

# AMERICAN CARPENTER AND BUILDER



**THE WORLD'S GREATEST BUILDING PAPER**

## *Special Features This Month*

**BUILDING PLANS** Typical Bungalow Designs  
Suggestions for House Planning  
Residences—Modern Frame and Concrete  
Small High School Building

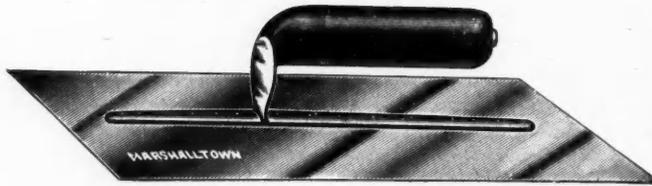
**PRACTICAL CARPENTRY** Need of Durability in Framing  
Dormer Window Construction  
Use of the Steel Square in Roof Framing  
How to Construct a Mission Book Case

**MODERN METHODS** Art and Craft of Cement Surfaces  
Vapor System of Heating  
Features of Stone Building Construction  
Reinforced Concrete Stairs

# THE MARSHALLTOWN TROWELS

Steel Sidewalk  
Edgers and  
Bronze Groovers,  
All Sizes

BEST MADE



Finishing and  
Browning  
Trowels, all Sizes  
and Guages

## CARPENTERS' WRECKING BAR



Made of the best quality tool steel,  $\frac{3}{4}$ -inch Octagon, 30 inches long

Will pull any size nail  
Just the thing for the mechanic

Brick Hammers  
Brick Chisels  
Cork Floats  
Canvas Tool Bags  
Beading Tools

**MARSHALLTOWN TROWEL CO.**

MARSHALLTOWN, IOWA, . . . . . U. S. A.

**GOODELL-  
PRATT . . . .**

No.

**108**



## AUTOMATIC DRILL

This is only one of our very complete line of Automatic Drills. We have them in various styles to suit the peculiarities of every user. They are all shown in our No. 8 Catalog. Perhaps your particular style is there. Better send for one and see : : : : : :

**Goodell-Pratt Company**

Greenfield, Mass., : : : : U. S. A.

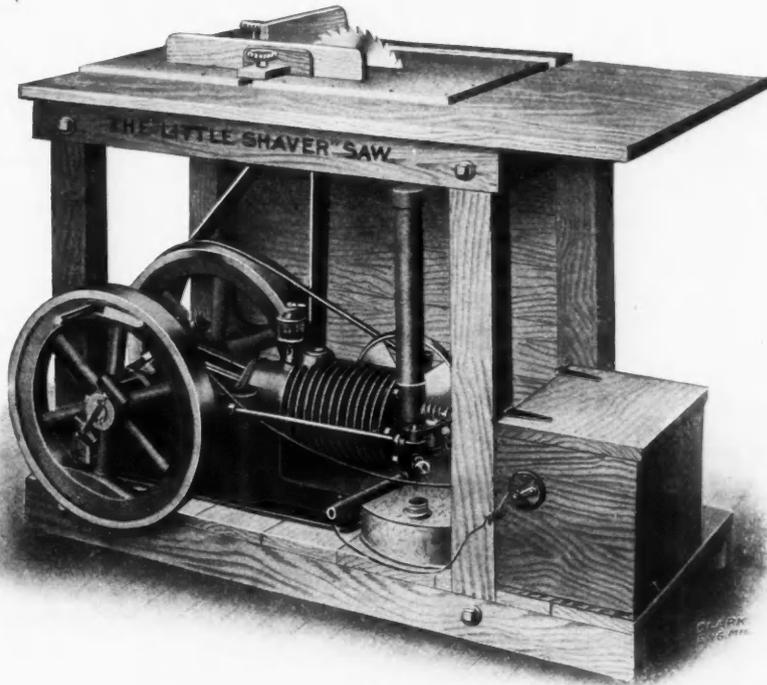
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

JUST OUT —

ANOTHER CRYING NEED



The  
"Little Shaver" Saw



Mr. Contractor:

Have you ever stopped to consider what a portable saw like this would save you?

The "Little Shaver" Saw is built on lines suggested by the practical carpenter contractor. It can be moved from job to job. The engine will handle the 6 inch rip or cross cut saw with ease. The gauges are shown in cut, but we cannot show the adjustment.



Our printed matter on the working of this saw will tell you all about this money and time saving outfit. It will make you **independent**, for it will do all your mill-work.

We have also made a **special price** for month of May on our "Little Shaver" Floor Scraper, and your inquiries at this time will save you money and get you the best and simplest Floor Scraper on the market. Write today and get our proposition.

Inter-State Equipment  
and Engineering Co.

Old Colony Bldg.

CHICAGO

# THE WEBER DOUBLE ACTING FLOOR SCRAPER

Takes only three-fourths the time of any other Scraper, and one-sixth the time of any Hand Scraper : : : :

The Weber is a Double Acting Ball Bearing, with Half Ball Bearing Sockets

which keeps the Machine from Jumping. Knife can easily be adjusted to the best cutting position.

Write for fully illustrated Circulars and Testimonials

**Weber Mfg. Co.**

Manufacturers of the Weber Double-Acting Floor Scraper, the Weber Sand Paper and Polisher, the Weber Bowling Alley Jointer and Scraper Shoe, the Weber Automatic Sharpening Device.

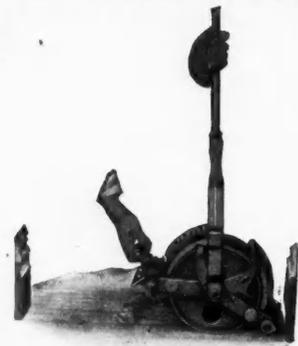
**665-667 71st Ave.**  
WEST ALLIS, WIS.

The Machine is in three parts, the weights being easily removed.

HAS AN AUTOMATIC SHARPENING DEVICE—The most

simple device, making the best possible cutting edge, sharpening the knife without removing from the machine.

This practical device can also be used on any other machine.



Working in space only 2' 8" wide



Illustration No. 2 shows the Machine in position for shoving, and No. 3 for pulling.



Main Offices  
Ohio Building

TOLEDO, OHIO

## THE LEVEL THE WHOLE WORLD HAS BEEN LOOKING FOR

The T. F. Deck Gravity Level is exactly what we call it in the opening lines of this announcement, the level the mechanics and dealers have been anxiously waiting for.

It is impossible to convey to you in a few words the many advantages obtained in this remarkable invention over all other levels now on the market.

The Deck Gravity Level is constructed on the plumb-bob principle. It is so sensitive that it will detect the

variation from the level or plumb, to so small a degree as one-hundredth of an inch. A full line of levels for carpenters, general mechanics, 24 and 30 inches long, and masons' plumb and level 42 inches long, sold to the mechanic and dealer at a price within the reach of all. All levels finely finished and thoroughly tested before leaving the factory.

Send for descriptive catalog and price list No. 10.

**The T. F. Deck Gravity Level Company, Dept. A, Ohio Bldg., TOLEDO, Ohio**

## HIGHEST CLASS RATCHET BRACE MADE

WRITE FOR CATALOGUE OF OUR ENTIRE LINE



No. 110—10 inch Sweep

This tool is designed and made for the class of mechanics who desire to use the finest tools that can be made.

No expense has been spared in its production and the machinery used in its manufacture is of the latest and most expensive makes.

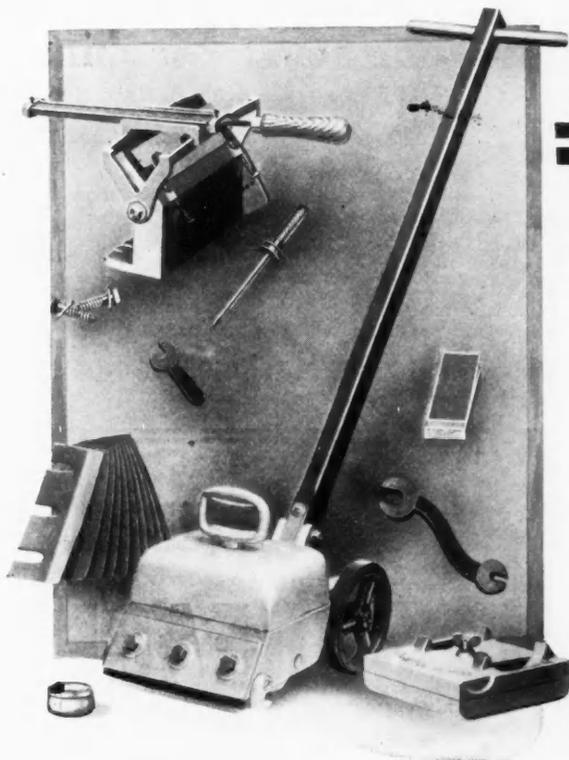
The tools are finely polished and full nickel plated, have a handsome metal clad head which is ball bearing, cocobolo head and handle and all the working parts are of steel.

The chucks are designed to firmly hold all of the sizes of square shank bits, and the smaller sizes of round shank drills.

Made in following sizes—6, 8, 10, 12 and 14 inch sweep.

**LANCASTER MACHINE & KNIFE WORKS**

918 Court Street :: Lancaster, N. Y.



# The ACME FLOOR SCRAPING OUTFIT

## COMPLETE IN EVERY DETAIL

A FLOOR SCRAPER whose action is entirely automatic, does not butt into the floor and that is a perfect machine.

A BLADE SHARPENER which assures a perfect cutting edge to the blade and which any person can operate.

A SANDER that puts the finishing touches to the floor and makes a smooth surface.

Write for illustrated booklet fully describing this outfit

**JOS. MIOTKE**

**247 Lake St. Milwaukee, U. S. A.**

This outfit will be sent on trial to any responsible party.



## STANLEY CONCEALED RATCHET BRACE.

No projections to injure the hands.



We make a complete line of Bit Braces

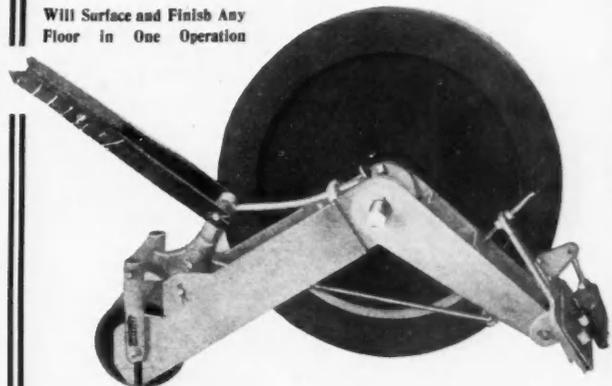
Send For Catalogue No. 34.

Sold by all Hardware Dealers.  
**Stanley Rule & Level Co.**  
 New Britain, Conn., U. S. A.

## The New Ideal AUTOMATIC FLOOR-SCRAPER

Its strongest features are  
**Automatic Action—Simplicity**

Will Surface and Finish Any Floor in One Operation



The Knife is Not Removed for Sharpening, as the frame is hinged at the axle, allowing knife to be raised by means of adjusting rod on top of frame, WEIGHT ON KNIFE may be Increased or Diminished for use on different kinds of floors. There is at all times a

### UNIFORM PRESSURE ON KNIFE

Automatic Shield in front of knife protects woodwork and also prevents knife from leaving any mark or cut on the floor whatsoever.

It will pay you to Write for Illustrated Catalog.

**SAMUEL DREW,** 191 Genesee Street Rochester, N. Y.



## The American Floor Surfacing Machine

Does the Work of 20 Men

BETTER

QUICKER

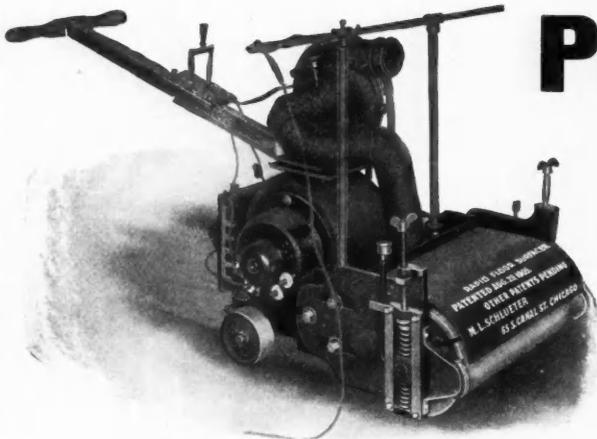
CHEAPER

*The only machine whose work is specified by architects and meets the requirements of contractors and owners, giving a level, smooth, sand-papered finish, that harmonizes with the balance of the interior wood work.*

It has surfaced and polished millions of square feet on every kind of floors, from common pine to the finest parquetry, from bowling alleys to sky scrapers. It is self-propelling, no pushing or pulling, no blades to dull or sharpen. Used and indorsed by leading contractors everywhere. Big money in floor surfacing as a business, one machine earned over \$1850.00 in seven weeks. Guaranteed and sold on its merits.

Write for our New Booklet. "Surfacing Floors as a business"

**The American Floor Surfacing Machine Company**  
TOLEDO, OHIO



# Perfect Results

Are Easily Obtained by using

## SCHLUETER RAPID FLOOR SURFACER

The machine is built on the only correct principle. It is guaranteed to be **THE BEST** machine with which to produce an even, smooth surface on any kind of wood floor, old or new, hard or soft and in all buildings; Residences, Stores, Factories, Bowling Alleys, Roller Skating Rinks, Reception and Dance Halls, Etc. **THE SCHLUETER** will remove all joints or warped edges, and leave the floor perfectly smooth. It will remove shellac, varnish, oil, wax, lime stains or the "muck" from skate wheels in a most satisfactory manner.

### Profits for Contractors

Type "B" Machine 18x8 in. Roller  
Type "D" Machine 16x7 in. Roller

The contractor using a **Schlueter Rapid Floor Sur-**  
**facer** and advertising the fact that he is prepared to do

perfect work will soon have all the work he can do. We can prove to any contractor that the Schlueter machine will easily earn a net profit from \$10 to \$25.00 a day when in operation.

### Sand Paper the Only Perfect Way

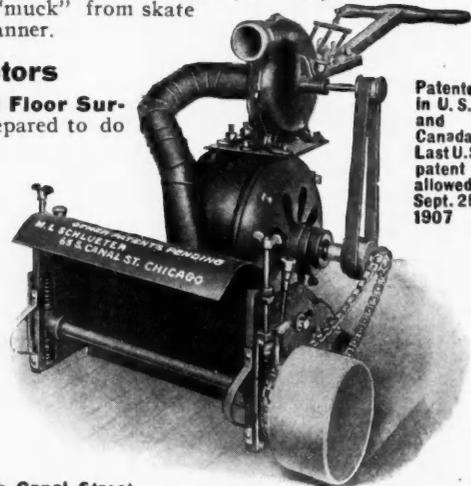
The **SCHLUETER RAPID FLOOR SURFACER** is so constructed that a roller, to which a sheet of sandpaper is quickly adjusted, is brought in contact with the floor surface while revolving at a speed of **600 revolutions a minute**. It is guaranteed to do the work cheaper and smoother than any other machine or method. This machine will surface from one to two thousand square feet in eight hours. Cost of sandpaper and electric power from \$1.00 to \$2.00 per day.

### What One Contractor Says

Richmond, Ind., Feb. 5, 1908  
TO WHOM IT MAY CONCERN: I am a floor contractor, have been in the business many years and I lay floors in the finest of residences, and therefore require a fine finish. Now to overcome the hardest work in the business, which is scraping the floors, I have been looking for a machine to do the work. I have tried all kinds of scrapers and floor surfacing machines but have not found one which would do the work satisfactorily, until Mr. Schlueter sent me a machine on two days trial which I found to do the work in the quickest and most satisfactory manner. So I cheerfully recommend the Schlueter Rapid surfacer to any one, which I know will pay for itself in a very short time. I am yours truly,  
ELI F. JONES, Contractor and Builder.

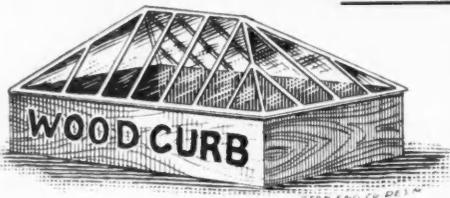
**FREE** Fine illustrated booklet containing full information sent free to contractors.

**M. L. SCHLUETER** 28 South Canal Street  
CHICAGO



Patented in U. S. and Canada. Last U.S. patent allowed Sept. 25, 1907

Edge Roller Attachment Interchangeable to either side of machine. Works close to baseboard.



## SKY LIGHTS

All kinds of Roofings, Steel Ceilings, Cornices, and Sheet Metal Work  
**ST. JOHN & BARQUIST CO.**

420 8th Street

Write for quotations

DES MOINES, IOWA



**F.C. BIT & TOOL CO.**  
FOREST CITY BIT AND TOOL COMPANY

Write for Catalogue G

ROCKFORD ILLINOIS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

# ACKERMANN'S RAPID FLOOR SCRAPER

Patented by J. B. Ackermann, June, 1907

**THIS MACHINE WILL DO**

**MORE  
BETTER  
EASIER  
WORK**

Than any other  
Scraper on the  
market.

Weight }  
120 lbs. }

The Machine is  
**FREE** if the above  
statement is not  
strictly true.  
(See offer  
Below.)



This Brush operates automatically. As the cutting  
away the shavings, grit, dust and other obstructions,  
keeping the floor free of anything that will cause the  
machine to vibrate or dull the cutting blade.

This Brush is an Ex-  
clusive, Patented feat-  
ure. **NO OTHER MACHINE**  
**HAS OR CAN USE IT.**

Patent Allowed Nov. 1907

### Knife Advantages of the "Rapid"

By means of a simple eccentric device, the knife blades of the "Rapid" can be **instantly** moved or set at any angle, thus securing a "drawing cut." No floor scraper can be a success that does not bring the knife blade across the floor surface with a natural, **hand-like** movement. The "Rapid" does this perfectly. Any size blade up to 4½ x 8 inches can be used on this machine.

### Exclusive Knife-Sharpening Feature

By simply reversing the position of the machine (turning it over) it forms its own knife-sharpening vise, the blade being brought into a perfect upright position, ready to sharpen, **without removing** it from the machine. This saves time, and time is money. The operator proceeds to sharpen the knife, then turns the machine over and goes ahead with his work.

### Our Special Guarantee Offer

We will ship a **Rapid Floor Scraper**, charges prepaid, subject to use **FREE** for three days, by any responsible person. If you are then satisfied the machine is all we claim for it you can purchase it, if not we will have the machine returned at our expense. Further; if, after you purchase this machine, you find that, at any time under equal conditions it will not do "**More**", "**Better**" and "**Easier**" work in a given number of hours than any other floor scraper, we will return your money and you can keep the machine free of cost. This is a straight offer, without any strings to it, made to anyone desiring to secure the best floor scraper made without risking their money until **THEY KNOW** what they are buying. We refer to the **State Bank of Michigan**, Grand Rapids, Mich., as to our guarantee and responsibility.



Showing  
Machine  
In Reverse  
Position Ready  
to Sharpen the  
Knife-Blade

**J. B. ACKERMANN CO.,** Sole Manufacturers Board of Trade Bldg., 97-99 Pearl St., GRAND RAPIDS, MICH.

I contemplate purchasing a floor scraper and would like to see yours operate before agreeing to buy it. Please send me full details covering your manufacturer's guarantee and special terms.

Name \_\_\_\_\_  
Town \_\_\_\_\_  
State \_\_\_\_\_

# 90% Of The Floor Scrapers Sold throughout the United States and Canada are "LITTLE GIANTS"

**FREE TRIAL  
Special Terms**

We are offering the "Little Giant" Floor Scraper on FREE trial and special terms.

