example, a street forty feet from curb to curb, with six feet gutter on each side, requires only



twenty-eight feet of paving, and I recall of a residence street but thirty feet from curb to curb with five foot gutters and twenty foot brick paving, which makes a very neat street, at a cost of \$1.17 per lineal foot less than if the old fashioned straight curb and thirty feet of brick paving had been used.

In widening gutters we usually increase the thickness of the concrete one inch to every foot added to the width, and always place the netting one inch below the top surface.

The materials used and methods of making curbs and gutters is easily managed, but requires careful attention, being simple, but must be properly done with proper materials.

The three inches of concrete under the wire netting should consist of one part Portland cement, two parts sharp sand, two parts pea gravel and four parts gravel

of one inch diameter, thus making a mixture of one part cement to eight parts sand and aggregates, after this has been mixed to the consistency of a stiff grout, it is tamped in position between the 2 by 14 and 2 by 4 timbers to a depth of three inches at the street side and four inches on the curb side, or at the points indicated by A as four inches and B as three inches thick. The netting being placed we cover with same composition to a depth of one-half inch and add a finishing coat (made of two parts sand to one part cement) from A to B, and then place the 2 by 9-inch plank and brace in position, filling the curb with both mixtures at the same time. The rods being driven in position when the curb is about half full. The top being finished same as gutter and the sidewalk edger being used for rounding the corner.

Use less water on the curb than on the bottom, thus with firm tamping the 2 by 9-inch plank may be immediately removed to the next section.

The ends or joints of gutters and curbs (gutter-curb) are separated same as blocks in sidewalks.

After the cement has set eight to twelve hours, cover with soil or sand to the depth of two to six inches and keep moist for five or six days, when all wood framing may be removed.

Street paving with concrete has not become as popular as curbs and gutters, as brick has proved a good article, and asphalt being superior is backed by sufficient capital to destine it to lead, while concrete pavement, which can be successfully handled by contractors of small as well as large capital, is given little credit in our larger cities, but always used for foundation for the other materials. It has been fully demonstrated that concrete pavement, if properly constructed, is equal to any other material.

The foundation is largely governed by the nature of the soil and the city engineer usually specifies the kind required. However, in sandy soil no foundation is needed, provided the soil is in its natural state and well tamped or rolled. In clay soils a foundation 6 or 8 inches deep adds much to the durability of a pavement.

The pavement should be of the same composition as the gutters and made in the same way in blocks about eight by twelve feet, reinforced with netting about six by ten feet; all blocks shall be separated same as sidewalk blocks and gutter curbs.

The top coat must be rough, therefore we use a different composition, of which any of the following will prove satisfactory.

One part cement, two parts sharp sand, floated with wood float and then covered with locomotive cinders and tamped.

Another good surface, but fast wearing, is two parts cement, four parts sand and three parts coarse saw dust; this makes a noiseless pavement, but will soon wear down in a busy street.

Perhaps the best surface is made of one part Port-

land cement, one part sharp sand mixed dry, then add one part granulated furnace slag, and proceed in the usual manner; the slag being porous would consume much of the cement if all mixed at once, as is done in other concrete.

The thickness of concrete depends upon the size of block; for blocks containing 96 square feet, as mentioned above, the concrete should be 4 inches thick if reinforced, and 7 inches thick if no reinforcement is used.

The wearing surface which should not be measured with the concrete is made of such thickness as required, in residence streets one inch is sufficient, while in commercial streets not less than two inches should be used, and if noiseless pavement is made this should be increased at least one-half.

In the illustration, showing pavement from curb to curb, it will be noticed that no foundation is shown under gutter curb, which practical tests the past four years have proven to be sufficient; the blocks of pavement are placed lengthwise across the street, thus making less joints parallel with the street.

The raise from the gutter varies and with curb nine inches high as shown the pavement of a forty-foot street should be on a level with the tops of curb, but local conditions may make this impractical; however, the best appearance is obtained by adhering to suggestion as follows:

Streets thirty-six feet from curb to curb have curb 9 inches high and gutter two inches deep, thus allowing a rise of about one-half inch to the foot from the end of gutter to the center of street, the rise being slightly oval, which is made with a wood straight edge (cut to make the required curve) used in forming the surface after same has been tamped or rolled.

#### Engine Bed of Concrete

To the Editor:

Edmonds, Wash.

I would like to have you give me reliable information how to build an engine bed of concrete and give the best method and description thereof. It is to be 16 feet long, 4 feet wide and 4 or 5 feet high. It is to be built on the sea shore. It is all sand and we intend to drive piles down in the sand and cut them off and start the concrete. The engine is for a saw mill and is 300 horse power. Please state the amount of cement, sand and gravel to use. C. A. BECKLAND.

Answer: In making foundations on sand it is necessary to compact the sand, therefore tapering piles (spiling) should be used. A piling 20 feet long should be 16 inches in diameter at the top and ten inches in diameter near the bottom. For an engine bed 300 horse power, drive three rows of piling, all to be two feet from center to center, thus requiring 27 piling. The tops to be five feet below the bottom of the iron engine base. Then excavate and crib one foot below the top of the piling six feet wide and eighteen feet long. Fill to a depth of two feet before tapering (drawing in) with concrete and finish at the top with a flat surface four by sixteen feet, just one-half lower than required. Make a wood template (frame con-

taining all anchor bolt holes) and place all bolts therein, allowing them to extend four inches above the template. Set this template, which is one inch thick, just one-half inch lower than you wish to set the engine. The anchor bolts should be five feet long and one-fourth inch less in diameter than the holes in the iron engine base. Thus the anchor bolts will extend four and one-half feet into the concrete. Provide anchor plates six inches square and one-half inch thick to rest on the heads of the bolts (see that they are not lifted but that the weight upon them holds the bolts snug and tight). You are now ready to place your concrete, which is made of one part Portland cement, three parts sand and five parts broken stone or gravel one to two inch diameters, and three parts stone, weighing from four to ten pounds each, the latter being wetted and added after the concrete is in

the pit. When filled about six inches above anchor plates, lay three-fourths rods 8-inch centers both lengthwise and crosswise and add another 12 inches of concrete and repeat the steel rods. Then finish the foundation. When set, remove the template, keep damp for ten days. Then you place the engine, which is leveled by means of small hardwood wedges which remain under the engine, and all space (the half-inch above referred to) is filled by pouring a thin grouting made of one part Portland cement and two parts sand, which after six days setting will be ready for service.

Driving 60 penny nails half their depth into and around the top of the piling before adding concrete, makes an excellent tying or bonding between the pile and the concrete, provided no less than a dozen nails are used on each pile.

## Practical and Impractical Window Construction

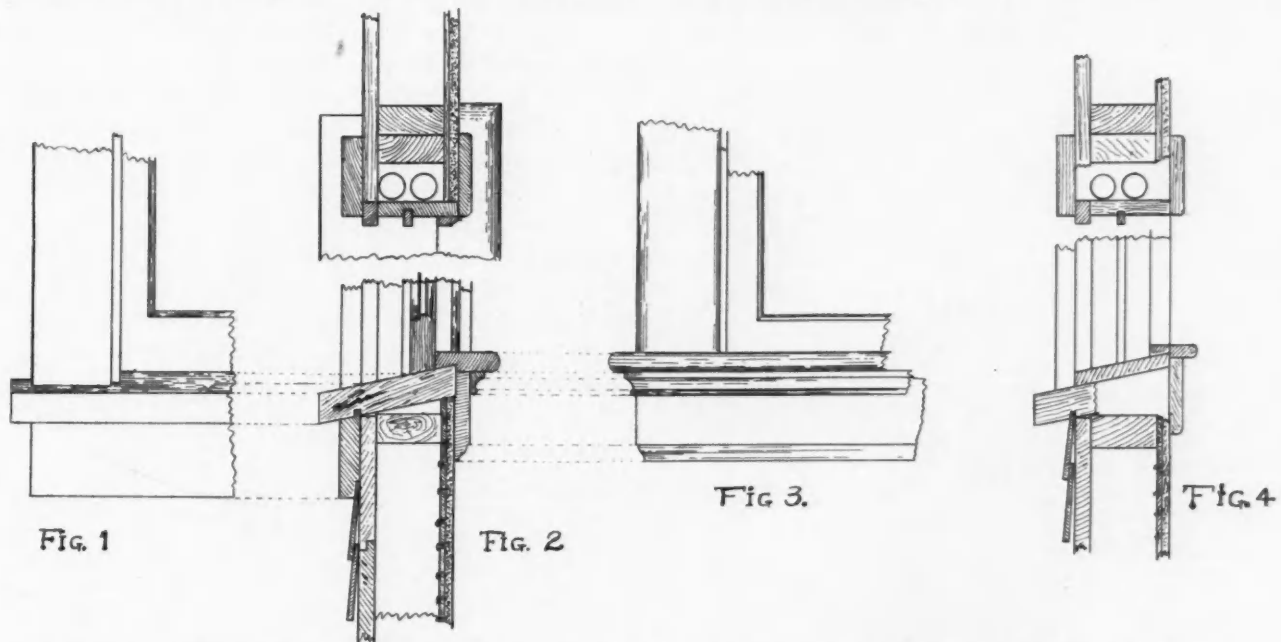
SHOWING THE DEFECTS FOUND IN THE METHOD OF CONSTRUCTING WINDOW FRAMES—SEVERAL PRACTICAL REMEDIES SUGGESTED

By G. J. Shuster

**A**T FIG. 2 is shown a sound and substantial method of constructing sills in window frames for studded buildings. It will be noticed by referring to Fig. 2 no sub sill is used which, in the opinion of the writer, isn't necessary where no shutters are used, as nowadays screens and storm windows are made in one piece and reach across window

to sill they have a tendency to push it away from the sub sill, and the sub sill being only  $\frac{7}{8}$  of an inch thick, usually will cut and turn up and separate from the sill and leave a bad joint where wind and rain will get through, whereas if sill was made of 2 by 8 no such defect would occur.

Another objection against the sub sill is that where



frame, hence it is not necessary to have a sub sill for them to shut against as in case of shutters or blinds. One objection to the sub sill is when it is used 2 by 4 or 2 by 6 are used for window sill, and while the sub sill is usually gained into the jambs  $\frac{1}{4}$  inch to 5-16ths of an inch, the window sill is then dropped in between jambs and no gains cut in jamb to receive and support it. When casings are fit snugly

the window stool fits down on the sub sill, it cannot be lightly nailed to it as the sub sill is only  $\frac{7}{8}$  of an inch thick. It does not afford solid nailing as is the case where 2 by 8 sill is used and the window stool will not remain tight to it, thereby leaving a place where water will some time get through during a rain storm. Another objection is that when a sub sill is used and the window sill is 2 by 4 or 2 by 6 this

will leave an open space between the top of header and sub sill 3 inches or 4 inches and usually the carpenter neglects to fill this in so that the lather can lath it. Consequently the result is an impractical job, as shown at Fig. 4, which leaves a place for the cold wind to get in, which is a very poor job and should be discouraged, as the plastering should fit up tightly against the frame all the way round on all exterior openings. Where a good job is desired it is best to construct the frame with an open piece, as shown at Fig. 2; this should be connected to sill with a tongue and grooved joint and lower edge rabbeted to receive the siding. The reason for using an apron piece is that when same is tightly fitted up against sill and properly nailed to it and to studding, it will act as a firm support to sill and keep it up tight against casing and prevent the sill from caving in the center as it often does where no apron piece is used.

A glance at Fig. 4 where no apron piece is used will show that the sill has practically no support under casing and quite often, as before stated, when casings are fitted down tight to sill they have a tendency to push it away from the sub sill, especially when aided by the workmen who occasionally stand on the outer edge of the sill while constructing the building.

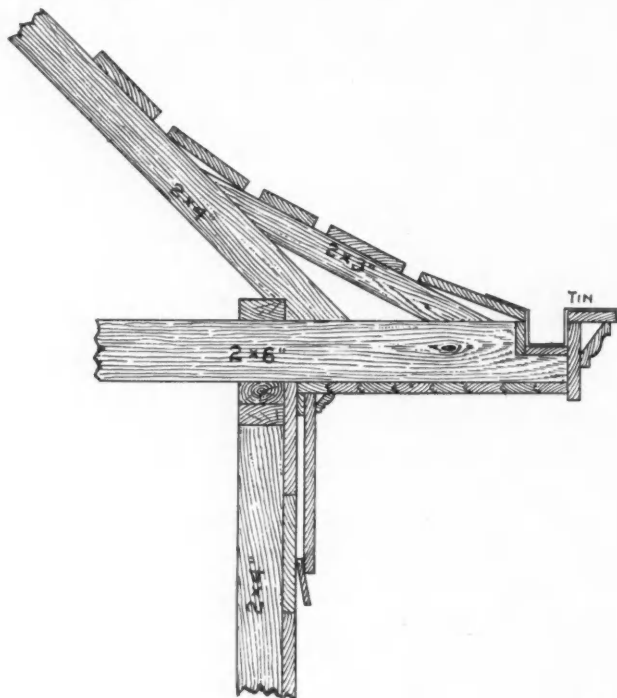
In connection the above I wish to say if sills are constructed as at Fig. 2 and the work properly done, no such defects will occur as pointed out in Fig. 4, but sills will remain straight and stay up tight against the end of the casings, which is not often the case where no apron piece is used. It is also a poor practice to cut off the jamb flush with bottom of sill before setting frame, as by so doing most of the strength gained by housing the sill to jamb is lost. The jamb should be left  $\frac{3}{8}$  of inch or  $\frac{1}{2}$  inch below bottom of sill and this amount should be removed from header.

## Constructing Cornice Details

AN EASY METHOD ILLUSTRATED OF CONSTRUCTING A CORNICE AND GUTTER WHERE THE BOTTOM OF THE ROOF IS CONCAVED

By I. P. Hicks

THE following illustration represents a very easy method of constructing a cornice and gutter where the bottom of the roof is concave. Many will put on the rafters to form the concave portion of the roof, but this is not at all necessary. The concave portion can be made much easier and quicker by cutting in 2 by 3 pieces as shown in the sketch



and placing the sheathing boards so that the center of the boards will break over the joints of the 2 by 3 where it connects with the rafters and lookouts. Then when the shingles are put on the roof they

will have just as nice a curve as can be made in any way and at much less cost.

It takes much less time to put in these 2 by 3 pieces than to work out the circular pieces, and then the trouble with hips is much less with the straight pieces than it is where hips have to be worked to the circular form. The straight pieces for the hips have to be a little longer than those on the common rafter, but this is very easily found in more ways than one. A little sketch will show it or it could be figured out mathematically, and the inexperienced in mathematical calculations or drafting can find it by putting a straight edge along the top end of the 2 by 3's, extending it to where it will strike the hip and then they can measure from this point to where the 2 by 3 strikes the lookout on the hip. When these pieces are put in right they work just as good on hips or in valleys as they do on the common rafters.



### A Hopeful Outcome

William Allen White says that the most amusing "personal" note that ever he came across in a country newspaper was that which last year caught his eye while reading a Wisconsin paper. The item was something like this:

"Niels Andersen met with a painful accident last week, a fish-hook becoming entangled in his eye. Niels is being attended by Dr. Phil Morton, who says his eye will come out all right."—*Harper's Weekly*.



Don't put on too much fancy shading and lettering on shop drawings, but strive to make good, plain, clear drawings, with plain lettering in all cases.





## The Making of Store Shelving

BEST METHOD OF MAKING SHELVING WHERE KNOTTY WOOD MUST BE USED—GREAT SAVING AND BETTER RESULTS OBTAINED

**E**VERY planing mill and practically every carpenter has at some time or other a job of making and putting up shelving, quite frequently in a store, sometimes for offices, libraries, and for one purpose and another, and sometimes there is special variation to the work. But generally speaking, shelving is shelving, and there are certain features of the work that apply to practically all occasions.

One problem these days that bobs up any time when an order for shelving comes along of any magnitude is that of getting enough good stock to make it without having to get stock that will cost so much that it would cause trouble. In the old days the shelving proposition was easy enough, because there was plenty of nice, wide, white pine, poplar and other shelving wood to be had reasonably. But these days an order for either white pine or poplar shelving calling for No. 1 stock of any material width is enough to set a man thinking. Clear pine boards are practically out of sight in price, and if specifications call for white pine shelving, there is, of course, a natural disposition to want to put in some rough stock, that is, stock with knots in it, to use in fact, No. 3, or even lower grade stuff. But, suppose you want to use that kind of stock and it is practically the only kind you have, and yet the man that wants the shelving won't accept knots and knot holes in the work. What are you going to do about it?

Here's what you can do, and it is recommended by a man who has had some experience with this very problem, and has had in time to rework stock on account of the knots. Take your No. 3 or other low grade pine, rip it into strips of whatever width will fit your work best, say 2, 4 and 6 inches for example. Run these strips through your sticker or some other machine to joint them, make a small V tongue and groove, or something of the kind so as to give a good glue joint, cut the knots out of your strips and then build up your shelving plank out of these strips, letting the end joints come where they will. You can do this by having a standard of width for your strips and then you can cut out the knots and use the clear sections in the strips, no matter how

many strips you use to build up the width of your shelving. After your width is built up and the glue is set, you can send your stock through the planer and start it through the mill in the regular way, just as if it were clear wide pine, which it is, clear wide pine made of strips. To do this costs something, of course, but if gone about in the right manner, it should not cost anything like the difference in price between rough narrow stock and wide clear stock in white pine. One should be able to do the edge jointing on any ordinary sticker and do it at a nominal expense, and the ripping and cross-cutting can be done easier and for less expense than it would take to cut out the knot holes in the shelving boards and patch them. Then, the built-up shelf board, built up of strips properly glued together edgewise, even though many of the strips are short, and there are many end joints, is better in many respects than a solid board. It is stiffer and free from any tendency to warp, and in fact, the smaller the strips the better. If it were made up of inch strips it would be all the better, but the idea in suggesting the wider ones was to simplify the work and keep the expense down as low as possible. If you have some shelving jobs to do this winter try it. Maybe you have got an accumulation of narrow strips that you can work off in this way and put them to excellent use, and if you have not it furnishes you an opportunity to rip up rough stock and narrow stock and make clear wide stock, for it goes without saying you can make the width of these built-up boards whatever you desire. And the same is true of the length. Build up the boards in the rough, that is, without dressing the side of the strips, and then after the boards are built up send them through the planer, cut your gains and handle them in every way just as you would solid wide stock. You will be pleased with the result and your customer will unquestionably be satisfied and should be persuaded that he has a better job than if made of solid lumber.

This ripping of stock into strips to cut out the knots and defects suggests another matter that I have had in mind for quite a while, and discussed more or less with planing mill men, and that is, when should

stock be ripped to eliminate defects, and when should it be cross cut? The usual planing mill practice is to cross cut stock to the length required, and, of course, to cut out knots and defects through this cross cutting. That is, cut off pieces of the board to eliminate them. Now, on some occasions, for some kinds of defects, it would unquestionably be better to rip the stock before cross cutting, and you could thus cut out the defects better and waste less stock than would be wasted in cutting out defects before ripping. You can get an illustration on this point, a good one, too, in making the built-up shelving as suggested above, and if you will go to a hardwood flooring plant you can get another illustration. There practically all the stock is ripped before it is cross cut. The reason is easy to understand, too, when you watch the work a while. Sometimes a common or even a cull board will have a clear strip along one side, maybe 3 or 4 inches, and it will work clear the full length of the board, while along the other side or through the center there are knots which will necessitate cutting that part of the board into 2, 3 or 4 pieces. It is easy to understand that if these knots are cut out before the board should be ripped there would be some clear stock cut in two which might be left full length, to say nothing of the pieces of clear

stock wasted in cutting out the knots. It looks like we might borrow an idea from work of this kind and use it to advantage in the planing mill. Of course, it would be impracticable and take up too much time and cost more in the end to go to the extreme in this matter, to diagram and lay out each board separately and figure how to cut it to the best advantage, but without going to this extreme there is undoubtedly room for improvement, for more economy of lumber in the planing mill by ripping more of the stock before it is cross cut. It comes handier to cross cut it first, so naturally it is more inviting, and we readily fall into the habit. But, lumber is too scarce and valuable for us to let any wasteful habit possess us just because it is convenient. And, a little study and experimenting should show any planing mill man how he may get more clear stock and less waste out of certain classes of work, especially such classes as are to be ripped into narrow widths by doing the ripping first and the cross cutting afterwards. Try it once. You may have fewer wide ends of boards to work into brackets, and probably will have less scrap generally, but if the idea is carried out right, you will have more clear material and get more available stock out of the same amount of lumber than by cross cutting.

## How to Shingle Valleys

CAUSE OF VALLEYS ON A ROOF LEAKING AND HOW TO REMEDY IT—SEVERAL GOOD METHODS OF SHINGLING THEM

By I. P. Hicks

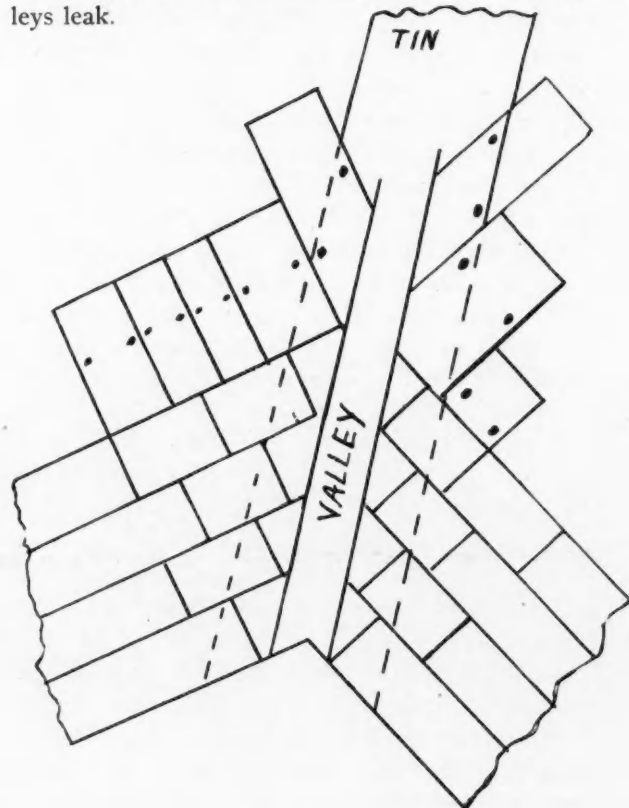
**T**HERE are many carpenters who do not know how to shingle a valley. There are many who think that they know all about it and would feel insulted if told that they did not know how to shingle a valley right. There are many who can shingle a valley so that it will look all right, but being right does not consist altogether in the looks. One of the most important questions is, will it be tight, or will it leak?

It is no trouble to shingle a valley so it will not leak, and if any shingler has leaky valleys, it is either the result of his carelessness or ignorance about what is required to make a valley watertight.

One of the most common causes of leaky valleys is pure carelessness in driving nails. No nails should be driven through the valley tin lower down than one inch from the upper edge of the tin and the next course of shingles should never break joints over the nails in the course of shingles below. The sketch shows how shingles should be nailed up the valley.

The standard width of valley tin is 14 inches. Now if in shingling the shingler drives nails through this tin three or four inches down toward the center of valley it is no better than if the tin was only six or eight inches wide. You can't expect a valley to be tight if you make a sieve of it by driving it full of nail holes.

There are carpenters who have worked at the trade for thirty years without finding out why so many valleys leak.



Sometimes they will not leak even when shingled in a haphazard way, but it is an accident if they do not, or a piece of good luck. A valley will not leak if properly shingled and the chances are against the careless and haphazard way of doing this work.

Shingling hips and valleys takes more time than straight shingling, and when there are hips and valleys to shingle it will pay to cut a pattern and saw the shingles, four or five at a time. On hips some carpenters contend that they can nail the shingles on and trim them off with a good sharp chisel as fast as they can saw them. This may be true if they saw one at a time and saw them as they lay them, but if the carpenter will get a correct pattern and saw four at a time and saw up a bunch of a hundred or about what is needed for the job, he will find it far ahead of cutting off hip shingles with a chisel. We have seen it tried to our entire satisfaction, and have seen one man spend as much time finishing up hips with a chisel on a hip roof house, 24 by 28, as he did laying all the balance of the roof, and it was evident the contractor lost money by the chisel process of finishing hips, which this man contended was as quick as sawing hip shingles.

There is, of course, a difference of opinion as to what constitutes a day's work at shingling, many

claiming three to five thousand. The fact is, that it is hardly possible to pick up a bunch of three to five men on any job that will average two thousand apiece. There are some experts at shingling who can put on three thousand as easy as someone else can the two thousand, but no contractor would be safe from loss if he figured over two thousand per day to the man, and even then he would have to know pretty well the ability of his men to make this rate good.

Now let us see what it costs the contractor per thousand to lay shingles. Say a man is getting 40 cents per hour and lays two thousand shingles in eight hours; this will cost \$3.20, or \$1.60 per thousand. Suppose the workman gets 45 cents per hour; then it will cost the contractor \$1.80 per thousand. This looks like a big price to those who have shingling to do and yet the chances are that any contractor taking work on the above basis would actually lose money on the job. It is easy for the workmen to say figure higher, figure higher, but there is a limit to high prices and the carpenters who want every penny there is in a job and care nothing whether the contractor gets anything or not, ought to take a turn at contracting just to find out a few things to take the conceit out of them and show them that many of them are being paid more money than they are worth.

## Design of Town Hall

PERSPECTIVE AND FLOOR PLANS SHOWN—CONVENIENTLY ARRANGED AND SUPPLIED WITH ALL MODERN EQUIPMENT

**W**E ARE this month showing the perspective and floor plans of a town hall which was designed by G. W. Ashby and is adapted for a small town where the electric light plant, pumping station, fire department and police department are in connection with the town hall. The building has a stone foundation up to the first story window sill and the balance of the vertical walls is of paving brick.

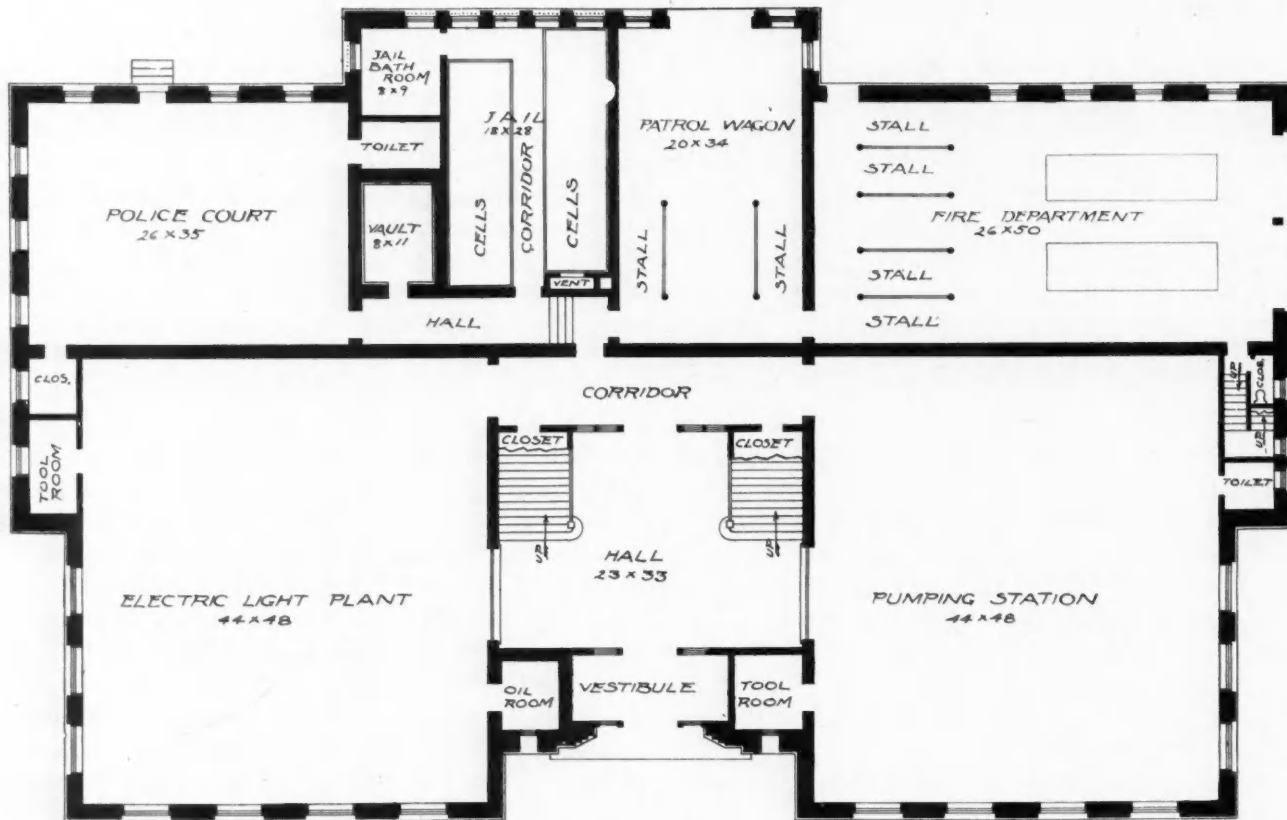
There is a slate roof covering the building and the cornice is of galvanized iron.

The basement only contains the boiler and fuel rooms which are located under the police court.

The first floor is divided into the pumping station, electric light plant, police court, fire department, jail and a room for the patrol wagon.

The town hall proper is located on the second floor



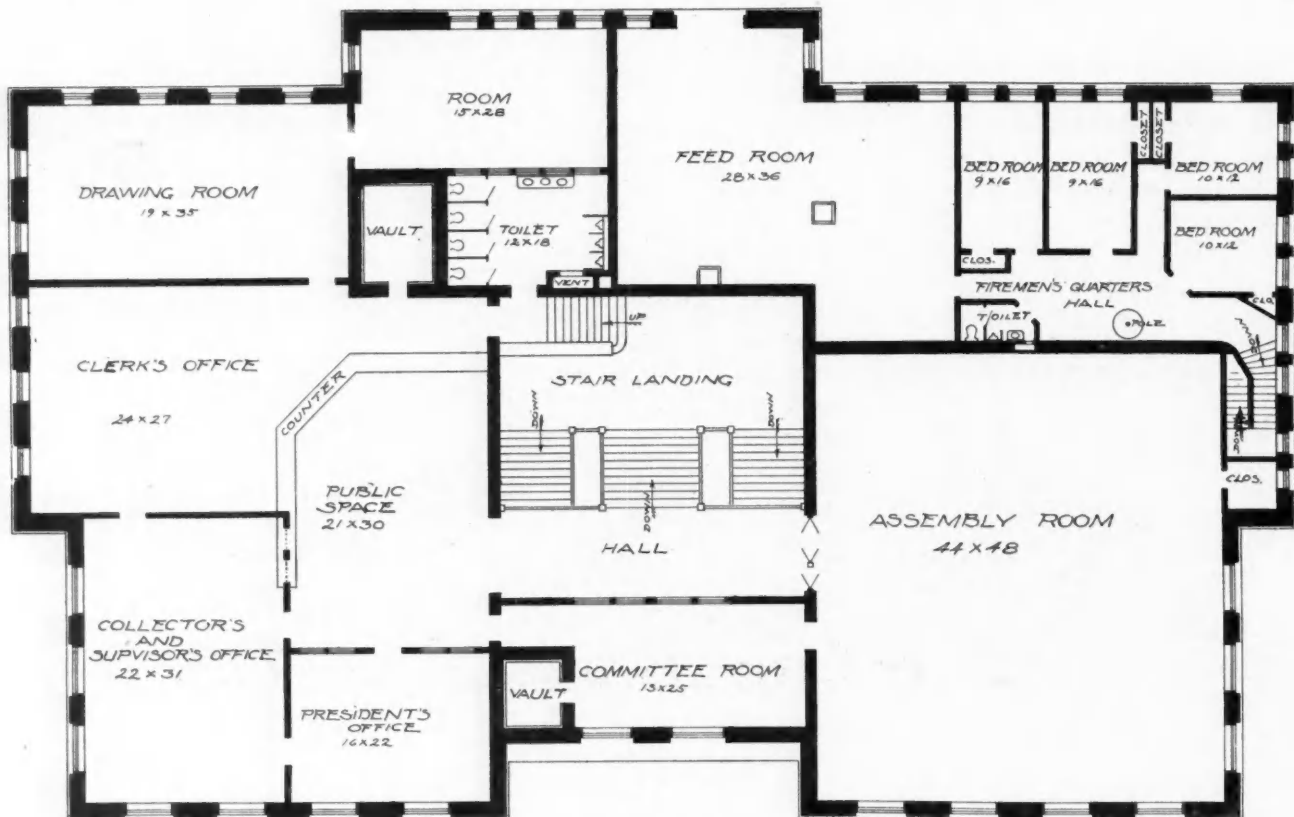


First Floor Lighting and Pumping Plant

where there is a large assembly hall, clerk's room, collector's office, president's office, feed room and sleeping quarters for the firemen.

splendid place to preserve old and new records. The entire building is very conveniently arranged and contains all that is necessary in the way of public offices in a small town.

There are several fireproof vaults which make a



Second Floor Lighting and Pumping Plant

## Concrete Blocks\*

PART THAT EACH MAN INTERESTED IN CEMENT PLAYS IN THE INDUSTRY—IMPORTANCE OF WORKING TOGETHER

By Harmon H. Rice

**B**ECAUSE I believe that concrete block construction presents a representative style of architecture, typical of that spirit of independent enterprise characteristic of American progress, and because Europe, Asia, Africa and the islands of the sea are looking to the States for light upon this industry, I characterize the conduct of our business, or, if you please, the practice of our profession, as the National Game, believing that in the play of the Diamond we shall find an interesting and instructive parallel to the opportunities and responsibilities of co-workers in the domain of concrete blocks.

In the pitcher's box stands the stalwart blockmaker, in stature well proportioned, by nature a good mixer, through systematic training, always in good form. There are too many smart men, and too few able men filling this position. The time has passed when the pitcher may, with clever curves, deceive the watchful batter's eye. The battery of wood, clay and stone has learned to know those curves. The victory of the day is to him who, with perfect mastery of self and with thorough knowledge of the field, delivers a ball which is strong, swift and true—a thing of beauty and a winner forever. In the throwing of such a ball there is successful introduction, there is permanent and increasing patronage, there is profit, and there is public favor. Uniform excellence rather than spasmodic brilliancy counts on the score card.

The superintendent takes the catcher's place, because from this position the personal equation can never be eliminated. Whatever may with truth be said for the efficacy of modern appliances adapted to playing the game, however completely the catcher may be equipped with mask, mitt and shield, it is in the end the man behind the bat who saves the day. It is his quick eye, supported by a studied knowledge of the field, an intimate acquaintance of the players, and an intuitive recognition of the vulnerable points of the opposition, which brings his adversaries to shame. It is he who must watch the field and the bases, to the end that he may ever support the play and co-operate with the plans of the several players.

The machine manufacturer we put on first base, because in those olden days when we "chose up sides" he who came first usually claimed this position. So, by precedence in the field, it goes to the maker of machines. When he first took the place he had not that full quota of players which we find today. He had some sorry days before the game was popularized. But he was a persistent player. And then there came a time when some of those on the bleachers said that

\*Address made at the Convention of the National Association of Cement Users, held at Chicago, Ill., January 7 to 12

the first basemen drew higher pay than the pitcher, but that day, too, has passed, for the game draws greater crowds and the pitcher's skill is cheered by audiences who have learned to know its merits and to watch the ball. And yet does not our first baseman rest too easily upon his laurels; does he not rely too much on the pitcher's skill and the catcher's diligence to increase the interest of the game? Rank imposes obligation, and first baseman may not shirk the responsibilities incident to his birthright.

On second base we have the cement manufacturer. He plays well, though at times lacking enthusiasm. But he has many rival interests, with his golf and his cricket and other games which he learned in the land of his birth. And yet he is, withal, a dependable player, a player of quality, a player who always stands the test. In the changes of climate incident to the migration of the club, in freezing and in boiling weather, his tenacious qualities prevent its disintegration. His strength is so great that he does not become distorted, even when the umpire's words are thrown at him. In emotion he is paradoxical, inasmuch as his heart strings have been torn asunder by one-tenth the grief necessary to crush him.

The mason is on third base, where careful, accurate and uniformly excellent work is required. Too often has a wild throw from third enabled the runner to land safe on the home plate. Perhaps it is not too much to say that the slovenly mason's work on third base has lost more games than the careless work of any other single player. He has regarded our national game with less favor than those games handed down to the present generation from the ancients of Egypt and Assyria. His longer training in the games of the Orient has made his hand cunning to their play, and he has imagined that in seeking their perpetuity he was insuring more continuous activity for himself.

Our salesman shortstop is so optimistic concerning the ultimate success of the game that many regard him as visionary. And yet to him is due the credit of earnest and persistent work toward the realization of his visions. He has gone into waste places to introduce the game, by his intimate knowledge of its rules he has taught others to play without error, by his consideration for the ultimate well being of his associates he has silenced the tongue of slander, by his energy and fair dealing he has gained the respect of the opposition, while his good counsel has enabled his colleagues to make plays of such unexpected quality that the grandstand rocks with applause. In his success there are no secrets save honest, loyal and untiring zeal. He has studied the game well, he knows

the men, he keeps his eye on the ball, and he enjoys the confidence of his fellow players, of his opponents and of his umpire.

The architect is in the left field, and it is only when the pitcher throws carelessly or a mighty man comes to bat that the ball reaches him. Hence he has much time to watch the exertion of other players, and he seems to be growing a bit restless and anxious to come closer in the game. Time was not long ago when he refused to play, but as he sat on the bleachers and fanned himself with his hat he could but observe the intrinsic interest of the game and the ever increasing skill of its players. He is now one of us. Let us welcome him and applaud heartily when he plays well.