We furnish 12 Imported Silver Steel Knives and 3 complete equipments for keeping them sharp, with each Machine.

**We Do Not Ask You to Deposit Any Money**

**HURLEY MACHINE CO.**

We pay freight and if after using the machine you are not thoroughly satisfied that it is the best on the market you can return it to us at our expense.

GENERAL OFFICE AND WORKS  
155 South Jefferson Street, CHICAGO

BRANCHES:— New York, San Francisco and Toronto, Can.



TRADE MARK

2 Fine Screw Driver Bits, 5-16 and 3/8 inch.

Sharp Knurled Cup Point Nail Sets, 1-16 and 3/8 inch.

1 Deep Cut Rose Countersink, 3/8 inch.

1 Sharp Knurled Prick Punch, 5-16 inch.

1 Concave Ground Square Reamer.

**EXPRESS 7 TOOLS FOR \$1.00 PAID**

Only one set to each purchaser, to get them known. If after trial you will part with them, we will pay you \$1.25 to get them back.

MANUFACTURED BY  
**BRAUNSDORF-MUELLER CO.**  
201-211 Madison Avenue ELIZABETH, N. J.

**LEONHART'S  
STRAIGHT  
EDGE LEVEL**

Proved Glasses  
Nickel Plated

Handiest Level on the Market for setting Door Jambes and Partitions. Can be Attached to any Piece of Wood.

Try one. Money refunded if not satisfied.

Ask your dealer, or send 50c to

**R. LEONHART**  
San Anselmo, - Calif.

**THE CROWN  
NAIL-PULLER AND  
BAND CUTTER**

Pulls nails faster than others, cuts and rips off bands like magic, all parts interchangeable.

**HARDWARE SPECIALTIES,  
L.T. SNOW,  
MANUFACTURER  
NEW HAVEN CONN.**

SAVES NAILS, TIME, STRENGTH.

Write for price of pre-paid sample.

**BEST BOX OPENER  
ON EARTH.**

**SNOW & PETRELLI  
MFG. CO.**

**NEW HAVEN, Chapel St., CONNECTICUT**

# DISSTON SAWS

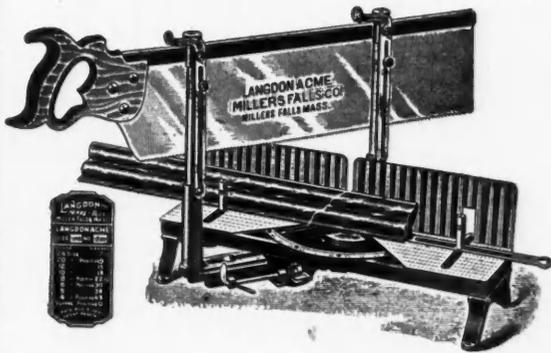
BACKED BY THE  
**DISSTON SAW WORKS**  
AND BY THE  
**DISSTON METHOD**  
OF MANUFACTURING,  
**THIS BRAND**  
ON SAWS AND TOOLS

Will continue to be recognized in the future as in the past

**SIXTY-EIGHT YEARS**  
as a guarantee of **HIGHEST QUALITY** and **EFFICIENCY.**



**HENRY DISSTON & SONS, INC.,** PHILADELPHIA, PA.  
Keystone Saw, Tool, Steel & File Works

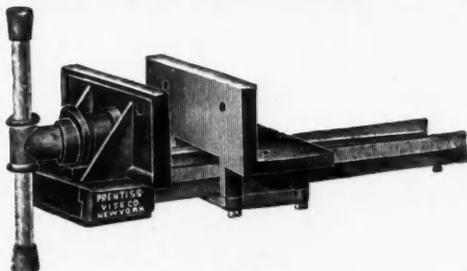


## Are You Interested in Mitre Boxes ?

If you are it will pay you to investigate the Langdon Acme. It has all the advantages of any other box made and several that others do not comprise. Our pocket catalogue "D," representing our full line of tools, will be sent if asked for.

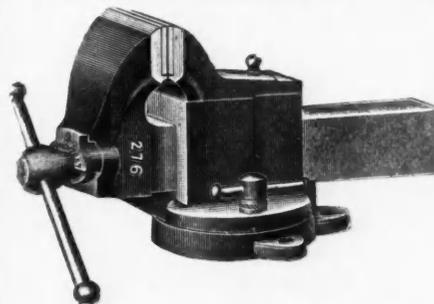
**MILLERS FALLS COMPANY**  
28 Warren Street, NEW YORK

## BLAKE QUICK ACTING VISE



For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best  
Send for Catalogue of all kinds of Vises.  
**PRENTISS VISE COMPANY, MAKERS**  
44 Barclay Street, New York, U. S. A.

## PARKER VISES



MADE  
ESPECIALLY  
FOR WOOD  
WORKERS

FOR SALE BY  
DEALERS

SEND FOR  
CATALOG

**CHAS. PARKER CO.**  
MERIDEN, CONN.

**TOOLS FOR SLATERS** MANUFACTURED BY **BELDEN** ARE GUARANTEED

Their superiority over others is acknowledged by thousands of users. Made-to-order steel used in their manufacture adopted only after most careful experimenting gives them their value.

- ONE HAMMER
- ONE RIPPER
- ONE STAKE
- ONE PUNCH
- Constitute a Set

If Your Dealer Cannot Supply You, Write Us Direct



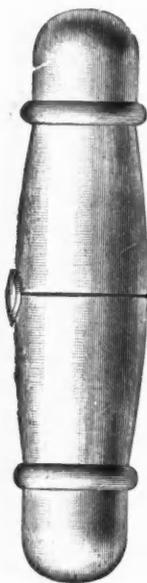
**THE BELDEN MCH. CO.,**

**OUR HAMMERS** are perfectly balanced and are provided with

**Leather Handles** to prevent hand from slipping

Our Tools Bear an International Reputation

Whalley Ave. and Tryon St. NEW HAVEN, CONN., U. S. A.



**Here is a Gimlet**

Equal in quality and usefulness to any Brace Bit

HANDLE OF SELECTED COCOBULO WOOD

THREE SIZES ONLY  
Cutting 4-32, 6-32, and 8-32 Holes

Price Postpaid **15 cents** each

**H. H. MAYHEW COMPANY**

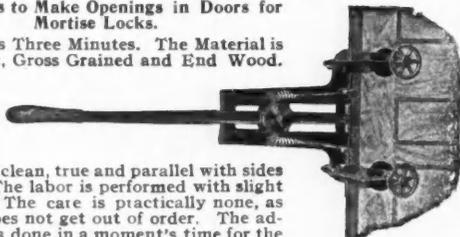
SHELBURNE FALLS, MASS.

**Miller's Hand Mortiser**

WILL SEND ON APPROVAL

Its Work is to Make Openings in Doors for Mortise Locks.

The time is Three Minutes. The Material is Hard, Soft, Gross Grained and End Wood.



The job is clean, true and parallel with sides of door. The labor is performed with slight exertion. The care is practically none, as the tool does not get out of order. The adjustment is done in a moment's time for the different sizes. The cutters are five in number and cover locks from 1/2 inch to 1 1/2 inches thick. Thin doors are handled as easily as thick doors.

Riverside, Cal. A. W. MILLER MFG. CO. Cincinnati, O.

**LUFKIN** STEEL TAPES

and **RULES** ARE INDISPENSABLE FOR ACCURATE WORK

MADE BY **The Lufkin Rule Co.** Saginaw, Mich., U.S.A. New York London

For Sale Everywhere. Send for Catalogue.



"Last a Lifetime and give Satisfaction to the End"



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

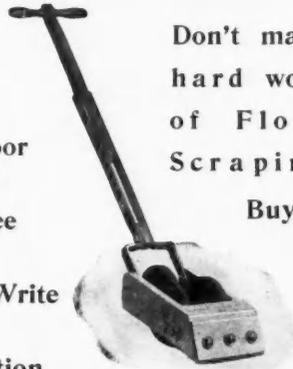
The Celebrated Barton Tools, send direct for Catalog. Be sure and specify "CARPENTER'S CATALOG"  
**MACK & CO., 20 Brown's Race, Rochester, N. Y.**

**When you think of Floor Scrapers—Think of the FOX FLOOR SCRAPER**

**It Will Save You Money**

**Money Pays Dividends**

We Send the Fox Floor Scraper on Three Days' Trial—Write for Proposition



Don't make hard work of Floor Scraping



Buy a **FOX FLOOR SCRAPER**

**The Simplest and Best Device for Perfect Floor Scraping.**



REGISTERED

The handiest wood scraping device on the market. Body of tool slides on the floor, insuring a uniform cut, blade is held by a clamp and can be adjusted or reversed in a second's time. Unexcelled for any kind of wood scraping. Never jumps or leaves waves. Every carpenter needs this tool. Price of Fox Cabinet Scraper, \$1.25.

Ask your dealer to order it for you, or we will ship on receipt of price.

**WRITE US BEFORE BUYING**

**FOX MFG. CO., 187 Second St., MILWAUKEE, WIS.**

**"FORSTNER" BRACE AND MACHINE BITS**

**FOR FINE CARPENTER, CABINET AND PATTERN WORK**



**Specially Adapted for Hardwood Working**

leaving 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.

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.

Manufactured by

**THE PROGRESSIVE MFG. CO., Torrington, Conn.**

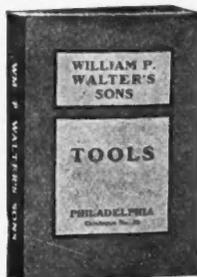
Enquire of your Hardware Dealers or write us direct.

Supplied in sets.

Write for Catalogue.

To thoroughly introduce this high grade tool among carpenters, pattern makers and others, we will mail to any reader of the American Carpenter and Builder upon receipt of 50 cents any bit we make from one-quarter inch to one inch in size.

**OUR LATEST CATALOGUE No. 20.**



Handsomely printed on heavy paper, containing 450 pages, 2000 illustrations, including a full line of **Woodworking and Metalworking Tools, Foot Power Machinery, Lathes**, etc. This is the largest and most complete catalogue we have ever issued, being a valuable hand book for any mechanic. Sent on receipt of 20 cents postage.

**WM. P. WALTER'S SONS**  
 Tool Headquarters  
 1233 Market Street, PHILADELPHIA

(Please mention the American Carpenter and Builder)

Smooth, tough "leads" are the result of skilful and careful grinding, working and firing. It is this care and skill that make Dixon's Carpenter Pencils standard. Send 16c for generous sample lot 183 J.

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

# The National Roofing Tile Co.

---

LIMA, OHIO, U. S. A.

Manufacturers of the

## Celebrated "National" Double Interlocking Roofing Tile

WATER TIGHT      EVERLASTING      HANDSOME

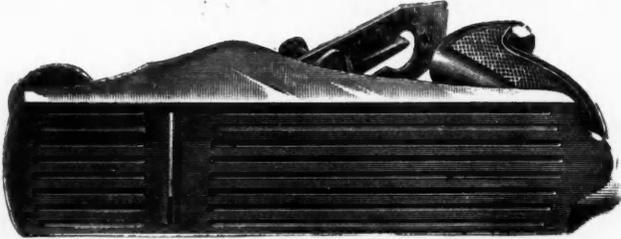
Send Plans at Our Expense for Estimates      Write for Catalogs, Samples and Prices

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

## CHAPLIN'S IMPROVED PLANES

Patented Feb. 14, 1899; Oct. 30, 1900; Dec. 24, 1902

We invite the  
Severest  
Comparative  
Tests

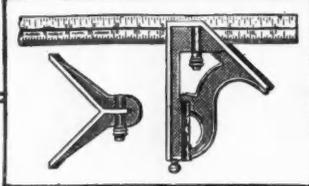


We want you to have a copy of our booklet

"A 'Plane' Talk About a Good Plane!"

We want you to have a copy, for it is a booklet you really need in your business. We'll gladly send you this booklet with our compliments, promptly upon receipt of your request.

**Tower & Lyon Company, 95 Chambers Street, New York**



**STARRETT**

### COMBINATION SQUARE

THE ORIGINAL : : THE MUCH IMITATED

Send for free Catalogue No. 186, of Fine Tools for all kinds of mechanics.

The L. S. STARRETT CO., Athol, Mass., U. S. A.

### ONLY SELF-SETTING PLANE

THE BEST IS THE CHEAPEST:  
None Cheep but the Best.  
All Want the Best.

Sent on 30 Days' Trial as per Circular, if Dealers do not keep it.



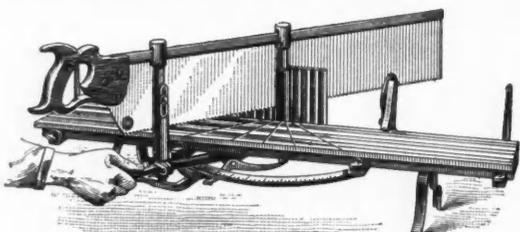
SECTIONAL VIEW—showing ADJUSTABLE IRON THROAT.

TRIAL COSTS NOTHING

if plane is returned at our expense as per circular. Circulars and a Carpenters' pencil free if this Ad. is sent us within a month, another pencil for 10 carpenters' addresses, still another if you will hand our circulars to seven or more plane users. If you will sell our planes where not sold, we will allow you Dealer's discount.

The first man, "From Kansas" living in Kansas, who sends us this Ad. within a month will get a \$3.25 plane free, by paying the express charges. The lucky man from Missouri, last month's ad. was Mack Green, Box 166, Monroe City, Mo. Watch this space—Another State next month. 5-1-08

**GAGE TOOL COMPANY, VINELAND, N. J.**

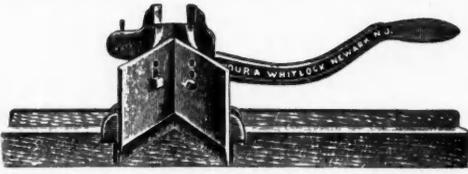


### Nicholls Common Sense Miter Box

We have endeavored to place on the market a Miter Box suitable for practical work, and having tested it thoroughly, we are satisfied we have succeeded in doing so, and are placing this Miter Box on the market warranted in every respect.

Nicholls Manufacturing Co.      ::      Ottumwa, Iowa

## The S. & W. MITRE



Hand or Foot Power

---

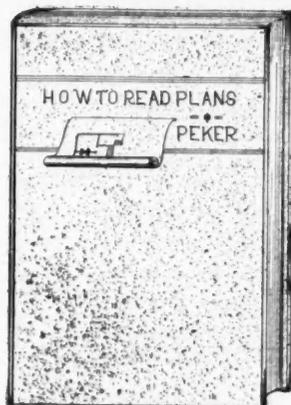
2 1/2, 3 and 4 inch Sizes

GUARANTEED ABSOLUTELY ACCURATE  
Write us for particulars

### SEYMOUR & WHITLOCK

1 GARDEN ST., NEWARK, N. J.

## How to Read Plans



A Valuable New Book by Charles G. Pekar

60 Pages (5x7 ins.)  
43 Drawings in Text, 8 Large Folding Plates

Showing the complete plans of a 7 room house

Handsomely Bound in Cloth

Price, 50 cents

Sent postpaid on receipt of price  
Your money back if you are not pleased

Many building mechanics are handicapped from getting more pay because they are unable to read plans and work from a drawing.

This book simply explains the meaning of the various lines, plans, views, elevations, sections, scales, blue prints, devices, symbols, etc., to be found on a set of plans.

Each subject is taken up and explained and illustrated separately, and then a full complete set of architect's plans for a frame house is taken up and explained so that the reader will be sure to understand how to read plans.

INDUSTRIAL PUBLICATION CO.

14 THOMAS STREET

NEW YORK

## WE WILL GIVE \$1,000 CASH

For a Stronger, Lighter, Cheaper and Better CLAMPING DEVICE than this

This adjustable 6 in., 8 in. and 10 in. Brace

\$4.00

By express prepaid for a LIMITED TIME ONLY

Send for a circular anyway

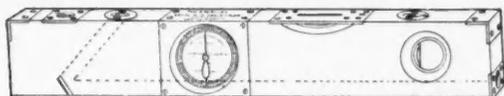
The E. S. BRACE CO.

Office with NIACARA MACHINE CO.

NIAGARA FALLS

NEW YORK

## THE AMERICAN Combined Level and Grade Finder

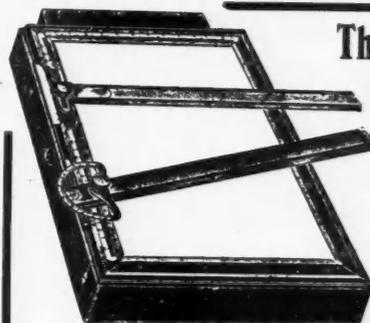


All Progressive and Up-to-date Mechanics as well as Manufacturers having use of a Level, are getting one

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

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

Write at once for large list of testimonials from all over the United States, and special introductory price given only to first applicants with privilege of taking agency. Address Edward Helb, Railroad, Pa.



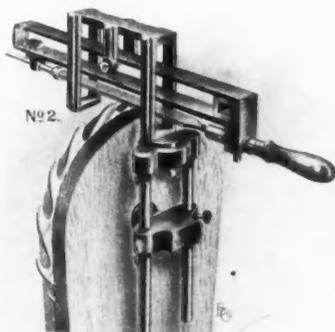
## The RICH Handy Drawing Outfit

SAVES TIME

for the draughtsman, and is a great aid to the learner. It holds a number of sheets or a pad, which requires no fastenings. The Protractor T Square gives accurate angles direct. You get measurements from the

board. Has a drawer for instruments and can be carried around to make drawings on the spot. Circulars free.

J. & G. RICH, 122 N. 6th St., Phila., Pa.



THE saw will run true if the teeth are filed with a uniform angle and pitch.

The Reynolds saw filing machines are designed for the accurate filing of band saws, hand saws and circular saws.

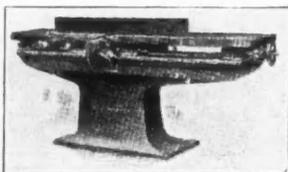
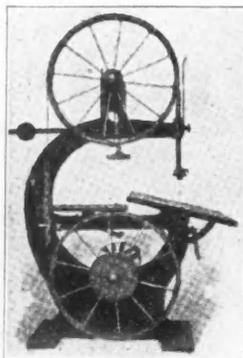
The simple substantial construction; the rigid adjustable guide and the smooth working parts are features which make the machine a practical success.

For descriptive circular and terms to reliable agents write

CHAS. H. REYNOLDS

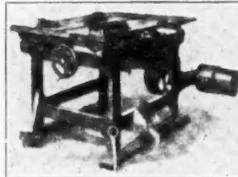
Box 75

MILAN, MO.



## COMPLETE WOOD-WORKING SHOPS For CARPENTERS and CONTRACTORS

*These Four Machines with a Gasoline Engine or Motor make a Model Shop*



You can save time and money by being in a position to manufacture your own millwork.

We also carry a **LARGE STOCK OF UP-TO-DATE, BUT SLIGHTLY USED MACHINES.** We can surprise you with the small investment it requires to be independent. Write us today for full information

Right Prices  
Prompt Shipments

### CHICAGO MACHINERY EXCHANGE (INC.)

Woodworking Machinery Merchants

9 to 10 North Canal St., CHICAGO

## CUSTOM MADE FLY SCREENS

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

For outside screens we use the identical finish of the outside of Pullman cars.

The best grades of Wire Cloth, enameled, galvanized, genuine bronze, etc. Fastened by tacks or by the "lock-strip" process.

Intending purchasers may have free by mail samples of woods, finishes, and wire cloth and copy of catalog and price list. Agencies in many cities. Special terms to contractors and builders.

**The A. J. PHILLIPS CO.**

FENTON, MICH.

23 Years' Experience

3 1/2 Acres of Floors

## PLATE GLASS Bath Room Fixtures

FOR RESIDENCES, HOTELS, OFFICE AND APARTMENT BUILDINGS

Absolutely sanitary, require no cleaning, never wear out or show the effects of use. Not affected by hot or cold water. The modern 20th century toilet and lavatory fittings.

### PLATE GLASS TOWEL BAR



Price \$1.50

No. 141 24 inches, adjustable. Also made in 30, 36, 42 and 48 inch lengths at slightly higher prices.

Round glass towel bars, \$2.00

Adjustable glass towel shelves, \$3.50, \$4.00, \$6.00

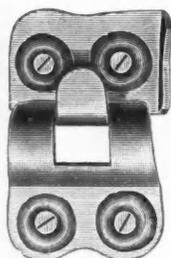
We also sell plate glass with polished edges for table tops, any size, and glass push plates for use in fine residences and apartments, manufacture and re-silver mirrors, etc.

CATALOGUE SENT FREE ON APPLICATION

**Geo. H. Anderson & Co.**

Manufacturers and Jobbers of Plate Glass Specialties

281-291 W. Superior Street - - CHICAGO



THIS

## GUIDE FLANGE

Makes it easy to hang or remove

full length screens

It's found only on

## GOSSETT DETACHABLE SUSPENSION HINGES

Use them and you'll save time—please your customers—increase your screen and storm-sash business.

Ask your hardware dealer or write for free sample.

F. D. KEES MFG. CO., Box 522, Beatrice, Nebraska

## THE "ZIMMERMANN" IRON BASE FOR WOOD COLUMNS

"The Column Never Rot"

All Sizes for Round or Square Columns. Thousands in use. Send for Circular "Z."



C. E. ZIMMERMANN, : Syracuse, N. Y.

## On the Square



every builder should have my little works and be a constant reader of the "Cement World," the leading paper of its kind published.



STEEL SQUARE POCKET BOOK.....\$ .50  
FOLDER (in case with pockets)..... .25  
DESIGNING (finely illustrated)..... .50  
CEMENT WORLD ..... 1.00

All for \$1.75.

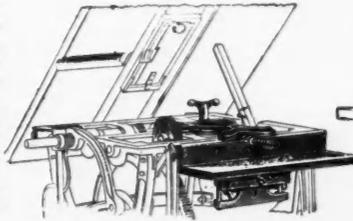
\$2.25

DWIGHT L. STODDARD, Author of "Steel Square Pocket Book," 328 W. Raymond St., Indianapolis, Ind.

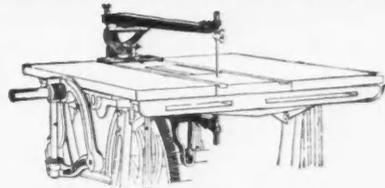
Send for other Combination Offers.

# If You Knew of a Man

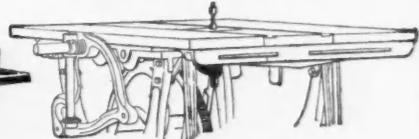
who could do as much work as 4 good men, would you hesitate to hire him? Don't believe you would wait a minute. Well, here is about the same proposition; one man with the No. 5 Union Combination Self-Feed Rip and Cross-Cut Saw will do as much as four men using hand tools, will do it easier and will do it better. Wouldn't it be economy for you to get a Union Combination Saw and save three men's wages?



"Union" Boring Attachment.



"Union" Scroll-Saw Attachment.



"Union" Moulding Attachment

## No. 5 "Union" Saw

Combination Self-Feed Rip and Cross-Cut

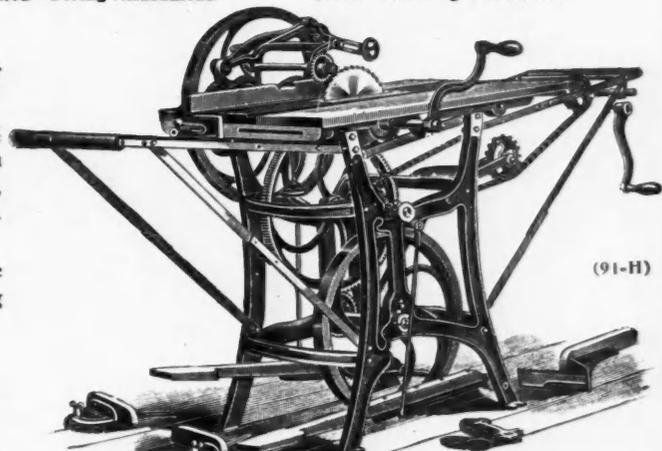
is suitable for various kinds of work—ripping (up to 3½ inches thick), cross-cutting, mitering, etc., and, with additional attachments, rabbeting, grooving, dadoing, boring, scroll-sawing, edge-moulding, beading, etc. Almost a complete workshop in one machine.

Send for Catalog "A," fully describing our complete line of foot, hand and light power wood-working machinery.

**The Seneca Falls Mfg. Co.**

218 Water St., Seneca Falls, N. Y., U. S. A.

(105)



(91-H)

No. 5 "Union" Combination Self-Feed Rip and Cross-Cut Saw.

## CARPENTERS

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

### Barnes' Hand and Foot Power Machinery

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

SEND FOR OUR NEW CATALOGUE

**W. F. & John Barnes Co.**

74 RUBY ST., ROCKFORD, ILL.



### Crescent Jointers Always Give Satisfaction

You may be in a hurry for a job and crowd a Crescent Jointer to the limit of capacity, and get just as good work as though you had not crowded the machine at all.



Every fellow fortunate enough to own a Crescent Jointer is so perfectly satisfied that when any of his friends want a jointer he tells them on the spot to order a Crescent. You will do the same when you get one. Catalog describing our elegant line of Band Saws, Saw Tables and Jointers mailed on request. Send for it Now.

**The Crescent Machine Co.**

224 MAIN STREET

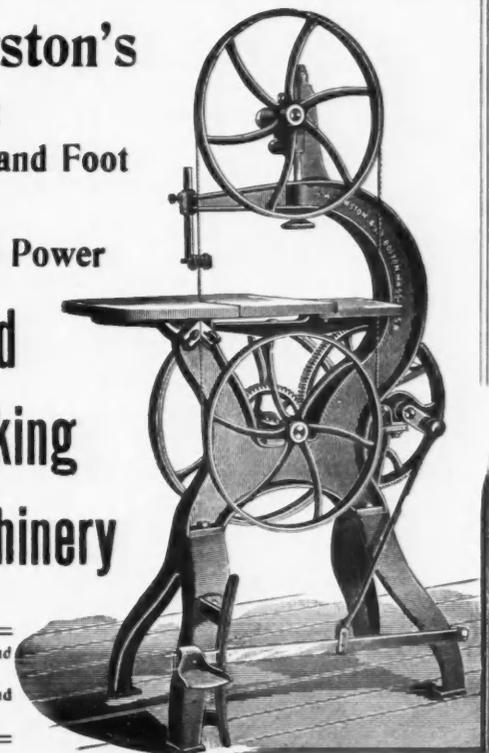
LEETONIA, OHIO

## Marston's

Patent Hand and Foot and Steam Power

Wood Working Machinery

20-in. Hand and Foot Power Band Saw.

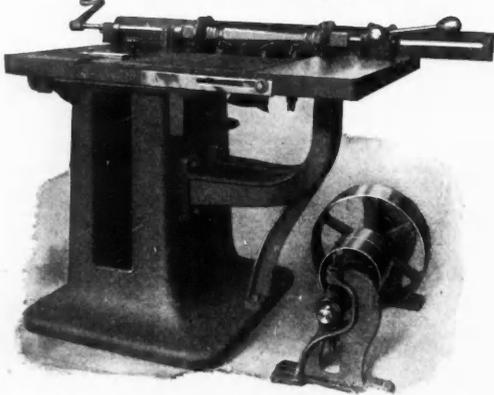


**J. M. MARSTON & CO.**

227 Ruggles St., Boston, Mass., U. S. A.

## A Combination Machine

That Users Claim is Indispensable to Every Jobbing Shop in the Building Line



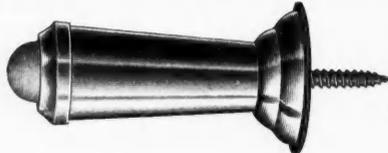
**No. 6 Universal Turning and Block Machine**

Not only because it does Turning, Etc., at one-sixth the cost of Hand Work, but because it is so convenient and quickly set up for all kinds of odd jobs.

**Here are a Few of Its Uses:**  
 Makes all kinds of Round and Square Balusters and Spindles, Corner Beads, Base Angles, Kitchen Table Legs, Raised Panel Balusters, Twisted Center Balusters, Shelf Spindles, Square Columns, Base and Head Blocks, Fan and Star Corner Blocks, Fence Pickets, Sunrise Panels, Twisted Moulding, Fancy Butt Shingles, Window and Door Frames; does Panel Raising, Moulding Circle Casings, Rounding Steps, Dadoing, Rabbetting, Jointing, is a first class Cabinet Saw — in fact there is almost no limit to its use.

Our large circular describing the machine is very interesting, as is also our Special Proposition. Drop us a line and we'll do the rest.

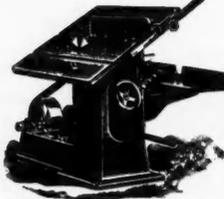
**C. Mattison Machine Works**  
 879 5th St. BELOIT, WISCONSIN



# STOP

and examine our prices on Builders' Hardware for this season. It will Pay You to send for our New Catalogue and Net Price List. They are now ready for you. : : :

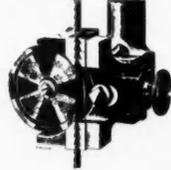
**REHM HARDWARE CO.**  
 354 Blue Island Ave., Chicago, Ill.



## Wood Working Machinery

for Contractors and Builders

Jointers and Wood Lathes, Band Saws, Boring Machines, Power Hack Saws, Combination Saws, Swing Cut-Off Saws, Leather Belting, Shafting and Hangers, Non-Frictional Band Saw Guides, Combination Emery Stand and Saws. *Band Saw Blades Set and Filed.*



**STANDARD MACHINE TOOL AND SUPPLY CO.**  
 7 E. Levee : : KANSAS CITY, MO.

# BURLINGTON



Venetian Blind for indoor window and outdoor veranda. Any wood; any finish to match trim.

**Venetian and Sliding BLINDS**

**Screens and Screen Doors**

Equal 500 milles northward. Perfect privacy with doors and windows open. Darkness and breezes in sleeping rooms. Write for our catalogue, price list and proposition to you.



Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

**BURLINGTON VENETIAN BLIND COMPANY**  
 950 Lake Street, Burlington, Vermont

# PHOENIX

## INSIDE SLIDING BLINDS

WILKES BARRE, PA.

*The Phoenix Sliding Blind Co.*

Enclosed find my check for blinds. I am pleased with them and sorry I did not have them put throughout the whole house.

C. W. MILLER.

**Comfort!**  
**Economy!**  
**Convenience!**

The lately improved springs and corrugated steel rods put the "PHOENIX" far in lead of less improved styles. Write for Catalogue "C" and free samples, showing construction.

**PHOENIX SLIDING BLIND CO.**  
 BRIDGE & CANAL STS. PHOENIX, N. Y.

## PLUMBERS' SUPPLIES

AT WHOLESALE



If you need anything in my line and wish to

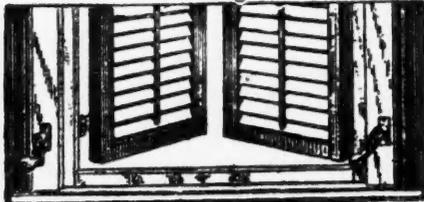
**SAVE**  
**20 to 40 Per Cent**

on every article, write for my free illustrated Catalog. Shipments promptly made from a very complete stock of guaranteed goods.

Small orders are as carefully handled as large ones.

**B. B. KAROL, 233 W. Harrison St., Chicago, Ill.**

# MALLORY'S



## Standard Shutter Worker

New and improved patterns and designs.

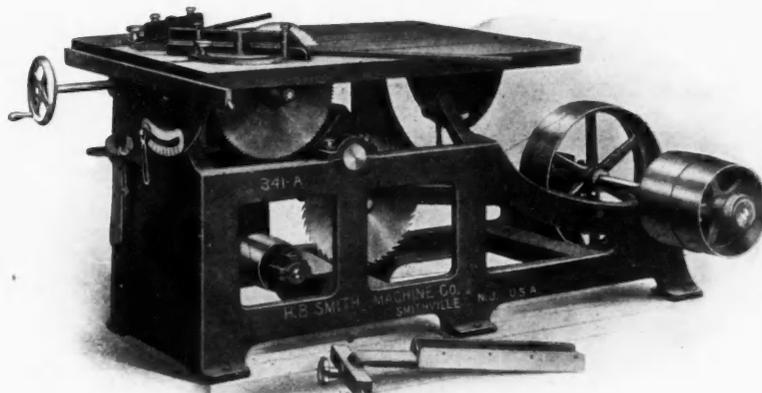
Opens and closes the blinds without raising the window. Automatically locks the blinds in any position desired. Made of gray and malleable iron. The best and most durable blind hinge. Incomparable for strength, durability and power. Can be applied to old or new houses of brick, stone or frame. Send for Illustrated Circular. If your hardware dealer does not keep them send direct to

**FLEMINGTON, NEW JERSEY**

# SMITH of SMITHVILLE The Sign of QUALITY

Modern Shop Equipments a Specialty  
We Make 150 Different Kinds of Machines

ASK FOR CATALOG

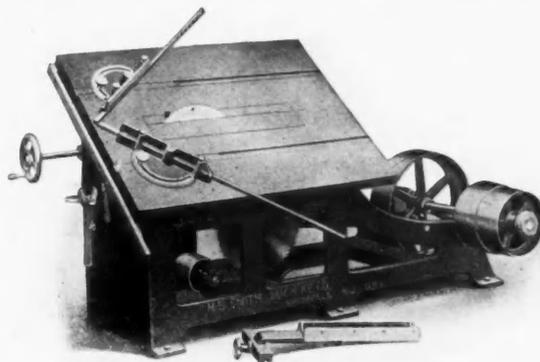


No. 341 A Combination Double Arbor Saw

**E**VERY user of machinery knows that if he were obliged to reduce his equipment to **one** machine he would retain a **Universal Saw**.

The **Circular Saw** is the indispensable tool—the beginning of all things in a shop—therefore why not make a wise selection? We build 21 different types of sawing machines and feel competent to consult intelligently with you on this subject. The Machine shown here-with is very useful for general work, and a great labor-saver when operated on specific wood working problems.

☐ Please bear in mind that all machines designed by **Smith of Smithville** always contain approved features for the elimination of danger to the operator. We also guard against the annoyance and expense of breakage by building machines sturdy and well, regardless of the influence of low priced competition. The name **Smith** in connection with wood working machinery is a synonym of **Quality**. Write for special circulars and prices.



Showing Table Tilted

## H. B. SMITH MACHINE CO.

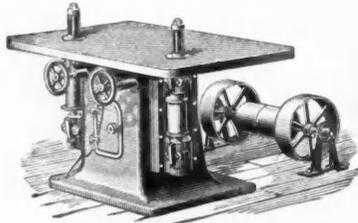
SMITHVILLE, N. J., U. S. A.

BRANCHES:

CHICAGO

NEW YORK

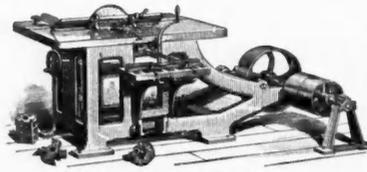
ATLANTA



Double-Spindle Friezer

**CORDESMAN,  
MEYER & CO.**

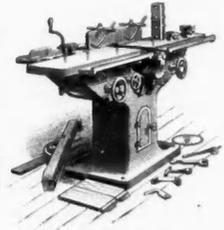
Manufacturers of  
High Grade  
**WOOD-WORKING  
MACHINERY**



Variety Wood Worker

60-66 Central Ave.  
CINCINNATI, O.

Write for our  
latest catalog and  
prices.



Universal Wood Worker



## NEW "YANKEE" TOOLS



Ratchet Driver with Screw Holder (3 Styles, 5 Sizes)

We make Screw Holder Bits for your Spiral Driver



Magazine Ratchet Screw Driver No. 65. 1 or 6 in. Shank (4 Bits)



Ratchet "Screw Eye" Driver (2 Sizes)

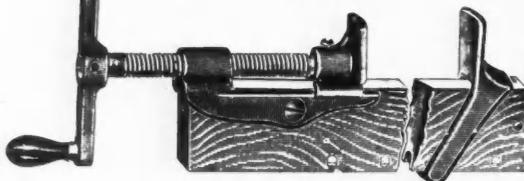
**They're in the same high class with our other Tools.**

**Send for our New TOOL BOOK—it's FREE**

**NORTH BROS. MFG. CO., Philadelphia, Pa.**



Wood Bar Clamp Fixtures Per Set 50c



**OVER 12,000 OF OUR  
STEEL RACK VISES IN USE**

25 doz. Clamp Fixtures bought by one mill last year. We ship on approval to rated firms, and guarantee our goods unconditionally. Write for list of Steel Bar Clamps, Vises, Bench Stops, etc.

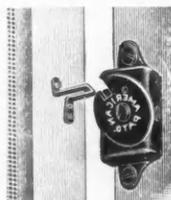
**E. H. SHELDON & CO.**  
281 Madison St., - - CHICAGO



Price \$2.80  
to \$4.00

RAPID-ACTING WOODWORKER'S VISE No. 3

## The Wonderful American Door Catch



Ready to Catch

The Catch that Latches  
The Latch that Catches

Holds every time. Catches with a spring quick as lightning. Releases with a push and is then ready to catch the closing door again. Automatic—never fails. Spring has never been known to break, nor the catch to wear out or come apart. A wonder for



Closed

Doors, Screens, Office Gates, Swinging Windows, Pantry Doors, Cabinets, Closet Doors and a hundred other uses. The door will never sag, rattle or spring

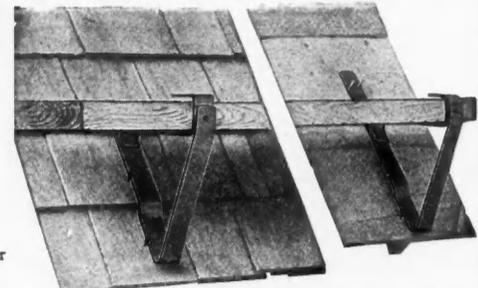
**Have Some Handy**

Complete with screws, staple and templet—all in envelope. Price 15c each, \$1.50 per dozen. Sold by hardware dealers, jobbers and  
**AMERICAN HARDWARE MFG. CO.** : Dept. 79, Ottawa, Ill.

## THE WAGNER ROOF BRACKET

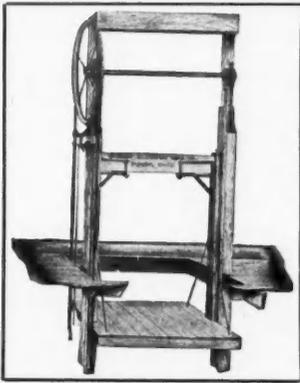


**POINTS OF ADVANTAGE**  
The safety hook. Timber can't slip off. Is the only roof bracket which can be used both for shingling and sheathing. Over 50,000 in daily use.



Ask your dealer  
or write to

**WAGNER MFG. COMPANY,** Sole Manufacturers,  
CEDAR FALLS, IOWA



**PERFECTION**

# ELEVATORS

ARE

**"BEST BY EVERY TEST"**

For PASSENGER or FREIGHT SERVICE in Factories, Stores and Dwelling Houses.