The contractor in the right field takes an exceedingly practical view of our game. To the vox populi his ear is ever open.

He is a good player, but ready to stay with us or to leave us as the crowd may applaud or deride. So he keeps one eye on the grand stand, and if handkerchiefs be waved and hats flung high his energies rise to mighty plays. With the increasing popularity of the game, it is hoped that he will become more settled in his appreciation of its merit.

To our good friend, the journalist, we give center field, and in it he does valiant work. The shouts and plaudits of the throng are dear to him, and he adds greatly to the joy of all by those spectacular plays which bring encomium from the very boards on which the spectators sit. He may not know all about the game, but he is powerful in talk, and he keeps up our spirits on days when things go badly. It is his wide reputation which has added so largely to the gate receipts, and sometimes, when crowds are not what they should be, the captain excuses him for the afternoon to go down among the newspaper offices and fill the galleys with the history of our past triumphs, the story of our present greatness, and the prophecy of our future magnificence.

The owner of the building in which concrete blocks shall go is our umpire. To win from him the coveted decision it is not enough that one should play well—he must play at his best. The umpire knows the game better than do some of its players. To attempt deception is to invite his displeasure. Honest, manly, fair play counts with him. He does not greatly mind the so-called brilliant plays. The player who wins his enduring approval is that one who is ever in form, who day in and day out strictly observes the rules of the game, who avoids errors as a plague, and who invariably plays a good game.

If we are in the game, let us play it as well as we are able. Let each man, while performing to the utmost limit of his ability the duties of his particular position, never fail to render with heart and hand that support to his fellow-players without which the game cannot be a success. In community of interest, and unity of endeavor, lies the ultimate success of the nine.

In any discussion of concrete block construction, the basis of consideration is form. As to the importance of form, I am indebted to Mr. George Hess for a most forceful illustration. In his new book, "Inventor at Work," he tells of an experiment made in Canada during very severe winter weather. A piece of ice was fashioned to the form of a lens, and so effectually did it focus the sun's rays that paper was burned and wood was charred in the same manner as though an ordinary reading glass had been used. Thus is shown the paramount importance of adopting the form of structural material to the service required.

The plasticity of concrete enables it to be molded into units of greater utility than those of any other building material known to mankind. Without attempting to speak of the many forms on the market today, it may be said in respect to all that the air space in the wall gives to block construction its distinctive advantages. Too readily do we allow minor considerations to rob us of an adequate air space, and too careless are we of the encroachments of those building departments which reduce it to a point which strips the concrete block of its essential points of superiority. There is, I hold, no excuse for making blocks of so inferior quality that the percentage of air space need fall below that requisite to the preservation of fire-proof, frost-proof, moisture-proof, heat-retaining and heat-resisting walls.

But to maintain the high standard of quality the ingredients must be right, and they must be used in such relative proportions that voids will be eliminated, and maximum strength and density will result. It is the application of scientific principles of concrete work rather than the haphazard use of a large proportion of cement that makes for quality.

The thorough manipulation of the mass is more essential in block manufacture than in any other branch of concrete engineering. Where defective blocks have been produced investigation has generally disclosed faulty mixing. Hand mixing is seldom sufficiently thorough, while operators in the smaller towns have been unable to bear the expense of installing and operating power machines of standard type. The present season, however, brings to the relief of such operators a unique hand mixer of adequate capacity which mixes thoroughly and leaves no excuse for clinging to the shovel and hoe of former days.

#### ✦

#### Mark Twain Asks for Hymn-Book

Mark Twain once wrote to Andrew Carnegie as follows:

"My Dear Mr. Carnegie: I see by the papers that you are very prosperous. I want to get a hymn-book. It costs six shillings. I will bless you, God will bless you, and it will do a great deal of good.

"Yours truly,

"MARK TWAIN.

"P. S.—Don't send me the hymn-book; send me the six shillings."

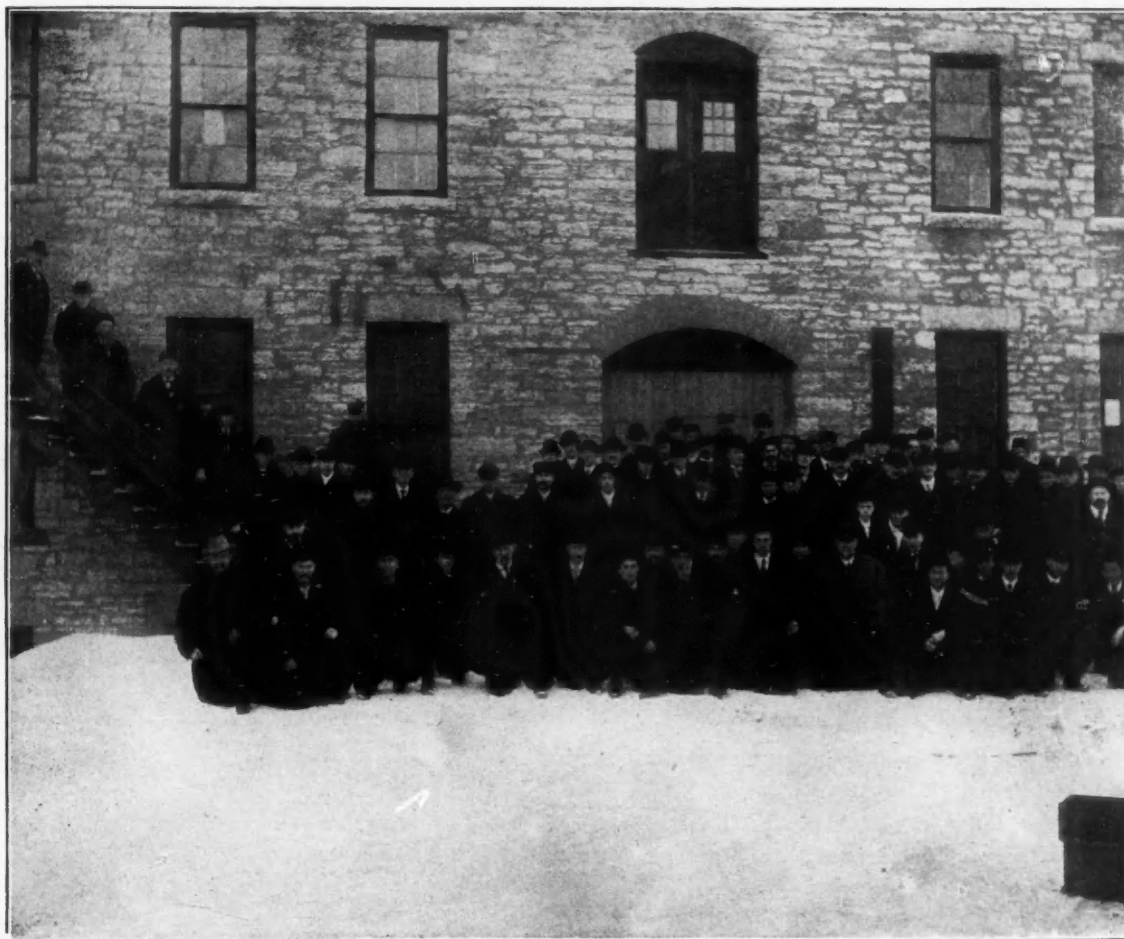
## Northwestern Cement Products Convention

**T**HE third annual convention of the Northwestern Cement Products' Association met in the Armory, in St. Paul, Minn., January 16 to 18.

At the opening session President C. A. P. Turner of Minneapolis, introduced Controller Betz, of St. Paul, who welcomed the convention to the city, in place of Mayor Smith, who was unable to appear owing to illness. O. U. Miracle of Minneapolis, responded on behalf of the association and referred to the unprecedented growth of the cement industry and the great improvement in the quality of the concrete blocks now made. Many interesting and instructive papers were read during the session and all of those who attended felt fully repaid for the time spent. In place of the morning session scheduled for the second day of the convention, the members and exhibitors, at the invitation of the Miracle Pressed Stone Company, boarded special cars for Minneapolis and inspected the plant of the Miracles on Nicollet Island. The invitation was generally accepted and the morning was spent in observing the practical operation of the various kinds of cement working machinery manufactured by this company. At the business meeting, Lee Stover, Watertown, S. D., was elected president;



Martin T. Roche, Secretary



Members of the Convention Visiting the Miracle Pressed Stone Co.

Martin T. Roche, secretary; J. M. Hazen, treasurer. Five vice presidents were elected as follows: A. H. Laughlin, Lisbon, N. D.; O. U. Miracle, Minneapolis, Minn.; C. A. P. Turner, Minneapolis, Minn.; John Wunder, Minneapolis, Minn., and William Simpson, Mandan, N. D.

The membership was doubled during the convention and the financial standing of the association is in good shape, there being a surplus left in the treasury. The dues were raised from \$2.00 to \$3.00 a year. Secretary Roche was endowed with the power to employ an assistant secretary at a salary of \$300.00 a year.

Five loving cups, given by the Commercial club of

Minneapolis, were awarded to the following exhibitors:

Expanded Metal and Corrugated Bar Company, St. Louis, Mo., for best display booth.

Miracle Pressed Stone Company, Minneapolis, Minn., for best general display of cement equipment machinery.

The Peerless Cement Brick Machine Company, Minneapolis, Minn., for most attractive cement bricks,

Blaw Collapsible Steel Centering Company, Pittsburgh, Pa., for most unique cement product display.

National Stone Company, Minneapolis, Minn., for best display of cement block.

## Two Room School House

NEAT DESIGN FOR VILLAGE OR COUNTRY SCHOOL — ARRANGEMENT OF SEATS SO AS TO HAVE BEST POSSIBLE LIGHT FOR PUPILS

**W**E ARE this month illustrating a two room school house designed by G. W. Ashby. It is suitable for a small town or district where two teachers can take charge of all the children.

It is a neat design and at the same time very inexpensive.

The two rooms are both twenty-five by thirty-six feet, thus being able to comfortably seat fifty children in each room.

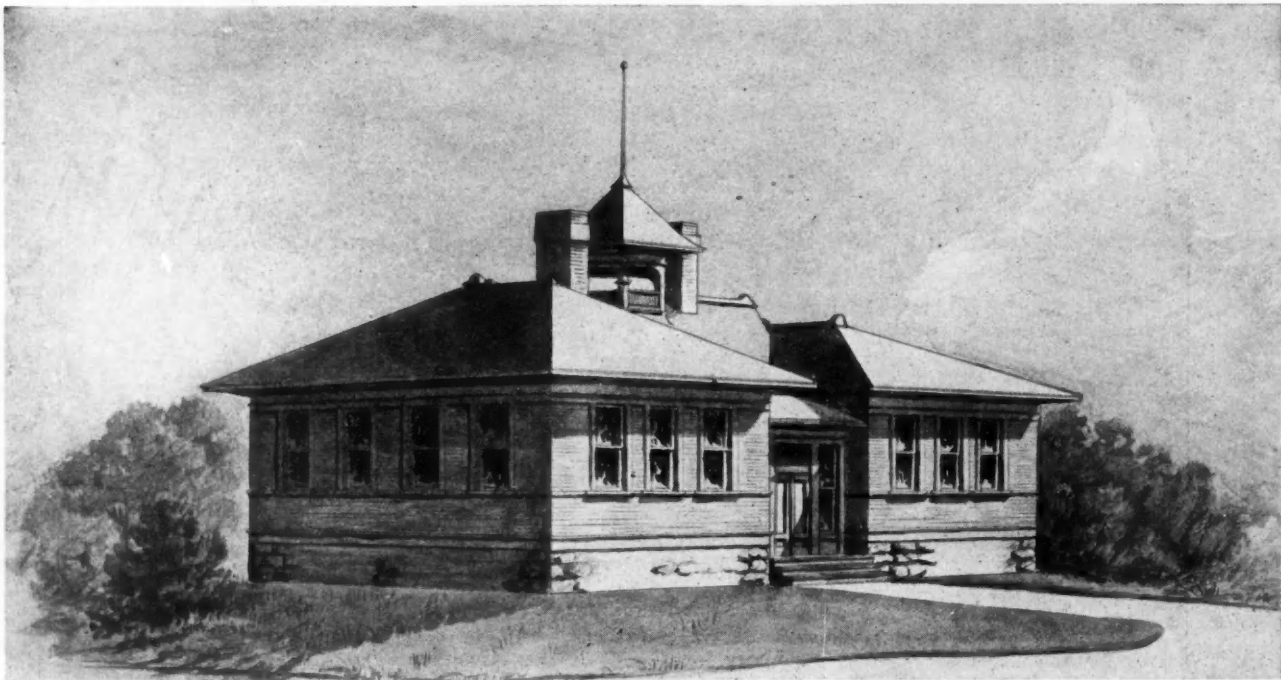
should be taught to love neatness and order from their infancy and later it will be second nature with them.



### Greeley's Retort

An acquaintance met Horace Greeley one day and said: "Mr. Greeley, I've stopped your paper." "Have you?" said the editor; "well, that's too bad," and he went his way.

The next morning Mr. Greeley met his subscriber



The seating can be so arranged that the children will have light from the rear and left of them, which is the best light possible.

There is a wardrobe for each room and there is also a case for reference books in each room.

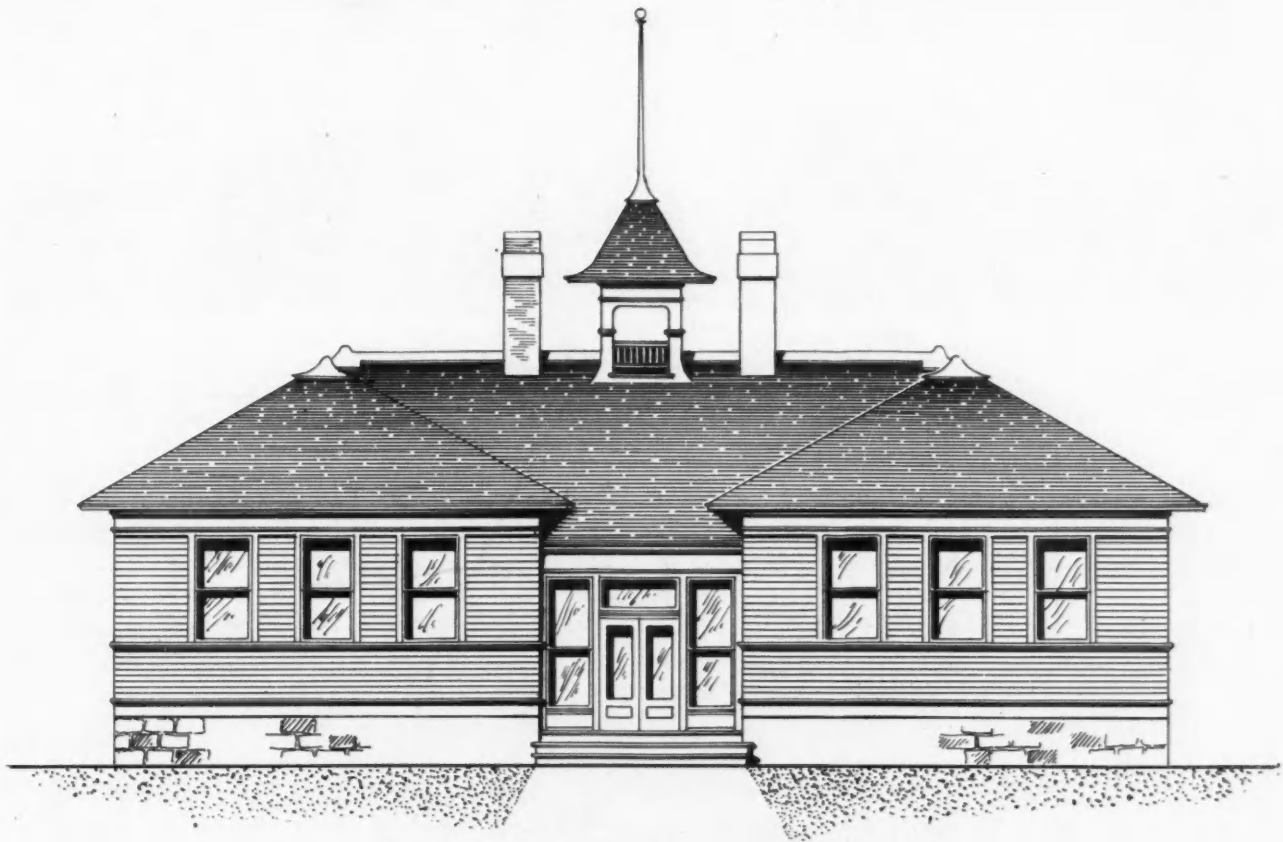
A building of this kind, with nicely kept grounds surrounding it, will make not only a good appearance but will have a healthy influence on the children. They

again, and said: "I thought you had stopped the *Tribune*."

"So I did."

"Then there must be some mistake," said Mr. Greeley, "for I just came from the office and the presses were running, the clerks were as busy as ever, the compositors were hard at work, and the business was going on the same as yesterday and the day before."



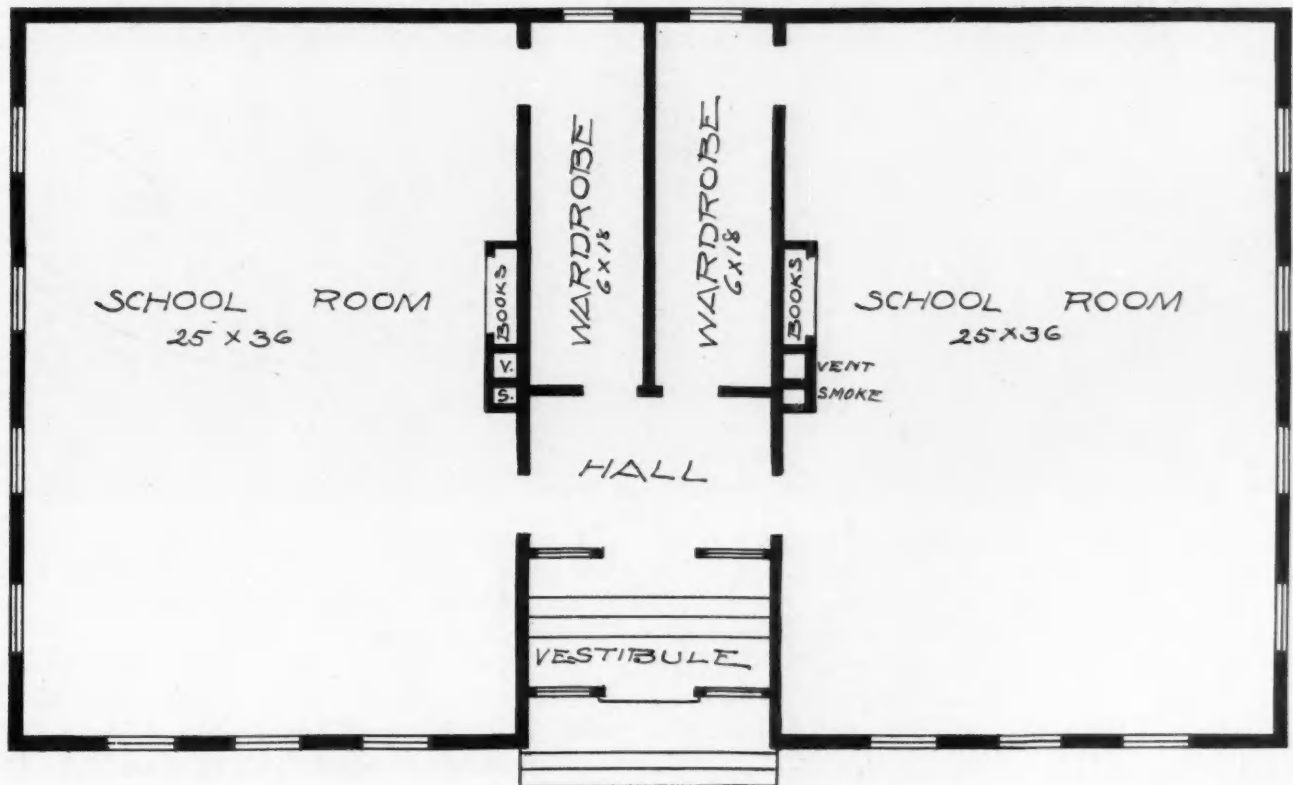


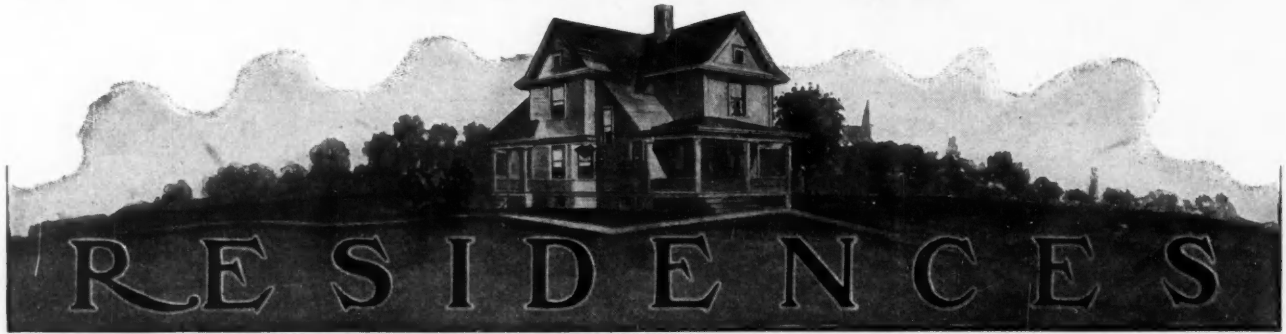
FRONT ELEVATION

"O!" ejaculated the subscriber, "I didn't mean that I had stopped the paper; I stopped only my copy of it, because I didn't like your editorials."

"Pshaw!" retorted Mr. Greeley, "It wasn't worth taking up my time to tell me such a trifle as that. My

dear sir, if you expect to control the utterance of the *Tribune* by the purchase of one copy a day, or if you think to find any newspaper or magazine worth reading that will never express convictions at right angles with your own, you are doomed to disappointment."





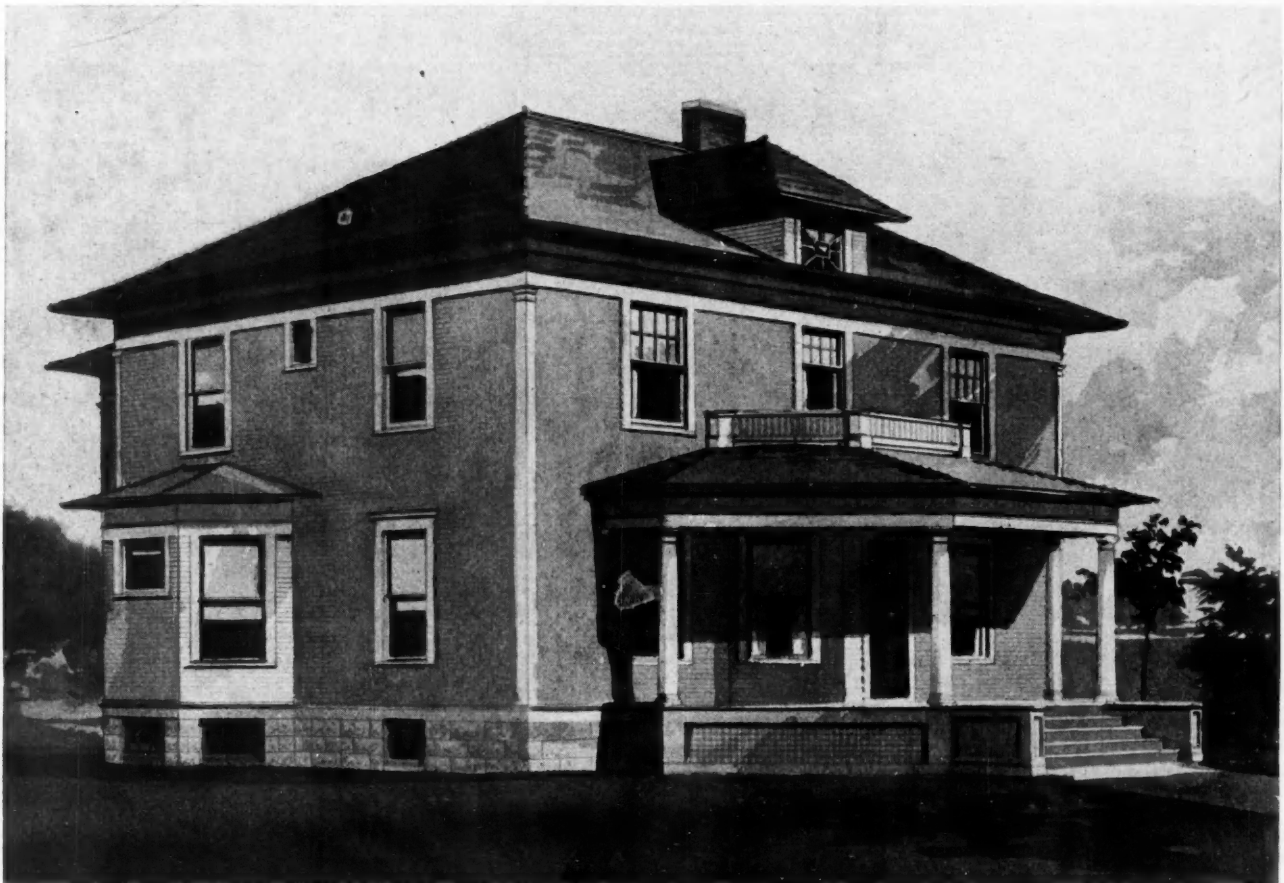
## Two Practical Houses

DIFFERENT STYLES OF HOUSES SHOWN AS SUGGESTIONS TO THE CARPENTERS AND ARCHITECTS—PERSPECTIVES AND FLOOR PLANS OF EACH SHOWN

**T**HE perspective and floor plans here shown are of a house designed by Woods & Corder of Lincoln, Neb., and built on a farm near Oskaloosa, Ia.; the owner suggesting the number and approximate sizes of rooms and stipulating that the building should not cost to exceed \$4,000 or \$4,500.

The work was done by the day and as no complaint

It will be noticed by the floor plans, that the first floor includes parlor, living-room, bedroom, dining-room and kitchen, besides a very generous and convenient pantry, from which the cellar is reached by a stair well lighted from the pantry windows when the door is open. It will also be noticed that the main stair is well lighted by a window in the second story.



has been entered, we take it that the amount was not exceeded.

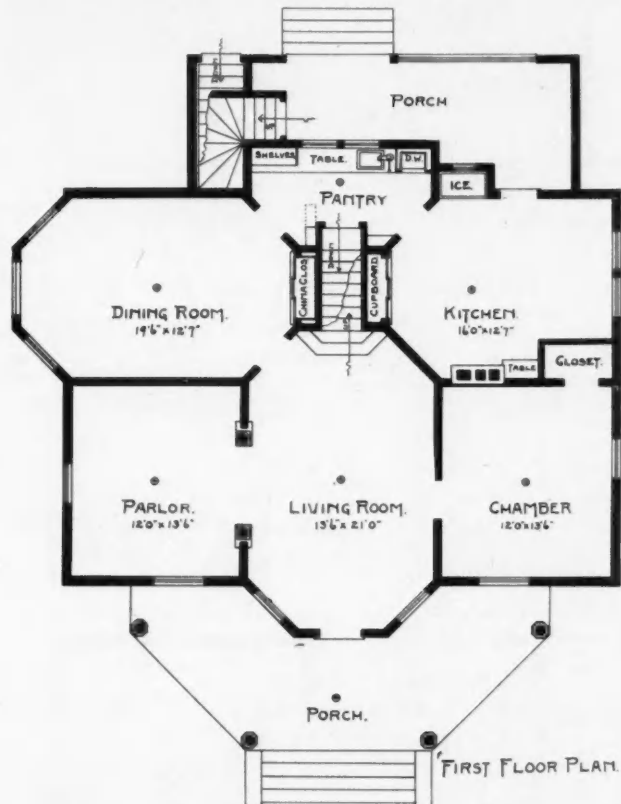
There is cellar under the whole house, making ample room for furnace, fuel, stores and laundry rooms, besides a large bath and toilet coming under the outer end of the dining-room, where there is plenty of light, especially if this side is placed to the south, as it is in this case.

If a bed room was not required on the first floor, the one shown could be used as a library, and an arch matching the one leading to parlor would make a very effective arrangement.

The stairs are somewhat out of the ordinary and were designed with the idea of economy, both as to space and expense; yet by draping the window neatly on the second floor, and placing a few attractive plants

on the shelf in front of it, they will make a very handsome feature of the living-room. The back stair was placed to enable the "boys" to get to their apartments on the second floor "without coming through any of the lower part of the house," which we think a very good feature. It will also be noticed that an outside cellar way is placed under the rear stair.

The second floor contains four large bedrooms, with



a closet for each, besides a hall closet for winter bedding and an ample sewing room. The house is finished throughout with yellow pine and can be left natural or stained to suit the taste. The finish is plain with neatly moulded caps and base; the floors are 4-inch edge grain throughout. All floors are lined and paper between, as are also the outer walls. The siding is 4-inch clear white pine, or fir, and the shingles best clear red cedar 6 to 2, laid 4½ inches to the weather.

The foundation may be of brick, or concrete, to grade line and three courses of cement range above ground. The chimney is topped with pressed brick and capped with cement.

While the house is not intended to be ornamental, there is a dignified simplicity and grace of outline, which are calculated to reflect the refined sincerity of those who dwell within, which is more to be sought after than vulgar display.

**An Artistic Home**

On page 1426 we show the perspective and floor plans of a cottage designed by Simon Fluor and built at Oshkosh, Wis.

The rooms are all on one floor but so arranged that the living rooms and sleeping rooms are entirely sepa-

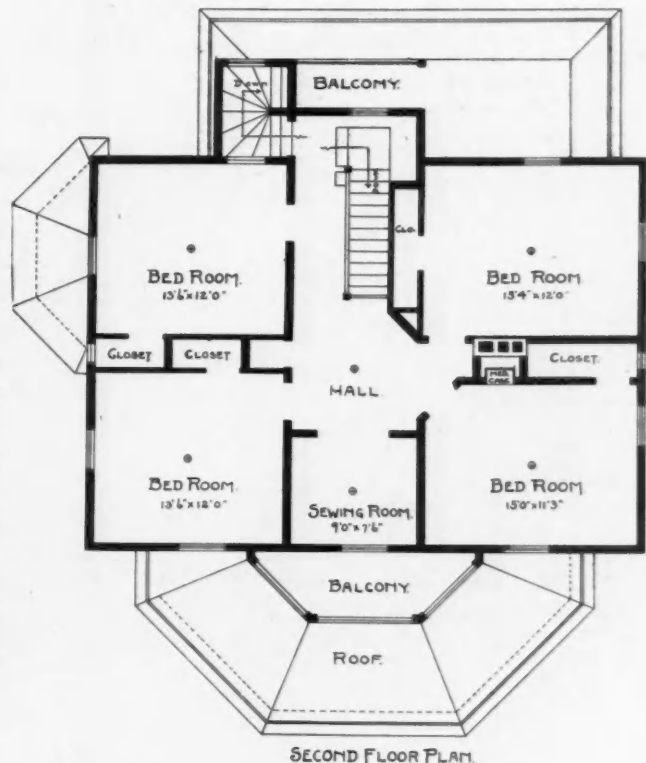
rated. The living room is the largest room in the house, and it should be so in every house, for there is where most of the time is spent. The dining room is divided from the living room by sliding doors. It is twelve by twelve feet and has a window seat on one side and a china closet on the other.

The kitchen is large and roomy and tends to do away with the disorder so common in a crowded kitchen. The three bedrooms are arranged along one side of the house with a bathroom between two of them. The basement plan shows the location of the furnace and also the cistern. Many people have the cistern in the basement of the house as it prevents the water from freezing and also prevents dirt and other matter from getting into the water. The basement is well lighted and ventilated and makes an excellent place for storage.

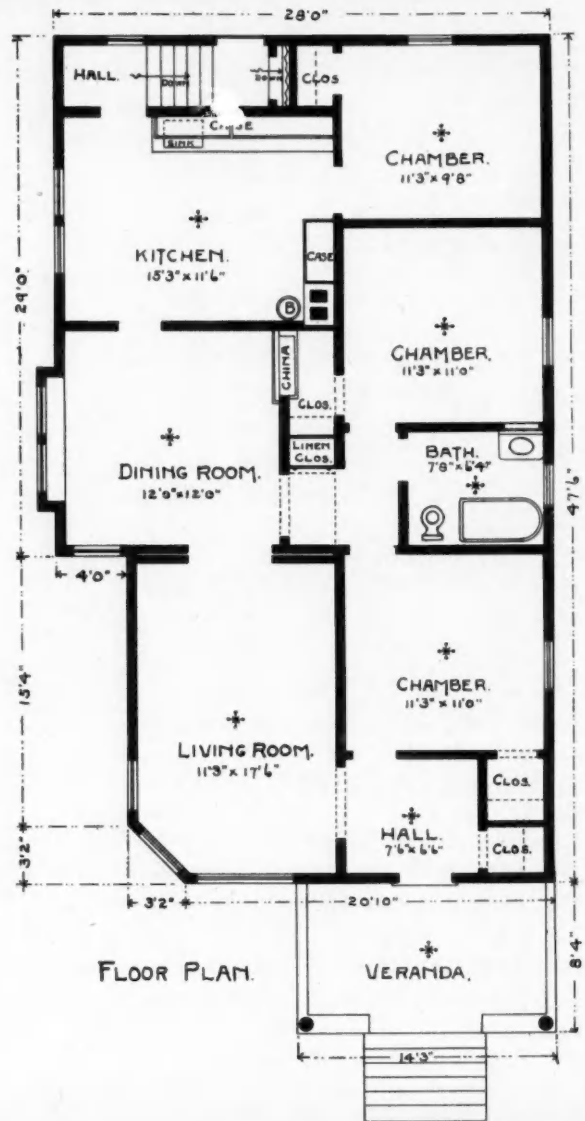
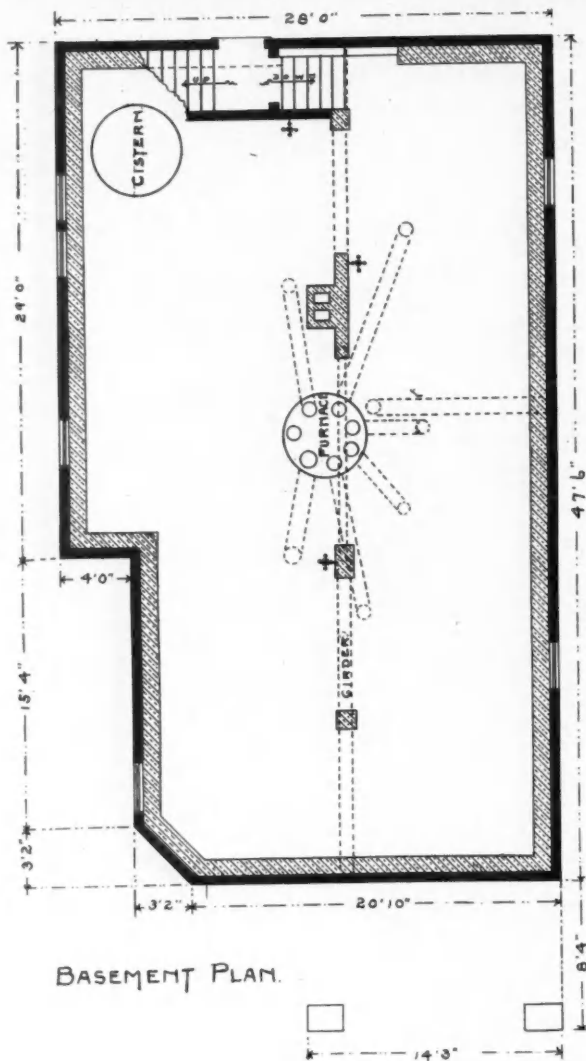
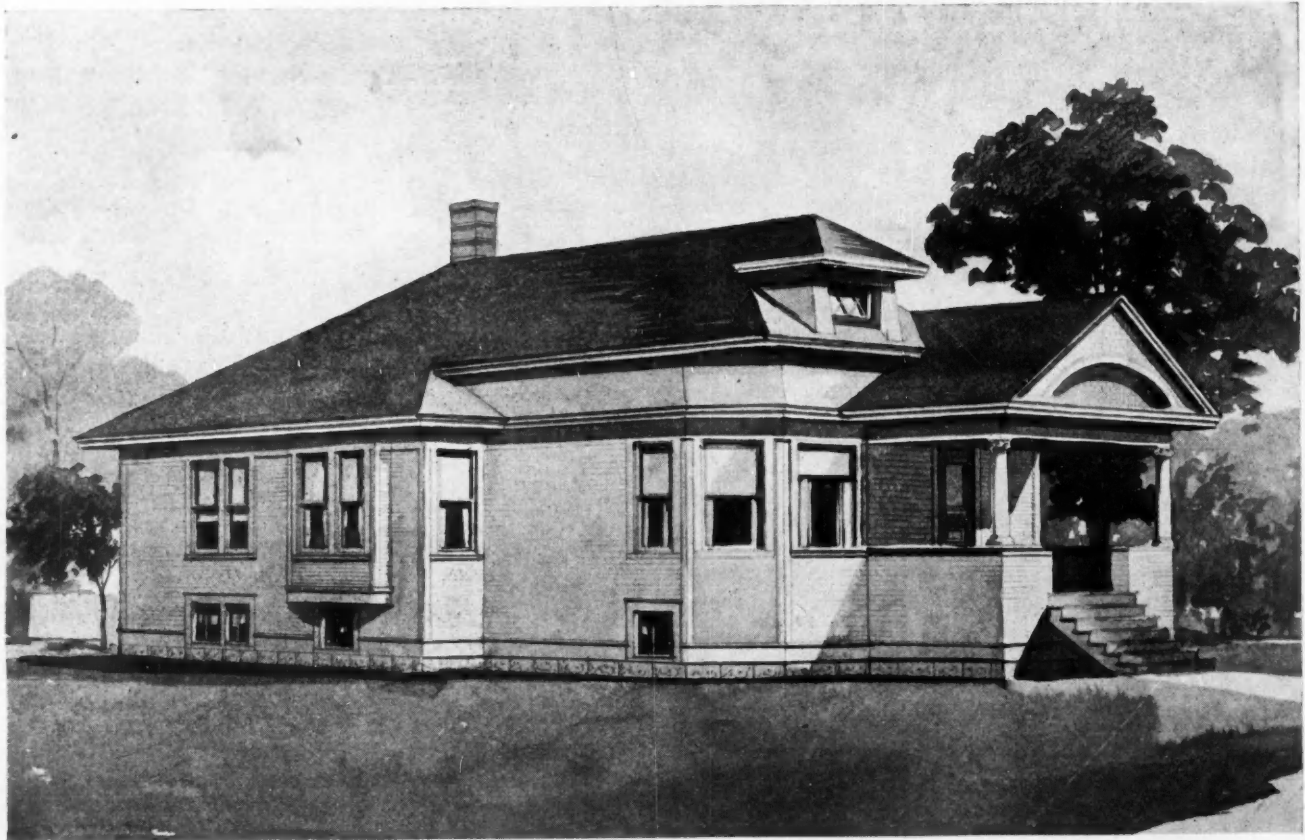
**Working Overtime**

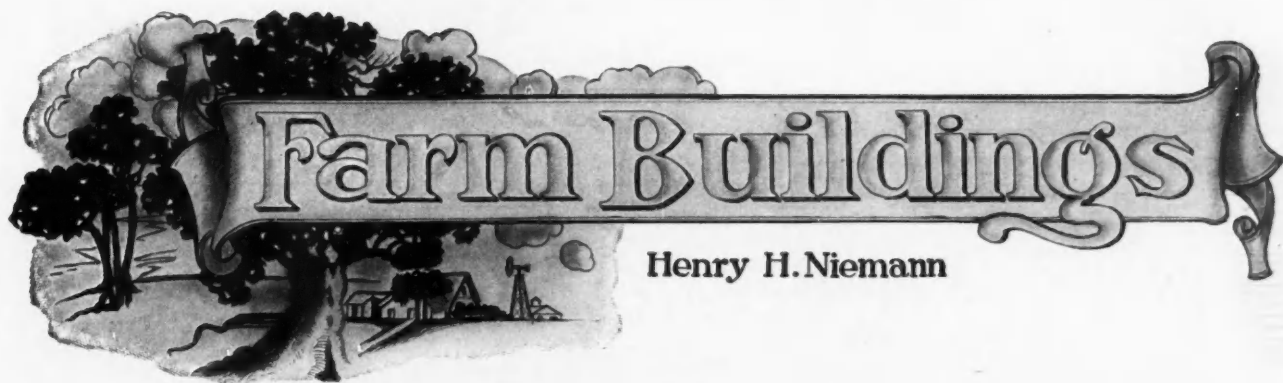
A Chicago teacher gave a boy pupil a question in compound proportion for home work one evening, which problem happened to include the circumstances of "men working ten hours a day to complete a certain job."