Our Elevators are noted for their Easy Running and Serviceable Qualities. They are practically self contained and can be erected by any carpenter in a few hours. We furnish Plans for erecting. When writing, state your requirements.

**Sidney Elevator & Mfg. Co., Sidney, O.**



## EASY TO ORDER—

Eaton & Prince hand-power elevators are easily ordered through our Folder No. 99, which contains full illustrated plans, details, stock sizes and prices—are as easily and as accurately ordered as though you were in our office in Chicago in person.

*Immediate shipments are always obtainable—both center-lift and corner-lift patterns are continuously carried in stock in Chicago in various sizes.*

Eaton & Prince hand-power elevators are economical, simple, safe, satisfactory and serviceable—the Folder tells all—to be had of



**EATON & PRINCE COMPANY**  
CHICAGO



## FREE

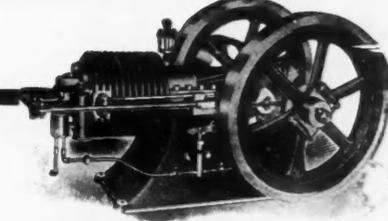
To all Contractors and Builders.

We want you to try this rail and hanger

### STORM AND BIRD PROOF

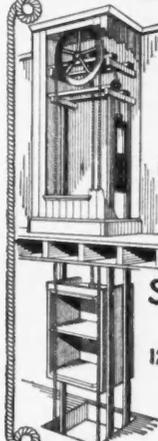
*For particulars write the*

**Automatic Door Rail Company**  
Hillsdale, Mich.



### The GADE Air Cooled Gasoline Engines

Made in 2, 3 and 6 horse power sizes. What's the use of paying good money for an old style engine, when you can get something better in the "Gade Air Cooled" at the same cost? Buy one. It will not freeze up or go back on you in cold weather. It's ready for business all the time. We know it will please. By all means write for descriptive circulars and price list of the "Gade." Address, GADE BROS. MFG. COMPANY, 15 Sherman St., Iowa Falls, Iowa



## DUMB WAITERS AND HAND ELEVATORS

*OF THE MOST IMPROVED AUTOMATIC CONSTRUCTION*

**INVALID LIFTS TRUNK, CARRIAGE, SIDEWALK AND FREIGHT ELEVATORS**

**SEDGWICK MACHINE WORKS**  
POUGHKEEPSIE, N. Y.  
AND  
128 LIBERTY ST. NEW YORK

*CATALOGS AND ESTIMATES FURNISHED SEE SWEET'S INDEX*

**PUMPS, DOOR-HANGERS, STORE LADDERS**

The Pump That Pumps

**SPRAY PUMPS**

Double-acting, Lift, Tank and Spray

**MYERS**

Glass Valve

**Myers Stayon Flexible Door Hangers**

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

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

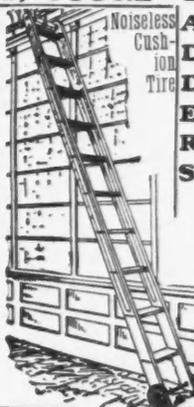
Noiseless Cushion Tire

**LADDERS**

Store Ladders, Etc.

**Hay Tools**

of all kinds Write for circulars and prices.



**Samson Spot  
Sash Cord**



Much of the cord sold nowadays is cheap, rough stuff, that will wear out in no time. Spot Cord is made of extra quality fine yarn, and guaranteed free from imperfections of braid or finish.

SEND FOR SAMPLES

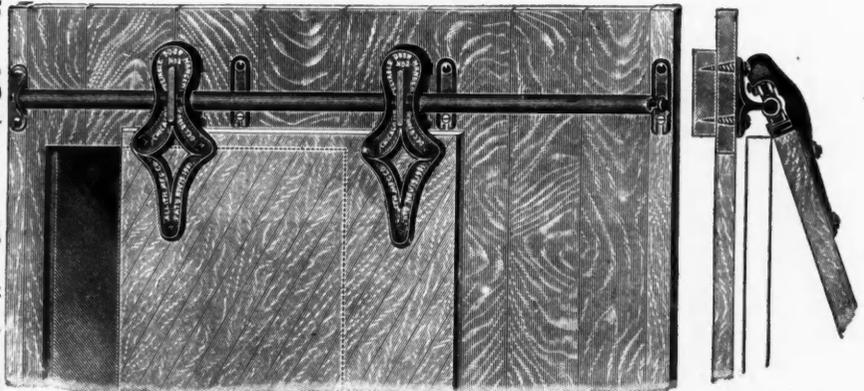
**SAMSON CORDAGE WORKS, BOSTON, MASS.**

**RELIABLE  
ROUND TRACK DOOR HANGERS**

Impossible to Derail  
Easy Running, Great Strength

FOR  
**BARN, WAREHOUSE and FIRE DOORS**  
Send for Catalog "A"

**ALLITH MANUFACTURING CO.**  
CHICAGO, ILL.



**LATEST IMPROVED ALL IRON  
SWING CUT-OFF SAW**

alone of its kind



Properly  
Counter-  
Balanced

**Adjustable  
Hanger**

With Six Inch Adjustment

**CAN BE HUNG  
ANYWHERE**

On the Floor  
Under the Floor  
On the Wall

With same ease of operation

Write for **FREE** Catalog  
of our complete line.

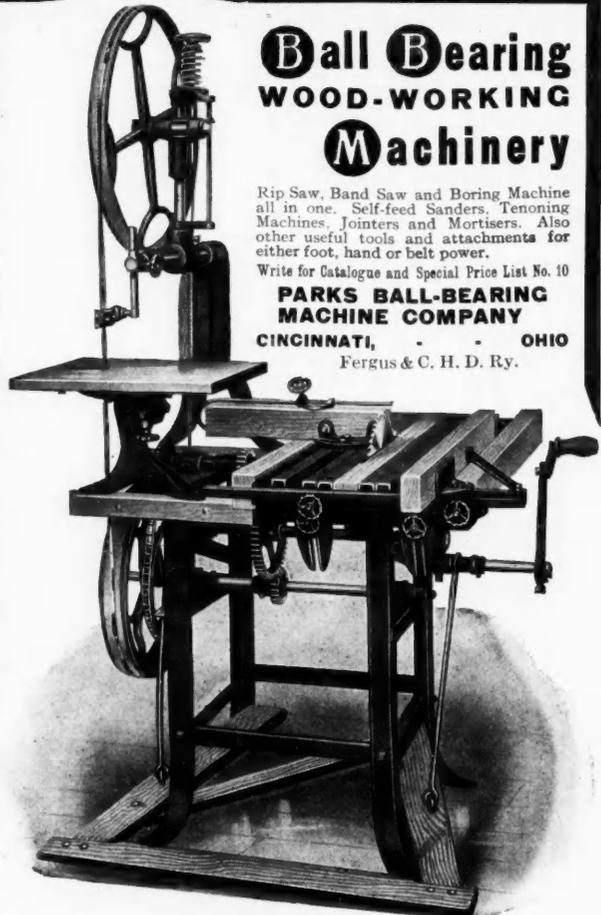
**LOVELL MACHINE WORKS, Gardner, Mass.**

**Ball Bearing  
WOOD-WORKING  
Machinery**

Rip Saw, Band Saw and Boring Machine  
all in one. Self-feed Sanders, Tenoning  
Machines, Jointers and Mortisers. Also  
other useful tools and attachments for  
either foot, hand or belt power.

Write for Catalogue and Special Price List No. 10

**PARKS BALL-BEARING  
MACHINE COMPANY**  
CINCINNATI, OHIO  
Fergus & C. H. D. Ry.



### The Taylor Shingle Bracket

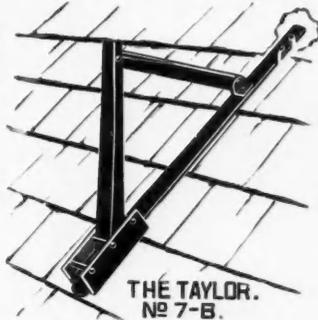
Adjustable to any pitch of roof; shingles laid over bracket, which is removed without leaving exposed nail holes.

Made entirely of steel, and folds up when not in use.

List \$5.00 Per Dozen

Catalogue on request.

JAMES L. TAYLOR MFG. CO., Bloomfield, N. J.



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

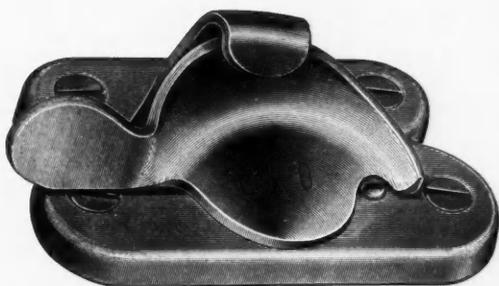
### "SILVER LAKE"

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



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

## MONITOR SASH LOCKS



(PATENTED)

### NEVER BREAK

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

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

MADE IN TWO SIZES AND ALL FINISHES BY

**The Champion Safety Lock Co.**  
Geneva, Ohio

## GRAND RAPIDS All-Steel Sash Pulleys

Are sold DIRECT to Builders, Contractors and Mills at prices under the common ordinary goods.

If you make ten or ten thousand window frames, we can save you money and give you a superior sash pulley. We are the largest sash pulley makers in the world. We ship direct, or through dealers and jobbers everywhere.

Write for catalogue and free samples and prices on gross, barrel, or any quantity.

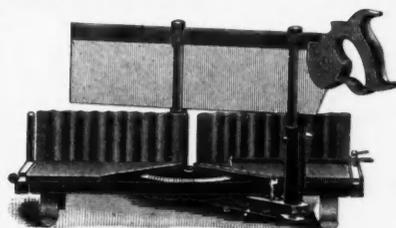
Direct from the makers to you. Inquiries welcome.



**GRAND RAPIDS HARDWARE CO.**  
34 Pearl St., Grand Rapids, Mich.

## GOODELL MITRE BOX

Made of STEEL - Cannot Break



First in Quality and Improvements  
Automatic stops for holding up saw.  
Carrugated backs. Graduated.  
Gauge for duplicate cuts and many other features.  
Send for Circular "C"

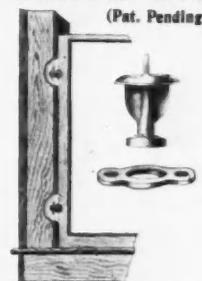
**GOODELL MFG. CO., Greenfield, Mass.**

## BOARDMAN WINDOW-STOP FASTENERS ADJUSTERS

ARE Quickly Installed

Prevent Rattling

Window can be instantly removed without tools



ARE Easily Adjusted

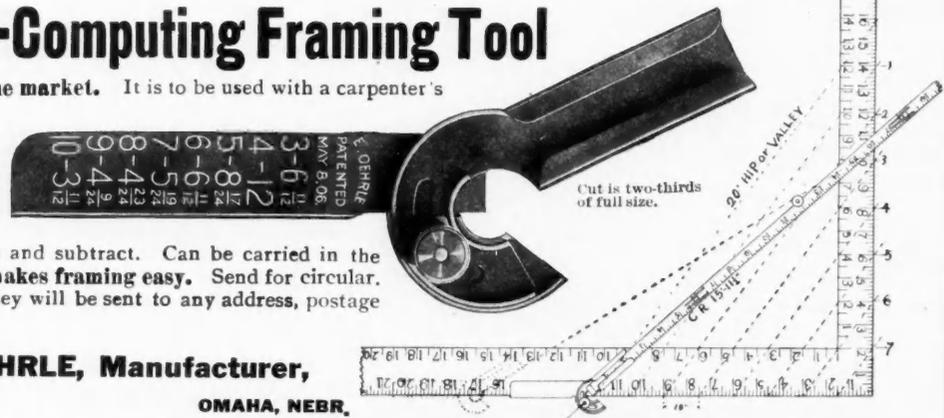
When installed any woman or child can operate

Write for further information

MANUFACTURED AND SOLD ONLY BY  
SENECA PATTERN & SUPPLY CO., SENECA FALLS, N. Y.  
Manufacturers of Patterns of All Kinds

## The Acme Self-Computing Framing Tool

is the most practical tool on the market. It is to be used with a carpenter's square and rule. Use an Acme Framing Tool, and your troubles will cease in roof-framing. It will give lengths and cuts for any kind of rafters; lengths and cuts of rafters for any polygon roof; lay out stairs; will divide and subtract. Can be carried in the pocket. It is a time-saver and makes framing easy. Send for circular. Ask your hardware dealer, or they will be sent to any address, postage prepaid, on receipt of \$1.00.

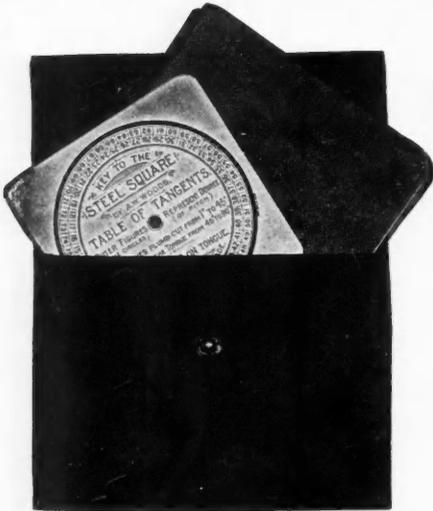


**E. OHRLE, Manufacturer,**

2567 Dodge Street

OMAHA, NEBR.

## ALFRED W. WOODS' KEY TO THE STEEL SQUARE.



**This is it.**

The Key, Book of Instruction and Morocco Case. Full Size 4x5 inches.

It tells the whole story of how to use the common steel square for all kinds of framing.

Price \$1.50, Postpaid

**American Carpenter and Builder**

185 Jackson Boulevard, CHICAGO

## OUR NEW STEEL SQUARE

Aside from excellence of material and workmanship, the greatest difference between the best Carpenter's Steel Square and the old iron square of the blacksmith, consists of the scales and markings on the improved tool. Our square, as recently improved, enables the carpenter to lay out all kinds of work and to calculate quantities with an ease and accuracy never before known.

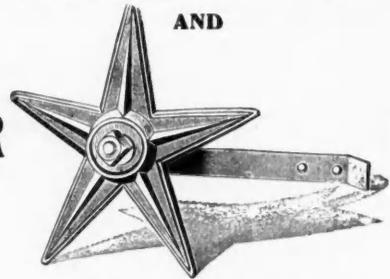
Our Steel Square Book, describing the new tool, is a veritable PRACTICAL TREATISE ON THE STEEL SQUARE and we will send a copy, without charge, to anyone who in writing us will mention the American Carpenter and Builder.

**SARGENT & COMPANY**

1149 Leonard Street

NEW YORK

STAR



AND

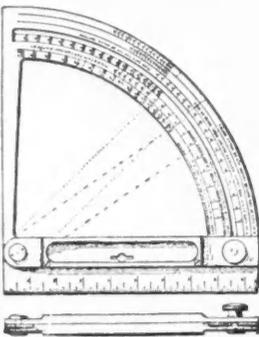
TEE

**ANCHORS**

Write us for Prices. Estimates Cheerfully Furnished  
**ST. LOUIS HARDWARE MFG. CO.**  
1519-21 North 18th St., ST. LOUIS, MO.

## A NEW TOOL FOR CARPENTERS

PRICE \$3.50. A. O. Calhoun, Patentee, Victor, Mo.



The Rafter and Polygon Bevel is a handsome, practical, durable tool particularly adapted to cutting rafters, etc., and it should be in the hands of every carpenter and joiner in the country. The calculations in cuts, pitches, lengths, etc., given on this tool are more nearly correct than can be found on any square on the market, the calculations having been carried out to the hundredth part of an inch. It is the embodiment of the draft-board, square, try-square, bevel-square, plumb, level and bevel-protractor in one small compact and convenient tool.

WHAT SOME MECHANICS SAY ABOUT IT:

Indianapolis, July 15, 1907.

Mr. Calhoun has demonstrated the workings of the tool before the various local unions and District Council of this city, and we believe it is the best mechanical device of its kind ever put on the market. Chas E. Bacon President. Z. F. Carrigan, Secretary.

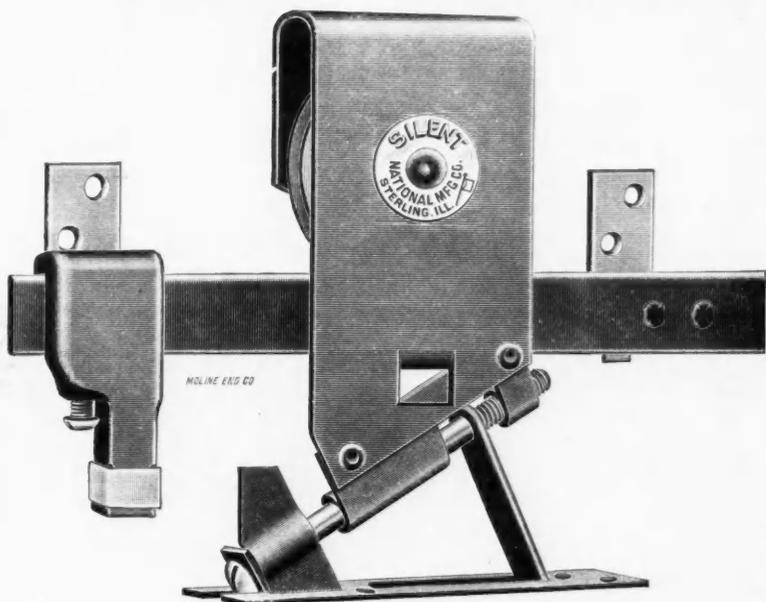
Cleveland, Ohio, Oct. 7, 1907

Mr. Calhoun: After examining your Rafter and Polygon Bevel would say that I consider it one of the most complete framing tools I have seen. O. C. Kagelmacher, Mechanical Laboratory, Case School Applied Science.

Any reader of this Magazine can secure one of these tools by remitting \$3.50 direct to

**J. R. CALHOON, : : : : : Paris, Mo.**

# "Silent" Parlor Door Hanger



No. 82

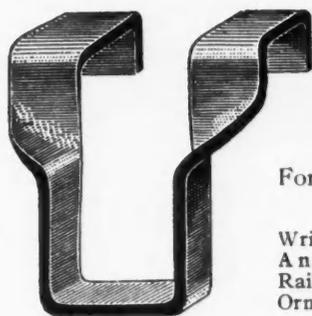
Ask for General Catalog "C" and Give Dealer's Name

A few good reasons for using our "Silent" Parlor Door Hangers:

- Simple in Construction.
- Can't Get Out of Order.
- Flexible Hinge Joint.
- Adjusts Itself to Top of Door Whether Square or Not.
- Full Weight of Door Rests on Adjusting Screw.
- Wheel Has Vulcanized Fibre Tread.
- Roller Bearings.

The time saved in attaching this hanger to the door should appeal to the wide-awake contractor.

**National Manufacturing Company - Sterling, Ill.**



## The Perfect Joist Hanger

For Concrete Blocks, Wood and Iron Beams.

Write for estimates on Beams, Angles, Anchors, Hangers, Railings, Iron Fence and all Ornamental Iron Work.

**THE BERGEN IRON WORKS, Inc.**  
135-159 51st St., Brooklyn, N. Y.



## JOIST HANGERS

- For Concrete Blocks
- Wood or Iron Beams
- Many Sizes in Stock
- Special Shapes to Order
- STEEL POST CAPS
- WIRE FLOOR CLIPS
- STRAPS, BOLTS
- PIN ANCHORS

Telephone Main 987

**CHAS. MULVEY MFG. CO.**  
15 So. Jefferson Street CHICAGO



## BRASS RAILINGS THRESHOLDS KICK PLATES NAME Plates SIGNS (cast) GRILLS

We have especially equipped our plant for the production of high grade BRASS RAILINGS. Plain and ornamental and for any special fittings you may require.

WE CAN SATISFY YOUR BRASS WANTS  
**ZERO VALVE & BRASS MFG. CO.**  
BRASS FOUNDERS and FINISHERS

418-420 CHICAGO STREET

BUFFALO, N. Y.

## HIGH GRADE BUILDING PAPERS

"Venetia" Sheathing—The Best Red Rosin Sized Sheathing made.

U. S. Fibre Plaster Board—A paper substitute for plaster; can be painted, varnished or kalsomined.

Red Hawk Red Rope Roofing Paper.

METROPOLITAN AGENTS, CONGO ROOFING  
SEND FOR SAMPLES and PRICES

**C. B. HEWITT & BROS.** 50 Beekman St., N. Y. City

"No Noise" Felt—The best sound deadener and damp-proof protector made.

Black Hawk Water-Proof Sheathing

"Old Hick" Red Rope Sheathing and Insulating. Strongest Building Paper made.



# AMERICAN CARPENTER AND BUILDER

LIBRARY of CARPENTERS  
170 WOODS BLDG.  
MAY 5 1908  
Mar 12 1908  
162-116  
COPY

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

## American Carpenter and Builder

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

Published monthly by

American Carpenter and Builder Company  
185 JACKSON BOULEVARD, CHICAGO.

VOL. V                      MAY, 1908                      No. 2

The AMERICAN CARPENTER AND BUILDER is issued promptly on the first of each month. It aims to furnish the latest and the most practical and authoritative information on all matters relating to the carpentry and building trades.  
Short practical letters and articles on subjects pertaining to the carpentry and building trades are requested.

### SUBSCRIPTION RATES.

One year, \$2.00; six months, \$1.00; payable always in advance. Single copies, 20 cents. Canadian subscriptions, \$2.50. Foreign subscriptions, \$3.00.  
SUBSCRIPTIONS may be sent by check, express or money order, or registered letter. Make all remittances payable to the American Carpenter and Builder Company. Postage stamps are not desirable, but if necessary to remit them, two-cent stamps are preferred.

**IMPORTANT TO SUBSCRIBERS**—Do not fail to notify us promptly if you wish your magazine forwarded to another address than that originally ordered. We will not guarantee to furnish missing numbers in cases where subscribers have neglected to inform us of their change of residence. We will be pleased to change the address of any subscriber at any time, but have no means of knowing that they have moved unless they notify us of the fact. The postoffice authorities will not forward newspapers or magazines from one address to another unless extra postage is paid by the subscriber. Write us as soon as you move, giving your new address, and we will correct our mailing list and there will be no delay in your getting your magazine.

### ADVERTISING RATES.

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

**B**E thankful for what you have and keep plugging for more.



### Your Magazine and You

**T**HERE are two things in the world that make good, hard, honest work worth while; first, the personal satisfaction it brings; second, the appreciation of others. The work of every man, if it's real work, worth doing, is inspired by self-respect and is

vitalized by the knowledge that—if it's good—it will please and help his friends.

The same thing is true, in a larger degree, with a magazine. Self-respect has caused us month by month to put out a work that can justify its name, the WORLD'S GREATEST BUILDING PAPER; the confidence and co-operation of thirty thousand practical, progressive builders has been our reward.

And the thing that pleases us most is that so many of you do feel in personal touch with your magazine. You feel that it is *yours*—and so do we. You have helped us, by suggestions and questions and friendly comment, to keep close to the work and to hew to the mark. Much is still to be done; and our request to you is: "If you don't see what you want, ask for it." We want to give you the practical, live stuff that helps to bigger business and to better ways of doing things.

The present is a progressive age, making use of new structural methods and materials. There is no question that many of these stand for real improvements, while the value of some is yet to be tested, and the worth of a few is very doubtful indeed. New ideas, like new friends, are not always better than old ones. All must be worked out and tested by you, the practical builders. As to your magazine, the AMERICAN CARPENTER AND BUILDER, we will not slight our old friends—the tried and true building and carpentry methods; but we will give thought and space every month to the best of the newer forms of construction. We must all keep alive and growing and up-to-date all the time.



### Fireproofing and the Carpenter

**A** SHORT time ago the Editor had occasion to request information from the executive officer of the International Society of Building Inspectors, in regard to the work being done by that society in the cause of improved methods of construction, including fire-proofing. The information was gladly given,—and very suggestive it was too. But it was accompanied by this remark, "Naturally, it is not to be expected that you will approve of what is being urged

by this and kindred societies; for your constituency, the carpenters, are, of course, opposed to our movement."

We fear that this worthy gentleman scarcely appreciates the progressive and open-minded spirit of our carpenters and builders. We all look forward gladly to the time of better and more substantial building. As far as the builders of this country are concerned, there was no need of the Boston suburb horror to impress on them the desirability of fire-proof construction for all classes of buildings. The use of fire-proof material means unquestionably an improvement in building construction. The building trades are now so closely allied that improvement in one line means improvement in all.

We want to take the stand strongly and unequivocally that universal fire-proofing does not sound the death knell of carpentry. We see no reason for the carpenter to be dismayed at the present change and tendency in building construction. The increasing use of concrete and of terra cotta and of steel presents new problems to the carpenter; but it does not eliminate him; far from it! True it is, there will be less work for the "wood butcher," but more for the skilled wood worker. The fine interior wood-work for a well constructed residence of cement and steel will unquestionably be more valuable to the carpenter than the whole of a cheaply built frame house. His work will be of a finer grade, requiring greater skill and paying him bigger money than ever before. As for the "wood butcher," none of us will regret to see him go; nor will we miss him when he's gone. But we must all turn in and dig—to keep out of that class! Satisfaction with present knowledge and skill will not do. Conditions are changing; yet we feel sure that carpentry is here to stay. Our carpenters are the most progressive workmen in the world; they stand ready now to do their share, and more, toward better and more substantial building.



#### Old vs. New

**T**HERE would indeed be strange sights for some of the old-time framers and builders of houses, if they could come back to earth now and see the changes that have been made; all of them would not be in the line of progress, either. Think of one of these old, careful workmen, who used to mortise and gain his studs and joists into sills for the ground floor, sorrowfully contemplating a two-story house with foundation stopping two feet below the first floor, the studs resting on a plate laid on a concrete wall and carrying the joists of the first floor on a ribbon strip, gained in just as is done for the upper floor.

Yet, in discussing some plans of this kind with an architect, he rather defended the idea on the ground that it kept out moisture. "Any way," he said, "it is better to have it that way, with the studding supporting the joists than to bed the joists down on the

foundation and then plant the studding on top of them."

Well, maybe it is, different people have different ideas, otherwise the world would be rather monotonous; but generally, when people see a house stilted up like this, they are not impressed with anything but the idea that it was built to sell, built with the studding making up part of what ought to be foundation, simply because studding is cheaper than foundation. In framing, also, some queer ideas have developed, with no reason for them except that of saving a little on the cost.

Is it wise, or even good policy to do this, even if a house is "built to sell"? The things that sell best are those things which have elements of quality in them; and, to a farseeing buyer, a fault in a house like that mentioned above would lower its value much more than could possibly be saved by such a method of construction. Ideas that help save money by keeping down cost are all right, and are to be encouraged, especially when they carry with them an improvement in quality too; but when worth is sacrificed for a slight difference in cost, it looks like poor business.



#### The Hare and the Tortoise

**F**ABLE has it that the Tortoise put up a great race: not a spectacular one perhaps, but still pretty exciting at the finish—especially for the Rabbit. We have been told that it was all the Rabbit's fault, overconfidence at the Quarterpost, where he thought the race was won. Investigating the case, however, we have reason to believe that it was the Turtle's race from the beginning and that he well deserved the Big Money. Moreover, it seems that, now, the whole Turtle family are out on the Track, and are plugging along, like their classic Ancestor,—with a prime chance of being There at the Finish.

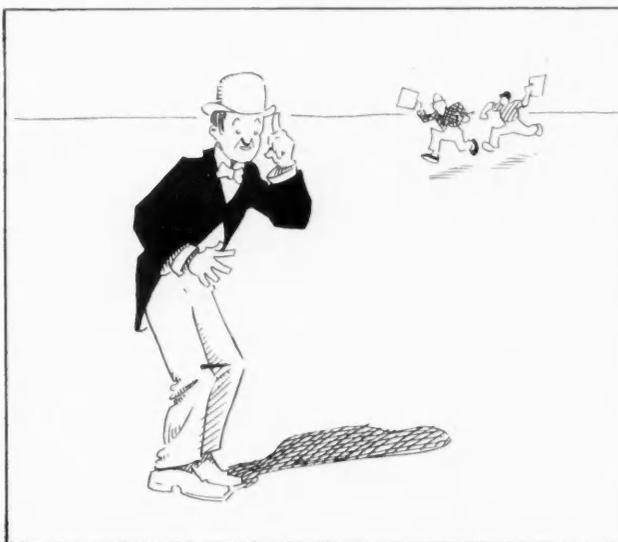
This old fable comes to mind as, high in the judge's tower, we watch the progress of our Great Prize Contest Race. Away over there on the back stretch are three or four who have been fighting to set the pace; surprisingly close behind, now, crowd the field—each running blind, not able to see even his nearest rival, nor the distance to the goal, nor the distance run. One contestant, a single pace behind the leaders, wears an expression proper for the tail-end-man. A large number are still playing for position at the start, waiting to make a whirlwind finish at the last. But most are plugging right along, like true followers of the old successful Tortoise. It is a pretty race—though in numbers rather than in speed. The finish is still two months away; and it is going to be close.

The winners of the monthly cash prizes for March were J. M. Heinonen, Negaunee, Mich., \$50; and T. J. Holler, R. R. No. 2, Peabody, Kan., \$25. These cash prizes are repeated each month, and are in addition to the regular commission, 50 cents for each new subscriber.

**A. Renter Becomes A. Homeowner**



**Wow! Help! Here They Are Again; Landlord Raising the Rent; Moving Man Charging Big Rates; Between the Two of Them a Fellow Hasn't Much Show**



**I've Got an Idea. I'm Tired of Being Driven From "Pillar to Post"—**



**I'll Just Make a Little Call on the Architect and Build—**



**A Home of My Own. Ha! Ha! I've Fixed You Fellows for Good! No More Landlords, No More Moving Days for Me**

W. LOUR



## Bungalow Building

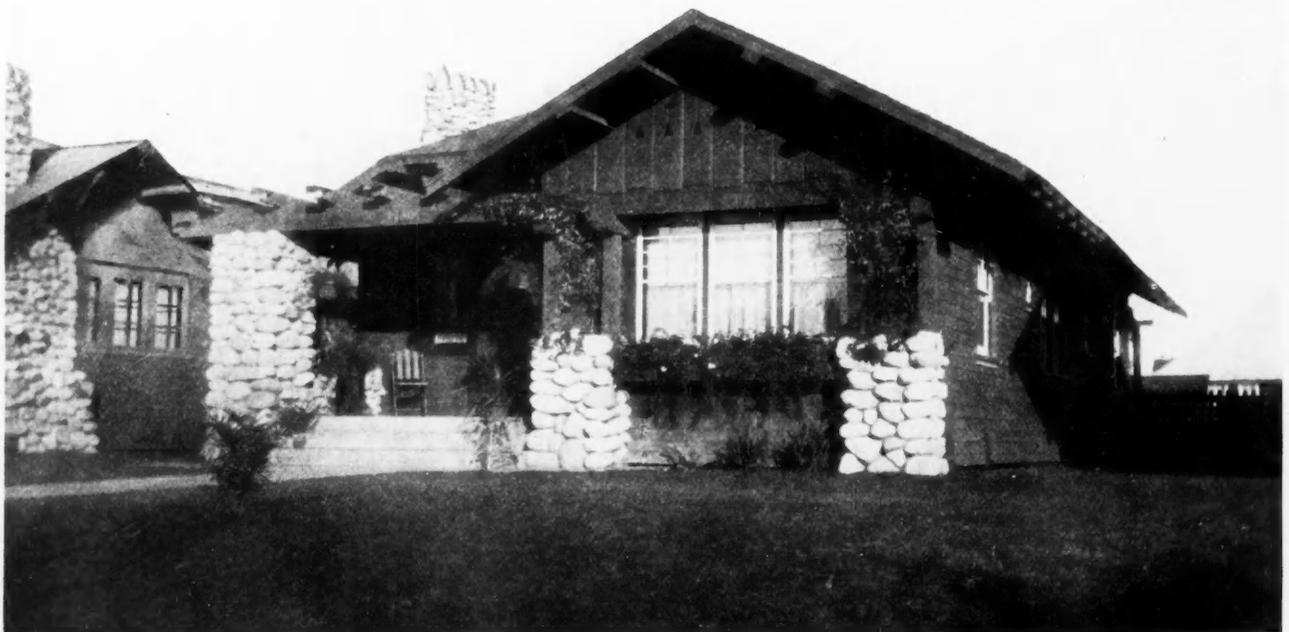
FACTORS NECESSARY FOR SUCCESS IN BUNGALOW PLANNING—FOUR ATTRACTIVE BUNGALOWS OF MODERATE PRICE ILLUSTRATED

**T**HE Bungalow continues to gain favor with home builders in all parts of the country. It appeals especially to the man of moderate means, who wants a simple, home-like house.

In making plans for bungalow buildings and in advising the use of this style, there are two points to be borne in mind by the builder, if the house is to be a success. The first requirement is a building site of good size. The idea of the bungalow is exactly op-

posite to that of the narrow "sky scraper"; it is essentially broad and flat, close to the ground.

The second requirement is due directly to the origin of the bungalow; it is the true American home type, developed from the log cabin and the adobe hut of our great grandfathers. For this reason, doubtless, it is most successful where use is made of the native building material of the locality—logs, slabs, field stone, thick shingles—whatever it may be. And



A Compact Little Home—Easily Kept Looking Trim and Neat



**An Inexpensive "Cottage" Bungalow—Cozy and Well-Built**

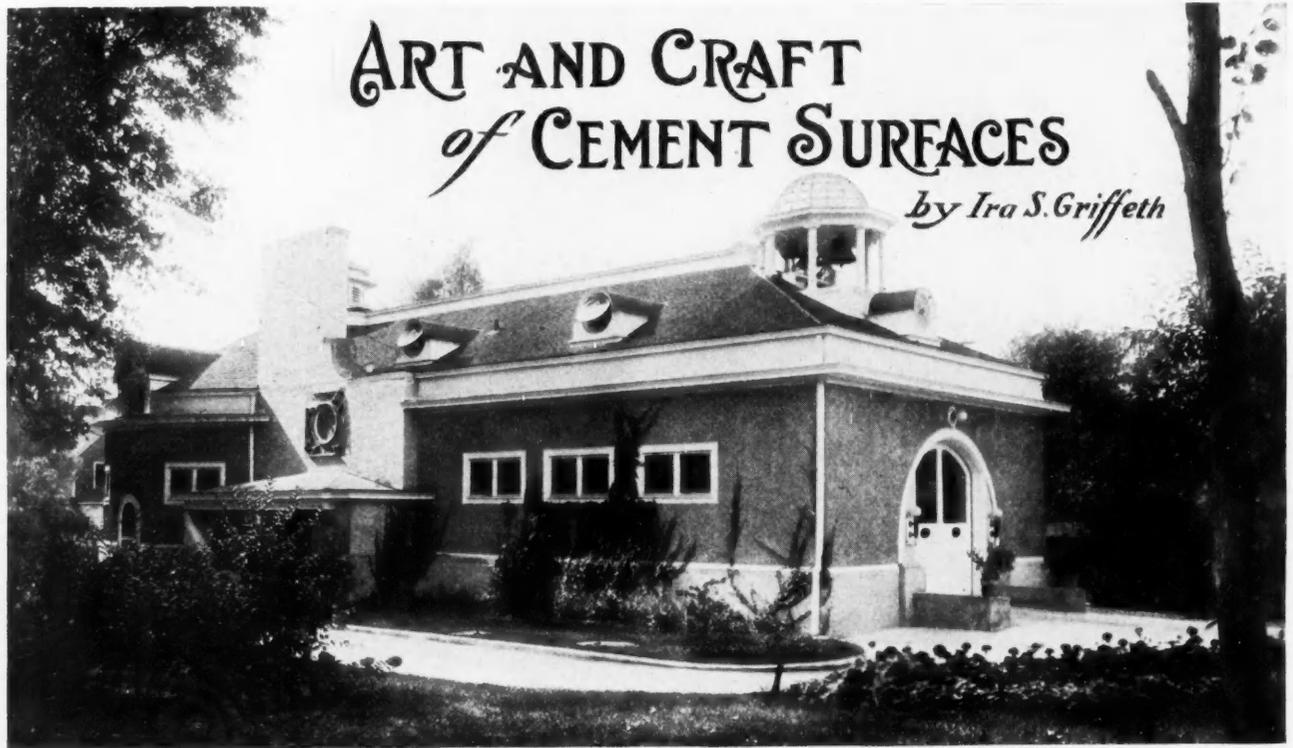
all should be used in a simple, unconventional way, showing the manner of construction. Every element should be structural, nothing just for ornament.

Exteriorly the most important features of the bungalow are the roof and the porch. The illustrations show four types of each. The roof is always flattened, projecting very much at the eaves and having exposed rafters. As to the porch, one notices a very frequent use of stone or brick for steps and pillars, which gives the substantial, well-built look needed.

The bungalow interior appeals to the housewife even more than does the tasteful outside. The rooms are few but large—usually five or six rooms and bath. There is no waste space for halls and stairs. The house is very convenient and is easily kept in order. Plenty of light and air is important; and the windows are found most attractive, both from within and without, when placed in groups, either as bays, oriels, or plain in the wall. Simplicity should be the dominant feature of the interior finish, as also of the exterior.



**Square Ground Plan—Simple and Inexpensive—Homelike and Comfortable**



John Farson's Garage, Oak Park, Ill., Rough-Cast Natural Gray Cement, White Trimming

**C**EMENT siding has grown wonderfully popular the last five years. The artistic possibilities which its use makes possible have had much to do with its ready reception by architects, builders and owners. It furnishes the added advantage of being fireproof.

When properly applied it is economical in that it will outlast wood or shingle siding and will not require constant painting to keep it from deteriorating. The claim is made that a good cement exterior will wear

better than stone and will become better both in color and weather resisting qualities with age.

The first cost of a cement siding is somewhat in excess of wood siding, painting not considered, but with the ever growing scarcity of good clear pine siding, this margin is rapidly diminishing.

Siding determines the life of a house, and the denuding of the pine forests of the United States makes it imperative that a new material be found to take the place of the wood siding. No one realizes this more



Owned by N. S. Moore, Oak Park, Ill., Smooth Natural Gray Cement, Brown Creosote Trimming



English Half Timber Effect, Rough-Cast, Dull Green Below Smooth, Natural Gray Above, Brown Creosote Trimming

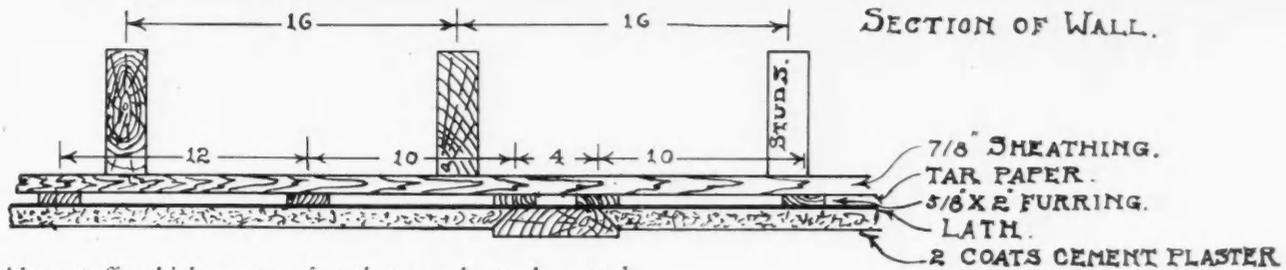
than the carpenter who has seen the changes which have taken place in the grading of lumber these last twenty or more years.