The next morning the unsuspecting teacher, in looking over his pack of exercises, found one pupil's problem unattempted, and the following note attached to the page:



"Deer Sir, i refoose to let my sun James do his sum you give him last night as it looks to me like a slur on the 8-hour sistem, enny sum not more than 8 hours he is welcum to do but no more. Yrs trooly, Samuel Blocksy."—*Success Magazine*.





# Farm Buildings

Henry H. Niemann

## Barn for General Use

ELEVATIONS AND FLOOR PLANS OF A BARN SHOWING THE CONSTRUCTION AND INTERIOR ARRANGEMENT — CONSTRUCTION ALONG MOST MODERN LINES

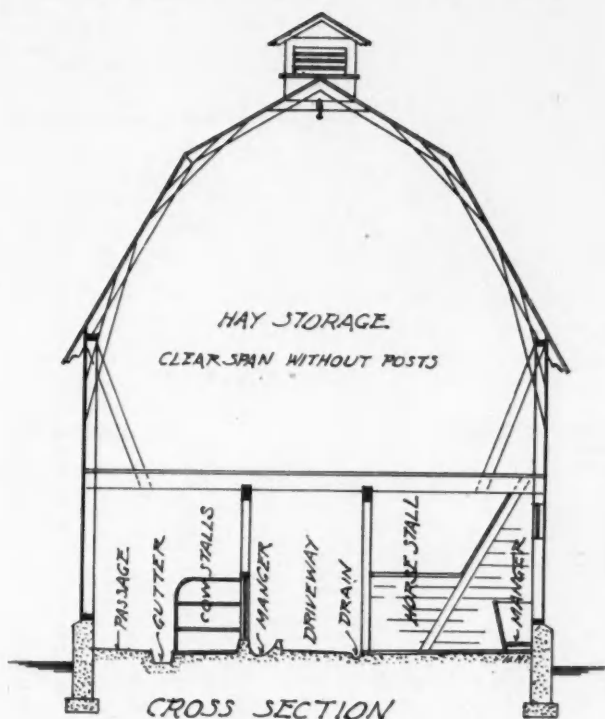
**W**E ARE this month illustrating a very convenient barn for general farm use, having horse stalls and cow stalls in the same room and so arranged that additional stalls can be added by extending the left hand end of barn out the distance

prevent the frame superstructure from coming into contact with moisture from the exterior ground or the scrubbing of the stall floor, which is also of concrete.

The stalls are provided with removable plank floors laid on top of the concrete and slightly pitched to gutter. The woodwork is of the balloon frame construction, consisting of 2 by 6 studding spaced 24 inches on centers and 2 by 6 rafters, also spaced 24 inches on centers, directly over each studding, then 1 by 10 inch corner braces are nailed to each side of all rafters and studding, forming a continuous arch.

This is a modern type of construction and does away with all heavy timber work which would require special appliances for hoisting and erection.

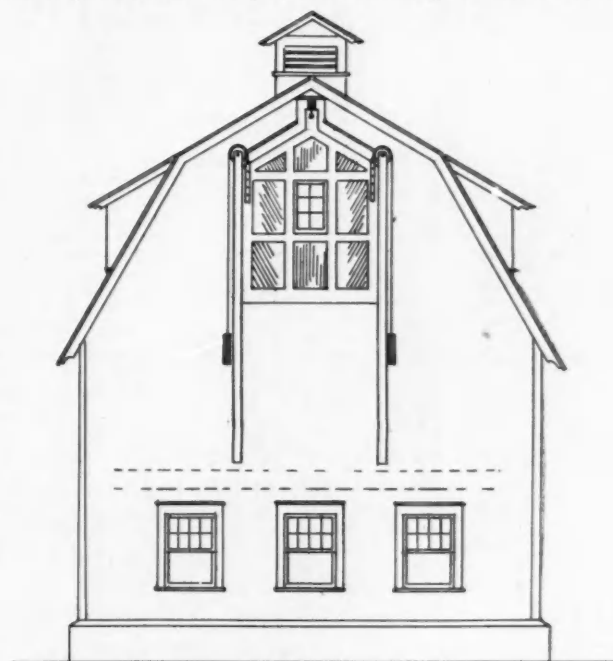
The interior of the entire first story is lined with matched flooring well fitted in place after all studding surface is covered with heavy water proof building paper. This makes a very warm barn and having the hay overhead keeps the stock very comfortable in



required for the number of stalls to be added, without affecting any part of the original structure. Another good feature about this barn is its large capacity for hay storage as the roof is constructed on the principle of a vault arch and is well braced and tied together by the floor joists. It consists of a clear span of twenty-six feet width by a height of twenty-two feet in the center from the hay fork track to floor.

At each end of the hay room there are large doors which are hung on counter weights and slide down for the installation of the hay, feed, etc.

The construction consists of a concrete foundation wall which extends two feet above the stall floors to



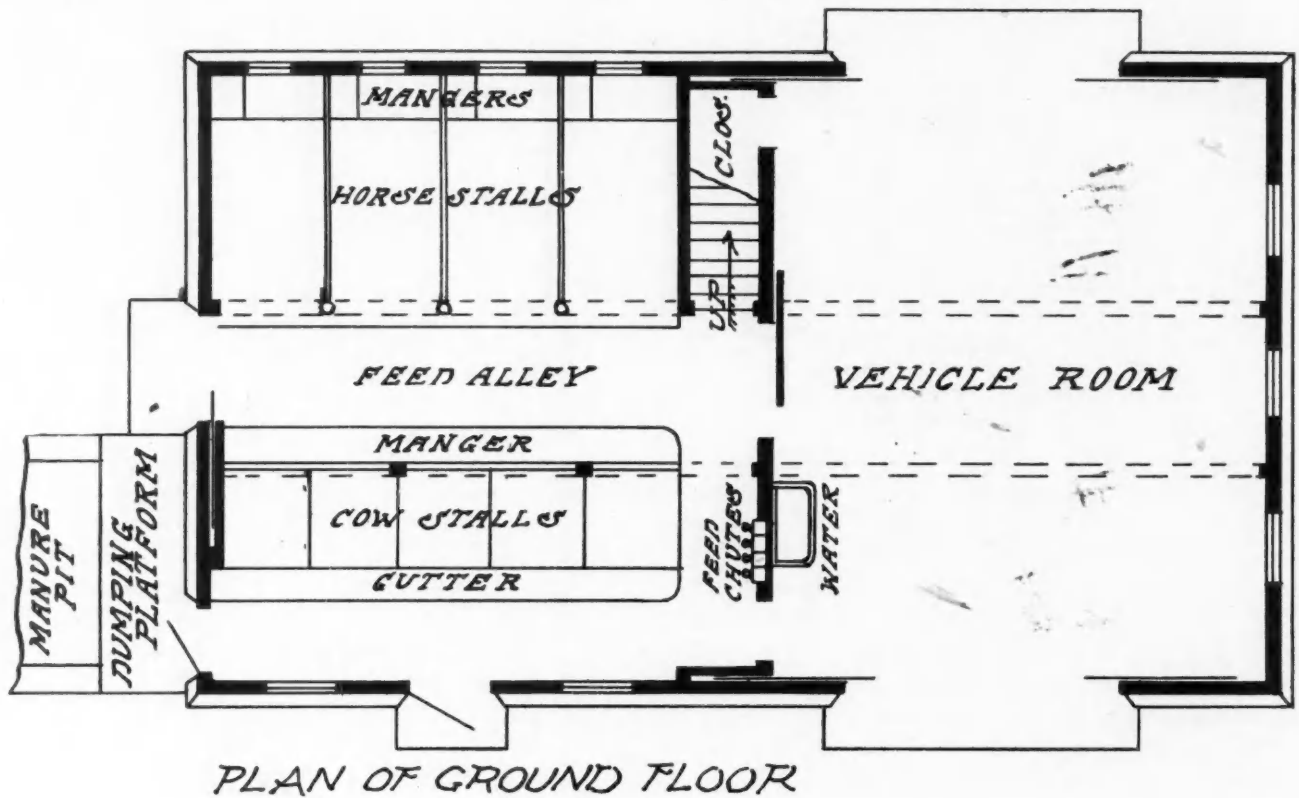
END ELEVATION



SIDE ELEVATION

the coldest winter weather. There are ventilating shafts built into the side walls which continue up the slope of the roof to the slat window ventilator at center of roof.

This barn, besides being practical and convenient, is of a good architectural design and proportion, and if painted a cheerful color with a stained shingle roof, makes a very pretty appearance.



PLAN OF GROUND FLOOR



## Something the Boys Can Make

COMPLETE DESCRIPTION OF HOW TO CONSTRUCT A WRITING DESK—KIND OF WOOD TO USE AND PROPER DIMENSIONS OF ALL PARTS

**T**HE writing desk, the description of which is given this month, is probably the most difficult piece of construction which has so far been offered in this department.

Patience and perseverance coupled with experience and skill somewhat above the average will be needed to produce a satisfactory result.

The photograph shown is of a desk made by a grammar grade boy of more than average skill.

Only good, clear, well-seasoned lumber should be used. White or red oak in the hard woods or chestnut in the soft woods will finish nicely. Especial care should be taken to select for the wide boards those which have been sawed from such a part of the log as will prevent their warping badly. If you do not know how to tell them, ask some woodworker to explain it to you.

The rough stock needed to make the framework is as follows: For the two sides, two seven-eighths-inch, mill-planed boards fourteen inches wide by three feet six inches long; for the lid, one piece seven-eighths of an inch, by fourteen inches, by two feet six inches; for the stretcher, one piece seven-eighths of an inch, by six inches, by three feet; for the top, one piece seven-eighths of an inch, by eight inches, by two feet six inches; for the base of the compartments, one piece of seven-eighths-inch stock twelve and one-half inches wide by three feet long. In addition

to the above, there will be needed for around the top two pieces seven-eighths, by one and three-quarters, by eighteen inches; one piece of the same thickness and width with a length of thirty-two inches. The keys can probably be got from the waste of the other pieces, so may the two strips which support the drawer. The stock for the other parts will be listed later.

Surface, or smooth, with smooth plane and scraper the broad surfaces of the stock mentioned above.

Begin with the sides of the desk, first getting a joint-edge and squaring the two ends of each so that the length shall be thirty-nine inches. Next, with a long straight-edge and a sharp pencil mark a line parallel to each joint-edge and twelve inches from it. Do not rip along these lines yet as the curves are still to be located thereon.

Place these side pieces so that their ends are even, and their joint-edges up, and square knife lines across the edges at the following points: Six inches from the bottom, then, from this point, seven-eighths of an inch, thirteen and seven-sixteenths, one-half, three and one-half, seven-eighths, eleven and one-quarter and finally seven-eighths of an inch.

Corresponding to the marks made on the joint-edges, carry, with knife and large square, lines across the boards on the inner surfaces. The first and second lines, measuring from the bottom, should be carried across five and one-half inches from the joint-edge;





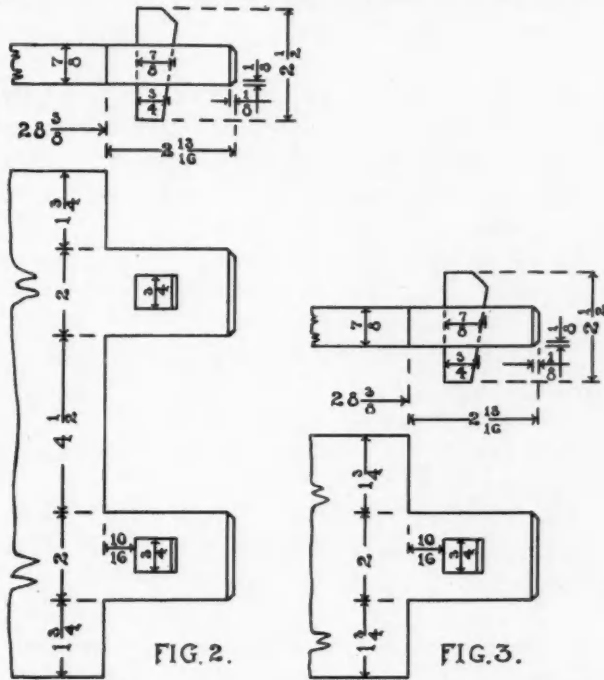


upper line marking the gain for the compartment base.

The manner of cutting mortises, gains and rabbets has been previously described in this department and need not be repeated.

The board for the compartment base should be squared up to twelve inches by thirty-four inches.

On the ends of this, lay out and cut the tenons



as shown in Fig. 2. Remember to do all measuring from the joint-edge which should, in this case, become the back edge; otherwise, the tenons may not fit the mortises.

It should be noted that the distance from shoulder to shoulder of the tenons is twenty-eight and three-eighths inches, Fig. 2, although the distance between the sides of the desk is but twenty-eight inches, Fig. 1. This added length is due to the "letting in" of the ends three-sixteenths of an inch at each end.

The manner of making the keys and mortises will be found described in previous numbers of the magazine in this department. The distance from the shoulder of the tenon to the first line of the mortise for the key, or wedge, is ten-sixteenths, the depth of gain allowing three-sixteenths of an inch and one-sixteenth more being allowed in order to insure a wedging action on the part of the key.

Gauge on the top surface, from the back edge of this board three-eighths of an inch, and on the back edge, from the top surface gauge three-sixteenths of an inch. This rabbet is cut for the back of the compartment to rest in.

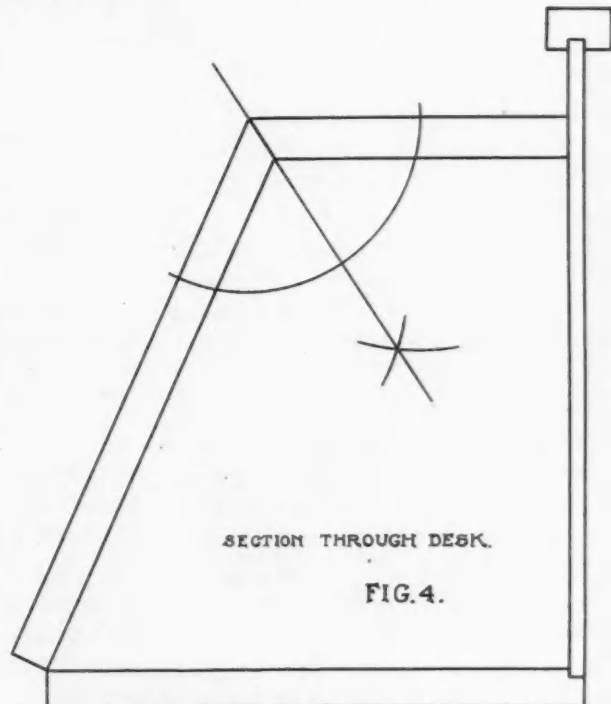
The stretcher, from shoulder to shoulder, is of the same length as the piece just described and for the same reason. Its tenons are laid out and cut similarly, Fig. 3.

Plane a joint-edge for the top of the compartment

and square the ends so that the top shall have a length of twenty-eight and three-eighths inches. Next, set the gauge to seven and one-eighth inches and gauge for the width of the top side. It remains to set the bevel square to the proper angle and plane the remaining edge to this angle. To get this angle, draw on one of the side pieces of the desk with a sharp pencil, lightly, so that they can be easily erased, lines to indicate the locations of the lid and top piece. A line drawn from the vertex of the outer angle to that of the inner angle, will give the slope, Fig. 1. If these angles are bisected, the result is likely to be more accurate, Fig. 4.

For the back, three-eighths of an inch tongued-and-grooved whitewood ceiling may be used, being nailed in place after the parts of the desk are assembled. These pieces of ceiling should be cut to a length of fourteen inches and should be put on vertically, the nailing being done from the back side into the top and bottom parts of the compartment. This back should not be put on until the rest of the desk has been stained and filled as it should be finished in the white with shellac.

The pieces which support the drawer should be squared to one-half an inch each way with a length of eleven and one-half inches each. They may be made of hard or soft wood and are to be fastened with screws so that one end of each shall be flush with the back edge of the side pieces to which it is fastened.



The parts having been assembled, the pieces which are to go around the top to stiffen the broad sides and to cover the ends of the ceiling or back may be placed.

The under sides of the pieces which cover the seven-eighths-inch stock should be rabbeted to a depth of three-sixteenths of an inch with a width of seven-

eighths of an inch. The gauging should be done from the outer edge, being set first to three-eighths, then to one and one-fourth inches. The rabbet should extend to within one-half an inch of one end while at the other it should be cut entirely out. The length of these pieces can best be determined by placing

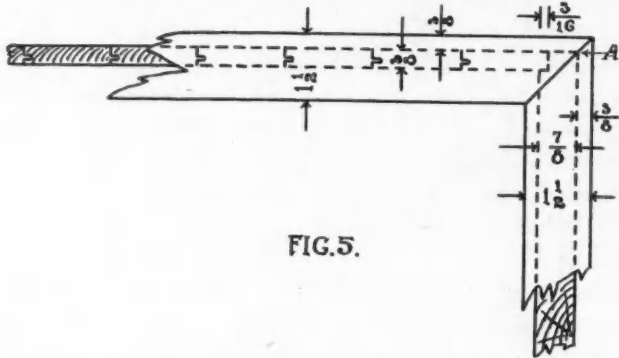


FIG. 5.

them in position and marking. They join the corresponding piece on the back with miter joints.

The back piece corresponding to the ones just described should be gauged for the rabbet first to three-eighths, then to three-quarters inches.

In getting the lengths of these pieces the point A, Fig. 5, is the point from which the marking should be done, the dotted lines representing the side and back of the desk, the heavy lines representing the top pieces.

In next month's number of the journal we shall complete the description with the making of the lid and hinging the same, the construction of the drawer, the making of the compartment partitions and the manner of finishing the wood.



### Concrete Telephone Poles

Several well known contractors in Mankota are experimenting with cement with the idea of manufacturing concrete telephone poles and they are a possibility in the near future. The experiment of using them is being tried in Richmond, Ind., and if it proves successful they may become quite common in a couple of years.

A skeleton framework of four corrugated iron rods is covered with ordinary concrete, the material being "poured" about the framework while it is octagonal in shape, thirty feet in length is provided with mortises, which are to be used by linemen when climbing and also is provided with cross arm mortises near the top. The cross arms are to be fastened in place by means of iron bolts. The pole is as ornamental in appearance as the general run of pine poles and has the additional virtue of being perfectly straight.

The strongest point in favor of concrete poles, however, is their durability. Pine telegraph and telephone poles must be repaired by new ones every five or six years as a rule. Concrete poles, it is declared, will be permanent, and soil conditions cannot affect them in the least. The cost will be less than pine poles,

and can be manufactured by the companies right on the ground where used. Should the experiment with the concrete pole prove successful it is likely the telephone companies will substitute them for pine poles as fast as these become unfit for further service.



### Illustrated

A teacher in one of the primary schools of New York recently read to her pupils "The Old Oaken Bucket."

After explaining the song to them very carefully, she asked the class to copy the first stanza from the blackboard, where she had written it, and try to illustrate the verse by drawings in the same way a story is illustrated.

In a short while one little girl handed up her slate with several little dots between two lines, a circle, half a dozen dots, and three buckets.

"I do not quite understand this, Maimy," said the teacher, kindly, "What is that circle?"

"Oh, that's the well," Maimy replied.

"And why do you have three buckets?" again asked the teacher.

"One," answered the child, "is the oaken bucket, one is the iron-bound bucket, and the other is the moss-covered bucket that hung in the well."

"But, Maimy, what are all these little dots for?"

"Why, those are the spots which my infancy knew," earnestly replied Maimy.—*Harper's Weekly*.



### Sad Ending

A young clerk grown up in the employ of a prosperous German grocer was by reason of his ability and knowledge of all the details virtually intrusted with the management of the business, and although given frequent advances of salary, began to feel that his services were absolutely indispensable and not properly appreciated from a money point of view. He laid the matter before his employer, placing particular stress on what a difficult matter it would be to operate the business without him. This claim was admitted by the employer, who inquired further:

"But, Chon, vat if you should die?"

"Oh, then you would have to get along without me," remarked John.

After a few minutes' deep thought the employer looked up at Chon and said:

"Vell, Chon, chust consider yourself deat."—*Harper's Weekly*.



### Still in Doubt

Reporter—Uncle, to what do you attribute your long life?

Oldest Inhabitant—I don't know yit, young feller. They's several of these patent medicine companies that's dickerin' with me.—*Chicago Tribune*.



**Side Cut of Jack Rafter**

To the Editor:

Kewanee, Ill.

Figure 1, 2 and 3 illustrates the whole thing. Take the length of the common rafter as the base and the distance from center of the other roof to the point directly opposite the seat of valley as C. D. Then draw a line from C. to B. Draw lines 1, 2, 3, etc., jacks, space them as you want them, measure and mark length on each one. This gives you the shape of space to be covered by valley and jacks

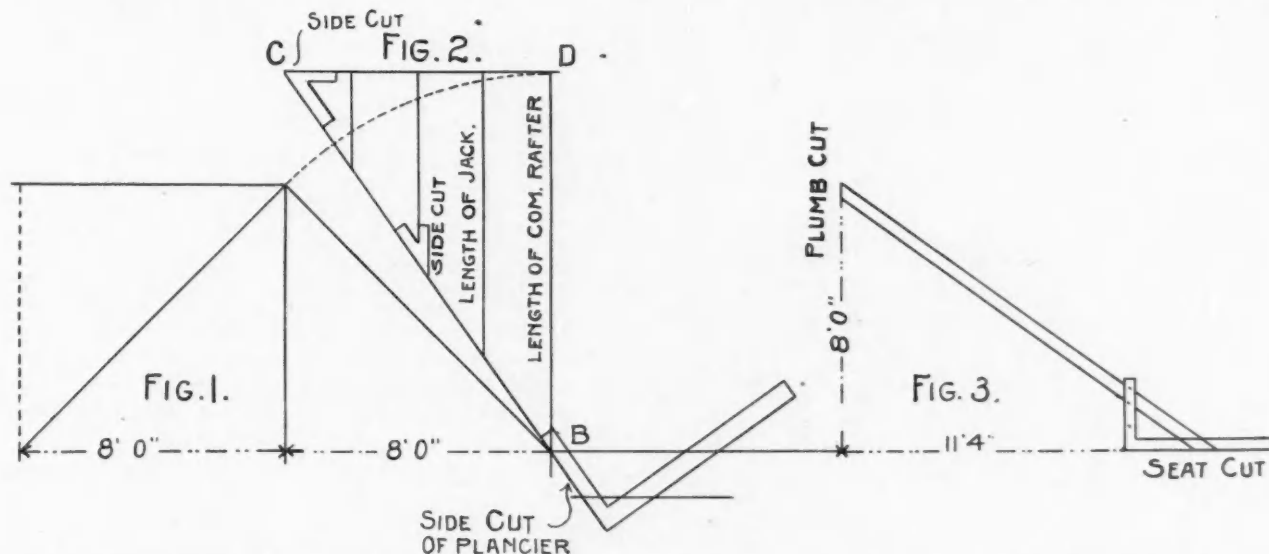
experience with pitch and gravel roofs and would like some of the family to give me full instructions for re-roofing this building with same if practicable. J. W. VAN NESS.

**How They Did It**

To the Editor:

Laceyville, Pa.

In the December number we noticed your article, "How Do You Do It?" Would like to tell you how we build a porch. First comes our floor timbers, then our iron rods for founda-



(or hips), the length of valley, length of each jack, side bevels of valley and jacks, and cut of plancier if it is the same pitch of roof, but it will not always give the seat and plumb of valley. To get this, take the rise and run of valley. Sometimes we strike a roof of several different pitches. In such cases the jacks cannot be framed in pairs for each valley, but we must make another draft using the same length of valley and as mentioned before, the distance from point of landing to point over base, or in other words, C. B. will be the same but C. D. and D. B. will be longer or shorter as the case may be. Then lay off your jacks as before.

I hope this will make it plain enough for the brother chips.

A. E. SNOW.

**An Answer Wanted**

To the Editor:

Hardy, Neb.

I am called upon to put on a tar and gravel or pitch and gravel roof on a building 24 by 90 feet. The same now has a roof of what is called alligator roofing and has a fall of one-half inch per foot and tin flashing built into the walls and covering on top of present roof. I have never had any

tion, which we extend down into the ground about three feet. Next our lattice work or other open work between the floor and the ground, together with our front steps. When this is all complete with proper stays, we put on our casing and then lay our floor.

In your article on building porches you mention cutting 2 by 4 to take place of columns when taking these down and putting in columns. Now we discarded this way years ago.

We next set our columns. If colonial columns, we locate the overhead timber over the center of the base of column. You all may have your way of doing this work, but we believe the order as given above will build the best porch for the money.

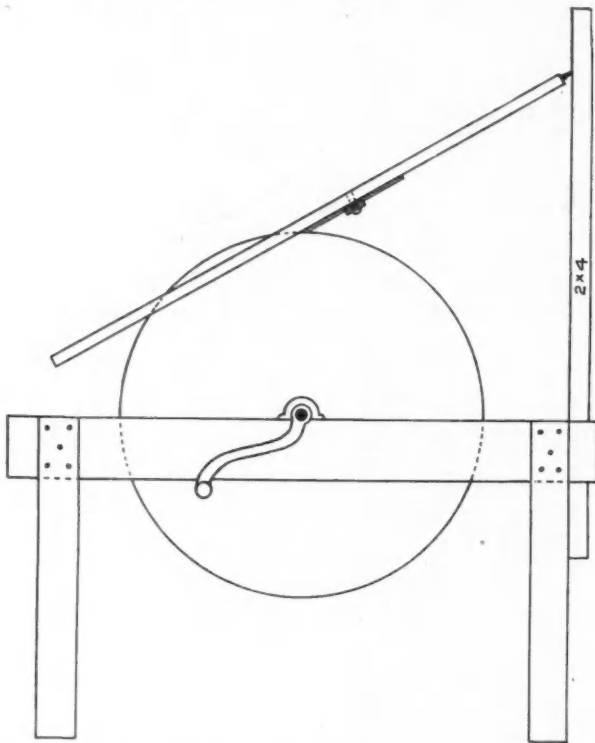
My partner and I started in business twelve years ago in a town containing less than 1,000 people. Our first year's contracts amounted to about \$2,000, balance of our time we worked by the day. To start with we borrowed \$50 after our first contract. We bought a colt for \$35; lumber wagon for \$9; harness for \$2.50. The colt proved to be the best horse we ever owned. The wagon was not worth \$1. The harness, together with plenty of hay bale wire, did good service.

This year we will do \$20,000 worth of business, mostly in other small towns. We now have over 5,500 feet of floor surface devoted to builders' supplies and buy considerable in car lots. We have a good team with plenty of wagons to transport lumber and material. We take your paper and have many of your books. We simply would not do without them.

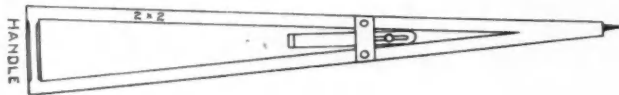
Should this find its way into print, perhaps we will tell you "How We Do It" in some other article. WHIPPLE BROS.

### Device for Grinding Chisels

To the Editor: Excelsior Springs, Mo.  
I am sending you cut of what I find a very useful device for grinding chisels and plane bits or any other tool that can be fastened in the clamp. It is made as follows: Take two pieces of 2 by 2 inches and taper them at one end so they will be about 2 by 2 inches on end when put together. Make them about 3 or 3½ inches long, but the length of your



grind stone frame will govern the length to some extent. Put a wedge shaped piece the same thickness between these two arms to extend about one-third the length from the point and about 3 inches wide at the widest end, but the thickness of the grind stone will govern the width of this piece as it must be wide enough to clear the stone. Put a piece in between the arms at the wide end and round for handle. Then take a piece of 7/8 of an inch by 3 inches (hard-



wood is better for this piece) and drill a hole in each end for screws and fasten across the frame, making one edge flush with frog or wedge shaped piece. This cross piece should be beveled on the front edge to prevent it from striking the stone. Now drive a D 8 nail in, file the point off and sharpen, and it is complete and ready for business as soon as you nail a 2 by 4 perpendicular on one end of your grindstone frame to jab the sharpened nail into while you hold

the handle with your left hand and turn with your right. This will of course grind the tool a little concave, but one man can do a much better job of grinding than two men can the old way. W. T. COURTNEY.

### How to Join Uneven Pitches

To the Editor: Lakewood, Ill.  
I am submitting you the ground plan of a small frame cottage, front 16 by 28 feet with a 14 by 28 foot extension in the rear. The rafters on the rear part are to be half pitch and the rafters on the front part to rise to the level

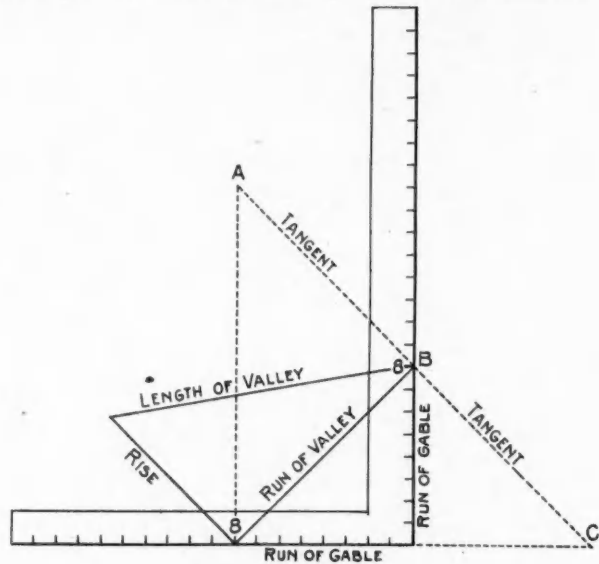


FIG. 1.

of the rafters on the rear part. The front being two feet more in width, the same figures on the steel square will not cut both sets of rafters. What will be the length of the valley rafters and what figures will cut them? Please give a full explanation in the AMERICAN CARPENTER AND BUILDER. This proposition may seem very simple, but there

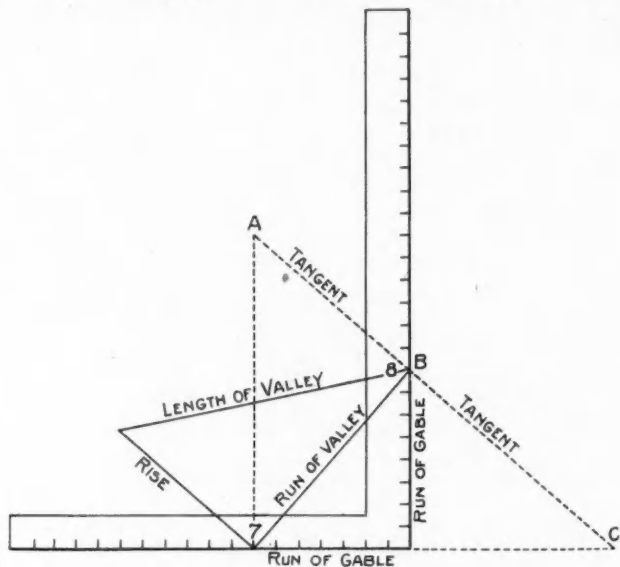


FIG. 2.

are more carpenters that will fall down on it than can work it out. J. I. JONES.

Answer: As to the question asked, we will first illustrate as though the gables were of the same width and pitch, then apply the same rule to unequal pitches. Referring to Fig. 1, sup-

pose the gables were 16 feet wide. The runs would therefore be 8 feet. Now by letting inches represent feet, a line from 8 inches on the tongue to 8 inches on the blade will represent the run of the valley. From this and at right angles to it, set off the desired rise as shown. A line from the rise to the other end of the run will be the length of the valley. A line drawn from the toe of the valley, and at right angles from its run intersecting the lines of another right angle, as at A B will be the length of the tangents. The runs of the gables being equal, the tangents are consequently equal. Therefore, the tangent taken on the tongue and the length of the valley will give the side cuts to fit in the angle at the intersection of the ridge boards. Now we will apply this rule to the question asked above, as shown in Fig. 2. The runs of the gables being 7 feet and 8 feet respectively, the line is drawn from 7 inches to 8 inches on the steel square and otherwise proceed as before. The gables being unequal, the tangents are likewise unequal, thus requiring different angles for the side cuts to fit at the angle of the ridge boards. The tangent A-B is taken on the tongue, and the length of the valley on the blade, the latter will give the cut for one side and by substituting the tangent B-C on the tongue, the blade will give the cut for the other side. This rule also applies to the side cut of the jack and in sort is as follows:

Take the length of the right common rafter on the blade and the run of the left common rafter on the tongue. The blade will give the cut for the right jack, vice-versa for the left jack.

There is another question that comes up in uneven pitches that should not be overlooked. That is in regard to the cornice. If a level plancier is wanted, the plate for the steeper roof should be raised the amount that one roof rises more than the other in the width of the cornice. Where there is not much difference in the slope given the roofs, this can be met by the depth of the plumb cut of the seat.

A. W. WOODS.

### Height of Plate Rail

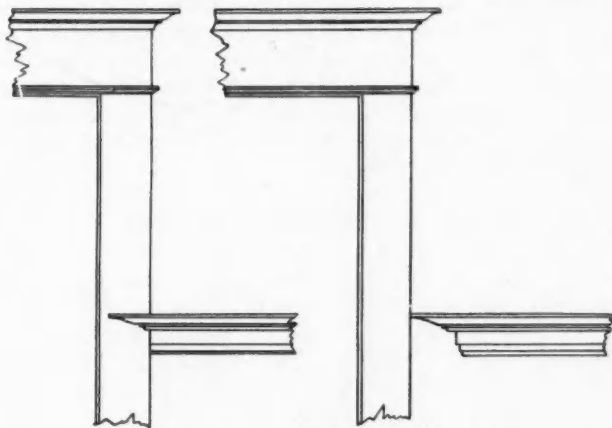
To the Editor:

Dakota City, Neb.

I desire to ask through the columns of your valuable magazine what is the proper height to place a plate rail. A great many carpenters place it at five feet six inches, some six feet. Also give information as to whether it should return on the casing, or butt against it. See diagram.

GEO. L. NIEBUHR.

Answer: There does not seem to be any set rule as to the height the rail should be placed, but the preference



seems to be to place them about two-thirds the height of the ceiling.