Time was when a C grade of pine siding was good enough for most any house; but the sappy, knotty,

the problem of its use is not entirely solved today. It is a fact, however, that its use is understood well enough and its success sufficiently demonstrated to warrant its use on innumerable costly buildings throughout the country. The manner of mixing, the proportion of parts, the coloring, the application and care of the walls after the plaster has been applied, make of it a problem which only an expert should be allowed to handle. An inexperienced workman will be certain to come to grief and cause regret to the owner and create prejudice against cement as a siding material.

No better illustrations of the value of cement from an artistic point of view can be had than in the English half-timbered houses, such as the people of Shakespeare's day, including Shakespeare himself, used to live in. The accompanying illustrations are typical of present day treatment of this important material.

The effects which may be obtained are various and interesting. Cement siding may be colored or left natural. It may be finished smooth like the ordinary sand finish of common plaster, or it may be stippled. Rough cast finish is obtained by throwing pebbles mixed with



blue stuff which passes for that grade to-day, and the advanced price of this is sufficient to make the conscientious builder serious. The tendency of sapwood to push off the paint and the readiness with which it decays, makes it questionable whether its cheapness, as compared to other grades and other materials, is not often overestimated. The discovery of cement producing rocks, in most every part of the country, and the consequent rapid growth of mammoth cement mills is bound to make cement plaster more available than ever before. The drop in price of Portland cement, since the discovery of American Portland cement bearing rock, has made its price ridiculously low as compared to the price formerly paid for the imported article. It must be admitted that there has been no small amount of prejudice aroused against the use of cement siding because of past failures. It must also be admitted that

thin cement upon the wall before it has had time to thoroughly harden. Cement siding may cover the house entirely or it may be combined with wood, brick or stone to form the wall. A very popular effect is obtained by using wood siding for the lower and cement plaster for the upper part of the house.



Home of H. B. Harvard, Oak Park, Ill., Rough-Cast, Buff Cement, White Trimming



Residence of Geo. C. Caldwell, Oak Park, Ill., Rough-Cast, Maroon Cement, White Trimming

Artistic effects in English half-timbered houses are due to the ease with which the spaces may be proportioned and arranged. There is an added advantage in the half-timber in that the material in the smaller spaces is not so likely to check with the expansion and contraction caused by atmospheric influence.

The construction of the frame for a cement exterior differs but slightly from that for wood siding. Usually the sheathing is put on the outside of the studs. Upon this is tacked tar building paper. The furring comes next. The strips are  $\frac{1}{2}$  by  $2\frac{1}{4}$  or  $\frac{7}{8}$  by  $2\frac{1}{2}$  inches, and are nailed vertically. They are spaced twelve inches from center to center for the lath, irrespective of the position of the studding. The thicker furring is used when more air space is desired than

can be obtained with the thinner strips.

That there may be plenty of clinches for the plaster, the wood lath are but one inch wide. They are the usual length however, and the furring strips are spaced one foot from center to center just as for the metal lath.

It is essential that the casings, cornice, base and belt-ings be so made that the plaster shall be keyed to it. Strips of wood for the English half-timber effect are beveled on their edges as indicated in the sketch. Casings may be similarly beveled on their outer edges except the head, which is tinned so as to turn the water. A more common method of making casings is to run a molding entirely around the casing, allowing it to project over the outer edge about five-eighths of an inch. Such casings have an "apron" similar to that used on the inside.

The question of the relative merits of metal and wood lath is one that does not seem to be fully settled. In fact, both metal and wood have their advantages and their disadvantages. Time will tell. At present both are used in about equal proportion, each having advocates with very decided opinions.

The advantage most frequently urged in behalf of metal lath is its rendering the wall fireproof. Its greatest disadvantage is its liability to rust. This disadvantage, it is claimed by the manufacturers, is overcome by having the lath back plastered so that the meshes are completely embedded. This does not fully protect the metal, however; and to overcome the diffi-



Rough-Cast, Maroon Cement, White Trimming

culty galvanized metal lath is being placed on the market.

The advantages and disadvantages of wood lath are too well known to the reader to need repeating. The poor quality of lath, which is becoming poorer from year to year; their liability to shrink, warp and buckle, render them far from ideal. The decrease in their width, with the consequent more frequent clinches and their cheapness have served to keep wood lath to the front in the outlying districts where fireproofing is not a necessity.

Many manufacturers of cements provide directions for the proper proportioning of their materials. It is taken for granted that their directions are the results of experiments and observations with their products and they should therefore be considered reliable.

The following, from the annual report for 1904, of the Ohio State Geologist, will be of interest: "First

coat has set hard, it may be "joined" to present the appearance of stone work. A small addition of lime flour increases the adhesion of the mortar.

The finished surfaces should be protected for at least two weeks with canvas curtains or bagging saturated with water.

Defects are liable to appear on cement plastered walls, (1) if too much cement is used; (2) if not applied with sufficient moisture; (3) if not troweled sufficiently; (4) if not protected from variations in temperature and draughts of air."

To this a prominent manufacturer of metal lath adds: "In some sections a departure from this specification has been found preferable. It is the practice in the New England States, for instance, to staple metal lath direct to the studding, and then plaster with one heavy coat of Portland cement and lime mortar mixed, using one barrel of best Portland cement and



Residence of H. C. Todd, Oak Park, Ill., Rough-Cast, Natural Gray Cement, White Trimming

coat, one-half inch thick. For best results, the wall should be furred off with strips put on vertically twelve inches apart and well nailed. On these fasten firmly metal lath. Add fibre to the mortar for lath work. Wet thoroughly the surface to be plastered. Mix one part of non-staining Portland cement with two parts medium sand, one part fine sand and one-half part lime flour. When this coat has set hard, wet the surface thoroughly and apply the second coat with a wooden float.

Second coat, one-quarter inch thick. Mix one part cement as above, one part fine sand and two parts medium sand or crushed granite. Before the second

three casks of hair and lime mortar made up in usual manner, as if it were to be applied to wood lath. The lime mortar to be divided into batches so the Portland cement can be added in small quantities, just before using, that the cement may not have time to harden or set before the plasterer can use it.

After this coat has hardened sufficiently, it is back-plastered on the key formed by the first coat, putting this back-plaster coat on with the same kind of mixture as the first coat on the outside, and covering the lath by at least one-half inch.

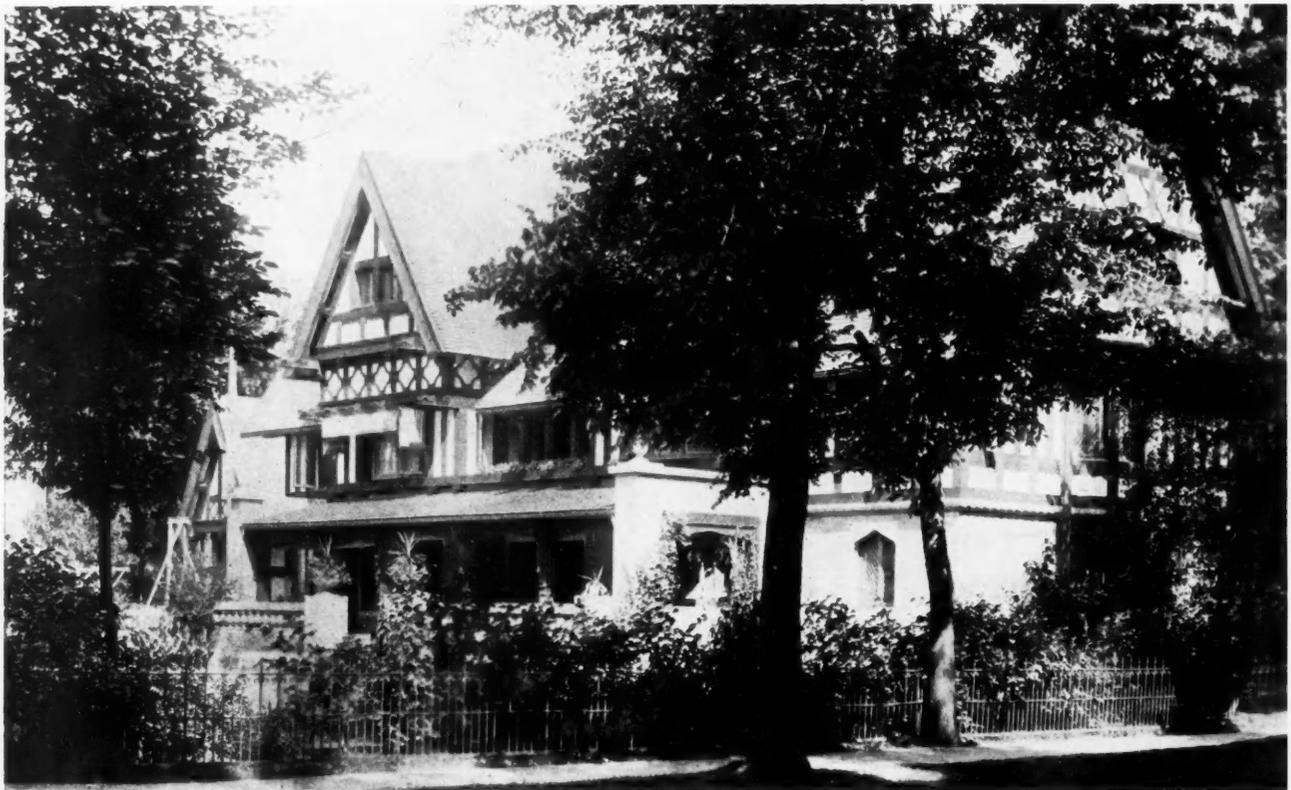
After these two coats have hardened sufficiently and dried out, the second or finish coat can be put on,

either by slapping on or putting on one heavy coat with trowel finish, or applying any of the various attractive finishes which are possible by the use of cement.

The mixture of this final coat depends on the kind of finish desired, but it is usually made with one barrel of Portland cement to two barrels of coarse, sharp, sand; and, if a light color is desired, a hodful of lime putty is added to the mixture; or, if a very rough finish is wanted a proportion of pebbles or crushed stone is mixed with the sand and cement. It is difficult to give a certain formula for the finishing coat, as nearly every plasterer or architect has his own ideas as to this finish.

A greater variety of finishes is possible than is mentioned in the State Report, among them the stippled effect is very pleasing; also the effect obtained by throwing small pebbles at random into the plaster before the second coat has set. An effective rough cast is obtained by mixing cement and water at a thick fluid consistency, and then adding fine washed gravel, screened through a  $\frac{3}{8}$  inch mesh screen. When mixed it is ready for application, and may be applied as a third coat on a rough-coated surface, or directly to a scratch coat. The result is most pleasing to the eye, and for a good wearing surface there is none better."

The color effects obtained with cement are many

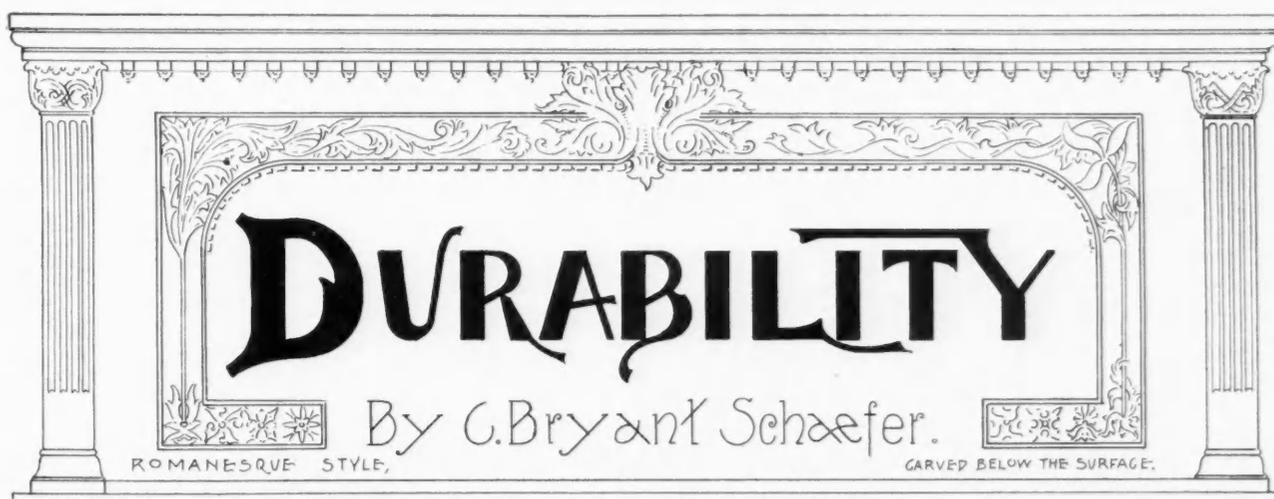


Residence of N. S. Moore, Oak Park, Ill., English Half-Timber Above, Roman Buff Brick Below

The specification last mentioned is the one generally used on the cheaper grades of houses, from \$5,000 to \$7,500. On the higher grade of work, it is done in four coats. There is first a scratch coat, which simply fill the meshes of the lath; second, the backing-up coat on the inside; third, what is called the brown coat, which is a heavy coat applied directly to the scratch coat, and which is floated or brought up to a straight, smooth surface, and left somewhat roughened to receive the final coat. The brown coat is often omitted on the cheaper class of houses. It is usually mixed with one barrel of Portland cement to two barrels of sand, and a hodful of putty.

We may add that improper gauging of cement and lime often causes an uneven color. Experienced plasterers overcome this easily. One who has done much of this says he thins down his lime putty so that it is so watery as to be used in mixing the cement.

and are beautiful. Most of these effects are obtained, however, not as might be supposed, by mixing the dry colors in the cement, but by painting the cement after it has become dry and hard. There are two very good reasons for not mixing the colors in the cement. First, it is almost impossible to mix the mass so that it will dry with an even or uniform color. Second, most coloring matters weaken the cement. We quote again from the report for 1904, of the Ohio State Geologist. "No coloring containing acids or anything that will act upon the alkalies in the cement can be used. Vegetable or oil colors impair the strength of the cement." Oxides and ochres are used for all shades ranging from yellow to red and brown. Manganese dioxide and lamp black for grays, slates and blacks; ultramarine for the greens and blues. Manganese dioxide is better for slates and blacks than lamp black, as the oil in the latter affects the strength of mortar.



**M**ANY light frame buildings are falling into needless decay every year for lack of a little care while being built. Just because they are to be constructed of plain boards, and a few heavier pieces at best, is no excuse for erecting them carelessly. A poorly constructed building is difficult to keep in repair; and its decay injures the goods that should be sheltered. Finally it becomes an eyesore and actual burden instead of a benefit. In the end it adds greatly to the country's waste of lumber.

The presence of dilapidated shanties throughout the big towns and the lack of adequate shelter for farm implements is often deplored. Yet by actual observation it has been found that attention to a few

New buildings would then have secured the desired increase of facilities.

It does not seem to have occurred to any one that the first step in establishing a disreputable or slum neighborhood, is taken by unscrupulous builders. No reforms, no model buildings, can counteract the effect of the little shoddy structures that are put up for the unsuspecting. When such work begins to fail, it brings ruin upon the occupants. It also injures business, carpentry most of all, for it drives owners to the adoption of other materials.

Not long ago I stopped off at a pretty appearing little village. Around the station were many neat little cottages. They were trim and well kept. The

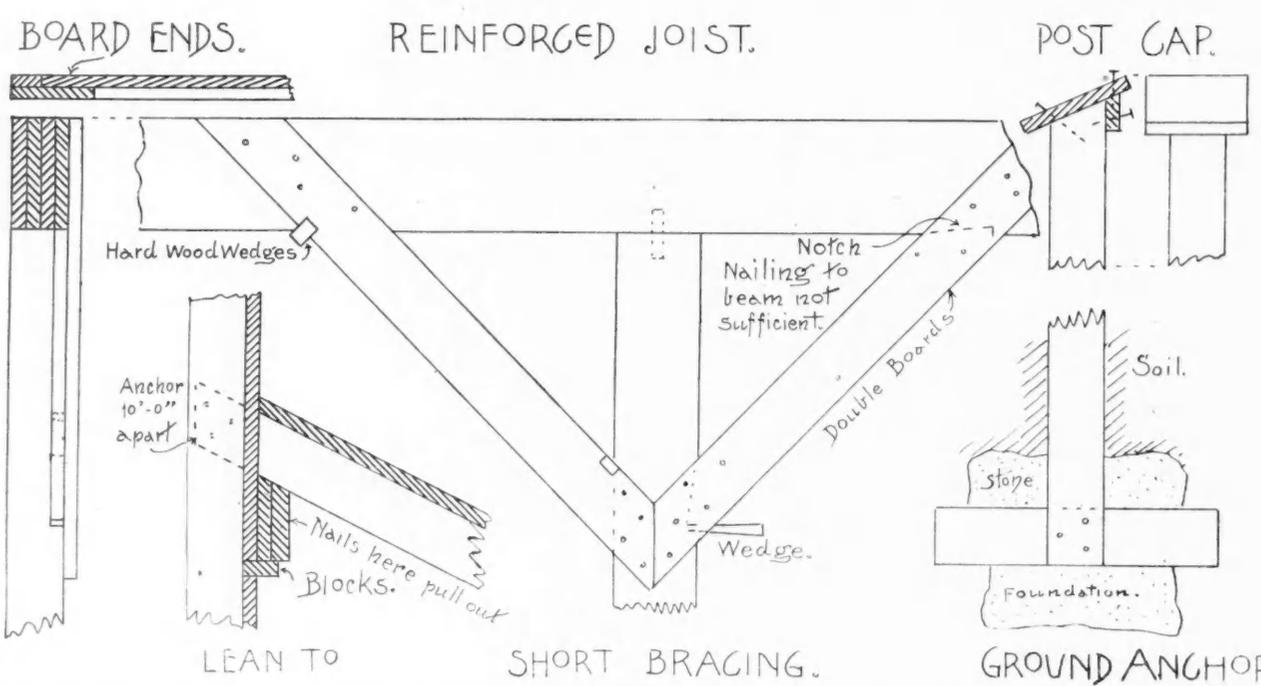
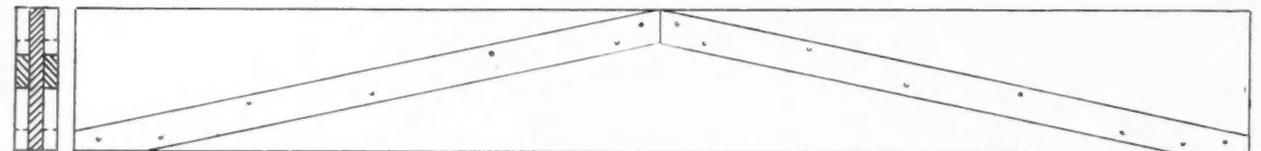
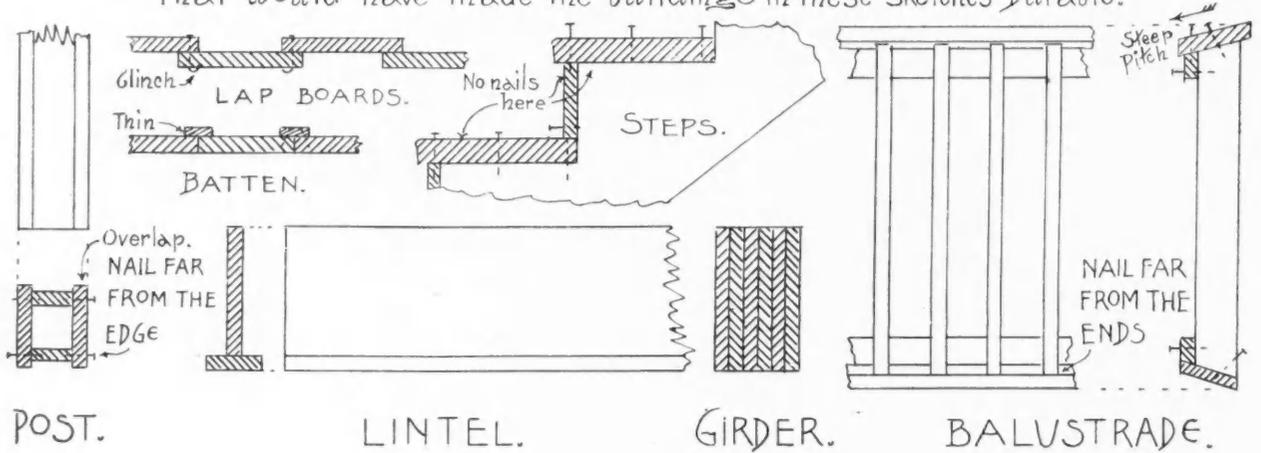


simple details of construction would have made a countless number of houses durable and worthy of continued improvement. Instead of its being necessary to entirely replace tumbled down store houses, the old buildings should have retained their serviceability.

people were thriving with enterprise. One only had to mention house building, and the premises were open for inspection from garret to cellar. One will serve as an example. To begin with, the gable roof had no ridge pole. The owner had observed it, but

# DETAILS FOR BOARD CONSTRUCTION

That would have made the buildings in these sketches Durable.



his carpenter insisted it was quite unnecessary and the owner had to make the best of it. Oh, certainly! He was an experienced builder! Perhaps he took the



contract too low? No, he was not even the lowest bidder. And so it went.

There were hardly any ties between the rafters. There was of course nothing to keep the sides from bulging, the roof from sagging, springing leaks, wetting the plastering, spoiling the furniture, and eventually driving the occupants out of the premises.

Sometimes the sheathing is omitted and the siding nailed to the studding.

Often the siding overlaps so little that the mere seasoning of the wood splits the edges off where the nails are driven. Then the strips drop off entirely.

A comparatively new and conspicuous fuel shed was already braced with a stretch of wire as though it was a tent. Yet no earthquake started it tipping over.

The foundations of cottages and stables were on top of the ground or nearly so. One house had a post under the middle that was placed firmly on the cellar bottom. One could see that it was actually doing its best to support the entire house—while the building held together.

It is only a question of time when work of this kind becomes irreparable. Finally the pretty little neighborhood is abandoned to less fortunate citizens. Who, among those who are filled with the worries



of life, can also cope successfully with ramshackle buildings and their exasperating influences?

From this lack of durability, the slums gain their foothold. The different stages of degeneration may be found in all the growing towns of the country. The only way to head it off is by insisting on durability in respect to the most insignificant structures.

The extra cost of material for durable construction is not as much as the first repair bill. Thorough workmanship takes little more time than careless. Any person of ingenuity can do lasting work by re-



specting a few simple principles that are often unintentionally violated.

In the first place nails do not strengthen a building. Their duty is to hold the wood in place. The wood itself must be so placed that it will bear all the building strain. Footings carrying even the lightest load must be sunk deep enough into the ground to rest firmly below the reach of the frost that keeps the surface soil constantly shifting. The smallest flat surface must have a steep pitch to quickly shed

the water. Sunshine and wet cause no injury; but dampness soaking into the fiber and then steaming out rots the toughest material.

Most of the buildings in these sketches are no longer standing. One might suspect as much. Their own-



ers have also moved to other fields where they will be unhampered in a fresh start. Attention to a few small details would have preserved these poor, but comparatively new buildings, just as good today as when built.

As minor buildings are constantly being erected it is well worth while to point out some of the mistakes constantly made in the building of small houses, barns, additions, sheds and coops.

Nails must be driven at right angles to the force they resist. Nailing close to ends and edges should be avoided, also diagonal nailing, for time splits the pieces loose. It is also useless to drive a nail into the butt end of a timber.

Do not lay boards flat-ways without intermediate supports. Time and weather will make them sag, as seen in the front porch of the cottage illustrated. A lintel can be easily made as shown on the accompanying details, either box or tee shaped. Ample girders can also be built up by spiking sound boards together.



A long span for light loads can be bridged by trussing the sides of a wide board.

A shed is sure to come down some night unless braced diagonally. The brace ends should rest in notches to secure firm bearing. Nailing does not provide sufficient strength.

If the shed illustrated had been anchored down at the corner posts, the sheathing would not have been shaken off. A narrow structure is blown upwards as well as down.

In covering perpendicular joints it will be found that thick battens will spring off, due to the warping

of the boards, while thin strips will conform to the surface and remain tight.

The old settlers' method of overlapping the edges of sheathing could be made more secure by clinching the nails.

Those square pieces nailed onto the ends of posts for their protection will not endure long enough to be of any service unless they slope enough to run the water off and are spiked into the sides of the posts to hold.

In putting up plank steps, the front edge of the treads should not be nailed into the small corner of the string piece, as is often done. In the course of time a split starts that extends clear back, loosening the whole tread and a firm nailing place is never to be had again.

Rafters should be tied together close under the ridge pole at short intervals and the lower ends simi-

marked "Jack Straws" seems to have suffered all the weaknesses combined.

Temporariness often becomes an unreasonable ex-



cuse for careless workmanship. It should be remembered that careful construction preserves the lumber for future use.

A cattle shed is illustrated that has proved its dura-



larly fastened. The frequent mode of spiking the ends diagonally to the ridge and plate can resist no strain and though solid at first, in course of time the wood splits and frays out, leaving the whole structure



entirely loose, and in danger of collapse.

Neglect of these points in construction can be studied in the accompanying sketches. The one

bility for more than half a century. In its bleak location among the New Hampshire hills, it has withstood usage and neglect. The dwelling on the premises had served its period and been carried off. The writer reached this location after hours of driving through byroads and all but impassable lanes. In settling a little, this cattle shed has only taken a firmer grip. The corner posts are solid timber. The bracing is dowelled into them. The sheathing of the sides is without doubt a full inch thick. The nails and spikes were wrought iron. Its coat of paint was never renewed.

### Rustic Frankness

"And have you music at the church?"

I asked the rural squire.

"Wall, no," said he; "can't say we hev;

Jest singin' by the choir."

# STEEL SQUARE

ALFRED W. WOODS

## How To Use The Steel Square

THE STEEL SQUARE IN FRAMING UNUSUAL SHAPED ROOFS—HOW IT MAY BE MADE TO REPRESENT THE DIFFERENT ANGLES—THE FIGURES TO USE TO OBTAIN THE LENGTHS AND CUTS

FOR the last two and a half years we have been talking and illustrating roof framing in these pages under various conditions for square and polygonal cornered buildings with even and uneven pitches; and we had about made up our mind to talk

and what determines them, along with the figures to use on the steel square. For the pentagon, or five sided figures, it is 36 degrees and the equivalent on the steel square, letting 12 on the tongue represent the starting point, the angle will pass at  $8 \frac{17}{24}$  on the blade. Then 12 and  $8 \frac{17}{24}$  is the foundation for all of the cuts and bevels in the star-shaped roof.

In Fig. 189 is shown a roof plan of this kind with the different rafters in place.

In Fig. 190 is shown the skeleton lines of the preceding figure (omitting the jacks) but showing the rise and the lengths of the hips and valleys, per scale, as indicated by the dotted lines. The hips in this roof are in each case opposite a valley. The former resting on an external and the latter on an internal corner.

Now for the cuts. Referring to Fig. 191, two squares are shown with their tongues intersecting at

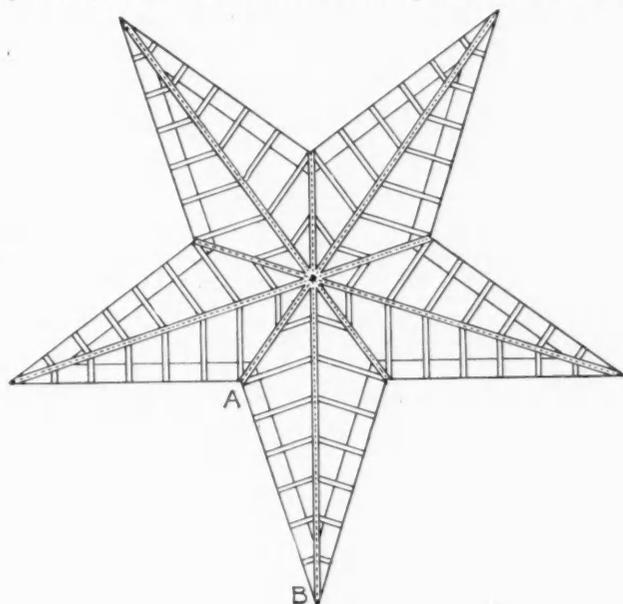


FIG. 189.

about something else a while. But just then a correspondent asks that we frame a five-pointed star-shaped building; that we do it on the ground and last, but not least, do it on the square. Certainly we would not think of doing it any other way. In fact, would not hesitate to frame the rafters to fit the celestial itself. The only real trouble would be in setting them in place after they are framed. But let us get back to earth—it is easier work.

The question is to frame a star-shaped building. This may seem nonsensical and perhaps it is, yet there are sometimes such buildings built. We recall the Texas State Building at the World's Fair at St. Louis, which was a five-pointed star-shaped building made so to represent the emblem of the Lone Star State, and in that case was a very appropriate design.

The question is how to arrive at the figures on the square to obtain the cuts. Those of the readers who are charter members, will remember that in Volume I of this journal, at Fig. 17, we illustrated the miters

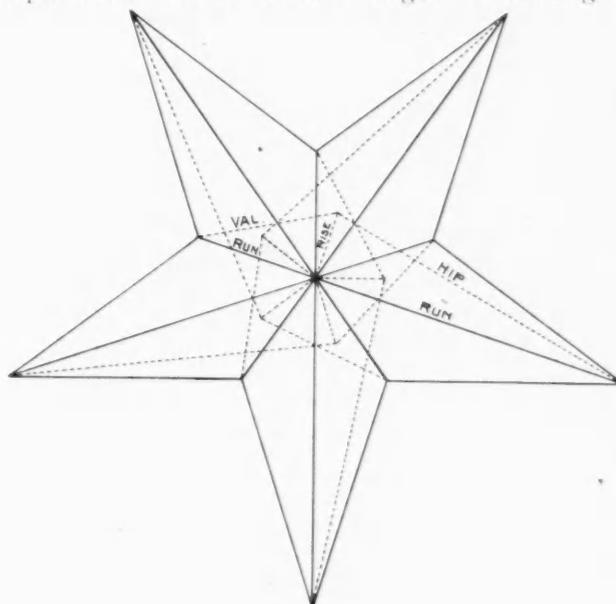


FIG. 190.

the twelfth inch mark and in line with  $8 \frac{17}{24}$  on the blade of the other square, as shown by the continued dotted lines. The intersecting point of the blades is at  $3 \frac{11}{12}$  and the lines thus formed represent the same angle as that of one of the points of the star. The outer lines represent the plate and the center line the run of the hip. Then 12 and  $8 \frac{17}{24}$  will give the miter at the interior angle of the plate, as at A

(Fig. 189)—the blade giving the cut. These figures also will give the lap joint cut of the plate for the external corner, as at B, but in this case, the tongue gives the cut. Twelve and 3  $\frac{11}{12}$  will give the cut for the lap joint of plate for the interior corner, as at A. The blade giving the cut. The same figures will give the miter cut for the plate, as at B, but the cut

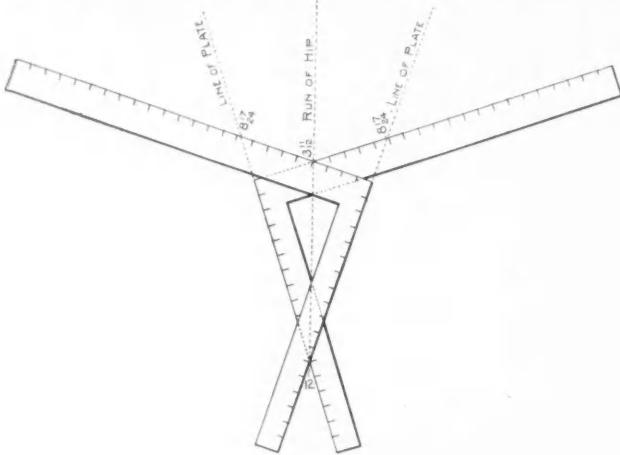


Fig. 191.

will be found along the tongue. So far, the cuts referred to pertain only to the plate, but the figures on the square that are used to obtain them are the foundation work, as we said before, for the side cuts of the rafters, regardless of the pitch given the roof.

Now we will pass on to the pitch of the roof—say we wish to use a 10 inch rise to the foot, or the  $\frac{5}{12}$  pitch. In Fig. 192, are shown two squares. On No. 1 are shown the same figures as those shown in the previous illustration and to this is placed the square No. 2, with its tongue along the line of the blade, with the 12 inch mark resting at the heel of No. 1. A line from 12 to 10 on square No. 2 represents the pitch of the common rafters, but in this case, they are all jacks, but of course these figures will give the seat and plumb cuts of these rafters.

As to the length of the jacks; if the first one rests one foot from the point, A-B will represent its run, B-C its rise and A-C its length. The second jack, if set 12 inches on centers, would be twice the length of the A-C—thus having the length for one or two foot centers, it serves as the common difference from which the lengths of the others may be found. The side cut of the jack may be had by taking A-D on the tongue and A-C on the blade and the latter will give the cut.

The individual runs and the rise given the roof, as shown by the dotted lines in Fig. 190 taken to scale on the square will give their seat and plumb cuts.

The lengths of the jacks are given to scale to the center line of the hip, which would move them further along on the plate, but would make no difference in the spacing, except the first one from the starting point, which would be as much wider as half the thickness of the hip would affect the spacing, which in this case would amount to practically the thickness of the jack. The hips and valleys should be backed because the angles of the plates on which they rest are very sharp.

Therefore, the corners of the hip should be removed so that the top of the hip when in position, will lie in the plane of the roof. The valley would be the reverse from the hip; that is—instead of taking off the corners, it should be grooved from the outer edge to the center of the back. This is not so easily done as in the case of the hip. However, the valley could be made of two pieces by backing them one way only and then nail them together, so that the backing will form the groove. The valley being of a steeper pitch, and resting on a lesser angle, the amount of wood to remove will necessarily be different from that for the hip. Another thing that must be remembered, is that the measurement lines for the lengths and cuts of these rafters are at the center line of the backing; and just how to place the square on the side of the rafter so

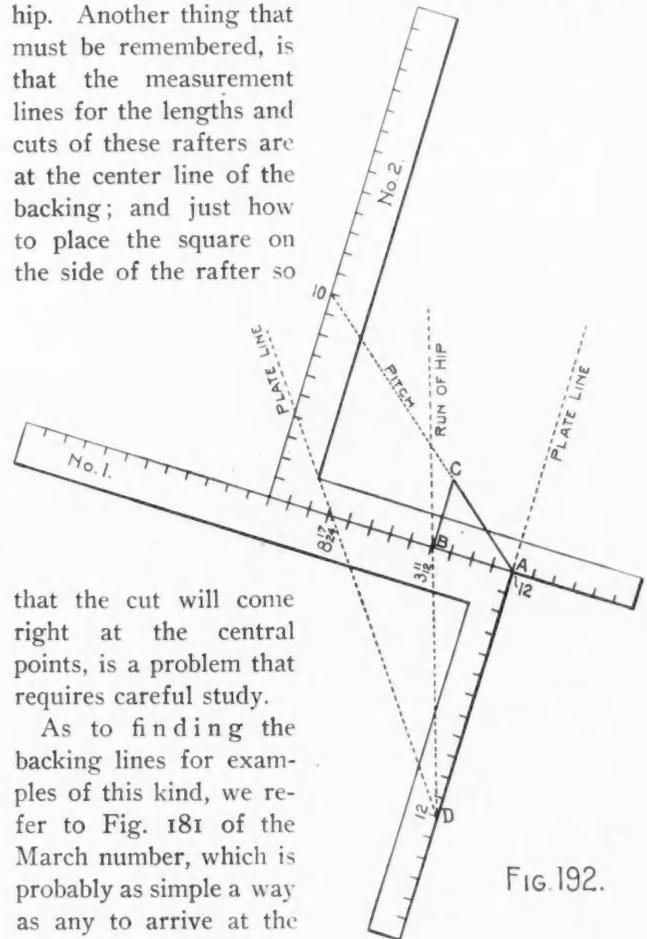


Fig. 192.

that the cut will come right at the central points, is a problem that requires careful study.

As to finding the backing lines for examples of this kind, we refer to Fig. 181 of the March number, which is probably as simple a way as any to arrive at the amount of wood to remove. With this we will close on roof work in our regular articles, for the present at least. Not that we have no more to say on the subject, but after thirty months, we feel like taking a rest and presume many of the readers feel that they should have a rest too. But anyway, we are under contract to keep on talking for the rest of the year. That is a long time, isn't it? But we are going to do it—on the square. There are lots of things to talk about and we hardly know which to take up first. We tried to map out a line of thought and after planning for many months ahead, the end was not yet in sight. So we will just keep on talking away and if we do not say just what you think we should just be a little patient and we probably will some day. However, if you can't, just drop us a word and we will try and work it in edge-ways, but let your questions be on the square.



# MANUAL TRAINING

IRA S. GRIFFITH

## Something the Boys Can Make

COMPLETE DETAILED INSTRUCTIONS FOR MAKING AN ATTRACTIVE BOOK CASE—KINDS OF WOOD TO USE AND PROPER FINISH

**A** BOOK CASE of pleasing craftsman design is described this month. It was made by Bruce Badger, Sullivan, Ind.

Plain sawed red or white oak will be suitable. If a soft wood is desired, chestnut will finish nicely. Whatever wood is used, care should be taken to get pieces which will not warp—pieces which have been sawed across the heart of the log as nearly as possible.

There will be needed for the shelves five pieces of stock mill-planed to seven-eighths of an inch thick with a width of twelve inches and a length of three feet; for the sides two pieces mill-planed to a thickness of one and one-eighth inches with a width that will finish twelve inches and a length of five feet. The dimensions for the piece across the top are three-quarters by four by thirty inches.

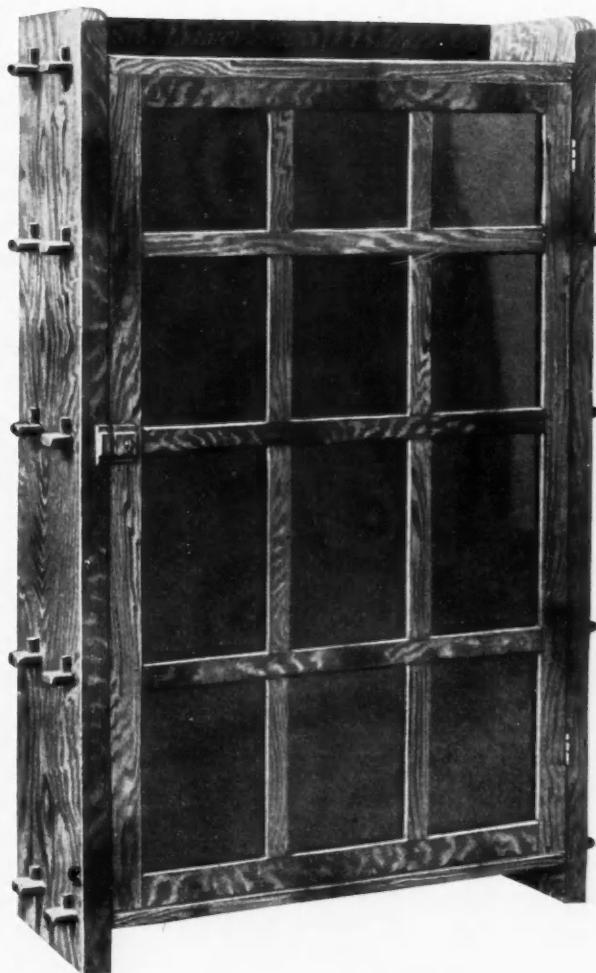
The back, if simply finished, will require enough three-eighths inch matched and beaded "ceiling" to cover a space thirty by fifty-two inches. The amount to be ordered will depend somewhat upon the width of the pieces; allowance must be made for the matching. Narrow ceiling will look better and show shrinkage less than wide. Order about one-third more than the surface to be covered if the narrow is to be used. White wood might be used for the back and shellaced natural, or it may be made of the same material and finished the same as the rest of the case.