As to the second question, it certainly looks much better

to let the shelf return against the face of the casing, rather than against the wall. The accompanying diagram shows both ways. The wall decorations above and below the rail are usually of different colors and where the rail is butted against the casing it avoids the unsightly corner next to the casing that would show by the other method. EDITOR.

### A Circle Top Sash

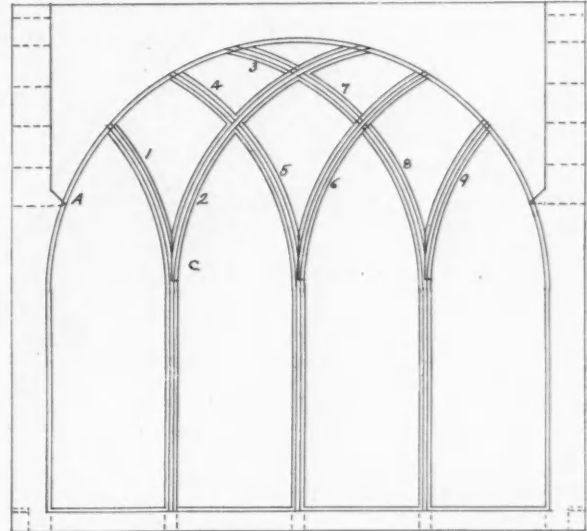
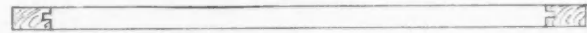
To the Editor:

Allentown, Pa.

During the past year I have noticed that most every subject pertaining to the building of an ordinary house has been very ably discussed, but still there are some subjects



DETAIL OF SASH BAR



TOP SASH  
Fig. 1.

that have not been touched at all. I will take for my object an ordinary cut up circle top sash. I find that in some mills little attention is given to this very particular piece of work. No consideration whatever is given to it, it is made only in the quickest way possible.

In Fig. 1 you will notice the construction at A. The mortise, tenon, and miter together form a good, lasting piece of work. I will call your attention to the construction at c. I see so many mill hands make their construction here with three joints, which makes it impossible to last for any

length of time. Now a way which I have followed successfully for some time, and which has given good satisfaction, is shown at c.

I first cut my muntins as shown in Fig. 2, then I shape it as desired, and afterwards cut along dotted lines, as shown.

This is easily membered to piece 2. Having fitted piece 1, I then fit pieces 4 and 3 at one end, then piece 2 is fitted to piece 1 and fastened in sash.

Pieces 3 and 4 are then fitted and fastened, and I proceed with the other parts as in 1, 2, 3, 4.

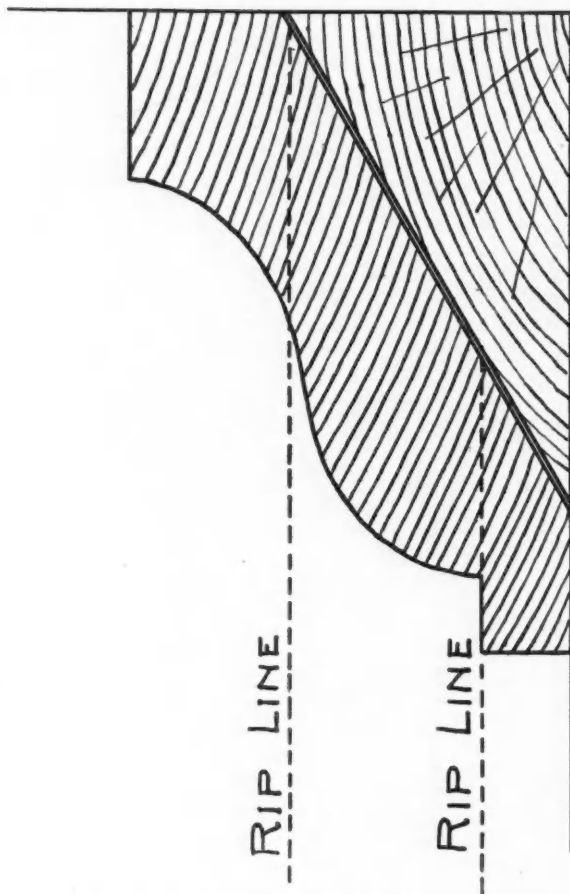
I find that this makes a good and lasting job, and is easily put in place.

Now if any of your readers know of a better plan, I would be much pleased to hear from them. Discussing a subject is bringing out its best points. ORLANDO W. OLD.



**Putting Crown Mould Around Circle**

To the Editor: Catlettsburg, Ky.  
In the December number of the AMERICAN CARPENTER AND BUILDER, I noticed a method of putting up crown mould around a circle, which is good as far as it goes, but it is



not complete. There should be a backing gotten out to fill the spring of the mould, and nailed to the fascia. This will make a good job, because the backing will hold the mould out in position on account of the solid bearing back of it. I herewith send a diagram of how I cut it, as spoken of.

A. C. MOORE.



**A Problem to Solve**

To the Editor: Calais, O.  
I will submit a problem which has no catch in it, but is simple and practical. The problem is this: For the sake of illustration will say that we have two pieces of timber each

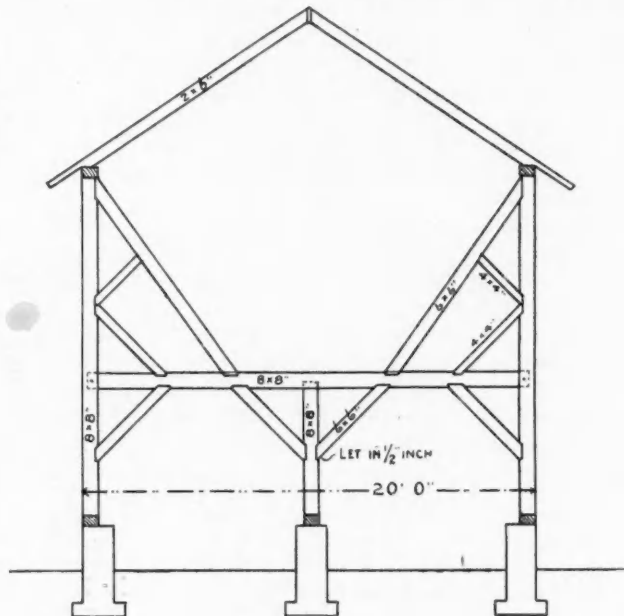
10 feet in length exactly, no more or no less, and we wish to splice them, making a 20-foot piece. Now we are not to use any other timber in making the splice, only the two 10-foot pieces, and at the same time the splice is to be of good and sufficient length to give the stick all the strength that would be required of a splicing in case it should be used in the construction of a building or otherwise. Now I would like to hear from some of the readers of the great family of the AMERICAN CARPENTER AND BUILDER on this subject.

C. T. EVERETT.



**Center Bent for a Barn**

To the Editor: Pittsfield, Ill.  
I herewith submit a rough sketch of the inside cross bent of a barn, which is 20 by 50 feet. On account of the narrowness of the building, purlins and cross-ties are discarded.



The sketch explains itself. It is open below the floor on the south side for a calf shed. The center and south side pillars have a 2 by 6-inch piece running through them and sticking up for tenons. The end and side bents are made in the usual manner.

W. E. HOOVER.



**Concrete Wall Construction**

To the Editor: Stockwell, Ind.  
How thick should the walls be and how close and how heavy the reinforcement in an octagon building 80 feet in diameter, 18 feet to the eaves? The first floor is to be 8 feet to the mow joist. This mow will be loaded with all kinds of grain and hay.

STOCKWELL LUMBER CO.

Answer: With a fourteen-inch wall to mow joist and a ten-inch wall the balance, ten feet made of one part cement, two parts sand and four parts gravel of mixed sizes (from pea to walnut) you will need no reinforcement.

With concrete of the above proportions a twelve-inch wall will carry the first eight feet and an eight-inch wall the roof, with the following reinforcement: Place in each octagon corner four one-inch rods 18 feet long (perpendicular) spaced five inches apart and held from spreading by means of loops made of four or six strands of common annealed wire (such as is sold by any hardware dealer). These loops to be not more than two feet apart. When your twelve-inch wall is six feet high, then bind together the entire eight posts with heavy wire fence netting four feet high. Should this interfere with the doors, then let the lower strands of wire curve

up over such opening frame. In no case cut the wire. Thus the top of the wire will be ten feet high and the next five feet will need no reinforcement, but the top three feet should be strengthened with no less than twenty strands of No. 4 common annealed wire around the entire wall.

Always place the wire around the outside of the vertical iron rods and tie the ends of the wire together. In tamping in the concrete keep the wires in the outside half of the wall and at least one and one-half inches in from the outside surface.

The last mentioned construction will carry a safe load of thirty-two tons per lineal foot of wall at the mow joist and about fourteen tons at the roof eaves. Let the wire rust for several days. Then clean with a wire brush before using, but never use old rusty wire. If galvanized wire netting is used, then use two rolls instead of one, as galvanizing any iron reduces its strength about 35 per cent. Four turnbuckle rods eighty feet long, tying all opposite corners together, placed on top of the mow joists and under the floor, will prevent spreading. If the floor is to be loaded with more than 225 lbs. per square foot of floor space, these turnbuckle rods can be made of three-fourths inch rods and the joist notched on top wherever they cross same.

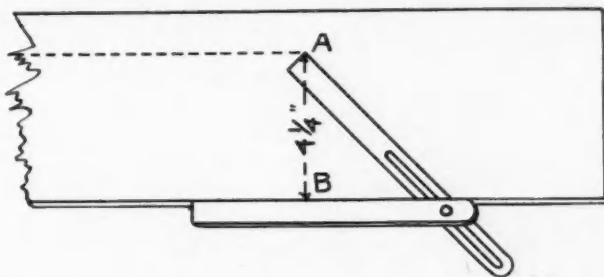
Another method to prevent spreading is to plaster the eight corners with eight-inch projections and sixteen-inch face the entire height of the wall. This will save the use of turnbuckles and add to the durability and appearance of the building.

FRED W. HAGLOCH.

### How to Cut Siding for a Gable

To the Editor: Colfax, Ia.

In the November number, Mr. J. H. Godfrey gives his way of siding a gable, which is practically the way I do, but would like to add a few words. I take a siding the full length of the gable in width, say sixteen feet. I set



my bevel square by it with the point from A to B, the distance that the boards are to be to the weather. To illustrate, I want a four and one-fourth inch. I set the point A to B four and one-fourth inches. Then as I mark the bevel of my board, I get the lap with the same marking. Now for the length of the siding, when I have half of my boards cut, I have half the length left, which will work back, so that there will be no waste at all. D. SNYDER.

### Cistern as a Reservoir

To the Editor: Bostwick, Neb.

Will you kindly inform me as to whether it would be possible or practical to build a cistern to be used as a reservoir through which water is to be forced by air pressure into the house? If so, how would it be done? If you will reply I will be pleased and much obliged. H. A. KENNEY.

Answer: In reply to this inquiry as to whether it will be possible or practical to build a cistern to be used as a reservoir from which water is to be forced by air pressure into the house, would say that we do not believe that it is.

In the first place it would be impossible to build a cistern

that could be made air tight. What you want to do is to build a cistern to be used as a reservoir for the soft water and pump the water from the cistern into an air tight steel tank placed in the basement of the house. This tank has two openings in the bottom, one for inlet and one for the outlet. As the water is pumped into the bottom of the tank the air having no outlet is compressed. This pressure is maintained by an automatic air valve. A good average pressure is 40 pounds, which will deliver water to points 85 feet above the tank. WM. R. MARSHALL.

### Lengths and Cuts of Purlin Plates

To the Editor: Yaliski, O.  
I was very much disappointed in reading the answer to Mr. Davis' problem. Each one told what the figure would

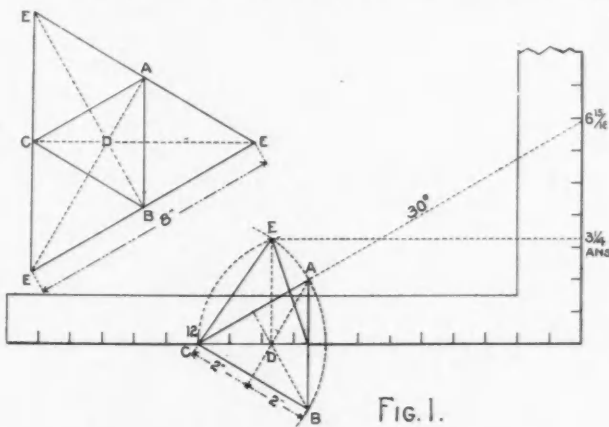


FIG. 1.

have to be but not how to cut if from a block. The idea I got was to take a block of wood with a triangular base, each side of which is four inches, and find how long to cut it, so

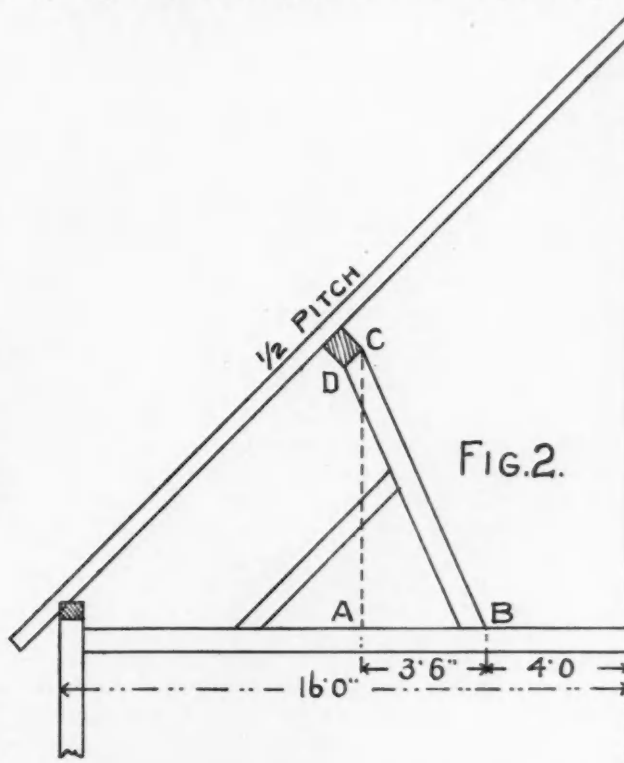


FIG. 2.

that when it is shaped up properly, each side will be four inches. Now, here is where I stick. How do you find the perpendicular of the block? I have my way for it, but find no authority for solving it that way.

I am also sending a drawing of a barn roof, which I framed

and would like to know the best way to find the length and cuts of posts for purlin plates. How would you lay them off with the steel square? It may be very easy, but I am a beginner and would like to learn. I made a draft of the roof, and got length and cuts from that. DAVID WICKLINE.

Answer: The point Mr. W. takes in his first question is a good one and to get at it mathematically forms a problem that is quite beyond the average man in figures. However,

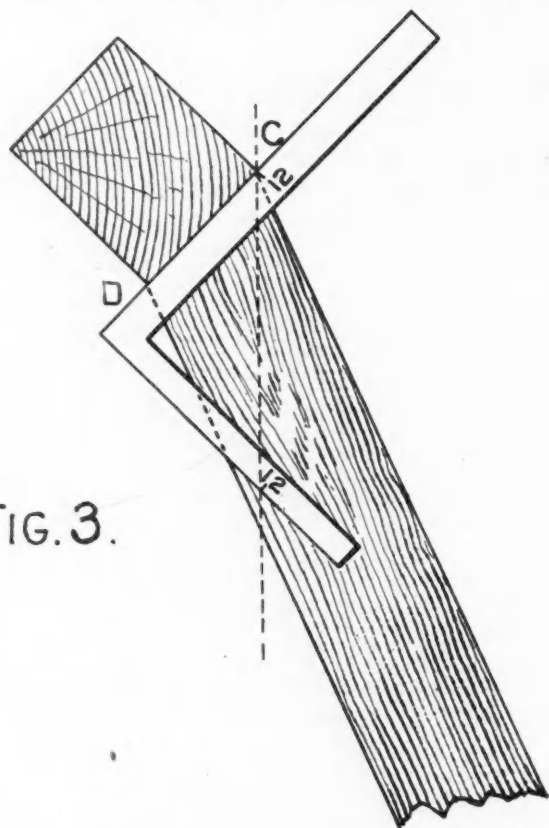


FIG. 3.

for all practical purposes, it is not necessary to enter into the higher branches of mathematics for a problem of this kind, as it can be arrived at by a scale drawing nearly enough. In fact, so near that the difference cannot be distinguished. This being the case, we will answer it "on the square." First draw a line from 12 on the tongue to 6 15-16 on the blade. This line will form an angle of 30 degrees from the tongue and the space enclosed represents one-half of an equilateral triangle. This being the case, we set the needle point of the dividers at 12 and open up with a radius equal to the length of the desired side of the triangle (4 inches) and draw the arc as shown, indefinitely. Where the arc cuts the 30-degree line, as at A, represents one corner of the plan. From this, drop a perpendicular line, cutting the arc at B and connect with starting point at C. Now, A B C represents the plan and by dividing the same as shown by the cross lines, establishes the center at D and a perpendicular line from this point cutting the arc at E will be the required height of the desired block and is found to be  $3\frac{3}{4}$  inches. The arc C E is simply another proof of the accuracy of the work. The proportions may also be found by laying out a full size pattern, as shown in connection with this figure, on a piece of cardboard and by folding on lines C A; A B and B C bringing the points E E and E together, they will meet at a point directly above D and will show the full shaped block desired.

Mr. W.'s second question, as to how to find the length and cuts of purlin posts may be found as follows:

Taking the example furnished with question, we reproduce the same. The post should be treated in the same manner as for a common rafter, A B equals the run, A C the rise,

and B C the pitch. Then the run and rise taken on the steel square will give the seat and plumb cuts. That is, if there was a plumb cut, but it is necessary to law off a plumb line just the same as if it was to be cut and to this line apply the steel square with the figures that give the seat and plumb cuts of the main rafters, which in this case is the one-half pitch. Then 12 and 12 applied to the plumb cut line will give the cut C D, as shown, in Fig. 3. In Mr. W.'s example, he shows a brace against the purlin post. For the cuts, proceed the same as above, taking its run and rise for the seat and plumb line, and to the latter apply the square with figures that give the seat and plumb cuts of the purlin post.

A. W. WOODS.



### Cost of Setting Jambs

To the Editor:

Bethel, Vt.

What is it worth to set the jambs and case and hang a door all complete, hardwood? Also what is it worth to case a window all complete, and what is it worth to put up a straight flight of stairs, all hardwood? FRANK LYMAN.

Answer: In reply to your correspondent, Mr. Lyman, I will say that the style of finish has quite a little to do with what it is really worth to set the jambs, case, fit and hang a door all complete. For the average house we consider the following a fair and reasonable price for hardwood finish:

Setting jambs .....	\$0.40
Casing both sides .....	1.30
Fitting and hanging door .....	1.00
Cutting in stops .....	.30
	<hr/>
	\$3.00
Window casing .....	\$1.00
Stops .....	.25

\$1.25

The above does not include fitting and hanging. If this is wanted, add 60 cents for window, which would make \$1.85 per window.

For stairs that are plain and straight of the average stock pattern of hardwood, it is quite safe to figure \$1.50 per step for labor. Winders at double the price of straight steps. Platforms double the price of straight steps. Thus every winder or platform would be counted \$3.00 each and the straight steps \$1.50 each. This is a simple and easy way to estimate the labor for stairs. It is supposed of course that the newel rail and baluster are gotten out at the mill ready to set up. If stairs of some elaborate design and more or less complicated, then the price must be increased accordingly.

I. P. HICKS.



### Fitting Doors

To the Editor:

Riple, Col.

Replying to Mr. Leonard in mitring eave and gable frieze, the cut on gable pieces are, length of rafter on blade, half the span on tongue, blade gives the cut. As to fitting doors, my method is to cut off lugs then with two rods or slide rule, take width of opening a few inches from the top and bottom and lay same off on door with a sharp pencil. Then look at jambs and if they are not straight see about what to allow when planing the edge of the door, planing about two light shavings below the marks. Then set the door up, mark up, mark the top by bedding a try square into inner angle of jambs or rabbet. Cut off the top of the door, mark door for hinges and set in place. Mark jambs for hinges and mark or scribe whatever is to be taken off the bottom. At the same time see what, if any more fitting is necessary on sides. Take down, cut off, finish fitting, and put on hinges. If the jambs are fairly true, this will usually



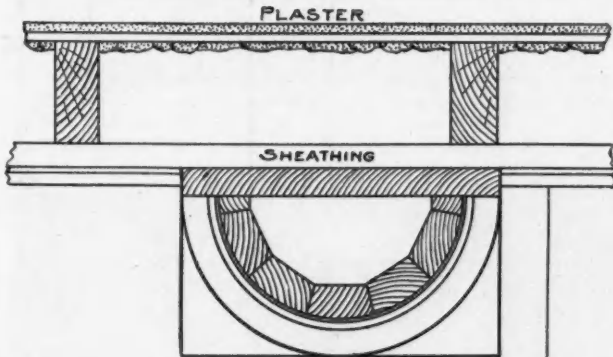
complete the operation and give a fit of a scant sixteenth of an inch on each side. If the jambs are not true, then the work takes much longer time. No, I do not mark the door all around and do not care to have anyone mark it for me, preferring to do all the work from the face side of the door.

GEORGE PEARSON.

**Porch Columns Against the Wall**

To the Editor: Roscoe, N. Y.  
 What I wish to know is whether, in using colonial columns, if they should start and stop against the wall with either a half or whole column? WM. MAUER.

Answer: According to the architectural orders, there should be about three-fourths of a column next the wall.



This, however, is rather expensive, because it requires a whole column to get the part desired. Besides, for the common run of residence work, the half column as a starter looks quite as well, except possibly to the would-be critic. Then, there is no loss of material, because the ripping of one column will answer for both ends of the porch. There should be a 1 1/8-inch board back of the column, as shown in the accompanying illustration, and the siding fitted to this, the same as at the corner boards and outer casings. A. W. WOODS.

**Laying Off Sash Pulley Holes**

To the Editor: Ripley, Tenn.  
 I am sure that Mr. Brundage has tried other ways of laying off sash pulley holes, and so have I, and I am confident his way is a good one, but I have a better way and will submit it herewith and let all the boys who have to make a living by working at the trade make themselves one. The Grand Rapids Sash Pulley Company make a little toothed hole marker and will give any one a pair of them. I think they will fit any of the late patterns of pulleys. To make a couple of these, drill two screw holes through each one of them and then screw them to a piece of pulley stile that has been worked down to the proper width. A small piece of parting stop should be placed in the groove short enough so as not to touch the bottom of the main pulley stile. Fit the wood so that the markers will be the right length to make the top of the pulley 5 inches from the bottom of the header. This makes the best marker that I have ever tried and I have tried many different kinds of pulley markers. N. G. HILL.

**A Problem for the Trade**

To the Editor: Toledo, Ia.  
 An old retired mechanic received a copy of your most excellent book and running over the problems along our line, thought with your kind indulgence, would ask you to print the following problem. This problem has never been in print. As the writer is the originator, I thought it would be of some interest to the young "know it all" mechanics:

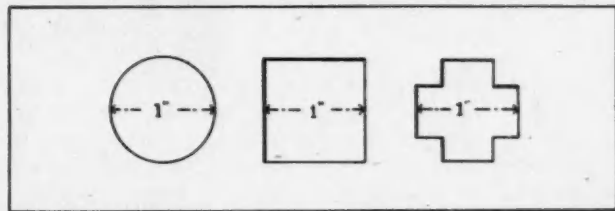
Two vessels lying in port, one starting out running due east at six knots per hour, and the other starting at the same time running due south at five knots per hour. After being out 34 hours from port, the one running six knots per hour changed her course and overtook the other vessel. How far were they then from the port? Take your steel square and figure it out. A. A. JONES.

**Grades of Lumber**

To the Editor: Toledo, Ia.  
 I have noticed Mr. J. R. Schmidt's article on "Lumber" in your January number and, as one of your subscribers, think as Mr. Schmidt does in regard to our lumber and the way it is graded at this time. I believe we should be protected as much as anyone else in that regard. If I order 1. P. 2 by 12-20 feet and the dealer sends 1. P. 1 1/2 by 11 1/2-20 feet I do not see why I should be duty bound to pay for 40 feet when I really only got three-fourths of that many feet. If the lumber trade compels me to take one-quarter less why does not the grocery house have the same right? I believe it is about time for us to pay for only what we get in feet, but not what we don't get. If we all come together and call a halt that will end this kind of a deal. Our congress says that a 2 by 12 don't mean a 1 1/2 by 11 1/2. Let's pay for what is right and get what we pay for. All pull together. It will come. G. W. NEWCOMER.

**Another Problem**

To the Editor: Byron, Ill.  
 To help along the correspondence column, I submit the following problem. Take a piece of thin wood, about one-



half inch thick and cut three holes in it as represented in the illustration. The trick is, to make a single block of wood that will fit each of the three holes exactly. A. H. KOSIER.

**A Useful Suggestion**

To the Editor: Glen Flora, Tex.  
 I was called on by my boss to hold a piece of timber or fix it in the vise so that he could dress it. It was in such shape that it would slip out of the vise. I got a file and laid it against the timber and screwed it and the file in the vise and it held fast. MACK BARRON.

**Setting Door Jambs**

To the Editor: Lincoln, Ill.  
 In a recent number of your paper I noticed the article by I. P. Hicks, which I consider a very good one, but I think that the proper time to fix your walls so they will be in a plumb condition to set the finished jambs to, is when the grounds are put on. Most carpenters put on grounds in a rush, but that is where they make a mistake. If the grounds are left in a plumb and straight condition, the carpenter will have no trouble in setting the jambs. We have a form with which we place all of our grounds, a drawing of which is shown herewith. Supposing you have a 4-inch wall that will only work 3 3/8 inches, you make two straight edges, one 4

inches wide and the other one 2 inches wide, and of a height according to the doors that you are to work on, say 7 feet. Then screw 3 cleats across the two straight edges so that they will be 5 2-16 inches apart. That will allow for lath and plaster on both sides. You can make these cleats long enough so that you can widen the form for a 2-6 wall that will be 7 3-16 inches and then drive a nail in the top and bottom in the center of the cleats. Place 7/8-inch blocks on the inside of the cleats, so as to hold the form out from

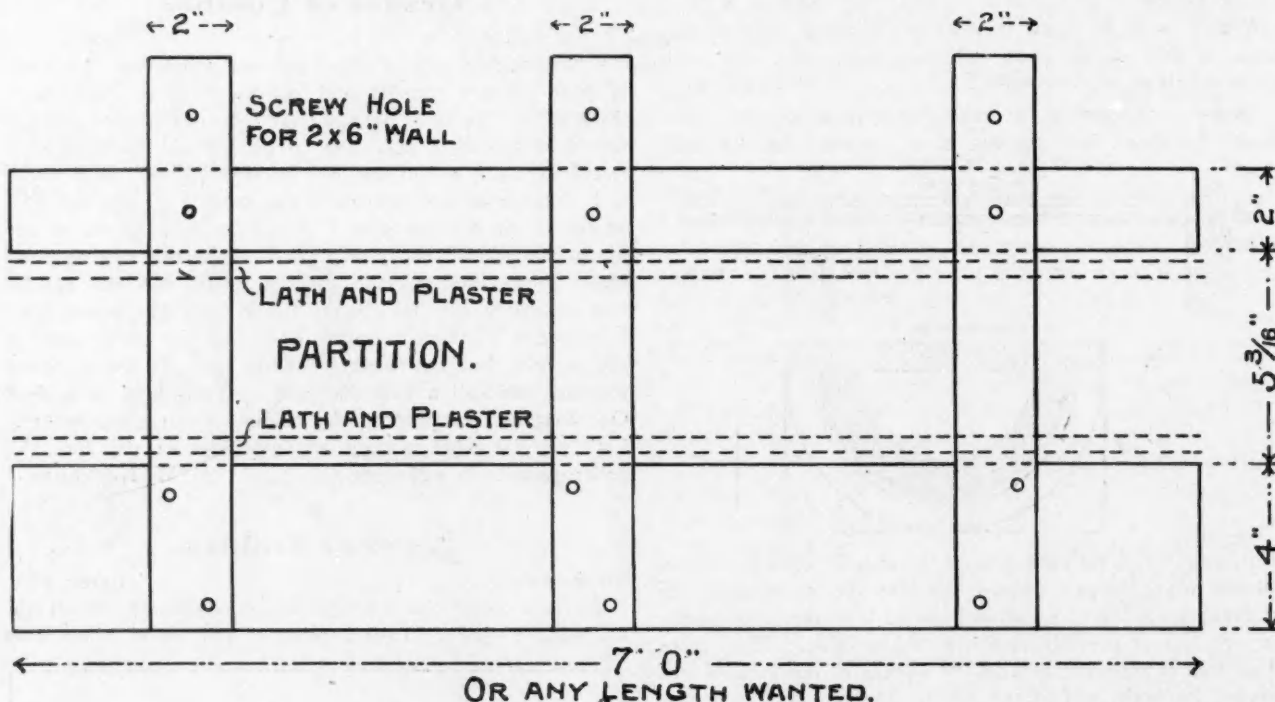
### Length of Rafter

To the Editor:

Kunkle, O.

I herewith submit a sectional drawing of a barn roof that I built recently. It makes a very nice shaped roof and also gives lots of room inside. I have another to build this year. The rafters are made out of one-inch boards and four nailed together, making them 4 by 4 inches.

Now I have a question I wish to ask. The dotted line is



the studding until you have the grounds in place. Then place the form up against the face of the opening. First place a lath at the bottom of the opening and nail the top, leaving it project out 3/8 of an inch for plaster. Then place one side of form against this lath and plumb the form. Then drive the nail at the top and bottom and then place the grounds against the inside of the form. Leave the grounds straight and plumb. Do likewise on the other side and you will have both sides plumb. A carpenter will have no trouble using this form and will put on more grounds with it than he will with a common straight edge and will have no trouble with his jamps. After using this form they will be right. Elmer L. Jones deserves the credit for the work of form.

D. W. ELLIS.

### A Question for the Family

To the Editor:

Argyle, Mich.

As some of the readers may be interested in another problem in carpentry, I will send you this one: If I had a foundation sixteen feet square, joist to be placed two foot centers, and the joists I have are twelve and fourteen feet long, how would you frame them to answer the purpose?

ALEX McLACHLAN.

### Another Question

To the Editor:

Vermilion, O.

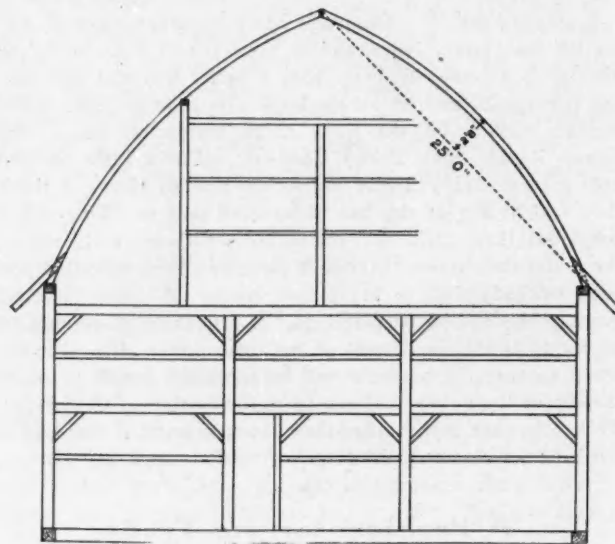
I have a problem to solve for the readers of the AMERICAN CARPENTER AND BUILDER. The problem is: Take a board 9 by 16 inches. then cut it in two. It should then give 12 by 12 inches. The board should be cut only one time.

J. HENRY GOETZ.

25 feet and the greatest distance the rafter is bent from this line is 2 feet 8 inches. What is the length of the rafter?

ARTHUR J. GREEK.

Answer: The working length is the cord which is represented by the dotted line and is, in this case, 25 feet. The



seat and plumb cuts are reckoned from this line. Therefore it is not necessary to know the length of the curve, as that will take care of itself. In laying out a rafter of this kind, it is necessary to lay it out full size to get the proper curve for the sectional pieces, with which to build up the rafter.

EDITOR.

# PRACTICAL TRADE APPLIANCES

## Special Spring Announcement

GORDON, VAN TINE & CO., THE BIG DAVENPORT MILLWORK CONCERN, DEVOTE FOUR PAGES TO TIMELY BARGAINS. SEE PAGES 1459, 1460, 1461, 1462

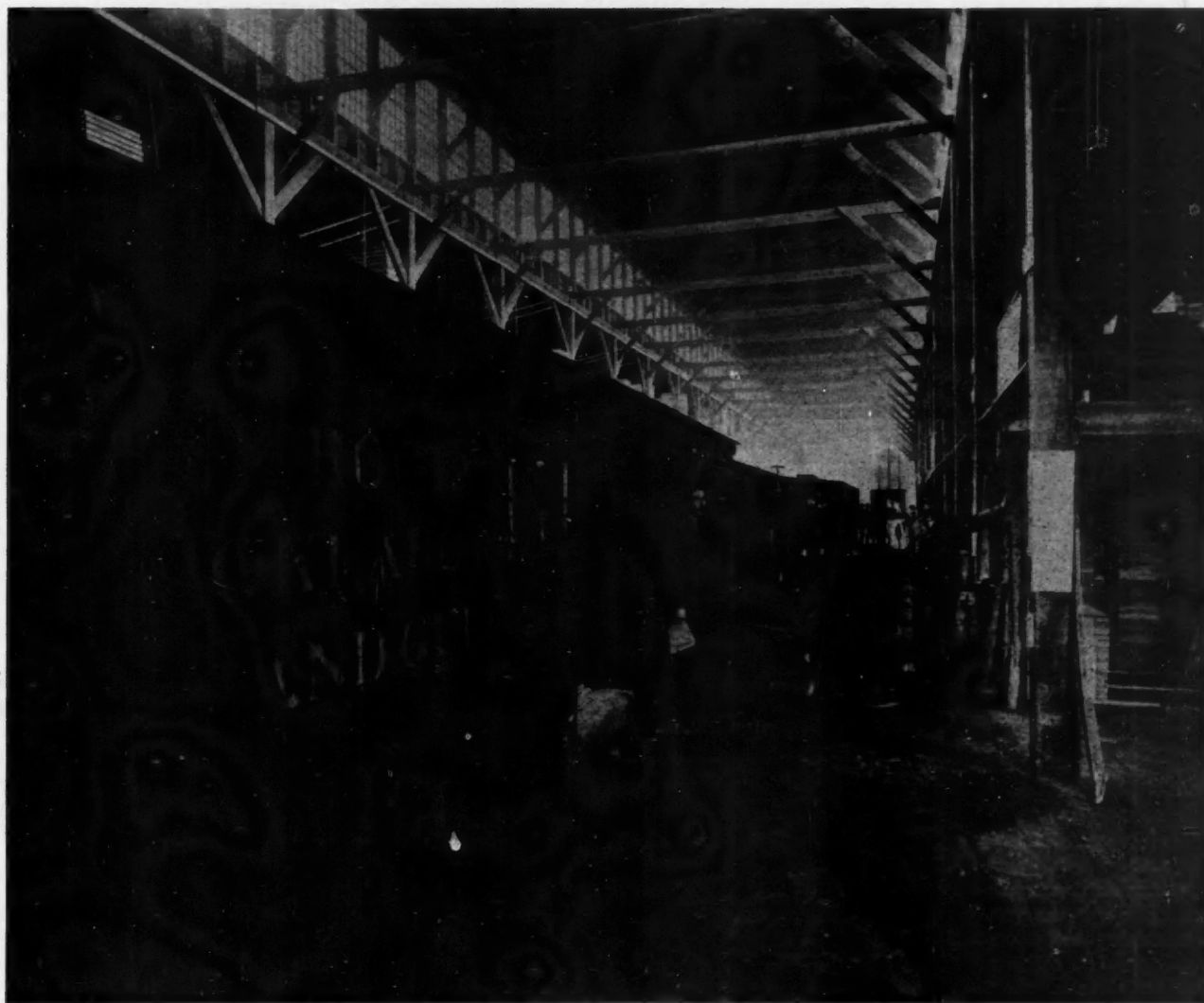
The largest building material advertisement ever taken in this or any other class publication appears in this issue of the *CARPENTER AND BUILDER* and is the special spring announcement of Gordon, Van Tine & Company of Davenport.

The announcement is directed to contractors, carpenters and builders and it will pay every reader of this publication

kinds of building material, and because they are revolutionizing the conditions of building material selling.

Out in Iowa, where this concern has its headquarters, the situation is becoming so interesting that Senator Kittredge, a South Dakota congressman, quoted, and very highly praised, Gordon, Van Tine & Company in an attack upon the trust methods existing today in the lumber business. The *Des Moines Capital*, one of the leading dailies of Iowa, in its issue of February 14th, said:

"Gordon, Van Tine & Company entered the field of selling



Loading Shed, Gordon, Van Tine & Co., Davenport, Iowa

to examine each and every item quoted in the four page advertisement.

The Gordon, Van Tine & Company business has created national interest because they sell by mail only, from an enormous catalogue that quotes over 5,000 bargains in all

direct to the consumer with the announcement that the prices charged by the retail lumbermen for mill work are absolutely all wrong; that the margin of profit is entirely unwarranted; that the slowness with which the retailer serves the consumer is all wrong, and they are backing it up by offering

right straight through the highest grade of mill work at half dealers' prices or less. Further, they ship promptly and have won the praises of builders all over the United States by the manner in which they facilitate prompt execution of building contracts. The day of being held up in the middle of a building job because material cannot be secured is over for the people who will buy direct from Gordon, Van Tine & Company."

This states the question exactly. The slogan of Gordon, Van Tine & Company is high quality, low price, prompt shipments, everyone treated exactly alike.

For the small buyer, Gordon, Van Tine & Company's prices are particularly attractive because it enables the small buyer to hold his own and to get what is justly his, a fair figure on building material. The large buyer finds that he can get a car order executed as promptly as an order for a single piece because of the enormous stocks from which this concern is able to ship.

A representative of this publication investigated Gordon, Van Tine & Company's plant the other day and finds a remarkable system for handling business, and the invitation which the editor accepted has and is made broadcast to the carpenters, contractors and builders of the United States. Their factory is open to everyone genuinely interested in finding out about qualities, styles of goods, etc. We find that an entire train of cars is backed into the shipping room of Gordon, Van Tine & Company and that cars are loaded from both sides at one time and as fast as loaded the ever ready switch engine removes them and makes room for more. We found one fact that will be of particular interest to the readers of this publication and that is scarcely a day passes when orders are held over. That is certainly assurance of promptness, and as *The Des Moines Capital* says, the day of being held up in the middle of a building job because material cannot be secured is over for the people who will buy direct from Gordon, Van Tine & Company.

The new catalogue just issued by this firm quotes about 7,000 prices and illustrates nearly every item. The figures demonstrate beyond all doubt that 50 per cent saving is actually made on the prices quoted by dealers, and the array of goods that are ordinarily made only to order but which are carried in stock by Gordon, Van Tine & Company is a delight to the man who has been held up waiting for special orders. Gordon, Van Tine & Company's goods are up to the standard adopted by the sash and door manufacturers of the northwest. Better products cannot be turned out and they are well warranted in making their guarantee because the entire process of timber selection, seasoning and final manufacture is carried on under their own supervision. They own their own timber lands and millwork factories.

Therefore, in adding our endorsement to this concern of modern methods we say first read their advertisement and then write for their catalogue. You will find beyond dispute that Gordon, Van Tine & Company save you money, save you time, and in all probabilities sell you a quality of goods that will be an absolute revelation to you. As to their advertisement, it is on the four blue pages in this number.

You will do well to file this copy of the *CARPENTER AND BUILDER* for further reference.

### Levering's Wall Ties

O. D. Levering, Columbus, O., whose advertisement appears elsewhere in this magazine, is making public the great capacity of his plant for wall ties and nail grips. Among his specialties are the Capital, Standard, Ohio, Buckeye, Columbus and Jumbo wall ties and the Capital and Buckeye Veneer ties and Capital Nail Grip. He makes as many different ties as any other three manufacturers combined. Every kind

is made on a special machine and is manufactured at the lowest possible cost. The selling price is about as low as it can possibly be made. Samples will be sent to all who request them. Dealers are wanted everywhere.

### Roebuck's Fly Screens

In time of peace, prepare for war. Your fight against mosquitoes and insects is near at hand and now is the time to get your armor ready. The only protection are screens and there is not a screen on the market which offers as many advantages as the Roebuck screen. It is the only screen which fits tight all around, thus excluding the ingress of any insects or mosquitoes; made to last a life-time and at a cost as cheap as consistent with the best possible workmanship



and material. The Roebuck screens can be fitted either on the inside or outside of windows and made to match the interior trim.

A comparison will show the superiority over all others, where careful criticism is brought into play. All they ask is permission to show their wares and have judgment passed upon them. Estimates and catalogues are cheerfully furnished upon request. Mention *AMERICAN CARPENTER AND BUILDER* when writing. Address The Roebuck Wire Screen Company, 179 Fulton street, New York City.

### Attractive New Catalogue

The Detroit Show Case Company of Detroit, Mich., have just issued a very attractive new catalogue, showing in detail the many advantages of the store fronts which they manufacture. In addition to stating how their mode of constructing store fronts and show cases excels others, it gives the contractor many valuable tips and information regarding store fronts in general. In the illustrations and description is included one of the "Petz" Corner Post and Transom Bar—the ideal store construction for the up-to-date store. It does away with unsightly posts and pillars. A copy of this catalogue will be sent to any of our readers who address the Detroit Show Case Company, 491 West Fort street, Detroit, Mich.

### A Practical Telescopic Rod

The latest thing on the market in the way of fishing rods is the "Champion Telescopic Fishing Rod," manufactured by the Van Doren Manufacturing Company, 56-58 West Van Buren street, Chicago, Ill.

The distinctive advantages of these rods are given in an attractive little booklet, issued by the company and many of the leading anglers consider them the greatest advance made in any line of fishing tackle, for many years past.

The rod is made of tapered steel tubing and the construction is such it is, unquestionably, the best rod for bait-casting or fly-fishing, as the very art of casting, automatically keeps the rod firm and the joints taut.

There is no possibility of them "throwing out" or working loose, as will happen with the best of jointed rods oftentimes, when used for any considerable length of time. This

rod can be telescoped or extended without moving the reel, line or hook, much more easily and quickly than the jointed rod can be taken apart and put together. No locking device is necessary, the joints are simply pulled out as far as possible, and the rod is ready for use. Think of the numerous times, in even one day's outing, when an angler would prefer to have his rod two feet long instead of from six to ten feet, were it not for the trouble incident to taking apart and rigging it up again. The "Champion" can be telescoped or extended and rigged up again as easily as opening or closing an umbrella.

Besides the convenience in handling the rod, it is much safer from accidental damage when not in use, the small lighter joints telescoping within the larger one, which acts as a sheath for the whole. The line runs through the guides, outside the rod, exactly as in a jointed rod. The guides are on the end of the joints, fixed and immovable (extra ones between, sliding to their proper place by their own weight, when the rod is extended, can be provided, when so ordered).

According to the manager, Mr. H. B. Wilson, the company has recently perfected and installed several new special machines, which have materially improved the rod, and they are constantly experimenting and improving their methods of manufacturing with a view to securing the best possible results.

In addition to the business this company is doing in this country, they are booking orders for England, Germany, Italy and South Africa, and have received inquiries from many other foreign countries, which goes to prove that they are filling a decided want in telescopic fishing rods.

By writing them and mentioning the *AMERICAN CARPENTER AND BUILDER* they will be pleased to send you their illustrated booklet.

**Signs of the Times**

The volume of business in signs is a great and growing one, and the number made from glass is remarkable. In order to produce an artistic glass sign, it requires a corps of skilled workmen and years of experience and preparation.

The Western Sand Blast Manufacturing Company have had this experience and are in a position to supply you with anything in the line of ornamental glass signs for adver-



tising purposes, for outside of store front, or for inside display, anything, in fact, from the ordinary door or nameplate up to the most elaborate conception of the signmakers' craft.

Their gold and silver chipped work on colored background—used in display signs of all kinds—is something that cannot be adequately described but must be seen to be appreciated. No lithograph or color work can portray the luster and brilliancy of the color scheme in these signs as brought out by the chipped process work on the glass.

Their electric signs show the most beautiful effects by day as well as night. Time was when the best glass, and

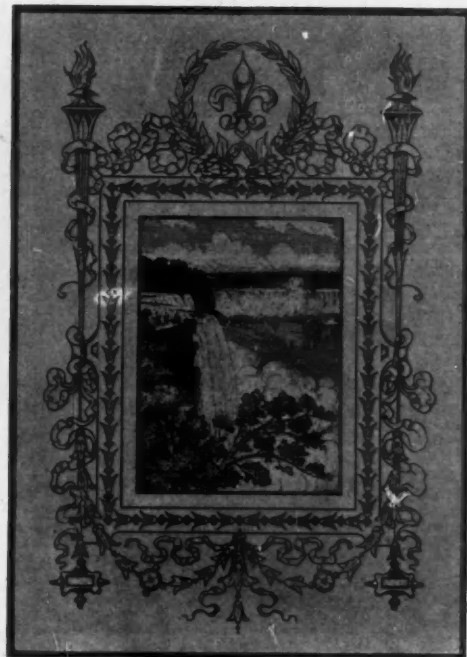
that most in use, came from Venice, as Venetian glass was considered best, but there have been rapid strides during



the last decade in the manufacture of glass, in America, and the growing use for art, or ornamental glass in homes, business places, as well as in churches, has stimulated the manufacture of all sorts and kinds of ornamental glass, for art and commercial work.

A representative of the *AMERICAN CARPENTER AND BUILDER*, in going through the factory of the Western Sand Blast Manufacturing Company, Twenty-first street and Marshall boulevard, Chicago, Ill., was shown an infinite variety of work of different kinds, in ornamental glass.

This concern has been in business steadily since 1876 and in the years that have elapsed since their inauguration have



acquired a large commodious factory, and at the present time are doing a large and steadily increasing business throughout the states.

They manufacture a very complete line of ornamental glass

for use in doors, sash, transoms, etc., in ordinary house use, and for office, store and church work.

Their large catalogue shows over 500 illustrations of ornamental glass, and glass and electric signs of all kinds. This catalogue will be sent to any of our readers, on request, and by mentioning the AMERICAN CARPENTER AND BUILDER.

### Spectacles On Trial

We desire to call attention of our readers to the unique method of advertising of the Trusight Spectacle Company, as shown on page 1463 of this issue. They are introducing the famous Trusight Spectacles and have such confidence in their goods that they offer to send a pair especially fitted to your eyes absolutely free on six days trial. Give them a trial.

### The United Cement Machinery Mfg. Co.

This is a new organization composed of the largest concrete block machine companies in the world, including the well known H. S. Palmer Company, of Washington, D. C.; The Winget Concrete Machine Company, of Columbus, O.; The Cement Machinery Manufacturing Company, of Burlington, Ia.; The Iowa Block Machine Company, of Waterloo, Ia., and some thirty other smaller concerns controlling patents on improvements on block machinery, mixers, molds and tools.

Almost every block machine maker has a patent on some so-called improvement. He generally claims he has patents on all the features of the machine, when, in fact, he has patented only a few points, perhaps only one part, and has copied the balance from the basic patents of the first machine patented by H. S. Palmer. In addition to this but few companies have been able to manufacture their machines in their own factories owing to the limited demand for their machines and limited capital, therefore they could not make a specialty of the business. Many of the machines so extensively advertised are built under contract by some firm which has no interest in the development of the machines and often the customer has to wait for the machine to be built after his order is placed. In order to overcome these difficulties and enable them to manufacture a better class of machinery at a lower cost without infringing patents The United Cement Machinery Manufacturing Company was organized and has purchased outright the patents, patterns, good will, etc., of the above mentioned companies.

United they are free from patent litigation, having purchased the right to the basic patents. United they have purchased the rights to manufacture all classes of cement molding and mixing machinery. United they are able to furnish any design the architect may call for. United they are building the highest grade of machinery possible. United they are operating a complete architectural department. United they own their own pattern shop, foundry and machine shop. United they carry at all times a large and complete line of standard machinery including every machine and tool used by cement workers. United they are able to keep their machine shop and foundry running to their full capacities and are able to furnish customers better goods at lower cost and fill orders promptly.

Their factory and foundry equipment is the largest of its

kind in existence and is located at Plain City, a suburb of Columbus, O. Their shops are built entirely of hollow concrete blocks and are equipped with the most complete and up-to-date machines and tools for the manufacture of cement molding and mixing machinery. They manufacture block machines of every type, both face-down and side-face; special molds, ornamental molds and tools; roofing tile machines, brick machines and cast pallets for all makes of machines, and weatherproofing and coloring for cement blocks and bricks.

### Miracle Catalogue Free

The photograph below shows that the old cry of monotony in concrete block construction can be done away with by using a reasonable amount of common sense, and a little ingenuity. This building is being erected by John Hardin at Vancouver, Wash. All blocks for its construction are made on Miracle molds. So many machines are so limited in scope of work that the architects and others can rightly criticise the block construction. Take a rock face building constructed entirely of rock faced blocks, made only on one plate, every stone being exactly the same, is there any difference in looks between it and a common sheet iron building?

If you were going to construct a building, a little planning and a very little, if any, extra expense will make an artistic as well as a substantial building. The Miracle Exhibit "A" machine will produce over seventy different kinds of blocks, and with a slight additional cost, every stone used in the construction of this handsome residence can be made.



Buildings being erected of concrete blocks in your locality are going to be an assistance or a detriment. It rests entirely with the man who is making the product. If you are going to build up a successful business, you must satisfy the eye as well as the pocketbook of the building public. In order to do this, your equipment must be complete in all details so that you can furnish the good people what they want.

The Miracle Pressed Stone Company, the largest manufacturers of concrete machinery in the world, publish a large 114 page booklet containing over 500 illustrations, showing all the various forms and shapes of concrete material made on their molds. The regular price of this booklet is 25 cents. It will be sent free to the AMERICAN CARPENTER AND BUILDER

readers. Write for it today. Just address Miracle, Minneapolis, Minn., and it will be sent you by first mail.

**World's Largest Concrete Mach. Plant**

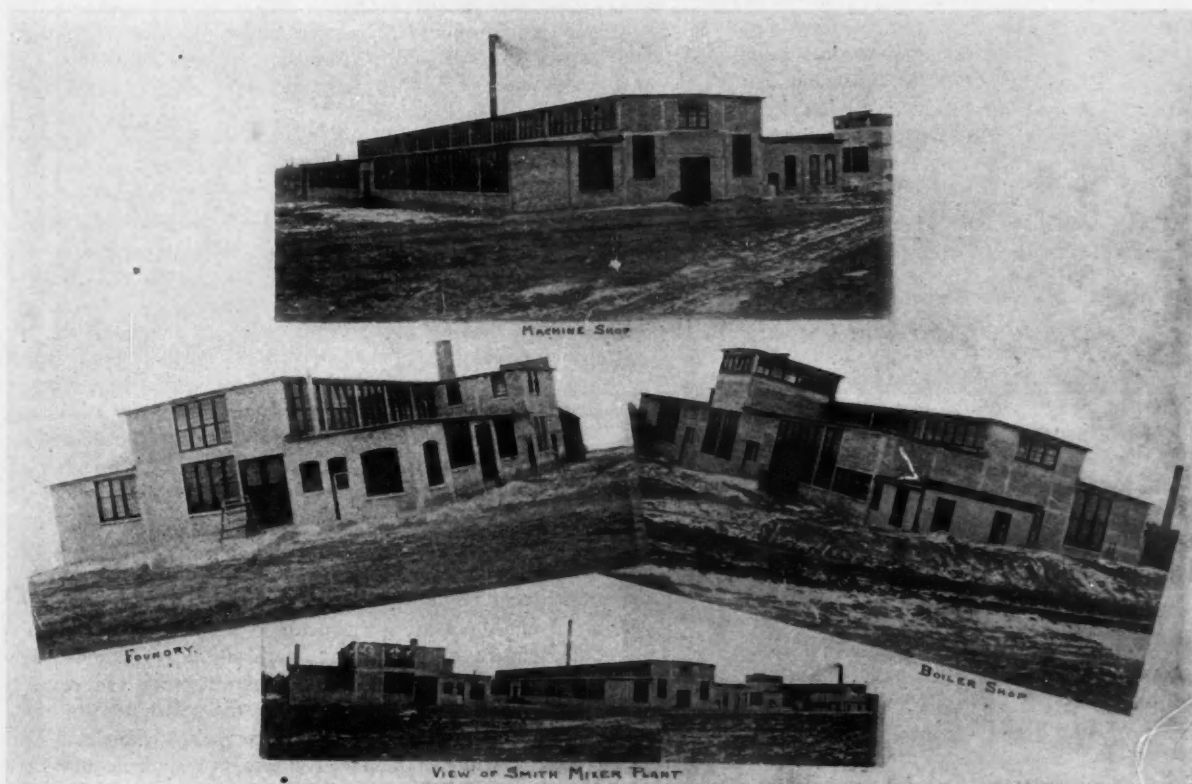
The Contractors' Supply and Equipment Company of Chicago, Ill., who have been identified during the last five years with the very successful "Smith Concrete Mixer," seem to be a very live concern indeed. Last year alone they manufactured and sold nearly one thousand of these machines, and in addition to the work incident to producing this output they report the completion of the largest factories in the world devoted exclusively to the manufacture of concrete machinery.

These buildings, consisting of a foundry, boiler shop, and machine shop, are constructed entirely of reinforced concrete, and equipped with the most modern machinery through-

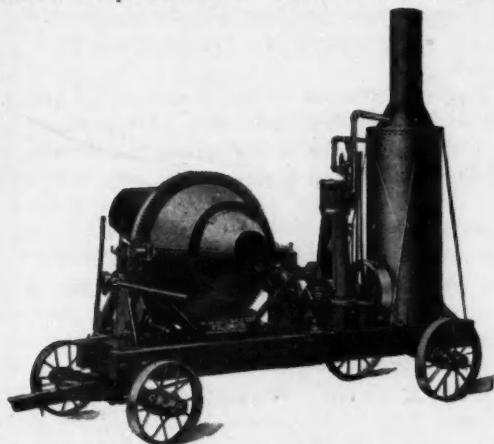
growth of this company some idea of the rapid strides being made everywhere in concrete construction, as the "Smith Mixer" has only kept pace with the times. They hope with their increased facilities to keep pace with the requirements in this line for some years to come; in fact, to set the pace, as it were.

This large plant is located at Thirty-second and Locust streets, Milwaukee, Wis., on the Chicago, Milwaukee & St. Paul tracks, with side track running direct into their yard. The machine shop in itself is one hundred feet wide by two hundred and sixty feet long, the entire building—roof, floors, etc.—being constructed entirely of reinforced concrete.

The crane in the machine shop is forty foot span, running full length of building, and gives 10,400 square feet of assembling and erecting floor space, served by this crane. It travels on concrete girders two feet in width by three feet eight



out, which will insure the highest grade of workmanship and will increase the production of "Smith Mixers" to more than



twelve hundred a year, as against a production of fifty machines, during the first year in a business that started but five years ago.

The reader will be enabled to glean from the phenomenal

inches in depth, which are supported every twenty feet by columns 14 by 16 inches. With such equipment as they have it is not to be wondered at that they can build a superior machine.

\*The "Smith Mixer" is built of materials that are tested before purchase and built in a shop where the men are carefully chosen for experience and ability, and are well paid.

As you know, Mr. Builder, good concrete requires that every particle of stone be coated with cement mortar and that every particle of sand be coated with wet cement. On the "Smith Mixer" this is done, owing to the action of the blades inside, in moving the aggregates around in the mixing drum.

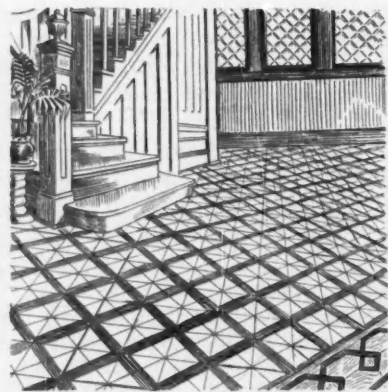
If you are interested in mixers write the Contractors' Supply & Equipment Company, Old Colony building, Chicago, Ill., and they will explain to you more fully about their product—its hatch feeding hopper—its elevating car—its endless chain for assisting loading cars—its hoist for erecting buildings, etc. Write them. It is good to read.

**Parquetry Flooring and Appliances**

In building a house, one of the foremost things to be taken into consideration, is—how shall I finish the floors? Parquet

flooring is one of the most beautiful and effective ways.

E. B. Moore & Co., 76 Wabash avenue, Chicago, Ill., are leaders in this line, for in going through their sales-rooms, one is struck with the infinite variety of floorings and borders. This firm has been in this business for the past thirty years and have in all probability laid more fine floors than any other firm in the entire west.



Their patent parquetry is considered by architects and builders to be the best on the market. Warping and twisting are absolutely avoided, as it is nailed down on a pine floor and will last a lifetime. They manufacture also a full line of floor wax, architectural finish, dancing wax, wax brushes, etc.

They will upon request send you a handsomely illustrated catalogue which shows completely all different styles in parquetry, flooring and the latest border designs now in use. The method of laying the flooring is also very fully described, showing the arrangements around the fireplace and also with reference to the stairs.

Further particulars of which can be had by writing the firm of E. B. Moore & Co., 76 Wabash avenue, Chicago, Ill., and mentioning the AMERICAN CARPENTER AND BUILDER.



### The New Process Veneered Doors

The Madisonville Lumber Company of Cincinnati, O., are advertising the "Korelock" veneered door. A detailed description of the process of making these doors should be of interest to every carpenter and builder.

The trademark "Korelock" is a coined word, deduced from the core construction of the door. The "Korelock" door costs the wholesale trade an average of about 40 per cent of the former price of a veneered door. It is constructed upon scientific principles, under such conditions of high class mechanical equipment that it is admittedly the highest type of veneered door yet placed upon the market, and has been a phenomenal success from the first. The story of its construction from the lumber camps to the modern house and colossal sky-scraper should be interesting to both the architect and builder.

The tendency of all wood to swell, shrink or twist is a fundamental difficulty, and the primary purpose of veneering is to overcome, so far as possible, such tendencies. As the core is the foundation of the door, a perfect core is a guarantee of the whole. Experience has demonstrated that the best results are obtained by constructing a core of strips, or small pieces, thus neutralizing the tendencies to warp. In



the "Korelock" door these pieces are united by a dove-tailed joint in addition to the usual glued joint, the edge strip then being united to the core in a similar manner. This process is accomplished with corelocking machines developed by the manufacturers and constructed at the plant. These machines, in construction and product, are some of the finest examples of mechanical achievement in woodworking machinery, and in operation require the best of skill. They not only cut the dove-tail joint and unite the stock, but also spread the glue, which answers the double purpose of lubricating the joint as the pieces are united and finally setting the joints as the glue hardens. No machines of this character are in use in any other door plant, and are only suited to operations on a scale such as these initial machines are handling. The machines are, therefore, not likely to come into general use, not only for this reason, but owing to their great expense and the mechanical care required in their operation.

Further detail of their construction and operation will be given in response to inquiries from our readers, but present space will not permit of going further into this item, and we will pass on to the preliminaries of preparing the raw material for the machines.

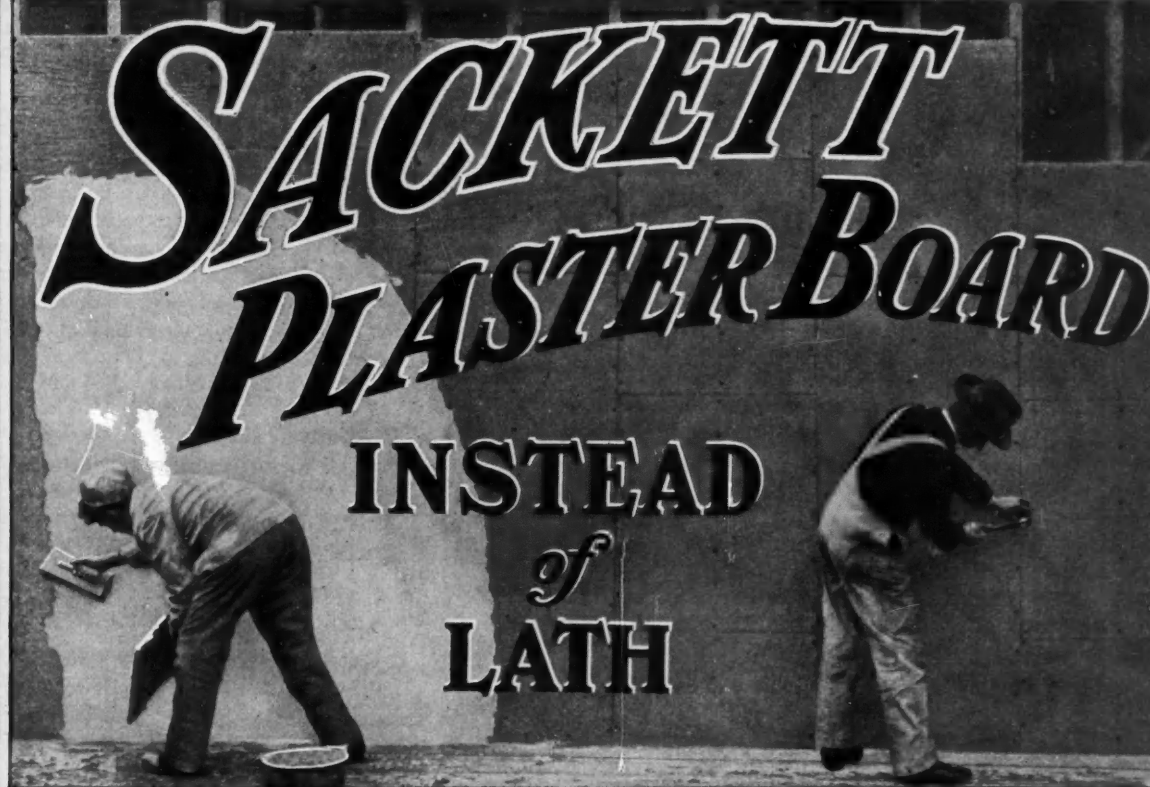
The kiln-drying to which the core strips are submitted is complete and handled through kilns of the most modern type. The greatest care is required in the kilning process, as it is imperative to eliminate all moisture from the core, and results have proved that in this case success is as complete as in all the other details of the door. The average dry kiln operating from the atmosphere as it varies from day to day, necessarily varies its product slightly, as the outdoor atmosphere varies under weather conditions. To take care of this irregularity of nature the kiln drying process is carried on through glass condensing dry kilns, whereby the air is used continuously over and over until the stock is cured, being passed by a natural circulation through the lumber and air ducts into glass condensing towers, where a cooling process eliminates the moisture and the cold air settles and returns to its duties through air ducts for the purpose. Thus the material, when cured, is uniform in its dryness, and with no irregularity as in the ordinary kilns.

From these kilns the material passes through the cutting department of the plant, where six heavy double surfacers bring it to a thickness in preparation for the rippers and slashers, which reduce it to the strips designed for the corelocking machines. After the cores are completed through these machines, the face veneers are applied, and here the great advantage in specializing, which is so fully acknowledged in manufacturing, as well as in profession or scientific lines, is conspicuous. The old method of sawing the veneers from lumber has been abandoned, and the modern method of rotary cutting the veneer direct from the log, established.

The logging operations of the Madisonville Lumber Company on its own timber lands offer an opportunity for the selection of logs for the veneer mill with reference to their adaptability of fiber and grain, so that only the choicest of the logs are used in the veneer work, and those that are most desirable for door veneers. In the veneer, as in the core, all natural tendencies of wood to warp should be eradicated so far as feasible. By a boiling process of twenty-four hours the logs are properly tempered to this end, and then the rotary lathes, by shaving around the log, cross-cut the grain in such a manner as to neutralize its drawing features, and at the same time develop the figure of the wood, adding immensely to the natural beauties of the grain.

In the veneer mill, which constitutes an important section of the main plant, the advantages of applying a mechanical process exclusively to a specialty are evident. The entire veneer mill, with its full quota of foremen and employes,





## FIREPROOF AND ECONOMICAL

SACKETT PLASTER BOARDS have been successfully used since 1891 in thousands of buildings of all classes, including small cottages, prominent hotels, costly residences, churches and theaters.

Walls and ceilings of Sackett Plaster Boards will be *dry and ready in half the time* required when lath is used, as less than half the quantity of water is needed. *Less moisture* means *less damage* from warped and twisted trim and woodwork.

*Their superior insulating qualities make warmer houses with less fuel.* The first cost is *no more* than good work on wood lath, and *less* than on metal lath.

*Sackett Plaster Board is an efficient and economical fireproofing*, not only for walls but between floors, and for protecting exposed wooden surfaces in mills, warehouses and industrial structures. It is also used extensively instead of lumber as outside sheathing under weather boards.

Sackett Plaster Boards come in sheets or slabs 32 x 36 inches ready to be nailed direct to the studding, furring or beams.

Carried in stock by *up-to-date building material dealers* everywhere.

*Booklet* showing buildings all over the country where these Boards have been successfully and economically used, with *Samples* and name of nearest dealer, furnished on application to any of the following General Distributers.

UNITED STATES GYPSUM CO.  
CHICAGO CLEVELAND FT. DODGE

GRAND RAPIDS PLASTER CO.  
GRAND RAPIDS, MICH.

SACKETT PLASTER BOARD COMPANY, 17 Battery Pl., New York City

is concentrated on the item of veneers for door use, all of uniform fiber, thickness, size and quality.

The veneer comes from the rotary lathes in long sheets in proportion to the diameter of the log. These veneer sheets are carried on long aprons as they come from the lathe, to machines called clippers, holding long horizontal knives that cut these sheets to sizes for the door plant, and cut out the defects as they appear. They are then passed to the driers, where they are mechanically dried in from thirty to forty minutes, and, in the drying process, rolled to a polish, preparing them for the high finish they are to receive on the completed door in the finishing room.

This feature of drying wood direct from the wet log in thirty minutes, ready for gluing, is perhaps one of the most sensational features of the process, and is certainly something modern in woodworking. Under old methods, in vogue until recently, this stock would be seasoned for two months and then passed through hot air dry kilns, occupying an additional week's time before it would reach the condition that these drying machines produce in thirty minutes.

The veneer mill turns out the door veneers as described, cut to size, thickness and proper widths and lengths, and dried ready for the gluing and pressing mill, where they are applied to the cores and the completed parts of the door made ready for the door plant, which turns out the finished product ready for shipment. Hydraulic presses are used largely in this process and the veneers glued to the cores under a pressure that seems to weld the pieces of wood together.

The enormous quantity of glue consumed has developed a scientific mixing process, whereby the glue is dissolved and mixed in large vats and distributed about the mill through pipe lines, being tested almost continuously to guarantee a

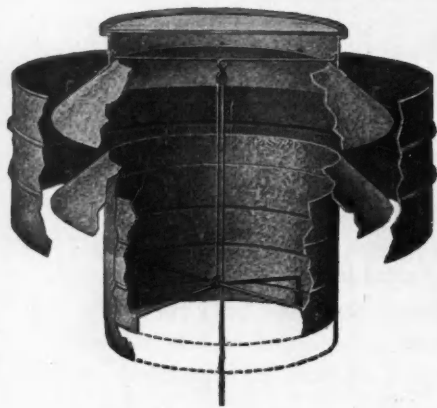
uniformity of strength. The use of glue in such quantities has naturally developed an accuracy in mixing and testing that can not be expected from small mills, and has also developed accurate data as to the merits of different manufactures and grades of glue. Such features explain the readiness with which the company guarantees its product in every particular.

In the door plant the same efficiency prevails, with a mechanical equipment equal, and in many respects superior, to the best in the world. Many machine attachments, and in some cases complete machines, have been built in the shops of the company for its own use, and are not to be found in the machinery market or in the use of other mills.

The process through the door plant shows the same careful attention to merit and detail that is evident throughout, and the finished door, on its arrival at the storage warehouses and shipping yards of the company, is as perfect as human ingenuity and machinery can make it.

After a careful study of the facilities and methods, a possibility of producing and marketing such a superior article at 30 per cent of former market values, is explained. The company, backed by its timber investments, representing more than a billion feet of the choicest forestry of Wisconsin and Michigan, supplies its veneer mill with selected logs from its own cut, and thus the veneer mill has not only the benefit of selected material, but at a minimum cost. Logs not adapted to the veneer mill are handled through the company's saw-mill plant, with a capacity of 75,000,000 feet per annum, and as less than 25 per cent of the logs are sent to the veneer mill, the choice fiber and rich grain conspicuous in the finished doors are explained.

Another feature explaining the low price on these doors is embraced in the facilities for marketing and distributing



Notice Sliding Sleeve Damper. Patented.

## One Won 48 More

Now comes the Florida East Coast Railway Company, to prove our contention that the unassailable superiority of the

## Burt Ventilator

is proven beyond question by the repeat orders.

In February, 1906, the Florida Company purchased a single Burt Ventilator for trial. They had previously tested practically all the ventilators on the market. They have just sent us an order for 48 more Burt Ventilators, which tells its own story.

Our 64-page general catalogue contains some further particulars that will be of interest to all who use ventilators. Write for it today. Address

**The Burt Mfg. Co., 500 Main St., Akron, Ohio.**

*Largest Manufacturers of Oil Filters and Exhaust Heads in the World.*



Notice Sliding Sleeve Damper. Patented.



## “Target-and-Arrow Old Style” Tin Has Endured on This House for 44 Years

During this Period Another Part of the Roof Has Been Shingled Three Times

**H**ERE is a splendid example of the marked superiority of good tin over good shingles. The ell of this old house was roofed with our “Target-and-Arrow” tin in 1863. With the exception of occasional painting it has never required attention. Save for a slight mishap it has not leaked a drop in these 44 years and is still as good as the day it was put on.

Since this tin was laid, however, the balance of the roof has been shingled three times with the best Eastern cedar shingles. Each time the shingling was done the tin roof was tramped over and otherwise abused. The house is located at Newburyport, Mass., and is owned by Mr. Charles W. A. Davis.



Architects, prospective builders and property owners desiring a roof that will give absolute protection and will outlive all other forms of roofing material can get it in “Target-and-Arrow Old Style” tin. It offers the same durability to day that it did 44 years ago. The roofing question is thoroughly and intelligently discussed in our booklet “A Guide to Good Roofs.” We send it free to any who are interested.

**N. & G. TAYLOR COMPANY**  
Established 1810 PHILADELPHIA

# We Will Send You FREE 2 Cans (Any Desired Shades) of Johnson's Wood Dyes For Name of Your PAINT DEALER

We want every carpenter to try Johnson's Wood Dyes at our expense, as we know that one trial will insure continued use. Its superiority is acknowledged by the enormous sales. Don't confound Johnson's Wood Dyes with various "stains" now on sale. Water "stains" and spirit "stains" raise the grain of the wood. Oil "stains" do not sink deep into the wood, nor do they bring out the beauty of the grain. Varnish stains do not properly color the wood—the color being only in the finish. When varnish finish is marred or scratched, it shows the natural color of wood—revealing the sham.

Johnson's  
Dyes are  
Prepared in  
all Shades  
as Follows :

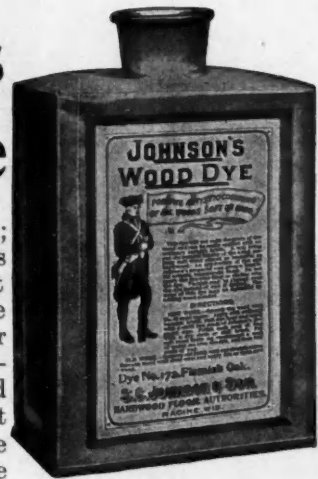
- No. 131, Brown Weathered Oak; No. 129, Dark Mahogany; No. 172, Flemish Oak; No. 140, Manila Oak; No. 126, Light Oak; No. 110, Bog Oak; No. 123, Dark Oak; No. 128, Light Mahogany; No. 121, Moss Green; No. 125, Mission Oak; No. 178, Brown Flemish Oak; No. 130, Weathered Oak.

Photographic illustration showing how Johnson's Wood Dye brings out natural beauty of the wood.



## Johnson's Wood Dye

is a dye; it penetrates the wood; does not raise the grain; retains the high lights and brings out the beauty of the wood. It is the best for use on floors, interior woodwork and furniture. Johnson's Wood Dye, any desired shade, is sold by the best paint dealers. Insist on getting the genuine, don't take a substitute



Half Pint Cans, 30c      Quart Cans, \$0.85  
Pint Cans, - 50c      Gallon Cans, 3.00

### 1 Can Johnson's Electric Solvo FREE

We want you to try, at our expense, the finest preparation in the world for removing all finish from wood, metal and glass—Johnson's Electric Solvo, so we will send you 1 can of it FREE with the 2 cans of Dye.

Be sure to send us your paint dealer's name and the name of paint jobber with whom your paint dealer does business, so we can make it easy for you and your dealer to get our preparations.

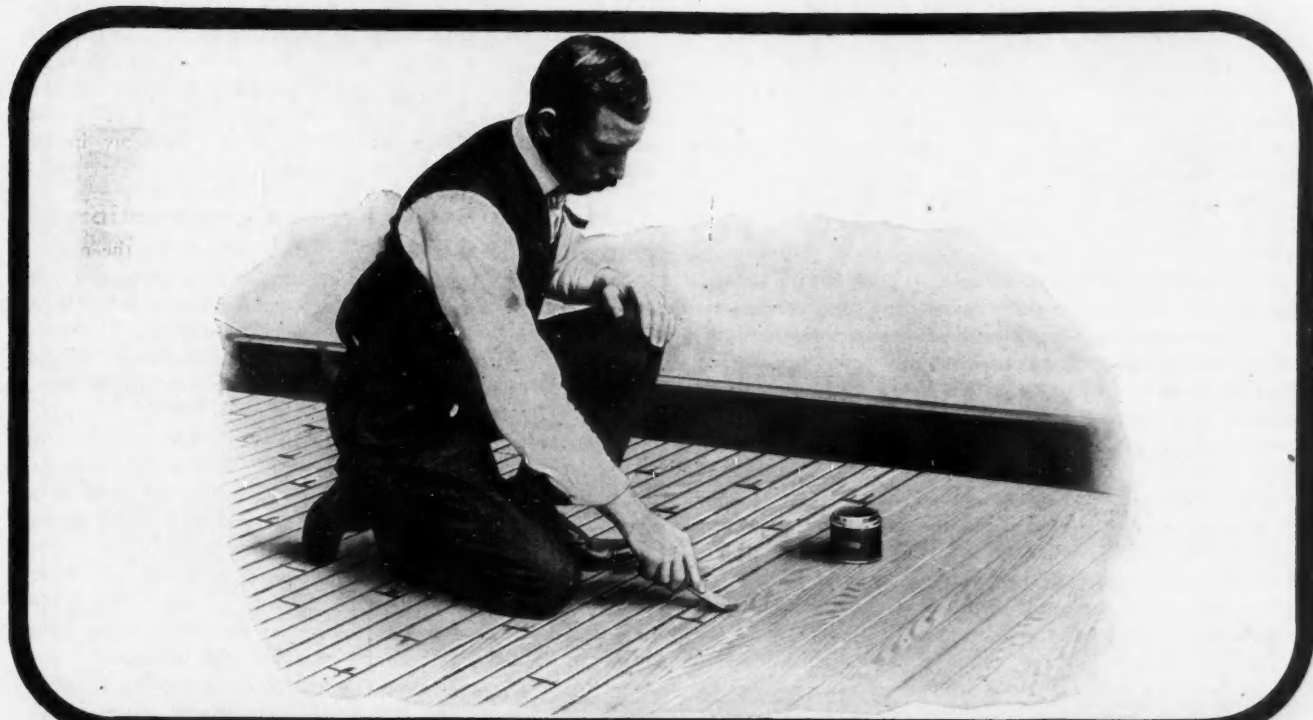
Write us a letter or postal today as follows: (Don't cut this out.)  
S. C. JOHNSON & SON, Racine, Wis.: Gentlemen—My paint dealer's name is

..... his address is  
..... My paint dealer's jobber's name is  
..... his address is  
..... for which please send me FREE  
prepaid, 2 cans of Johnson's Wood Dye..... shades, and 1 can of  
Johnson's Electric Solvo, and copy of your new 25c book, "The Proper Treatment  
for Floors, Woodwork and Furniture," edition ACB3, all FREE as per your  
offer.

My name is .....

Address .....

**S. C. Johnson & Son, Racine, Wis.**  
"The Wood-Finishing Authorities"



Fill those black, ugly looking cracks with

# Johnson's Crack Filler

*"A Non-Shrinking, Adhesive Compound for Filling Cracks Caused by Shrinkage"*

This preparation is now conceded by expert painters and wood-finishers to be the finest in the world. It is a superior substitute for putty as it will not shrink, is antiseptic and moth preventive. It is made especially for filling in cracks between boards, nail and carpet-tack holes in old floors. It may also be used for rough and slivered surfaces.

The color of Johnson's Crack Filler changes after drying so that it will not show when used for maple and oak. For dark woods the necessary coloring may be added. A pound ordinarily covers thirty square feet. A putty knife is all that is necessary to apply it.

The next time you require a crack filler, use Johnson's and you'll get the best results.

Johnson's Crack Filler is sold wherever paint is sold.  
1 and 2 pound cans, per lb. 25c; 5-pound cans, per lb. 20c.

Ask your dealer and insist on getting the genuine **Johnson's Crack Filler**. Don't take any substitute.

Write us today for copy of our new 25c book, "The Proper Treatment for Floors, Woodwork and Furniture," sent FREE. This book is 48 pages in size, printed in six colors and gives valuable information to every interested in wood-finishing. Mention edition ACB3.



## S. C. JOHNSON & SON, RACINE, WIS.

*"The Wood-Finishing Authorities."*

the product, large local stock being carried at distributing points throughout the country, and in the neighborhood of such stocks, selling offices for placing with the dealer, thus doing away with the ordinary jobber's profits. These distributing points include Chicago, Minneapolis, St. Louis, Kansas City, Denver, Louisville, Pittsburg, Cleveland, Baltimore, Boston, New York and many others.

Over fifteen hundred of these "Korelock" doors are made per day, in addition to a large miscellaneous line of general millwork and lumber products. The plant is also handling an extensive lumber business, as indicated by its saw-mill capacity of 75,000,000 feet per annum, the total consumption of the woodworking departments being something in excess of 50,000,000 feet per annum. The daily production in windows is about two thousand in ten hours, and of blinds five hundred pairs, giving a total number of openings in doors, sash and blinds of over 4,000 in ten hours. As the average house will only consume about forty of these openings, the product is equivalent of 100 houses per day.

The magnitude of the plant may be appreciated in a measure by a few statistics that indicate the dimensions. Twenty miles of logging railroad in operation; docks at factory, two miles; thirty-eight acres of floor space, containing twenty-eight miles of steam and water pipes.

The annual sales of the company, including all departments, branches and subsidiary companies, exceed five million dollars per annum.

The capital invested runs well up into the millions, and the number of hands employed in the company's operations, from the woods to the distributing points, exceeds three thousand.

In the above sketch of the operations of the company we have endeavored to give some idea of the perfection of

system and great resources essential in the production of the "Korelock" door to increase the possibilities of the output and at the same time to reduce the cost to a point where the highest type of door may be brought within the means of the humblest cottager, thus adding materially to the comfort and sanitation of the home, as well as to the economy in all buildings.

### Modern Store Front Construction

The J. W. Coulson & Co., of Columbus, O., are the manufacturers of a store front construction that is unequalled. It has been on the market for about eight years, and has been extensively used, and found wanting in no particular. It needs no further recommendation, than to say, that since it was introduced, its sales have doubled that of the preceding year, during each consecutive year.

By looking at the illustrations in their advertisement in this issue of our publication, you will readily see the manner of its construction. The steel used, being in the form of a T, more strength and rigidity is secured than could be, by using the same amount of steel in any other form. It is encased in the wood, and is provided with lugs at either end, by which it is secured in place by screws. Where the transom bars intersect with the corner posts or division bars, they are framed together, and provided with bolts at the factory, ready to set in place. With this construction, all glass is set from the outside, and is held in by wooden stops, which complete the contour of the different members, forming a setting of wood for the glass, so that it does not come in contact with the metal. The whole outer surface is covered with metal, the same being held in place by screws, finished to match the finish of the metal used, which can be had in 18 gauge brass, finished in polished brass, brush brass, nickel



**Center Lift Store Hoist**

**We Pay the Freight—You Install Elevator Yourself**

We will ship this Elevator direct to you, freight paid and you can install it yourself without expense except the help of the average mechanic. This is an exceptional offer. Everyone knows that **EATON & PRINCE** means dependable Elevators. No other Elevator is quite as good because none is made with such infinite care. Send for Catalogue No. 99.

We are also extensive makers of Passenger and Freight Elevators, for direct and alternating current. Send for catalogue.

**EATON & PRINCE COMPANY**

70-76 MICHIGAN STREET, CHICAGO.





**IS SHE  
COMING  
OR  
GOING?**

We have been trying to figure out whether this girl is coming in or going out. Do you think you can help us? Of course it makes no difference in the action of the hinges, as they are made perfectly and swing any door correctly from any angle. The making of a hinge is nine-tenths the battle—the quality the other tenth. Did you know that we make twenty different styles of spring hinges that are rare and attractive? There are embodied in these twenty styles hundreds of different sizes and finishes—and hinges that are made for all kinds of work—such as large, heavy bank or library doors, lavatory, butler's pantry, screen doors, cabinets and show cases, etc. We have published a booklet called "High Grade Hardware—In Keeping with Twentieth Century Ideas." How would you like to see a copy? Sent free anywhere. We call this book our No. 12.

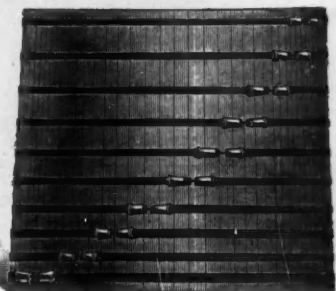
**47 Years in the Spring Hinge Business Means Something**

**The Columbian Hardware Co., Cleveland, Ohio**

ALWAYS SAFE AND RELIABLE. ASK YOUR FRIENDS.

## Caldwell Cypress Tanks

Through the use of Louisiana swamp cypress, the most durable tank wood known, and scientific hooping plans, are the most satisfactory tanks made, because they give the best and longest service.



They are also the cheapest, because the saving in repairs, through superior material and workmanship, more than pays for them in the end.

This is the experience of hundreds of users, who have for years demonstrated its serviceability and long life. Ask for reference and illustrated catalogue.

**W. E. CALDWELL CO.,**  
**Tanks** STEEL-WOOD **Towers**  
 GALVANIZED  
 WINDMILLS--GAS ENGINES--PUMPS  
**LOUISVILLE :: :: KENTUCKY**

### Rider Agents Wanted



in each town to ride and exhibit sample 1907 model. Write for Special Offer. Finest Guaranteed **\$10 to \$27** 1907 Models **\$7 to \$12** 1906 & 1908 Models all of best makes **\$3 to \$8** 500 Second-Hand Wheels All Makes and Models, good as new Great Factory Clearing Sale. We Ship on Approval without a cent deposit, pay the freight and allow **TEN DAYS' FREE TRIAL.** Tires, coaster-brakes, sundries, etc. half usual prices. Do not buy till you get our catalogue. Write at once. **MEAD CYCLE CO., Dept. M12 Chicago**

## 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.**

H. J. KICHLIN, Sales Agent

### WHO WANTS SLATE?

Roofing Slate for Houses, Barns, &c. Always clean, beautiful and fireproof. Blackboards for Schools, Colleges, &c. Needs no commendation; universally used all over this and other countries.  
 Structural Slate. Electrical Stock, Sinks, Troughs, Washtubs, &c. Superior to all stone for such purposes.  
 Slater's Supplies. Handmade Slating Tools, Felt, Cement, Nails, Snowguards, Punching Machines, &c.  
 Write for prices and I will tell you all about Slate.  
**DAVID McKENNA, Slatington, Pa., U. S. A.**

## K.C. WIRE & IRON WORKS.

Home Telephone 611 Main

Bell Telephone 87 Grand

Tree Boxes  
 Stall Guards  
 Fencing  
 Poultry Netting  
 Desk Rails  
 Riddles  
 Hay Racks

### STEEL BEAMS and CHANNELS

Architectural Castings Architectural Wrought Iron

Feed Boxes  
 Coal Screens  
 Window Guards  
 Jail Cells  
 Columns  
 Wire Cloth  
 Joist Hangers  
 Lintels, etc.

Foundry and Machine Shop.  
 Rosedale, Kansas

WIRE WORK OF ALL DESCRIPTIONS

Desk A, Kansas City

**SAMSON SPOT CORD WEARS LONGER**

SEND FOR TESTS. CATALOG. "B" AND SAMPLES

NO WASTE FROM ROUGH PLACES, CHEAPEST IN LONG RUN.

**SAMSON CORDAGE WORKS. BOSTON, MASS.**

plated, oxidized copper plated, gun metal or bauer barff finish, or in polished copper or aluminum metal, as desired.

The construction when in place, presents the most attractive appearance. It is so formed as to obtain the greatest amount of strength in the smallest bar, and so cause but slight obstruction. It is also formed so as to be the most practical, the inventor being an experienced glass setter, and had long realized the disadvantages at which large glass was set under the old methods, especially where the glass set from the inside. With The Coulson Patent Store Front Construction, the glass is set from the outside, and when replacing broken glass, it can be done with comparatively little labor and expense, as it is unnecessary to remove any of the window fixtures or displays, or even to enter the inside of the window. For this reason, it is highly endorsed by plate glass insurance companies, who not only insure glass set in it, at the lowest rate, but who recommend its use.

Any contractor, whose work includes the putting in of store fronts, should have one of their illustrated catalogues, "D-800." This will be sent on receipt of request, by the manufacturers, J. W. Coulson & Co., Columbus, O.

### Ornamental Glass

Well chosen designs in ornamental and decorative glass bespeak refinement and culture. How necessary, therefore, to intrust the execution of your art glass to firms that have had experience, training and skill to properly handle your work. Nothing better testifies to the growth of artistic taste



in the people than the increased uses found for the decorative glass.

The Schuler & Mueller Company, corner of Madison and Canal streets, Chicago, is one of the largest dealers in this line in this part of the country. They would be pleased to send anyone writing them and mentioning the AMERICAN CARPENTER AND BUILDER, a handsomely illustrated catalogue which shows all different styles of ornamental glass for all manner of work.

### Pioneer in Block Machine Business

One of the first manufacturers to foresee the demand for concrete blocks as a substitute for the rapidly decreasing lumber, was the L. L. Parry Manufacturing Company of Mansfield, O.

In 1891 they built and operated their first machine in the above mentioned town. Although they were confronted by the vicissitudes of a new industry, the fact that they are today planning to treble their capacity is undoubted evidence of the merit of their machines.

A unique feature which our readers should not overlook is that they have their own iron moulds and the entire machine is constructed in their plant. This advantage not only insures prompt delivery but eliminates the iron foundry's profit from the cost of the machine.

A practical contractor himself, Mr. Parry has designed their machine to meet every requirement in successful building construction. Although weighing less than 200 pounds, it is capable of doing more work than many of the larger



## A Dollar An Hour Instead of A Dollar a Day

Do you realize what this means to you and those depending upon you?

Don't be satisfied with a small salary all your life—do as thousands have done; let the INTERNATIONAL CORRESPONDENCE SCHOOLS show you how your pay can be increased. It matters not where you are, in the city or on the farm, in the field or in the office, in the mine or in the mill, in the store or shop, the I. C. S. can and will increase your earning capacity.

A Dollar an Hour is not out of your reach, if you will only let us help you. It will cost you nothing to ask us—How? Write us a post card stating the position you would like to secure and it will bring to your aid all the resources of that great institution the I. C. S., a six-million dollar establishment founded and maintained for the benefit of poorly paid men and women. If you want your pay increased say so—At once.



### Here is a List of Good Positions

Select the one you prefer, write a postal to the INTERNATIONAL CORRESPONDENCE SCHOOLS, Box 910, Scranton, Pa., and ask how you can qualify to fill it at a good salary. Be sure to mention the position you prefer.

Architect  
Architectural Drafts.  
Contractor & Builder  
Building Inspector  
Structural Engineer  
Structural Draftsman  
Plumb. & Heat. Contract' r  
Estimating Clerk  
Civil Engineer  
Bridge Engineer  
Mechanical Engineer  
Mechanical Draftsman  
Surveyor  
Stationary Engineer  
Electrical Engineer  
Electrician  
Bookkeeper  
Stenographer  
Ad Writer  
Window Trimmer  
Commercial Law  
Illustrator  
Civil Service Exams.  
Chemist  
Mining Engineer





**No. 408.**—Modern Mission Style. 5 feet 11 inches high and 5 feet wide; heavy plan, shelves, recessed leather panels; the brackets supporting main shelf are carved with Spanish Insignia. Forian-Vitrea tile hearth and facing. Hand-wrought Andirons of Romanesque design.

**CHAS. F. LORENZEN & CO., Inc.,**

# LORENZEN MANTELS

A Mantel in the home is useful as well as artistic and decorative. It saves you furnace heat on chill spring and autumn days, and diffuses cheer and comfort like no other piece of furniture in the house.

## Lorenzen Mantels

**\$10 to \$250**

In Colonial, Craftsman, Modern Mission and numerous other styles, and all woods and finishes. Our modern factory, large stock of air-seasoned lumber and expert, skilled workmen all mean beautiful mantels, far above the ordinary. We are at all times prepared to furnish designs of Mantels and Fireplaces in the historic periods of architecture, such as Louis XIV, Louis XV, Louis XVI, Renaissance, Gothic, Rococo, Empire, Early English, Colonial, Chippendale, Sheraton, Adam, etc.

**FREE CATALOGUE**—The largest and finest catalogue of wood mantels ever issued, with photographic reproductions. Each copy costs us nearly a dollar to issue, but we send it free to all Carpenters and Builders. If you write for it now, you won't forget.

**286 N. Ashland Avenue, Chicago**

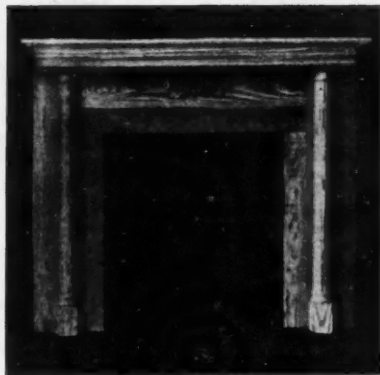


## HOLD! STOP!

Give us an opportunity to quote you on some item on this list

### WINDOW FRAMES

- Oak, Y. Pine and Poplar Balusters
- Poplar Brackets
- Poplar Porch Rail
- Yellow Pine Mantels
- Oak and Y. Pine Newel and Angle Posts
- Oak and Y. Pine Corner and Base Blocks
- Oak, Y. Pine
- Birch and Cypress Finish
- Oak and Maple Flooring



PRICE, \$4.00

WE ARE PLEASED TO QUOTE YOU ON ANY LIST YOU MAY SEND TO US

**The Malta Manufacturing Co.**  
MALTA, OHIO

## India Oilstones

**HARD SHARP QUICK**

Used Daily with Satisfaction by Up-to-Date Mechanics

**Made in 59 Different Shapes and Coarse, Medium and Fine Grits**



**SOLD UNDER THE FOLLOWING GUARANTEE**

"If this article should prove in any respect unsatisfactory, we agree to exchange or refund the full price paid for same."

Send for New Descriptive Booklet and Price List

Manufactured by **The Norton Co.,** Worcester, Mass.

Exclusive Sales Agents



**PIKE MANUFACTURING CO., Pike, N. H.**

and more complex machines on the market. In fact, the striking features of the machine are its simplicity and the swiftness with which it turns out perfect concrete blocks.

Another important point is that it makes a wet block, thereby making use of every particle of cement and producing a block which, when dry, becomes a hard flinty stone, impervious to water.

Another step of progress made by them in advance of their competitors is that their machines are specially adapted for



making small blocks. The smaller blocks not only add a pleasant appearance to the building by taking away the coarse, bare effect of the earlier large stones, but are also easier to handle and can be laid with greater rapidity.

Besides manufacturing the cement block machines they are the originators and agents for the celebrated Parry Burial

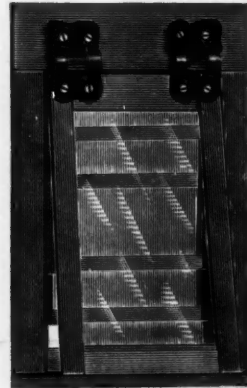
Vaults, manufacture a cement shingle machine and carry an artistic line of cement moulds.

Their cement block machine is especially designed for building contractors and should receive the consideration of all who are in the field for a cement block machine.

### Popularity of Gossett Hinges

The F. D. Kees Manufacturing Company state that the sales of the Gossett Hinges have grown rapidly for the past six years and that over one-third more were sold last year than in 1905.

This popularity, they believe, is accounted for by the peculiar design of the "Gossett" hanger, which is different from all others. It will be noticed that there are guide flanges on the parts which are fastened to the building. These bring the screen into proper position and make it easier to hang it than it would otherwise be. It will also be noticed that there are no loose pins or other parts to get lost.



If the whole window is screened, the upper sash can be lowered for ventilation, without admitting flies, which is not the case if half-screens are used. Full-length screens also protect the glass. These should be hung from the

top to prevent their sagging out of shape when opened to drive out flies or wash the windows.

The carpenter who fits his screens in this way can be sure that they will always fit and always be in working order. A

# Get This Gold Pair Free



**S**PECTACLE WEARERS! Listen! I want to prove to you beyond the shadow of a doubt that the Dr. Haux famous Perfect Vision Spectacles are really and truly ever so much better than you have ever used before—and that's the reason why I am making the following very extraordinary but honest proposition, whereby you can get a handsome pair of Rolled Gold Spectacles absolutely free of charge.

HERE IS MY SPECIAL ADVERTISING OFFER:

**S**END me your name and address and I will mail you my Perfect Home Eye Tester, free.

Then when you return me the Eye Tester with your test, I will send you a complete five dollar family set of the Dr. Haux famous Perfect Vision Spectacles for only \$1, and this will include a handsome pair of Rolled Gold Spectacles absolutely free of charge.

With these famous Perfect Vision Spectacles of mine you will be able to read the finest print just as easy as you ever did in your life

—and I will return you your dollar willingly if you yourself don't find them to be the most perfect-fitting, clearest and best you have ever bought anywhere, at any price.

Send for my free Eye Tester today, and address my company as follows:—

DR. HAUX SPECTACLE COMPANY,  
Haux Building, St. Louis, Mo.

### ***I Want Agents Also***

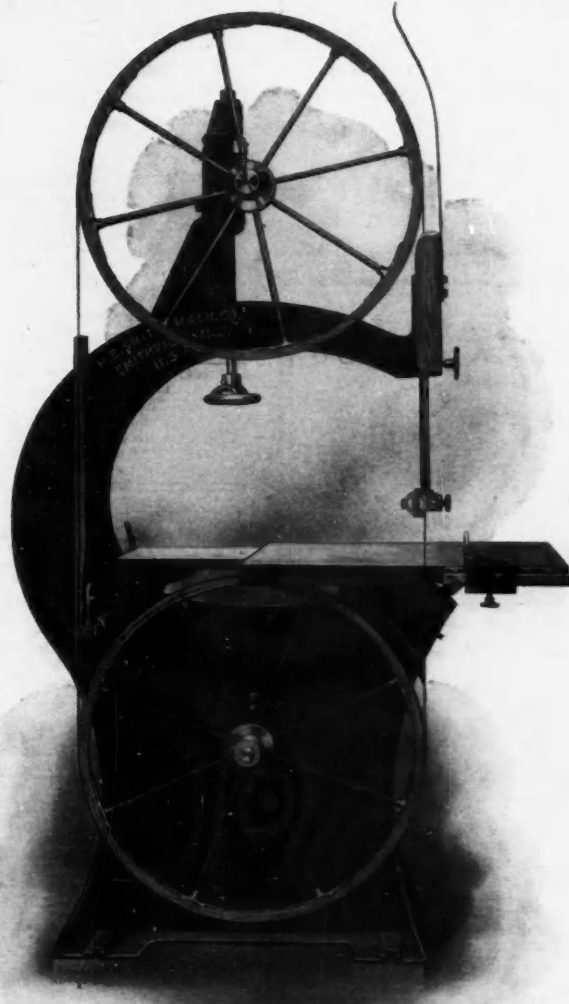
And any one can easily earn as high as \$100 weekly, fitting spectacles with my Improved Eye Tester. My agents need no license anywhere in the country, as I furnish necessary documents with agent's outfit.




NOTE.—The above is the largest Mail Order Spectacle House in the world, and absolutely reliable.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

# A Band Saw of Quality



The Smith Band Saw

 UR line is so very extensive—including over 150 machines—that it is impossible to attract every reader of this magazine by pictures only. If you have in mind any specific machine that you want to be advised about, write us. We have a great fund of information gathered from an experience of sixty years in manufacturing machinery for the most critical American woodworkers. The name SMITH is a synonym for quality and indicates the highest standard of excellence in design. Write us for circulars completely describing the above illustrated Band Saw.

**H. B. SMITH MACHINE CO.**

SMITHVILLE, N. J., U. S. A.

CHICAGO

NEW YORK

BOSTON

ATLANTA

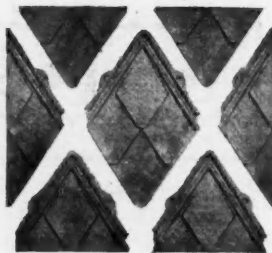
job of this kind is worth more to the owner and he would be willing to pay more for it, if necessary. He will be so well pleased with them that he will want his storm sash hung in exactly the same way. The part of the hanger on the building will answer for both screen and storm sash, and an extra pair of "eyes" for the latter, makes the two interchangeable.

The manufacturers have such confidence in the excellence of these hinges that they offer to send a sample pair free, for actual test and comparison, if you mention this paper, Address F. D. Kees Manufacturing Company, Box 552, Beatrice, Neb.

**Cement Roofing as a Business**

People are just awakening to the fact that a good cement roofing is the best of all roofing. It is waterproof, lightning proof and absolutely fireproof; needs no paint, is cool in sum-

mer and warm in winter, and is beautiful and artistic. Lighter than tile or slate, it is cheaper and far better than either. It is the most durable of all roofs. Heat and frost do not affect it. When a shingle roof is wearing out a cement roof, of the same age, is just getting good.



As to profits—it requires one-half barrel of cement and one-fifth yard of sand for a square of cement roofing. On a Diamond machine one man will make at least two squares per day, and the same man will lay three to four squares per day. The price per square, laid, is usually \$6.50. Just figure it out, using the prevailing prices for labor and material, and you will see that each Diamond machine makes its owner from \$6 to \$7 every day it is used.

(See advertisement on another page.)

**WASHINGTON DESK \$16.50**

F. O. B. CHICAGO



4 FEET LONG, 2 FEET 6 IN. WIDE, 3 FEET 8 IN. HIGH  
Oak, golden finish. Extension slides. Finished back. Quarter-sawn Sycamore pigeonhole case. Combination lock on drawers. Spring lock with duplicate key on curtain. 4 drawers on left side, book closet on right hand side. Drawers, pen rests and card racks in interior. Tongue and groove dustproof curtain. Casters.  
You can return at our expense if not satisfactory.

**WASHINGTON DESK CO.**

138 E. Washington St., CHICAGO, ILL.

Orders must be accompanied with draft or money order unless you have a commercial rating. Reference, State Bank of Chicago, Capital \$1,000,000.

**Classified Advertisements.**

Advertisements under this heading will be inserted at the following rates:  
One month.....\$0.45 per line  
Three months..... 1.25 per line  
Six months..... 2.25 per line  
One year..... 4.25 per line  
Count 10 words to the line. Situations wanted one-half above rates.  
Replies may be addressed in our care and will be promptly forwarded.

**For Sale.**

FOR SALE—Planing Mill, in a large growing city in Southern California, new, modern, up-to-date equipment for all kinds of work; reasons for selling, have other business that requires my entire attention; a rare opportunity for practical mill men. Address Thos. H. Kennedy, Home City, O.

**Help Wanted.**

WANTED—Two or three good carpenters can find a steady situation for the coming season by addressing Chas. Kirk, Gridley, Ills.

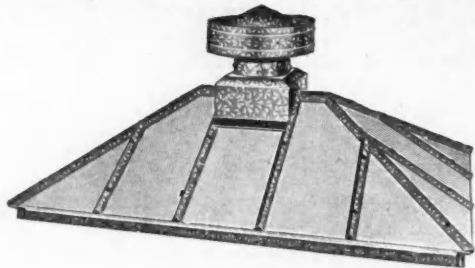
WANTED—Carpenters to read our ad. on page 1464. Gage Tool Co.

WANTED—Ambitious young men to act as agents for our line of calipers, etc. For particulars address E. G. Smith Co., Columbia, Pa.

PREVENTS DRAFTS, DUST AND WINDOW RATTLING.  
IVES' PATENT Window Stop Adjuster.



PATENTED.  
The only Stop Adjuster made from one piece of metal with solid ribs and heavy bed that will not cup, turn or bend in tightening the screw. Manufactured only by The H. B. IVES CO., New Haven, Conn., U. S. A. (Fifty-page Catalogue Mailed Free.)



**SKYLIGHT**

**DO YOU WANT  
PERFECT LIGHT  
COMBINED WITH  
PERFECT VENTILATION?**

If so, investigate the WILLIS Ventilators and Skylights. Our Skylights are made in seven different styles, and can be set up by any person of ordinary ability without the use of tools or solder and have a perfectly water-tight job.

Send for Catalogue No. 5 of Skylights, Cornices, Crestings, Finials, etc.

**WILLIS MFG. CO.  
GALESBURG, ILL.**

Original makers of the Willis Hip Shingle.

Special Spring Announcement to

# Contractors, Carpenters and Builders

WE QUOTE and illustrate in these four pages of "THE CARPENTER AND BUILDER" specimen items just as they appear in our Grand Millwork Catalogue.

These items are not leaders. They are **regular quotations** and are selected only because we believe they will be of particular interest to the readers of this publication **at this moment**. All qualities up to or above the grade of the Northwestern Sash and Door Manufacturers. We sell by **mail order**. We sell to the **individual purchaser**. We quote **factory prices—America's greatest millwork factory prices—direct to the contractor, carpenter and builder**. We ship **promptly**, we guarantee **safe delivery**, we guarantee **satisfaction**, we guarantee a **saving of 50 per cent** at least on the dealer's price on practically all millwork, and we carry in stock for **immediate** delivery not only all the **staple goods**, but **thousands of pieces, styles and sizes** previously made only to **order**. Our mammoth business in selling, our sales from stock goods, our ownership of timber lands, our own factories (enabling us to supervise seasoning, manufacture and handling), our quick turning of capital, all combine to produce a business that has **revolutionized all millwork conditions**. Now we want to send you our

## Grand Millwork Catalog Free

All we ask you to do is to spend a postal—to send a postal—to find out the truth of our claims. It is a fortune for you if our claims are true—you are one cent out if our big, carefully printed, truthfully illustrated millwork encyclopedia doesn't back up our claims made here.

Some of our 5,000 Bargains. A few of our Front Doors



LAFAYETTE

Glazed 2-inch Bevel Plate. Door 1½-inch thick.  
2-8x6-8, 1½. **\$9.98**



SUPERIOR

2-8x6-8, 1½, glazed as above **\$4.50**  
Glazed D. S. Glass..... **\$4.20**



MANHATTAN

2-8x6-8, 1½, glazed as above **\$3.06**  
Glazed D. S. Glass..... **\$2.88**



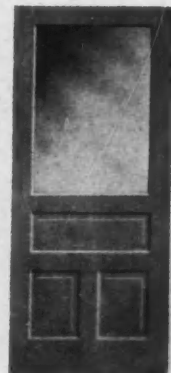
BRONX

2-6x6-6, 1½. **\$2.35**  
2-8x6-8, 1½. **\$2.45**  
If glazed D. S. Glass, deduct 26 cents.



NEVADA

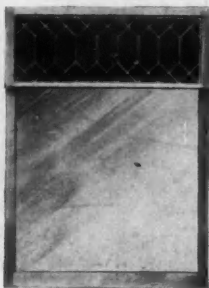
Painted  
2-6x6-6, 1½. **\$2.35**  
2-8x6-8, 1½. **\$2.45**  
If glazed D. S. Glass, deduct 10 cents.



MADISON

Painted or Grained  
2-6x6-6, 1½. **\$1.88**  
2-8x6-8, 1½. **\$1.95**  
If Grained, add 13 cents.

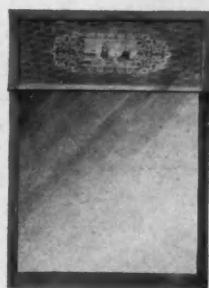
### Art Windows



VENUS

Top Glazed, Clear Leaded. Bottom Glazed D. S. A. Glass.

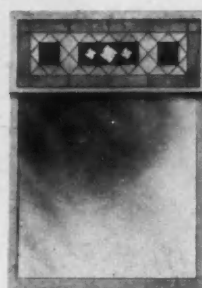
3-8x5-0, 1½..... **\$3.99**  
3-8x5-2, 1½..... **\$4.28**



NEPTUNE

Top Glazed, Battenberg Lace. Bottom Glazed D. S. A. Glass.

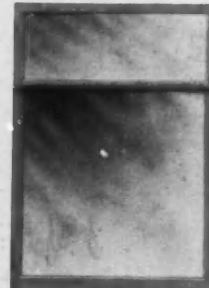
3-8x5-0, 1½..... **\$3.56**  
3-8x5-2, 1½..... **\$3.68**



LUNA

Top Glazed, Leaded Art Bevel Plate. Bottom Glazed D. S. A. Glass.

3-8x5-0, 1½..... **\$4.52**  
3-8x5-2, 1½..... **\$4.83**



SOL

Top and Bottom Glazed D. S. A. Glass.

3-8x5-0, 1½..... **\$2.99**  
3-8x5-2, 1½..... **\$3.09**

For Grand Free Catalog address

**Gordon, Van Tine & Co.**

100 Federal St. Davenport, Iowa

"Quick Shipments—no more jobs held up"  
See following pages for Spring Quotations

# Gordon, Van Tine & Co.'s Announcement—Continued

**WE** will SAVE you HALF in DOLLARS of what your Local Dealer would charge you for Millwork, freight included. We guarantee this. We also guarantee that every article we sell to you direct is up to the Standard of High Quality required by the Official Grade of the Sash, Door and Blind Manufacturers' Association of the Northwest. Not all Millwork is. Remember that. You see here a few illustrations and prices taken from our catalogue. These are but Specimen Values. Ask yourself if it isn't worth while to see that catalogue. It illustrates the entire product of the biggest mill in America—the only manufacturers of millwork who sell direct to Carpenters and to Contractors or Builders.

## VARIOUS DOORS

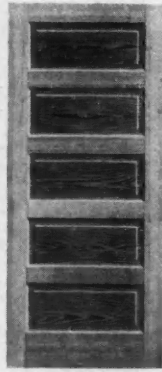


FOUR PANEL DOOR

**"A" Quality, 4 Panel**  
 2-0x6-0, 1 1/2" thick... \$1.36  
 2-6x6-6, 1 1/2" thick... 1.57  
 2-6x6-6, 1 1/2" thick... 1.77  
 2-8x6-8, 1 1/2" thick... 1.85

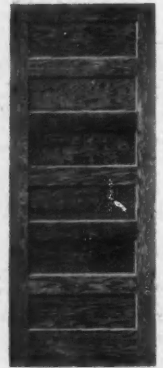
**"B" Quality, 4 Panel**  
 2-0x6-0, 1 1/2" thick... \$0.80  
 2-0x6-0, 1 1/2" thick... 1.30  
 2-6x6-6, 1 1/2" thick... 1.49  
 2-6x6-6, 1 1/2" thick... 1.58  
 2-8x6-8, 1 1/2" thick... 1.68

**Painted, 4 Panel**  
 2-0x6-0, 1 1/2" thick... \$0.74  
 2-6x6-6, 1 1/2" thick... 1.02  
 2-6x6-6, 1 1/2" thick... 1.07  
 2-8x6-8, 1 1/2" thick... 1.12  
 Grained, add 11 cts. net



FIVE CROSS PANEL DOOR

We carry the largest stock of Doors in America, comprising over 300 sizes and kinds in White Pine, Yellow Pine, Cypress, Yellow Pine Panels and Oak.



No. R 213 Six Cross Panel Veneered plain Red Oak.

## OAK DOORS and MOULDINGS

**"Finish Your Home in Oak at a Small Cost"**

The time of high prices on Veneered Oak Doors and Trim has passed. We make it possible for you to finish your home in Oak at only a small advance over pine.

### A Few Prices

2-6x6-6, 1 1/2" thick... \$3.25  
 2-8x6-8, 1 1/2" thick... 3.36  
 2-8x7-0, 1 1/2" thick... 4.07  
 2-8x6-8, 1 1/2" thick... 3.85  
 3-0x7-0, 1 1/2" thick... 4.75

### OAK MOULDING

IN STOCK

- Base
- Casing
- Door Trim
- Window Trim
- Stool
- Apron
- Picture Moulding
- Window Stops
- Door Stops
- Cove Moulding
- Plate Rail

## DOOR AND WINDOW FRAMES

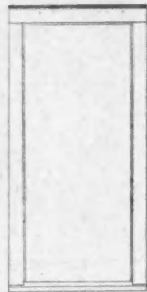
Window Frames      Door Frames      Inside Door Jambs



No. RJ314

For Windows 2 feet 5 inches wide by 5 feet 6 inches high, \$1.25 or smaller...

For Windows 2 feet 11 inches wide by 6 feet 2 inches high, \$1.35 or smaller...



No. R 315

For Doors 2-8 x 6-8 and smaller... \$1.65

For Doors 3-0 x 7-0 and smaller... \$1.78



No. R. 316

Yellow Pine Door, 2-8 x 6-8, or smaller... 54c

Doors, 3-0 x 7-0, or smaller... 60c

We carry these Frames, as well as thousands of other items, in stock.

## VARIOUS WINDOWS

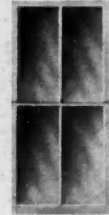
### A Few Prices

16x24, 2 lts... \$0.65  
 20x24, 2 lts... .81  
 20x28, 2 lts... .89  
 22x28, 2 lts... .96  
 22x30, 2 lts... 1.04  
 24x24, 2 lts... .94  
 24x28, 2 lts... .98  
 24x30, 2 lts... 1.06  
 24x32, 2 lts... 1.19

Above Prices are Glazed S. S.



2 LT. WINDOW No. R 238

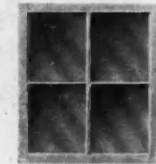


4 LT. WINDOW No. R 237

### More Prices

10x20, 4 lts... \$0.66  
 10x24, 4 lts... .75  
 10x28, 4 lts... .87  
 10x30, 4 lts... .98  
 12x28, 4 lts... .95  
 12x30, 4 lts... 1.10  
 12x32, 4 lts... 1.17

Above Prices are Glazed S. S.



BARN SASH R 2245

### Prices

8x10, 4 lts... \$0.40  
 9x12, 4 lts... .49  
 10x12, 4 lts... .51

We carry over 550 sizes in Windows, Cellar Sash, Transoms, Attic Sash, Stall Sash, Hotbed Sash, etc. We quote you net prices on these windows, glazed S. S. and D. S. A., also open.

## MOULDING DEPARTMENT

### Casing

We carry this design casing in Yellow Pine, Cypress and White Pine. Price per 100 lineal feet, random lengths.



R8309



R8341

Prices on above Casings, 13-16x4 1/2"  
 Yellow Pine... \$1.75  
 White Pine... 1.90  
 Cypress... 1.90

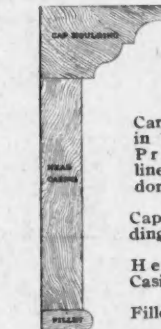


BASE R8426

### BASE

Size, 13-16x7 1/4 inches. Price is per 100 lineal feet, random lengths.

Yellow Pine... \$2.84  
 White Pine... \$3.16



Door and Window Cap Trim

Carried in stock in Yellow Pine. Price per 100 lineal feet, random lengths.

Cap Moulding... \$1.99  
 Head Casing... \$1.93  
 Fillet... 35c



DOOR AND WINDOW STOPS

Price is per 100 lineal feet, random lengths in Yellow Pine.

1x1... \$0.30  
 1x1... .33  
 1x1... .42

### PICTURE MOLD



R 8264.  
 Picture Moulding, size 1 1/2". Price is per 100 lineal feet, random lengths... 65c



DRIP CAP No. R 8284  
 White Pine, 1 1/2" x 2... \$1.30



No. R 8065  
 Is carried in stock in Yellow Pine, White Pine and Cypress.

Price per 100 lineal feet, random lengths.  
 Yellow Pine... \$0.25  
 White Pine... .36  
 Cypress... .40

For Grand Free Catalog address

**Gordon, Van Tine & Co.** 100 Federal St. Davenport, Iowa

"Promptness is our Watchword"

[See following pages for Spring Quotations

# Gordon, Van Tine & Co.'s Announcement—Continued

## Why Our Millwork is the Best

Our Millwork is the best made because—we have the most skilled workmen under our direction—we operate the largest mill in the world—163,000 feet of floor space (four acres)—we own our own timber lands, sawmills (rough lumber not handled). We carry a large stock, and can therefore ship promptly. Our lumber is first air-dried and then, as an extra precaution, is put through a scientific drying process. Joints are made with heavy hardwood dowel pins, glued with imported glue, pressed together by heavy steam power press. Absolutely no "come-apart" to our Millwork. It won't cost you a cent if anything you order is not just what we say it is. You can send it right back to us and we will pay the freight BOTH ways and return your money without delay or argument.

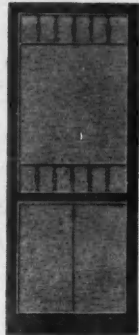
You Will SAVE HALF, whether You Order \$5.00 Worth or \$10,000 Worth

### SCREEN DEPARTMENT



No. R 301  
SCREEN DOOR

2<sup>6</sup>x6<sup>6</sup>, 1<sup>1</sup>/<sub>8</sub>. \$0.93  
2<sup>8</sup>x6<sup>8</sup>, 1<sup>1</sup>/<sub>8</sub>. .97



No. R 302  
SCREEN DOOR

2<sup>6</sup>x6<sup>6</sup>, 1<sup>1</sup>/<sub>8</sub>. \$1.21  
2<sup>8</sup>x6<sup>8</sup>, 1<sup>1</sup>/<sub>8</sub>. 1.23

Above screen doors are carried in stock, and better screen doors are not manufactured.



No. 304

SCREEN WINDOW

We do not carry these in stock but make up to your order and ship in 2 to 4 weeks.

Price per square foot . . . . . 8c  
No screen figured less than 60 cents.  
Painting 15c per coat.

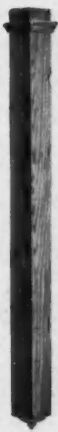
### STAIR DEPARTMENT



No. R 335



No. R 336



No. R 341

### STAIR NEWELS

Yellow Pine . . . \$2.30  
Red Oak \$2.50

Yellow Pine . . . \$2.90  
Red Oak \$3.10

Yellow Pine . . . \$1.65  
Red Oak \$1.75

### Angle Newels

### EMBOSSED MOULDING



No. R 287

Price per 100 lineal feet, size 3/4 x 1/2 in., Yellow Pine . . . . . \$1.00  
Red Oak . . . . . 1.10



No. R 286

Size 3/4 x 1/2 in., price per 100 lineal feet, Yellow Pine . . . . . \$1.10  
Red Oak . . . . . 1.20

### PORCH MATERIAL



No. R 322  
STAVED COLUMN

6 x 6-8 feet . . . \$1.74  
8 x 8-8 feet . . \$2.10  
10 x 10-8 feet . 2.75



No. R 324

TURNED COLUMN

4x4-8 feet . . . 55c

4x4-9 feet . . . 62c

5x5-8 feet . . . 83c

5x5-9 feet . . . 93c



No. R 327  
BALUSTER

1 1/2 x 20 . . . . 4c

1 1/2 x 24 . . . . 4c



No. R 329  
SPINDLE

1 1/2 x 8 . . . . 1 1/2 c

1 1/2 x 10 . . . . 1 1/2 c



No. R 331  
BRACKET

10x12 . . . . 5c

10x14 . . . . 5 1/2 c

12x14 . . . . 5 1/2 c



No. R 333  
BRACKET

10x12 . . . . 7c

10x14 . . . . 7 1/2 c

12x14 . . . . 8c



No. R 344  
STAIR RAIL

Size 3 1/2 x 1 1/2



No. R 345  
BALUSTER

1 1/2 x 28 x 30 Yellow Pine . . . 7 1/2 c  
Above Red Oak . . . 8c

Yellow Pine . . . . . 7c  
Red Oak . . . . . 8 1/2 c



No. R 310



No. R 312

### PORCH RAIL

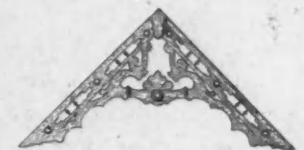
Carried in stock in Washington Fir, 1 1/2 x 3 1/2, random lengths . . . 3 1/2 c

### GABLE ORNAMENTS



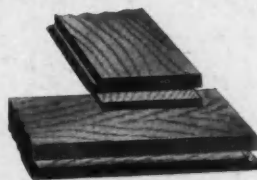
No. R 12

Extends 4 feet down gable. Price . . . . . \$0.75



No. R 20

Extends 4 feet down gable. Price . . . . . \$1.05



### MODERN HARDWOOD FLOORING, BEST GRADE

No. R 292. Plain Red Oak, 13-16x2 1/4-inch, per 1000 ft. . . \$57.00  
No. R 293. Quarter-Sawed White Oak, same size . . . . . \$90.00  
No. R 294. Maple, same size . . . . . \$45.00

### 3-8 INCH FLOORING

No. R 295. Plain Red Oak, 3/4 x 1 1/2 inch. Price per 100 lineal feet . . . . . 80 cents

For Grand Free Catalog address

# Gordon, Van Tine & Co.

100 Federal St. Davenport, Iowa

"Quick deliveries are our hobby"  
See following page for Spring quotations

# Gordon, Van Tine & Co.'s Announcement—Continued

WHAT A BANKER SAYS ABOUT US:

We are a reliable, responsible concern, and do just exactly as we say we will. Read here on the right what the Cashier of a large Davenport, Iowa, Bank says of us. This is our home. We were established here in 1865. This banker, or any other banker in the country, can tell you of our responsibility, if you enclose a stamped envelope for his reply.

**KEEP THIS IN MIND** Your Money Immediately Returned for Any Goods Not Exactly as Represented  
Refer to Bradstreet's

SCOTT COUNTY SAVINGS BANK  
Capital \$250,000.00 Davenport, Iowa. Surplus \$150,000.00

To Whom it May Concern:

It gives us great pleasure to testify to the reliability, business integrity and honesty of Gordon, Van Tine & Co. Their financial responsibility is well over three hundred thousand dollars (\$300,000.00), and they enjoy the highest credit with Western financial institutions.

We assure prospective customers that they are perfectly secure in sending the money with their orders, as we understand that if goods are not entirely satisfactory, they may be returned at shippers' expense, and the money will be promptly refunded.

The officers of this Company are well and favorably known to us, and may be relied upon to do exactly as they agree. Yours very truly,  
J. H. HASS, Cashier.

## Building Paper, Roofing and Paints of Guaranteed Quality Also Sold Direct.

We quote on these important staples to impress on you the scope of our business and to prove how positively we save you money in all your requirements. The catalogue lists thousands of items not quoted here. Get the big catalogue. It is Free.

### BUILDING PAPER



Our Building Paper is the best quality. We do not believe in cheap, shoddy goods at any price. We can save you half.

C Brand Red Rosin, weighs about 20 lbs. to a roll, per roll of 500 sq. ft. **33c**

B Brand Red Rosin, weighs about 25 lbs. to a roll, per roll of 500 sq. ft. **42c**

A Brand Red Rosin, weighs about 30 lbs. to a roll, per roll of 500 sq. ft. **50c**

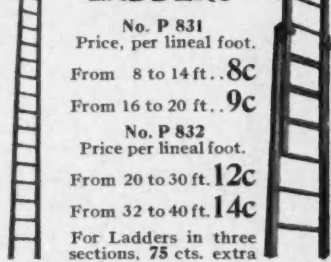
AA Brand Red Rosin, weighs about 35 lbs. to a roll, per roll of 500 sq. ft. **57c**

### TAR FELT

Diamond Brand, weighs 15 lbs. to 100 square feet, per pound. **1 1/4c**

SINGLE LADDER EXTENSION LADDER

### LADDERS



No. P 831  
Price, per lineal foot.

From 8 to 14 ft. **.8c**

From 16 to 20 ft. **.9c**

No. P 832  
Price per lineal foot.

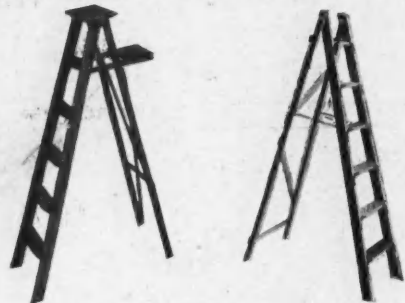
From 20 to 30 ft. **12c**

From 32 to 40 ft. **14c**

For Ladders in three sections, 75 cts. extra

No. P 831 No. P. 832  
Our Ladders are without question the best made in the United States today. We carry all these designs in stock and can make instant shipment of your orders. We manufacture our ladders from carefully selected lumber, with the best of hardwood rungs, securely fastened at each end.

IDEAL STEPLADDER Combination Ladder



No. P 833  
This stepladder is made of carefully selected Norway pine. Pressed steel top irons at the top are riveted to side pieces. No painter can afford to be without this ladder. Our price allows everyone to have it. Compare our prices with those of your retail dealer or any other wholesale house. We save you more than 50%. Price per foot up to 12 feet **15c** Price per lineal foot from 4 to 12 feet **20c**

### PAINTS

#### OUR GUARANTEE

We stand ready to take back, refund your money, and pay freight both ways on every pound of paint that is not perfectly satisfactory and just as represented. (You realize that we could not afford to make you this very liberal proposition unless we were sure that our goods were right.)



If you are going to need any paint and are interested, send for our big Paint Catalogue and Color Cards. You can save 50 per cent over your dealer's prices.

### HOUSE PAINTS

- 1 qt. cans, price each **\$0.31**
- 1 gal. cans, price each **1.10**
- 5 gal. buckets, price per gal. **1.05**
- 25 gal. barrels, price per gal. **1.00**

### HOUSE VARNISH



We guarantee all our varnishes and will refund your money if the goods do not absolutely satisfy you. Your dealer's prices will be 50c to \$1.00 a gallon more than our price.

- 5 gal. cans, per gal. **\$1.63**
- 1 gal. cans, each **1.73**
- 1/2 gal. cans, each **.97**
- Qt. cans, each **.53**

**Freight means almost nothing** The freight per gallon for 200 miles is only 2 1/2 cents, for 400 miles, 4 1/2 cents; and for 1000 miles, 9 cents.

### CONTENTS OF OUR SPECIAL PAINT CATALOGUE

House Paints—Barn Paints—Floor Paints—Carriage Paints—Wagon Paints—Varnish Stains—Oil Stains—Enamels—Varnishes—Leads—Oils—Dry Colors—Colors in Oil—Aluminum Paints—Gold Paint—Brushes—Putty—Ladders—Glass—Art Glass—Glazier's Supplies.

Let us save you half on every dollar you spend and you can be assured of nothing but the very best in our line.

### GLASS

We are the only firm quoting Net Prices on Window Glass good for the year, and these prices are very low. We quote you net prices equal to 90 per cent of the Official Window Glass List. See page 50 of our big catalogue for net prices. Also Designs and Prices on Fancy and Art Glass.

### ROOFING

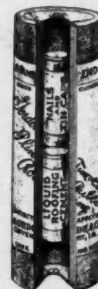
'What is worth Roofing, is worth Roofing well'

Less Than Half What Shingles Cost You

	PRICE Per Square 108 sq. feet
1-Ply	\$1.41 per Roll
2-Ply	1.96 per Roll
3-Ply	2.29 per Roll

We'll sell you, if you want roofing, better roofing than you can buy anywhere else—Flint-coated Fireproof Rubber roofing. Sell you direct at half what your local dealer will charge you for ordinary roofing—half what shingles will cost you, for we ship right from our factory to you. Send you a Free Roof Book on our roofing, telling why it is the best roofing made, if you'll only send us a postal. Send you a sample so you can test it—try to tear it—pound it—smell it to see that there's no tar in it to burn or melt—try it with hot coals—try it with acid—try it any way to satisfy yourself.

### FREE ROOFING BOOK



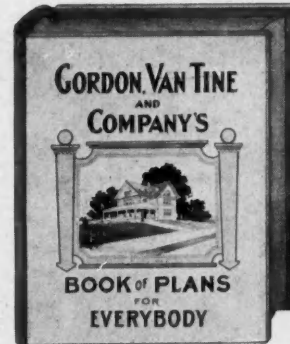
just why it will pay you to use our roofing. We guarantee safe, prompt delivery everywhere in the United States. We save you 50 per cent, freight included. We ship to you from Kansas City, Minneapolis, Chicago or Davenport. This saves on freight. Write or send catalogue requests only to Davenport and let us save you—dollar for dollar—HALF.

PRICES—Per Square of 108 Square Feet.

- 1-ply, per square **\$1.41**
- 2-ply, per square **1.96**
- 3-ply, per square **2.29**

### Book of Plans for Everybody

This book contains Plans of Modern Houses, Cottages, Barns, and every conceivable out-building. Treats of the cost problem, tells you how to save your dollars in construction.



We have spent over \$5,000.00 in preparing this book and it will save you many dollars.

This Home Building Book we send you for 5 two-cent stamps, postage prepaid. Send today.

For Grand Free Catalog address

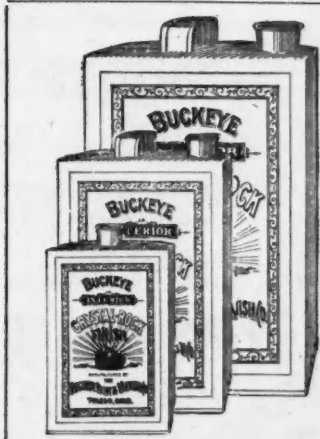
# Gordon, Van Tine & Co.

100 Federal St. Davenport, Iowa

'We fill telephone and telegraph orders daily'

See preceding pages for Spring Quotations





TRY OUR

# Crystal-Rock Finish

BEST INTERIOR AND EXTERIOR VARNISHES ON THE MARKET TO-DAY

Recommended by First-Class Architects.

MANUFACTURED BY

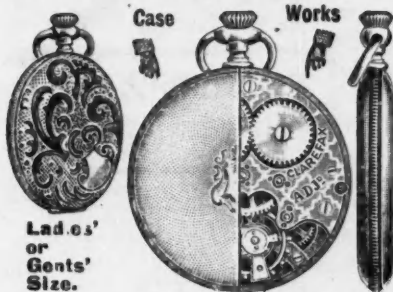
## Buckeye Paint & Varnish Co.,

TOLEDO, OHIO.

### GUARANTEED WATCH 540

Finely Jeweled Movement For

Regular Wholesale Price, \$12.



Ladies' or Gents' Size.

This Clarendon watch is a thin model, stem wind and stem set, well made, beautifully jeweled movement and finely balanced with patent regulator, dust band, enameled dial and fancy hands. Every Clarendon watch is accurately timed, tested and regulated before leaving the factory and guaranteed absolutely for 20 Years. The case of the watch is a double hunting case, genuine gold laid and handsomely engraved. This Clarendon watch for \$5.40 is the best watch ever sold for less than \$12, and thousands of people have paid from \$15 to \$30 for watches not nearly so good. We are able to sell it for \$5.40 only because the manufacturers had to raise money in a hurry and sold us the entire output of their factory at less than cost of production.

Do not send money with order, but send us your name, postoffice and nearest express office. Tell us whether you want a ladies' or gents' Clarendon watch, and we will send the watch to your express office, where you may examine it before paying any money, and after you are positive as to its value, pay the express agent \$5.40 and express charges.

If the watch does not please you after you examine it, have the agent return it at our expense. Guarantee Watch Co., Dept. 113 Chicago, Ill.

# Try Them Free



No Money Required

I Want to Prove to You That Trusight Spectacles Are the Best You Ever Wore  
Simply Send Me Your Name

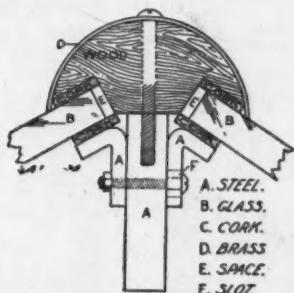
I will send you my perfect Trusight Eye Tester with which you can test your own eyes as well as the most skilled optician. When you return the tester with your test I will send you a pair of **Genuine Trusight Spectacles** that will surely fit you on **6 days' free trial**. I won't ask for a cent of money—no deposit—not even a reference. You wear the glasses in your own home for six days and if perfectly satisfactory in every way—if they are the best glasses you ever saw at any price—send me only \$1.00 and the glasses are yours. If the glasses for any reason do not suit you—if you don't believe them to be the best bargain you ever had—return them and you are out nothing. It is because I am so positive that you can see better with **Trusight Spectacles** than with the common glasses that I want to send a pair especially fitted to your eyes on **6 days' free trial**. Send for tester today. TRUSIGHT SPECTACLE CO., 1174 Ridge Bldg., Kansas City, Mo

## A MOISTURE-PROOF CONCRETE HOUSE WALL

The **No Touch System Patent Concrete Wall**, Little & Gavett, Ithaca, N. Y., which was exhibited by drawings only at the Cement Users' Convention, and was a center of attraction throughout the entire week, is being brought before our readers this month.

The inventors have realized the fact that it is not so much moisture coming through the wall that does damage on the inner surface, but moisture from the room that condenses wherever the inner surface is cooled off by connections with a cold exterior. The **No Touch System** does away with any lapping over of inner with outer blocks, and with all metallic ties. There is a complete air blanket in all directions uninterrupted except at doors, windows and floors, thus insuring a house cool in summer, warm in winter; with no chance for moisture to either come through the walls or condense on the interior. Those wishing State, County or City rights, address

**LITTLE & GAVETT, ITHACA, N. Y.**  
508 University Avenue



All Steel Cork Bedded Corner Post

# SHULTZ'S

Patent All Steel, Cork Bedded Corner Posts, Mullions and Transom Bars.

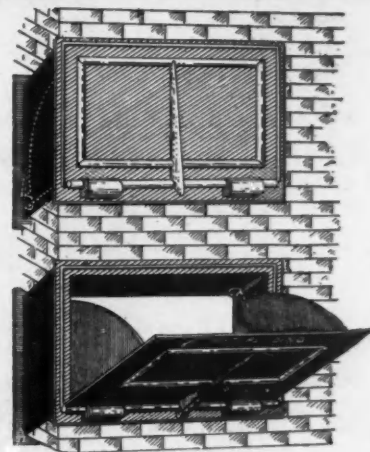
Also my new Acme Steel Post and Bars, in which the Glass is Bedded Between Wood.

They are the handsomest and strongest bars made. The glass is bedded on both sides, either between Spanish cork or wood, preventing any cracking or crushing of glass. No putty. Are absolutely water and dust proof.

**BURGLAR PROOF COAL CHUTE.** Locks itself automatically when closed up. Can only be opened from inside. Face of Chute flush with wall. Write

**C. H. SHULTZ,** Patentee and Manufacturer **St. Joseph, Mo.**

For Cut and Prices on Corner Posts and Coal Chutes.



Coal or Wood Chute

# SELF-SETTING PLANE

**SENT ON  
30 DAYS'  
TRIAL  
WHERE  
NOT SOLD**



**30 DAYS'  
TRIAL  
COSTS  
NOTHING  
AS STATED  
BELOW**

**Every Carpenter Knows** it took him a long time to learn to properly set his plane, not days, but months—years—perhaps don't get it just right yet. The many \$ \$ \$ in time spent in this **Unsatisfactory Plane-Setting Operation**—how often he took out his plane iron to change the cap before it went, and then it didn't go just right—how much guesswork there was about it, and each time the guess changed—how, when he wanted to take a thick, heavy shaving, he had to remove the cap and the iron, and raise the cap, or shove himself out of breath and lame trying to push both through the wood—how in changing the cap back to get a thin shaving from cross-grained wood he again had to take them out from the plane, push the cap down to where he thought was about right, went through with the trying and guessing operation once more and then got a rough job and had to scrape—how, when he got most right, the shavings would jam up under the cap and he said words or thought things not found in his Testament. How often he said he would pay any price for a plane that would **work right every time. "EUREKA"**

## Ours is that Plane

**Stop Right Here** Get your back numbers of *American Carpenter and Builder* and read what we say in the issues of August, 1906, at page 527; September, page 633; October, page 769; November, page 895; December, page 1020; January, 1907, pages 1202 and 1211; February, 1907, pages 1255 and 1340; and remember that the **statements there made are facts**—that this paper, the *American Carpenter and Builder* guarantees that we will do as our advertisement says. That you run no risk in sending for a plane that will have none of the above troubles. That it costs you nothing to try this Self-Setting Plane if you return it to us at our expense within 30 days of the time you receive it.

The above back numbers of *American Carpenter and Builder* will explain and tell you what the Self-Setting Plane will do.

If there is a better plane than yours you want it and if the Self-Setting Plane is not worth to you many times what your plane is, send it back as above and it will cost you nothing to use it 30 days. Try the Self-Setting Plane and let it do its own talking.

Yours for the only Self-Setting Plane made,

# GAGE TOOL CO., Vineland, N. J.

**When you write us, say you saw ad in A. C. & B.**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



**BOSTWICK STEEL LATH**

Specified by Leading Architects—Used by Leading Contractors—Endorsed by Busiest Plasterers, because it saves 25 per cent of Plaster and gives Greatest Satisfaction. A trial will prove our every statement. Let us show you.

**OUR EXPANDED METAL**

Made in various gauges. Satisfies the most exacting requirements in every branch of plastic construction.


**LOOK THIS UP  
LET US MAIL YOU  
A SAMPLE**



**EXPANDED METAL**

**Manufactured only by :: THE BOSTWICK STEEL LATH CO. :: Niles, Ohio, U. S. A.**

**UNSIGHTLY COAL WINDOWS  
ARE EYESORES**



**The Majestic  
Coal Chute**

A sure cure for Smashed Sash, Broken Glass, Splintered Siding, and Soiled Foundation.

No. 1.  
19x15 \$8.00  
No. 2.  
24x15 \$10.00  
No. 3.  
30x20 \$15.00

Freight allowed to points east of the Mississippi River.

Made of heavy wrought steel, and has an adjustable hopper, which swings into the chute, allowing the door to close flush with the wall. Also has a self-locking device for holding door open and for locking when closed. Can be placed in old walls as well as new. Write for Catalogue.

Pat. Oct. 16, 1906

**THE CHAPPELL FURNACE COMPANY  
MORENCI, MICH.**

**THE "MANEST"  
FAMILY CLOTHES DRYER**



**A Laundry Stove and Drying Cabinet Combined**

---

ONE FIRE { BOILS THE CLOTHES  
DRIES THE CLOTHES  
HEATS THE IRONS

Costs no more to operate than an ordinary laundry stove  
No modern residence complete without it

Write for full information

**The Mannen & Esterly Co.  
Cleveland, Ohio**



**HURD'S EXTENSION CLOTHING CARRIER  
"IT CANNOT SAG"**

MR. ARCHITECT: When you make your specifications for your next residence, hotel, theatre, or public building, see that you provide this simple, durable, efficient device that never gets out of order. It is ideal for closets and places under dark stairways. Made any length to suit.

Write Today for Complete Information and  
Special Offer to Architects and Builders

**HURD'S EXTENSION CLOTHING CARRIER CO.  
10-12 S. Clinton Street - - - IOWA CITY, IOWA**

## THE KING CEMENT BRICK MACHINE

One Man Machine



Makes 10 Brick at Each Operation

Price \$40.00

Why pay more? This machine makes brick equal to the best. In speed it is not excelled by the highest priced machines. Write for catalog.

## DUNN'S MASONS' and BUILDERS' BLOCK MACHINE

Blocks Made Face Down and Side Face



Every Block Perfect, with true, sharp corners.

Price \$40.00

Makes blocks in widths of 8, 10, 12 inches, up to 20 inches in length and in a variety of designs. A practical, rapid and satisfactory machine. No machine at any price makes a better block, or makes them more rapidly or economically. Catalog free.

**W. E. DUNN & CO., 339 Grand Avenue, CHICAGO, ILLINOIS.**

## The "Reed" Machines are in the "Lead"

Most simple, rapid, up-to-date Machines on the market. Face-down or Face-side Machines producing single, double-hollow or right-angle tri-angle blocks.

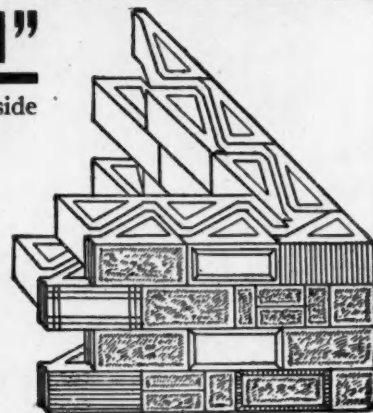


Triple Hollow Wall

Best brick machines out. Our system of two-piece wall excels all others on account of the natural bondage and triple air space. Orders received from all sections of the country are filled promptly. When in the market for Concrete Block or Brick Machine as well as Concrete Mixer, get our catalogue and prices. Do you desire to make

\$\$\$\$\$\$\$\$? We can start you right.

**Wichita Coal & Material Co.**  
WICHITA, KANSAS U. S. A.



Right Angle Blocks

## A REVOLUTION in the BUILDING TRADE

is sure to follow the introduction of the

### Lightning Cement Pressed Brick Machine

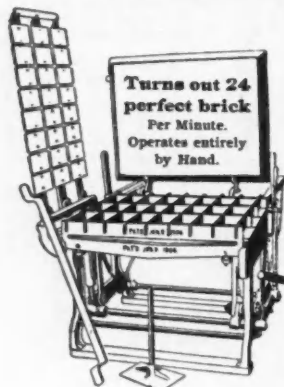
in your locality. Get in on the ground floor. Purchase a machine and supply the demand.

**THIS MEANS MONEY TO YOU**

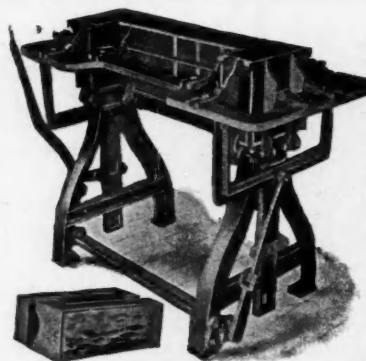
Made in three sizes, Six, Sixteen and Twenty-four Brick at an operation.

Write for particulars at once to

**WETTLAUER BROS.,**  
497 ELLICOTT ST. BUFFALO, N. Y.  
or our Canadian office  
STRATFORD, ONTARIO.



Turns out 24 perfect brick Per Minute. Operates entirely by Hand.



## THE WALTON Stone Machine

Two-piece wall system makes DRY WALLS

Makes lengths from 4 to 32 in and 3, 4 1-2, 6 and 9 in. heights. 10, 12, 14 and 16 ft. circles. 30 and 45 degree angles.

All widths by lapping blocks. All shapes, lengths and width made on the same pallet. Reducing cores save material.

LET US TELL YOU how we save labor, save material, save pallets, save expensive facings, save 5c. per cubic foot over other machines by our method. Send for illustrated catalogue

**WALTON STONE MACHINE CO.**

2502 East 18th Street, - - - KANSAS CITY, MO

**NO. XI JOINTER**  
\$42

**NO. X3 DRIVEWAY GROOVER**  
\$85

**NO. X5 STRAIGHT END JOINTER**  
\$54

**NO. X2 3/4 INCH EDGER**  
\$42

**NO. X4 3/4 INCH EDGER**  
\$48

**NO. X17 SQUARE EDGER**  
\$60

**NO. X18 BEVEL EDGER**  
\$48

**NO. X10 CURBING EDGER**  
\$85

**NO. X8 GUTTER TOOL**  
\$85

**NO. X6 CORNER TOOL**  
\$48

**NO. 3 STEEL TRAY BARROW**  
2<sup>50</sup> EACH

**NO. 4 TAMPER**  
6x6 IN.  
\$1.25

# EVERYTHING IN CEMENT MACHINERY

## MIRACLE ONE-MAN BRICK MACHINE



In selecting a Brick Machine one wants the very best. He wants one that will stand hard usage and lots of it. He wants one that will not be constantly calling for expensive repairs. The Miracle Machine answers these requirements. It is strong in every part. From the heavy iron standard to the delicate mechanism of its molding parts, it is a most durable machine. It is made for a capacity of 3,000 to 4,000 brick every day for many years to come and must be of the very best quality or it would not stand the wear. The man who buys a brick machine expects to use it for all there is in it and he cannot therefore afford to buy anything else but the very best and strongest machine made. Better to pay a little more, if necessary, at the start and buy a good machine that will last for years without repairs than to save a few dollars at the start and be squandering money for repairs for a year or two and then be obliged to buy another machine. Price \$150, F. O. B. Minneapolis.

Read the following letter from a well pleased customer:  
Roswell, New Mexico, June 29, 1906.  
Miracle Pressed Stone Company, Minneapolis, Minn.  
Gentlemen:—We want to express the utmost satisfaction we have experienced with your \$150.00 Brick Machine. Your claims as to capacity are none too large, and it is a business proposition that is certainly a good one.  
When we need any more brick machines, we are going to buy a Miracle.  
Very truly yours, Hondo Stone Mfg. Co.

## MIRACLE SEWER PIPE AND TILE MOLDS

Making Cement Pipe and Tile is the most profitable branch of the whole concrete industry. For \$44.50 we furnish you a complete outfit for making 18-inch Bell-End Pipe. When you have sold fifty pieces of 18-inch pipe (100 feet), you have paid for your outfit and have a nice profit besides. For \$57.50 we equip you with complete outfit for making 24-inch 2-foot Bell-End Pipe. The sale of fifty pieces of this size pipe will bring back your total investment and a profit besides.

The following is a letter from one of our Tile manufacturers.  
Clarinda, Iowa, Dec. 17, 1906.  
Miracle Pressed Stone Co., Minneapolis, Minn.  
Gents:—The tile molds I find to be just the thing. We had a good sale of the tile, it was late in the year to buy these tile molds, but we have had a good trade. We made about 3,000 feet of a 12-inch tile; 2,500 feet of 15-inch tile; and about 1,500 feet of 24-inch tile. I think they are better than clay tile. They will stand frost better, and the older they get the better they are. A clay tile is no better than the day it is put in the ground—cement gets better the longer it is in the ground. I know this to be true; I have made clay tile for sixteen years and am still making them.  
Yours, Paul O. Cook.

## THE MIRACLE DOUBLE STAGGERED AIR SPACE BLOCK

The Miracle Double Staggered Air Space Block, always at the front, is advertised in the leading magazines so that people demand it. Price of complete equipment making 69 different sizes and styles of blocks, \$250. Has wider range and greater capacity than any other machine made at anywhere near the price.

## PNEUMATIC TAMPING EQUIPMENT

We are headquarters for pneumatic tamping tools and equipment, and Gas or Gasoline Engines for operating same. Our tools are adjusted for tamping concrete blocks, brick and sewer pipe. Ask for prices and complete description.

## OUR 1907 CATALOG

We publish a large book on concrete—pages 9x12, with over 500 illustrations. It thoroughly covers the concrete industry, shows numerous buildings with size and cost, over 100 designs of blocks and the process of manufacturing; the proper mixing, curing, laying or coloring of the concrete, the proper principles of concrete construction, air spaces, etc.; full details on the manufacture, sale, use and the best machines for making Double Staggered Air Space Building Block, Cement Sewer Pipe and Drain Tile, Ornamental Stone, etc.; listing also everything in tools and appliances from a sidewalk jointer to an air tamper, and hand and power concrete mixers, including also several low-priced single air space machines. Regular price, 25 cents. Sent free, provided you say in which line you are interested, and ask for catalog "K."

**Miracle Pressed Stone Co.,**  
LARGEST MANUFACTURERS OF CEMENT MACHINERY IN THE WORLD  
MINNEAPOLIS, U.S.A.

**ADJUSTABLE NAME PLATES**  
ANY SIZE ANY SHAPE

**ASK FOR PRICES**

**NO. X12 RAISED POINTER**  
\$.40

**PLASTERING TROWEL**  
ALL SIZES

**10 1/2 IN. \$1.15**

**LACED SAND SCREEN**  
\$2.50

**NO. X015 IDENTIFICATION ROLLER**  
\$8.40

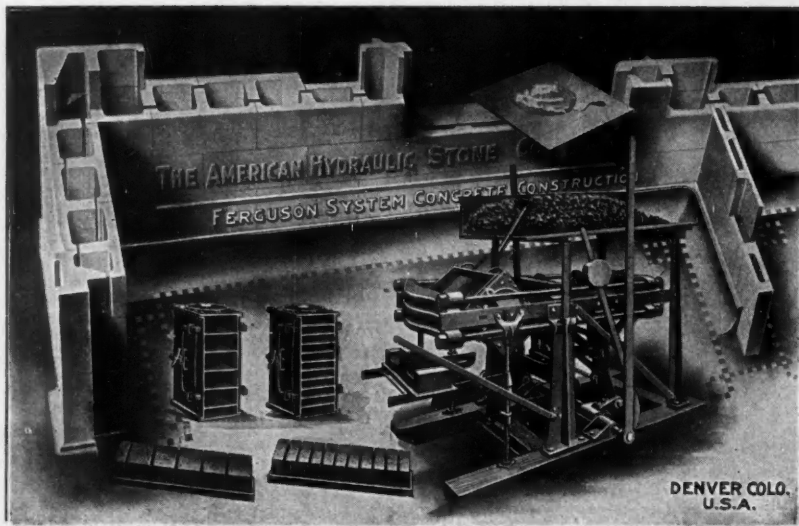
**NO. X016 DRIVEWAY ROLLER**  
\$7.00

**ROLLING JOINTER**  
\$1.50

**NO. X11. RADIUS TOOL**  
\$.42

**POINTING TROWEL**  
\$.25

**SAND RIDDLE, \$35**



**T**WO-Piece Hollow Concrete Wall and Partition, containing Header Bond and Continuous Horizontal Air Space. Impervious to Heat, Cold, Moisture and Sound. Fire and Vermin-Proof. Walls of all widths; blocks of all shapes and sizes. New Hand Press enables three men (mixture supplied) to

make 1200 blocks, 10000 brick or 5000 paving blocks in 10 hours. THE WALLS OF A COTTAGE ARE THE WORK OF A SINGLE DAY. 80 page catalog, fully illustrated, mailed upon request.

**The American Hydraulic Stone Co.** Century Building Denver, Colo.

**For FIRE PROTECTION**

— USE —

**Refractory Concrete**

So called because it is worked the same as cement or plaster, and will endure heat equal to fire clay products.

For flue linings, chimney blocks and tops, floor and partition blocks, conduits for electric wires, fire proof plaster for wood and metal lath, or as a scratch coat for stucco, this is the ideal material.

A finished product of this composition can always be had in less than twenty-four hours, this permits the formation of the product on the job, and to fit any requirement.

A ventilated flue chimney from this composition is positively fire proof, and at the same time ventilates all rooms which it enters. Cheap to construct, and will meet the requirement of any size buildings.

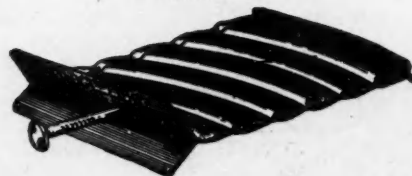
Refractory Concrete will prove a profitable proposition for any concrete worker, contractor or builder.

For full information address

**E. R. STOWELL : New Corydon, Ind.**

**Concrete Construction is Incomplete**

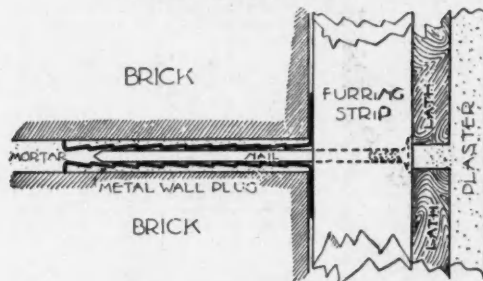
Without Our



**RUTTY METAL WALL PLUGS**

They are laid instantly, are indestructible, yet cost less than any other method. Previous difficulties of securing interior finish are entirely overcome by the use of the RUTTY Plug.

We make also Morse Steel Wall Ties and Prescott Steel Corner Beads

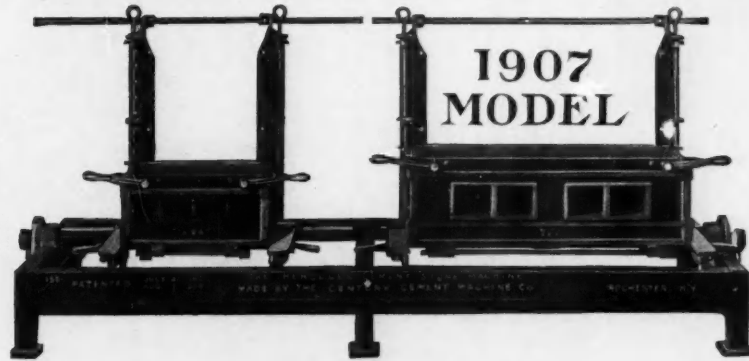


Furring Out on Brick or Concrete

Send for Samples and Catalog

**J. B. PRESCOTT & SON, Foundry Ave., Webster, Mass.**

**Hercules  
Blocks are  
Building  
Government  
Buildings in  
Egypt**



**1907  
MODEL**

**Hercules  
Makes Two  
Blocks at  
One Time—  
Simplest and  
Best Machine**

## IMPORTANT NOTICE

**To the Readers of American Carpenter and Builder  
A MAN YOU NEVER HEARD OF**

You never heard of a contractor who having once bought a Hercules Cement Block Machine ever discarded it for any other machine.

Hercules Machines are in demand the world over by hard-headed contractors, who want a machine that will do things, and do things right.

In the United States they are used by big contractors in making blocks where great strength is required and architectural beauty is a feature.

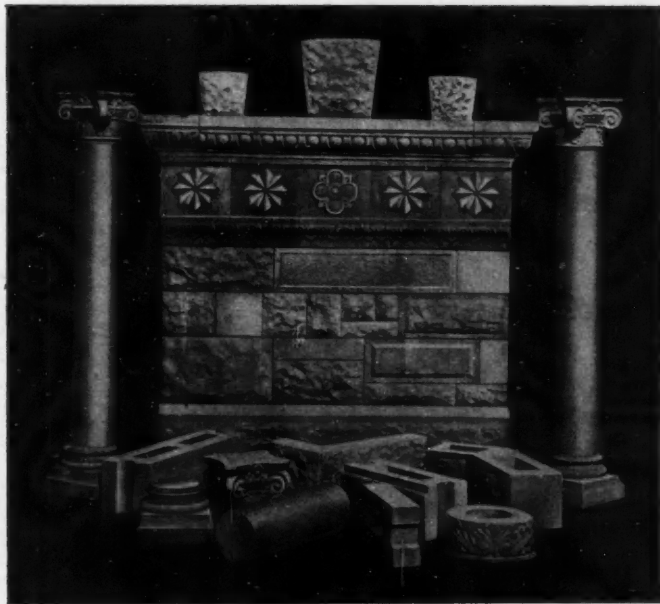
Just look at the illustration of the 1907 Hercules; it is really marvelous that such a simple machine can so easily and quickly produce an unlimited number of sizes and designs of perfect stone.

The Hercules Cement Block Machine doesn't get out of order—it is too simply constructed—not a pin, spring, lever or chain enters into its makeup—no gears to clog, or weights to lift—no friction or cleaning of parts.

The durability of the Hercules is guaranteed—it is the strongest Cement Block Machine made. Every part has been planned by a master mechanic and given the severest tests before it leaves the shop.

You cannot have a complete block plant without the Hercules; it makes any size block from two inches up to six feet, and makes more designs and shapes than any other machine. It also makes water tables, sills, lintels, steps, etc.

The Hercules will make two blocks of the same size, design, or two blocks of different sizes and designs on the one machine at the one time. This is a feature that should not be overlooked, as it cuts the price of labor in two.



**Hercules 1907 Catalog  
is Free**

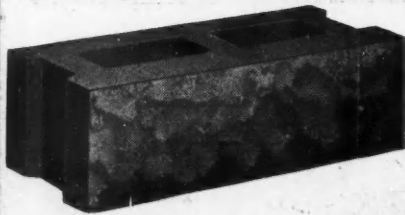
Send for it today—it tells a whole lot of things about Concrete Block Making that most men don't know.

**Ask for Catalog XX**

**Century  
Cement Machine Co.**

Makers of the Famous Hercules

**273 West Main Street  
Rochester, N. Y.**



## We Move the Machine NOT THE BLOCKS

Saves labor of off bearing, loss by damage; obviates necessity for heavy and expensive iron pallets. Reduces cost of plant and cost of operation. Every one knows that concrete should not be disturbed after it is molded or while it is setting, but this is the only machine by which this is possible. The blocks cost 6 cents to make—sell for 18 cents. One man can make 200 blocks per day. Whole outfit costs \$125.00. Figure the profits.

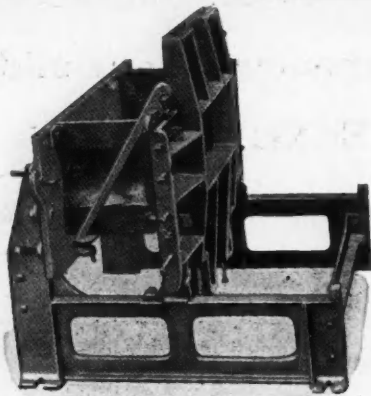
Competition simply demonstrates the superiority of the Pettyjohn machine. Unlimited guarantee. SENT ON TRIAL

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For One-Fourth what the Other Fellow Asks

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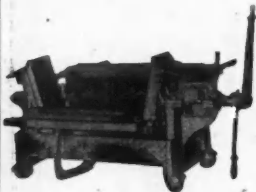
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**BRICK or 5,000 BLOCK**

**(8 x 24) PER DAY**



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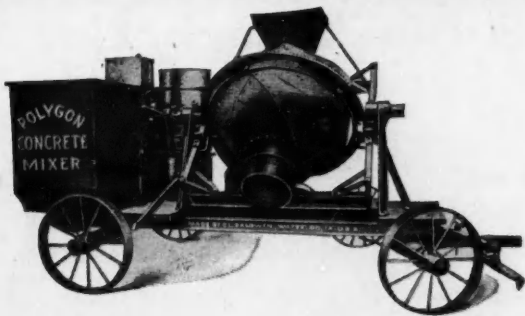
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Buy your cement machinery of us and you will be so well pleased that instead of swearing you will take to singing hymns. *You sure will!*

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THIS MACHINE IS SEVERAL IN ONE



It makes over 300 different kinds of blocks in all styles and sizes from 8x8x24 inch to brick sizes. The 4x5x12 and the 4x4x12 are the recognized sizes for building nice residences and cottages.

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The Number 6

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Mounted with 1 1/2 H. P. Gasoline Engine

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Capacity 12 cubic yards per hour on crusher run stone



Engine cools with half pail water carried in water jacket surrounding cylinder and extending above it, with open top.

**NO DAMAGE IF WATER FREEZES SOLID**

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**Weight 1500 Pounds**

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The Ideal Concrete Machine for the manufacture of Concrete Building Blocks makes it possible to profitably undersell all other building materials in all localities.

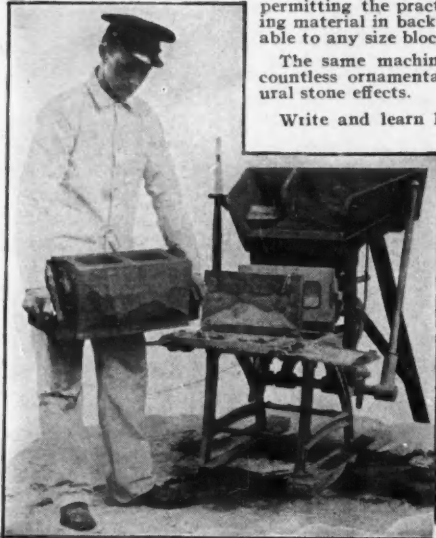
Ideal Blocks can be sold far below the cost of brick, lumber or natural stone. Excel them all in durability and fire and weather-proof qualities. Adaptable to any possible architectural design.

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Wonderfully simple in construction. No chains, springs or gears. Embody the only principle (face down) permitting the practical use of rich facing material in back of blocks. Adaptable to any size block within capacity.

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Sole Agents for  
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**ONE** movement of the lever operates the **ENTIRE** machine, consuming the least time for operation of any machine. Two men will make 250 blocks per day.

Our block is patented. Has double, a vertical and horizontal air space.

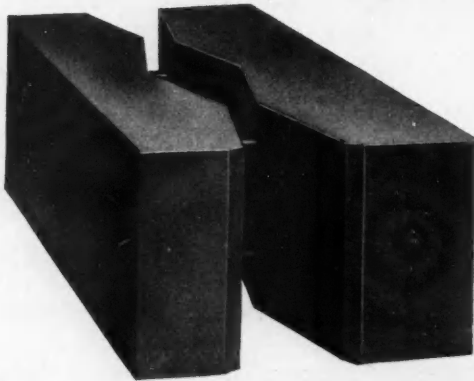
The brick attachment makes 18 brick as easily as a block.

No gears or chains to clog or break.

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**TWO SLABS OF CONCRETE TIED TOGETHER** with four one-quarter inch galvanized iron rods firmly imbedded in the block in its construction. Blocks lay in the wall 8 in. high, 24 in. long, 8 to 16 in. wide.

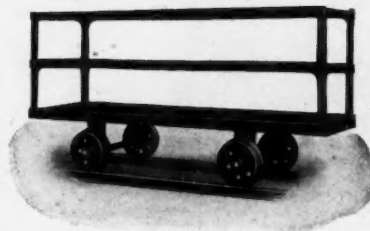
**Easy to Make Easy to Lay Look Fine**  
**Very Strong Frost Proof Moisture Proof**

Capacity of Machine:  
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Write for Special Low Prices and Catalog of Machines

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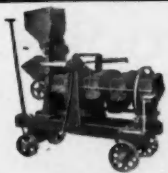
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FOR  
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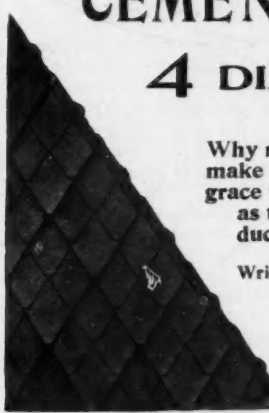
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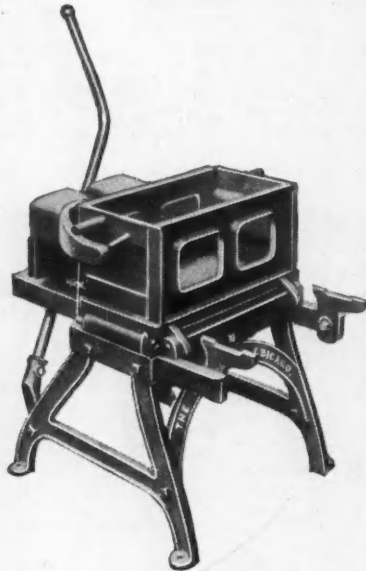
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BLOCK  
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The value of a block machine does not depend so much upon what it costs as upon what it will produce and the class of blocks it will make.

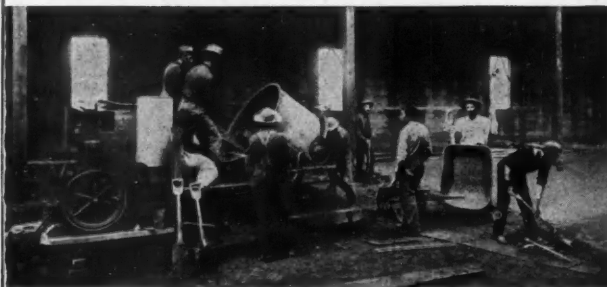
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**OPERATE**  
**DISCHARGE**  
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January 1907



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Our facilities for doing this are extraordinary, being large wholesalers of doors, glass and paint, and also making our own hardwood and special millwork, mirrors, art and prism glass.

There are 400 of us, making and selling. We started small thirty-seven years ago; growing ever since. Today we know of no one, anywhere, who has equal facilities or offers our advantages.

Take our Short Order Mill, a new invention of ours. WE CAN MAKE ODD SIZES OF VENEERED HARDWOOD DOORS OF THE BEST QUALITY IN ONE DAY AFTER RECEIVING THE ORDER. Have done it repeatedly. We don't expect to do this as a practice, preferring two or three weeks to handle usual odd hardwood orders, but WE CAN HANDLE RUSH ORDERS OF THIS KIND QUICKER THAN ANY MILL IN AMERICA.

Same with Sash. WE CAN MAKE AN ODD SASH OF NEARLY ANY SIZE IN AN HOUR.

Take frames for wood or brick buildings. WE FREQUENTLY DELIVER LARGE ORDERS OF BOX FRAMES WITHIN 24 HOURS AFTER WE GET THE ORDER.

So with finish, porch and stairwork. We have four acres of floor space filled with stock stuff and unique facilities for making special woodwork, art glass, mirrors and beveling.

**AS TO QUALITY.** Ohio grades are very high and we improve on them when possible. Our hardwood doors are the best we can make. Our windows are made of good glass backputtied, washed and paper packed to save all damage in transit.

**PRICES.** We give the best values in America.

**TERMS.** Our terms are liberal, either cash or credit.

**SEND US YOUR LISTS FOR NET DELIVERED PRICES TO YOUR DEPOT.** We will make low prices on your stock stuff or your entire house bills from frames to finish. Our catalogs of doors, sash and millwork, art glass, mirrors, plate and window glass, and paint stuff sent free.

**CLEVELAND WINDOW GLASS CO**  
doors    glass    paints  
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A PERFECT SUBSTITUTE FOR  
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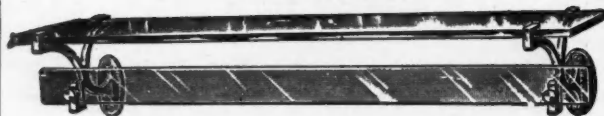
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WITH PLATE GLASS  
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Nickel Plated Bronze Brackets and Screws

No. 6.—Shelf 24 inches long and 6 inches wide, price each \$4.00

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They are entirely antiseptic*

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*Etc.*



see that it has a real roof—the life of your building depends on it. Any roofing that needs the paint brush is really only a roof ingredient. Tin is not the roof; tin plus paint is. The vital part is paint. Without it the roof wouldn't last at all. Soon this roof becomes a case of tin plus paint, plus paint again, plus paint once more, plus new tin, plus more paint, etc.

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tells

what the patent people say about patent roofs (tar, gravel, asphalt, etc.)

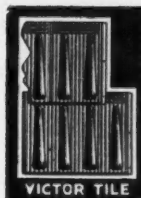
" "	shingle	" "	shingle	" "
" "	tin	" "	tin	" "
" "	tile	" "	tile	" "
" "	slate	" "	slate	" "

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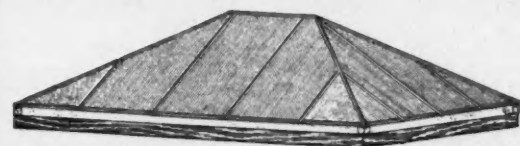


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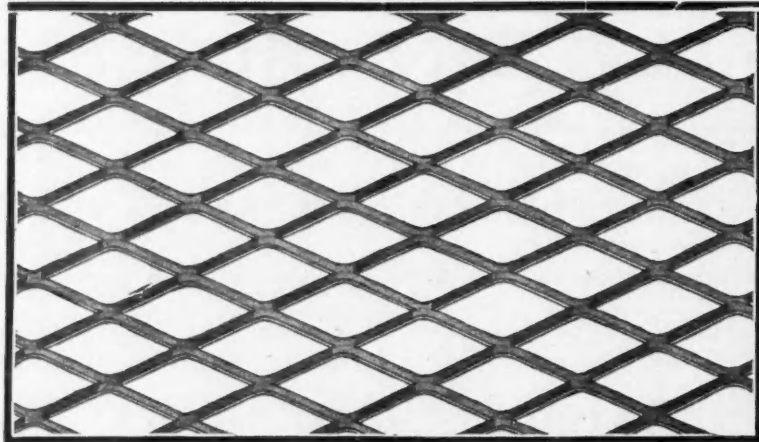
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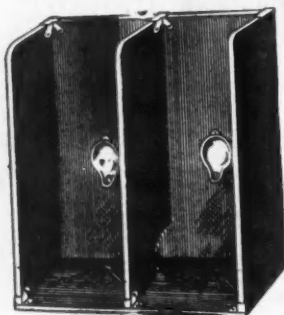
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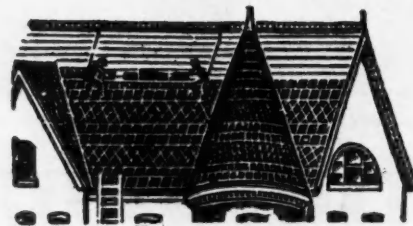
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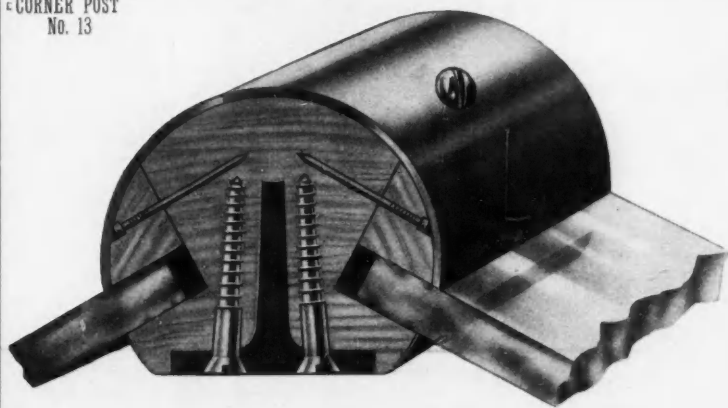


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CORNER POST  
No. 13



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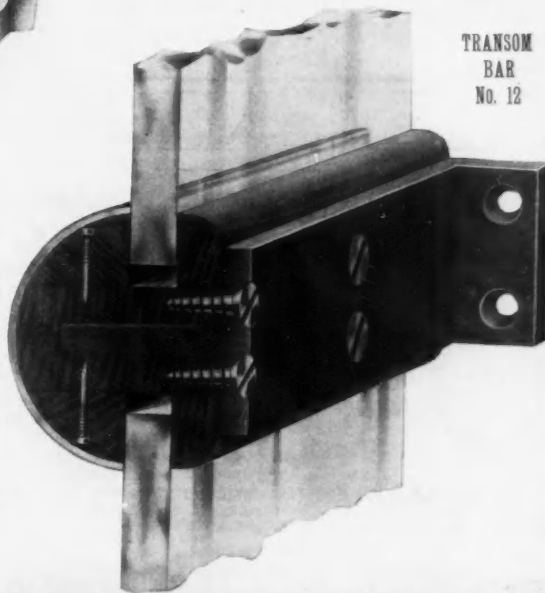
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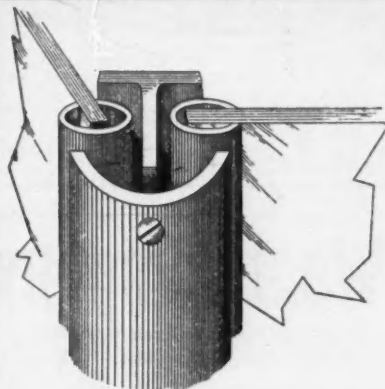
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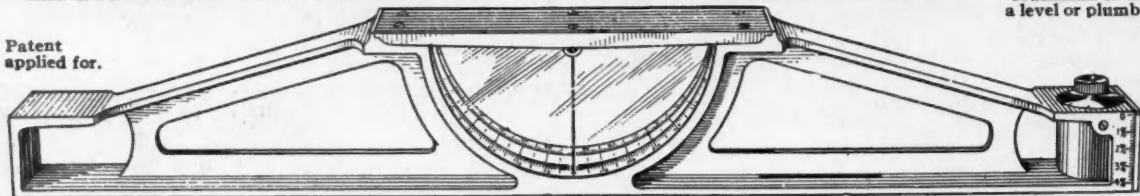
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Patent applied for.

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How often have you been situated so that it was necessary for you to ascertain the exact grade of some work in degrees or rise in inches per foot or in per cent? If you had this level it would help you out of all such difficulties instantly. It will show you at a glance a true level, true plumb, or any inclination in degrees, in inches per foot or per cent., and will establish all quicker and more accurately than you can establish a true level with the best spirit level you can buy. With the use of a bevel you can readily get the angle to set the bevel to cut any degree desired by setting the level so that the diaphragm sets on the degree desired and setting the bevel to the diaphragm, and you can use your steel square to get the right angle. You can set it on a track and it will show you the grade instantly in degrees or per cent. or in inches rise per ft.

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**A. W. HIGHT, Toledo, Ohio, JOHN R. HIGHT, Ballard, Washington**

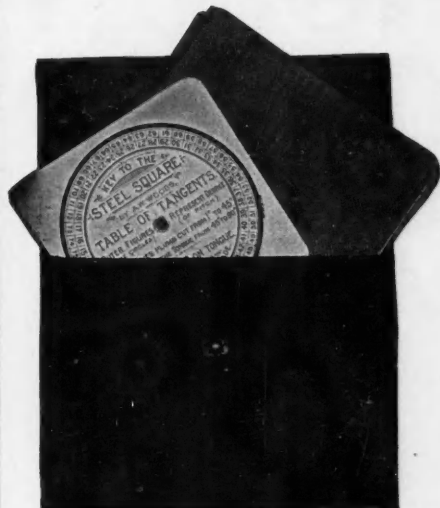


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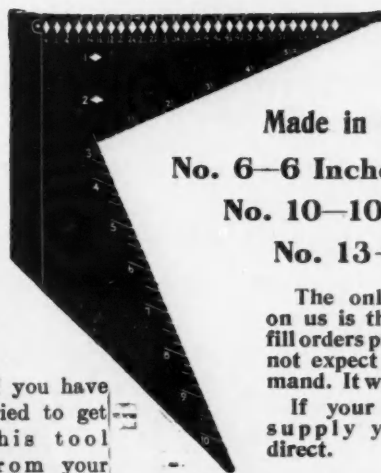
It tells the whole story of how to use the common steel square for all kinds of framing.

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Is proving itself sure to become  
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Made in Three Sizes:

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The only kick coming on us is that we did not fill orders promptly. We did not expect so heavy a demand. It was not our fault.

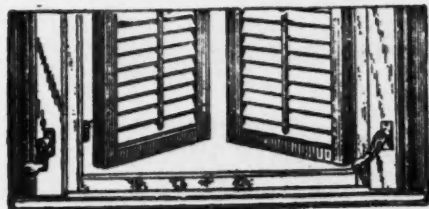
If your dealer can't supply you now, write direct.

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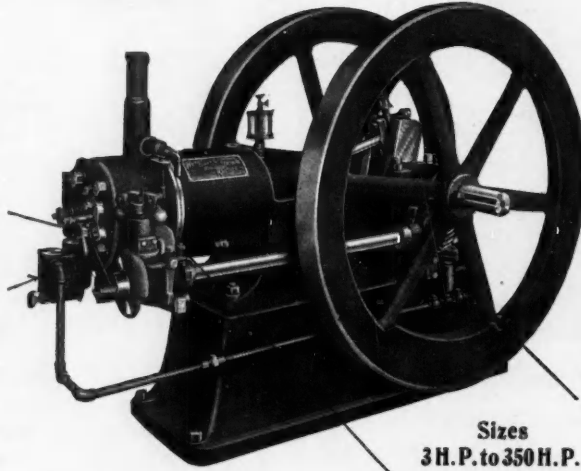
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Yours truly,  
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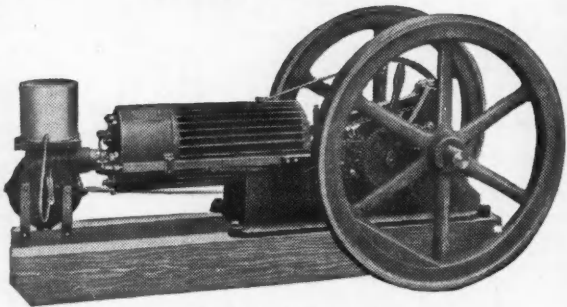


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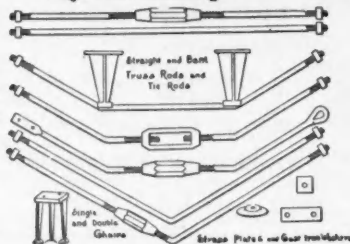
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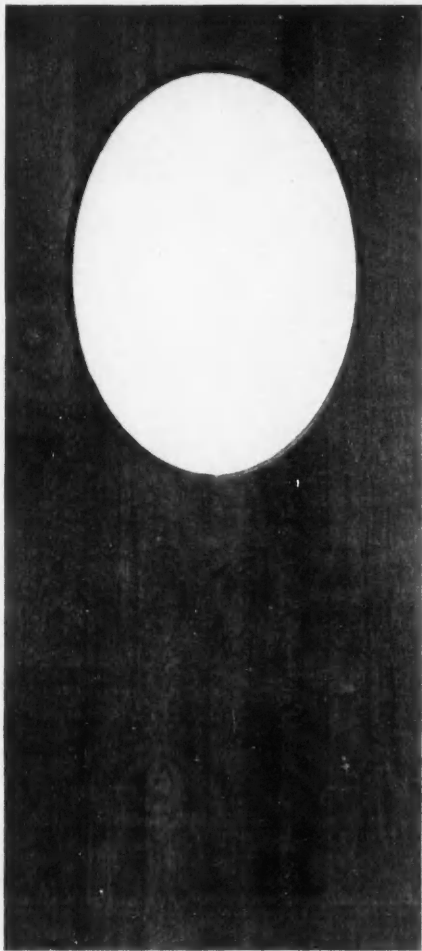
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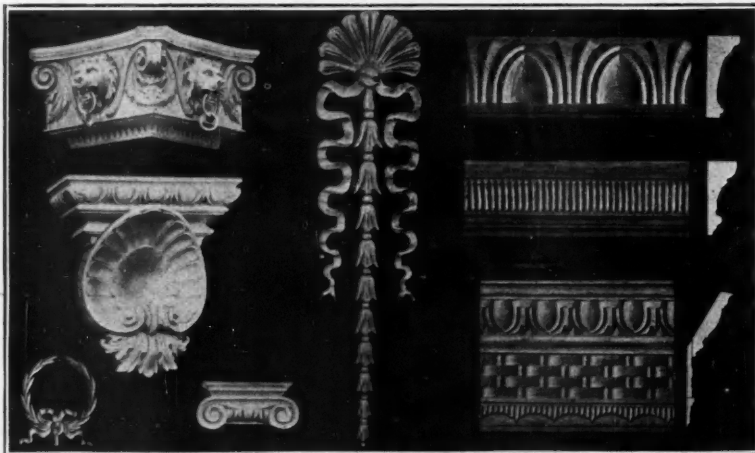
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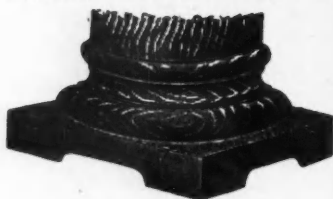
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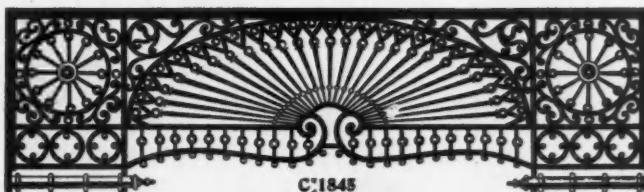
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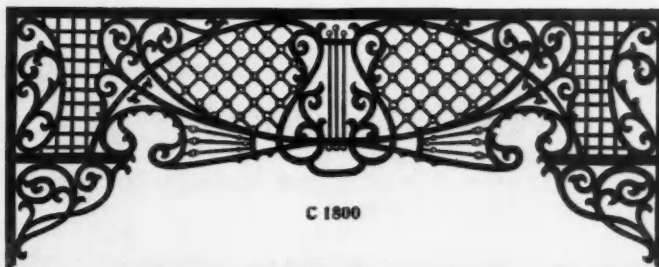
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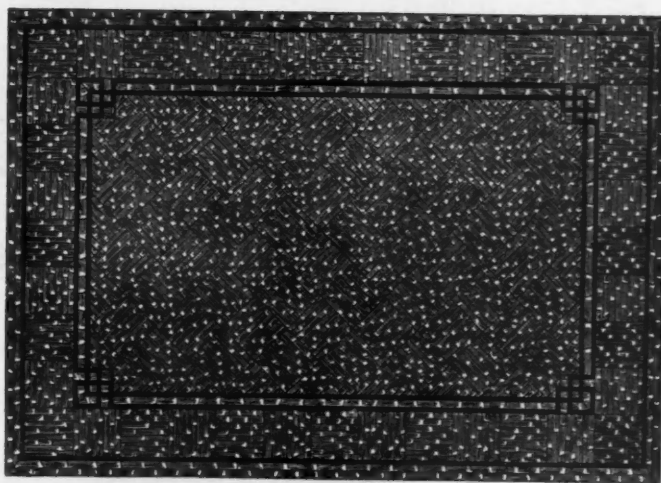


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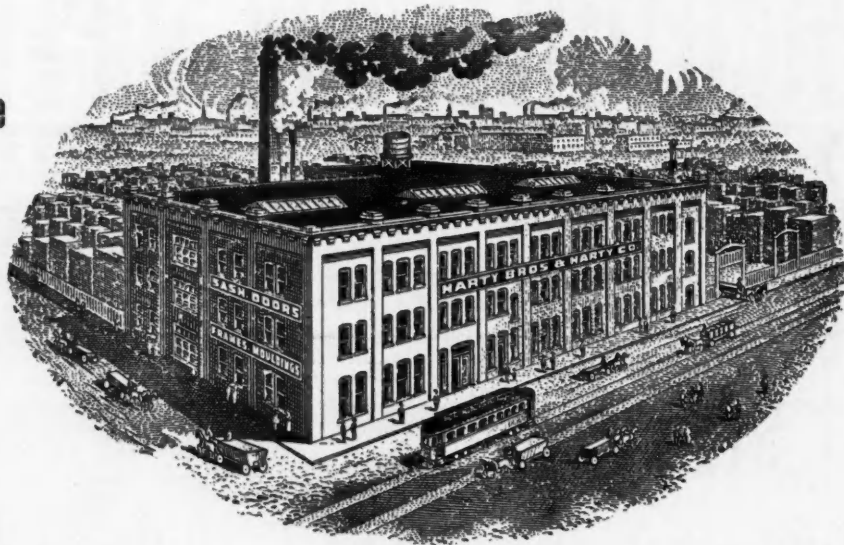
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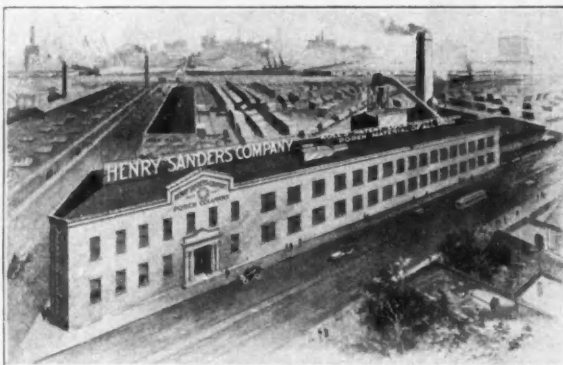
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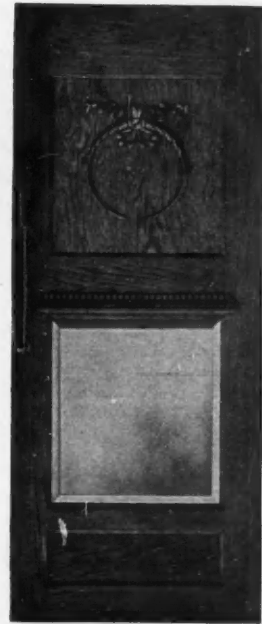
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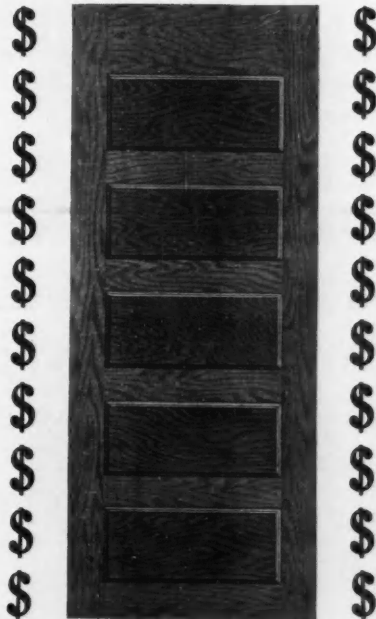
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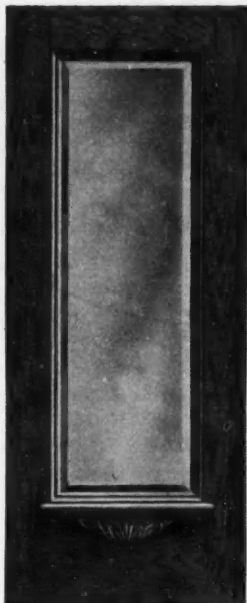
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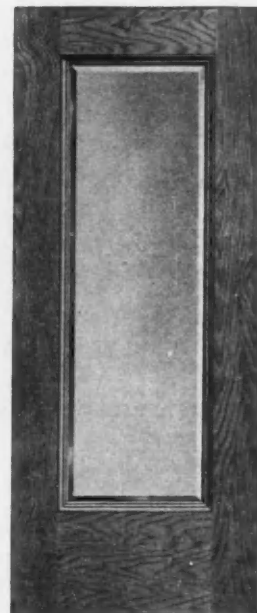
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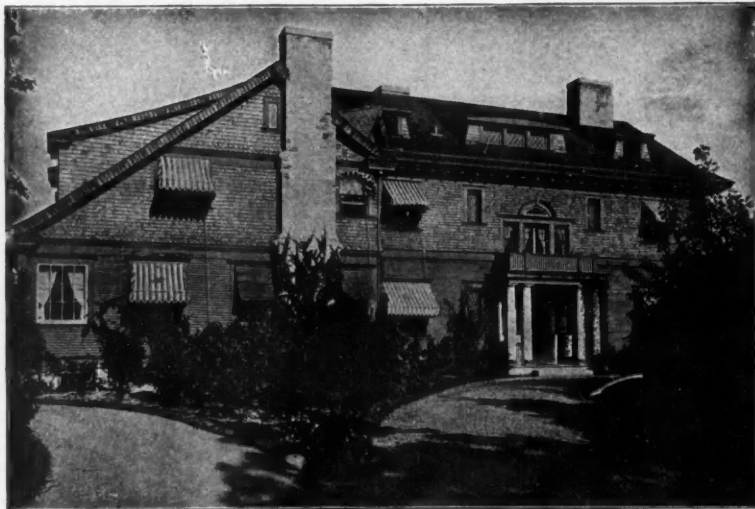
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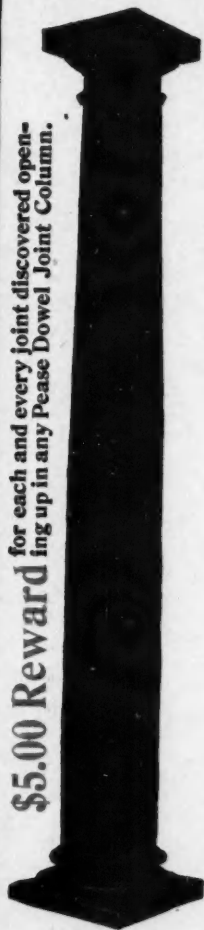
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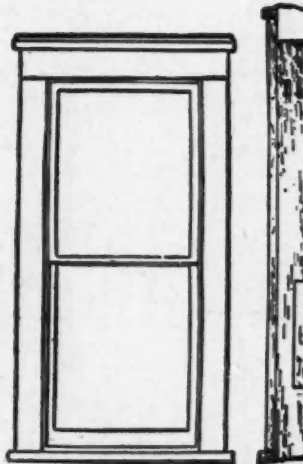


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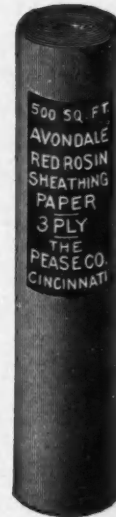
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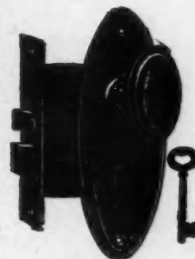
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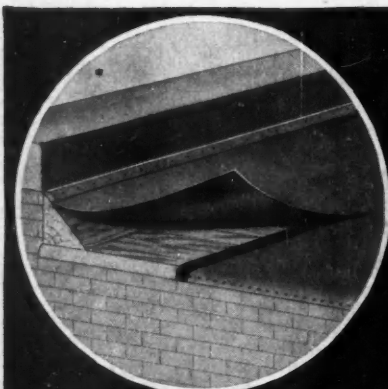
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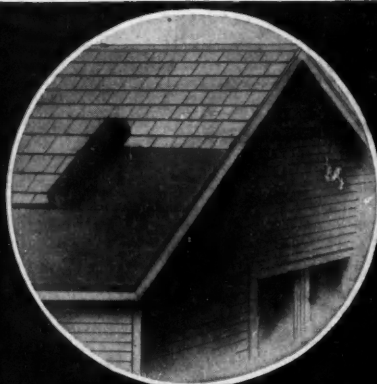
### WHAT THE TESTS PROVE

They Prove No-Tar Roofing to be Weather-proof, Water-proof, Acid-proof, Spark and Cinder-proof, Alkali-proof, That it is Strong, Flexible, Free from Tar—That It Won't Run—Can't Rot and Saves Insurance.

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NO-TAR Roofing has a surface as hard as flint—it is flint! Can't catch fire from sparks or cinders. It's as flexible as rubber and absolutely waterproof. It's tougher than leather. Costs less and lasts longer than shingles, iron or steel. Won't run in the hot sun. The building that has a “NO-TAR” Roof protection will last longer. Accepted by all Fire Insurance Companies, who charge 25 per cent less for insuring buildings protected by “NO-TAR” Roofing than for buildings with shingle roofs.

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