The door will require four pieces of stock mill-planed to seven-eighths, with a width of one and three-quarters and a length of thirty inches; one piece of the same thickness and length with a width of three and one-quarter inches. These are for the rails. The

stiles require two pieces seven-eighths by two and one-quarter by fifty-one inches.

The keys may be got from the waste stock.

All mill marks must be removed. A smooth plane set very shallow should be used first and this followed with the cabinet scraper. The door would better be surfaced and scraped after it has been put together, but all other pieces should be planed, scraped and sand-papered first. Begin work by squaring two



shelves from the seven-eighths inch stuff to a width of eleven and one-fourth by thirty-four and three-fourths inches, Fig. 1. With the knife, steel square and the panel gauge lay off the two tenons at either end of each piece. It is a good plan to use the joint-edge for the back edge and to mark all measurements from this edge on both shelves and side pieces. This will insure corresponding spacings of the tenons and mortises, whereas, to measure from both edges would make the spacing dependent upon the widths of the pieces. The length of the tenons is three inches, and care must be taken to have the length between the shoulders on all the shelves equal. Fig. 1 gives the spacings from which the gauge settings may be figured. The back edge is the top edge in the drawing.

The mortises for the keys should be laid out before the shoulders of the tenons are cut out. It will be noted that the mortise is laid off one and three thirty-seconds inches from the shoulder of the tenon. This allows one thirty-second of an inch, since the side is one and one-eighth thick, to insure the key's being forced against the side piece.

The mortise for the key should be laid out on both top and bottom sides by means of square and gauge. The top of the mortise is seven-eighths of an inch long by one-half an inch wide. The bottom of the

The three middle shelves are laid out and cut similarly to the top and bottom shelves, Fig. 2. The only difference being that a seven-eighth inch strip is taken off the front edge to allow for the thickness of the

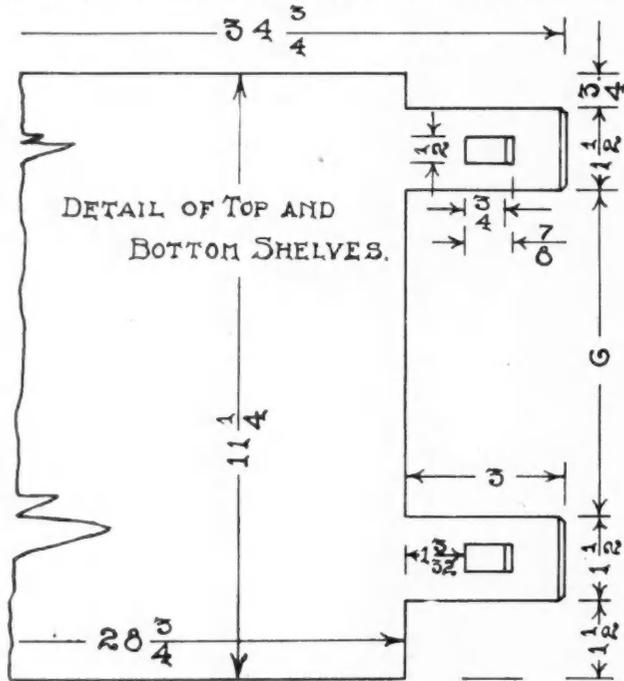


FIG. 1

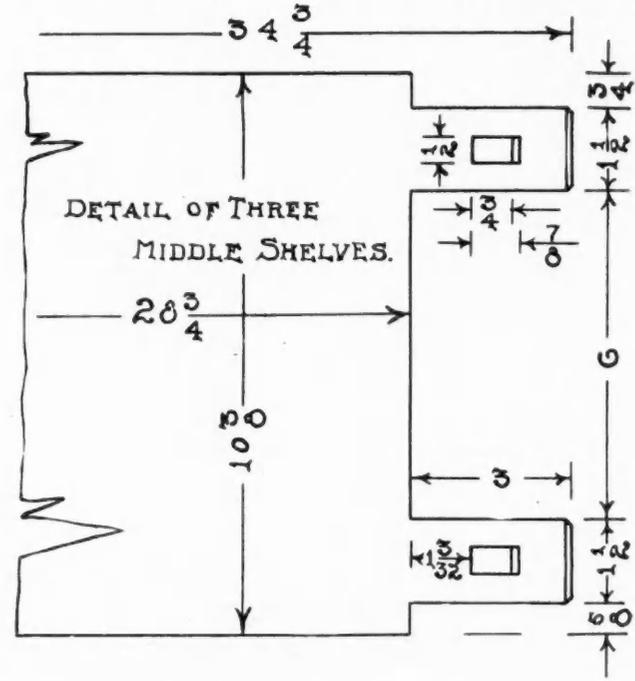


FIG. 2.

mortise is but three-quarters of an inch long, the front surface of the mortise being sloped one-eighth of an inch.

These mortises are best cut by first boring a hole, then chiseling from this hole out toward the lines. Cut half way through, then turn the board over and finish.

The tenons are to be sawed to the lines accurately. The inner shoulder is "got at" by boring a hole on the waste wood at a corner, inserting a key hole saw

door. This makes these shelves ten and three-eighths inches wide instead of eleven and one-quarter as in the first two. The gauge settings from the back edge are the same as the others and time will be saved by preparing all the shelves so that their tenons and key mortises may be laid off at the same time.

The two sides are to be squared to a width of twelve inches and a length of fifty-eight inches, Fig. 3. On the top end, the forward corner of each piece is rounded. Dividers are set to one and one-half inches.

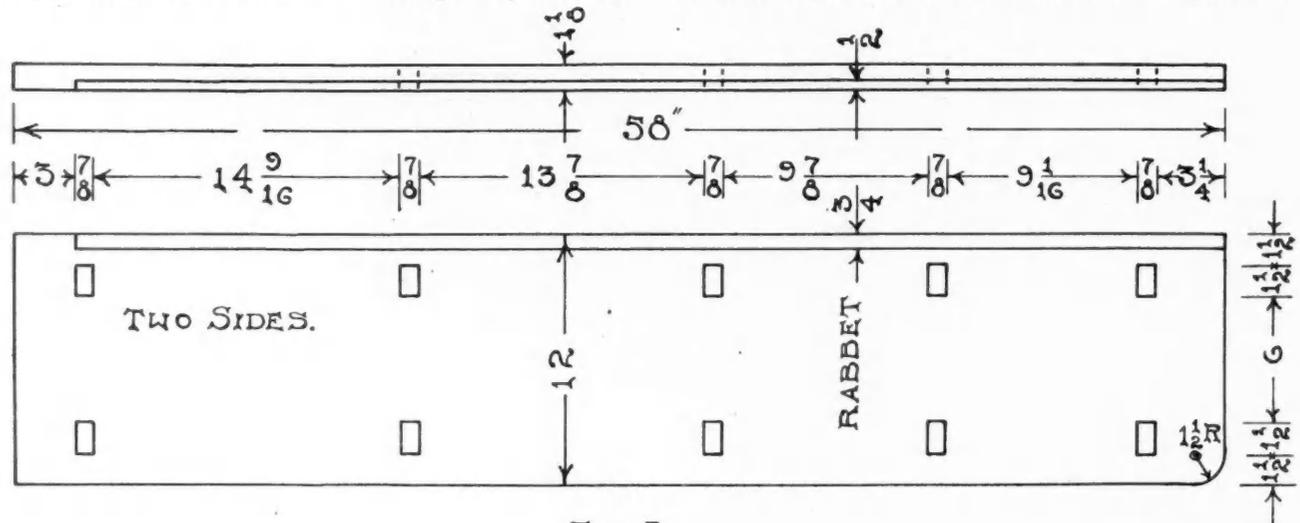


FIG. 3.

and sawing a kerf long enough to allow the crosscut saw to enter. Finish with this saw. Keep the cut away from the knife line about one-eighth of an inch and finish with the wide chisel and mallet, cutting halfway from each side.

The two pieces are set on edge, the ends evened, as were the shelves, and the mortises laid off as follows. A very sharp pencil would better be used to avoid scratching the surface. Measure on the edge of one, from the bottom, consecutively, three inches,

seven-eighths, fourteen and nine-sixteenths inches, etc. See Fig. 3. Separate the pieces and with the steel square carry these lines down either side of each. Gauge from the back edge, between the penciled lines which indicate the width of the mortises. From the dimensions on Fig. 3 may be obtained the settings for the gauge.

These mortises should be bored with as many holes as can be placed therein of a size almost equal to the width of the mortise. They may then be chiseled as were the mortises for the keys.

The inner, back corners of the sides are to be rabbeted to receive the back. This rabbet is to be cut three-quarters of an inch wide on the inner faces and one-half of an inch deep. It may be cut with a rabbeting plane to within four or five inches of the lower end, then finished with the chisel to within three inches.

Cutting the rabbet three-quarters of an inch allows the back to be paneled, using a frame three-quarters of an inch thick. If the three-eighths inch matched ceiling or wainscoting is used there will be an offset in the back, which is not altogether a bad thing. A little forethought will show how it can be avoided if desired. The advanced worker will probably prefer to panel the back.

The keys may be made in a variety of styles. Fig. 4 offers some suggestions. The length may be varied. The essential thing is that they shall fit the mortises so as not to be either too large or too small. This may be accomplished by squaring the pin to size on the three straight sides. The ends too, if they are to be square, should be planed at this time. Find the middle of the length and measure to either side seven-sixteenths of an inch, one-half the thickness of the tenon on the shelf. Square lines across the three planed surfaces at these points. From the back edge, the narrow planed surface, measure along the upper line a distance equal to that of the top side of the

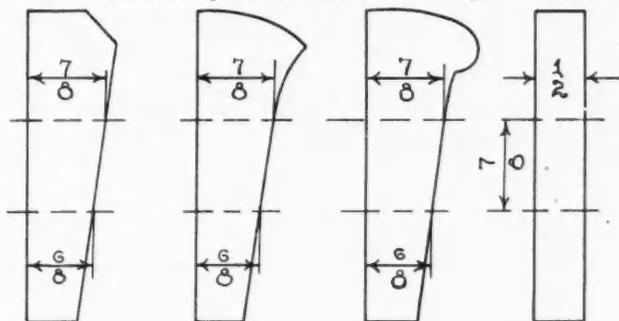


FIG. 4

key's mortise, seven-eighths of an inch. Along the lower line, measure three-quarters of an inch, the length of the lower side of the key's mortise. Through these two points a line should be drawn. Whatever the shape of the front of the pin, these two points should not be changed if the key is to fit properly.

The parts of the frame may next be sand-papered and put together. No glue is necessary, the keys

holding it sufficiently. The keys may be "forced" a little, but judgment must be used else the end of the tenon may be split out.

The piece which goes across the back, at the top, is to be squared three-quarters by three and five-

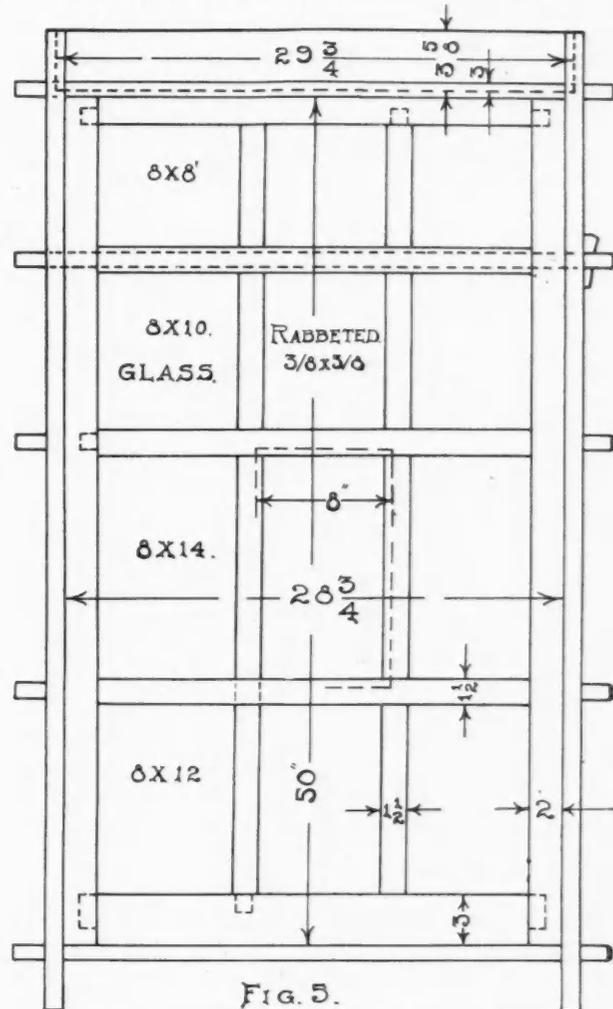


FIG. 5.

eighths by twenty-nine and three-quarters inches. It is to be nailed or screwed in place from the back side, Fig. 5. Its lower edge reaches half way on the edge of the top shelf. The back of the case covering the other half.

If wainscoting is to be used for the back, it may be cut to length and nailed. Begin at one side and toe nail through the tongue into the shelves, using light nails. The frame should be squared so that the shelves made right angles to the sides before any of the back is applied. A steel square is good, or the diagonals may be measured with a stick, the frame being shifted until they are equal. A strip should be "tacked" across a corner to hold the frame in shape until enough of the back has been fastened to hold it.

A paneled back, together with the construction of the door and how to hang it will be given next month.



A GOOD foundation is the best start for a building, but it's not the whole thing. Quality must go up with the frame and help put on the roof.



work and on common detail paper. The next thing to be done is to ink them in or trace them. If they are to be inked in, a good grade of cold pressed white paper should be used for the pencil work. As more or less erasing and redrawing has to be done before you have them correct you should never start to ink your work in until you first have it correct in pencil.

But we will suppose in this case they are to be traced so blue print copies can be made. Tracing cloth has a dull and a glossy side; either side can be used to

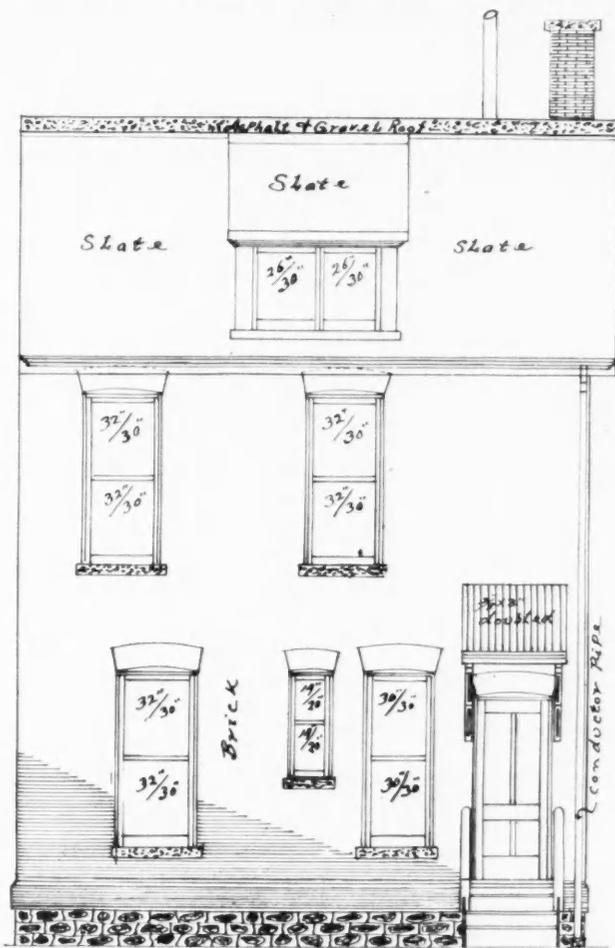


Fig. 10. Rear Elevation

trace on, though most draftsmen prefer the dull finished side. A little chalk dust rubbed carefully over the linen before you start makes it take the ink much better. Now, with the ruling pen, proceed to ink over the pencil lines with clear fine lines, of course bearing in mind to use the proper kind of lines in the proper place, as has been before explained. For small circles the bow pen will be used, and for larger circles the pen point of the compass. Care must be taken not to blot your work as the tracing linen will not stand much erasing.

Any color of India ink can be used, but if you desire to make blue print copies you should use black. Your pen should be almost sharp enough to cut the paper; and if it becomes dull it may be sharpened on an ordinary oil stone as follows. Set the two jaws together and hold the pen in an upright position, drawing it back and forth a few strokes across the stone,

at the same time revolving the pen from right to left; this is done to bring both jaws to the same length, and at the same time make them slightly rounded on the points; now they must be rubbed on the stone on each side until both jaws are sharp, taking great care that both sides are left the same length.

When using the pen it should be held in an upright position while drawing it along the edge of the T-square, or other instrument used. Never lay your pen down with ink between the jaws; have a piece of cotton cloth at hand and wipe the pen out every time you have finished using it. India ink dries very quickly and if allowed to dry on the pen will cause you endless trouble.

India ink becomes thick in the bottle very soon, so that it does not work freely in the pen; never mix any other ink with it to thin it; the black ink can be thinned with a mixture of one ounce of distilled water with four drops of aqua ammonia in it; the colored India inks may be thinned with the distilled water only. After refilling your pen before you start to draw on your work it is best to try your line on a waste piece or on the edge of the sheet that can be torn off, to make sure you have the line the thickness required; the pen is adjusted by the little set screw on the side to make the line to suit.

Ink the pen with the quill which is in the stopper for that purpose. Keep the ink bottle corked all the time except when pen is being inked; there is no danger then to your tracing from tipped over ink bottles.

We now have the plans and elevations all complete; the next thing to be made is the constructive details, showing how the interior is to be finished, the window and door frames, cornices, porch and veranda construction, etc.; these will be dealt with in a future article.



### Weight of Building Materials

The approximate weights per cubic foot of building materials are as follows:

Material.	Wt.	Material.	Wt.
Metals.		Masonry.	
Bronze .....	552	Asphalt .....	130
Copper .....	550	Blue Stone.....	160
Iron, Cast .....	450	Brick in Lime .....	120
Iron, Wrought ....	480	Brick in Cement ....	130
Lead .....	712	Cement, Portland...	90
Steel, Structural ...	490	Concrete .....	140
Timber.		Gneiss .....	160
Cedar .....	23	Granite .....	165
Chestnut .....	41	Gravel .....	120
Cypress .....	29	Limestone .....	170
Fir .....	32	Marble .....	165
Hemlock .....	25	Sand .....	106
Oak, White.....	50	Sandstone .....	145
Pine, White.....	24	Slate .....	170
Pine, Yellow.....	35	Terra Cotta.....	110
Spruce .....	25	Tile .....	115

## Practical Roof Framing

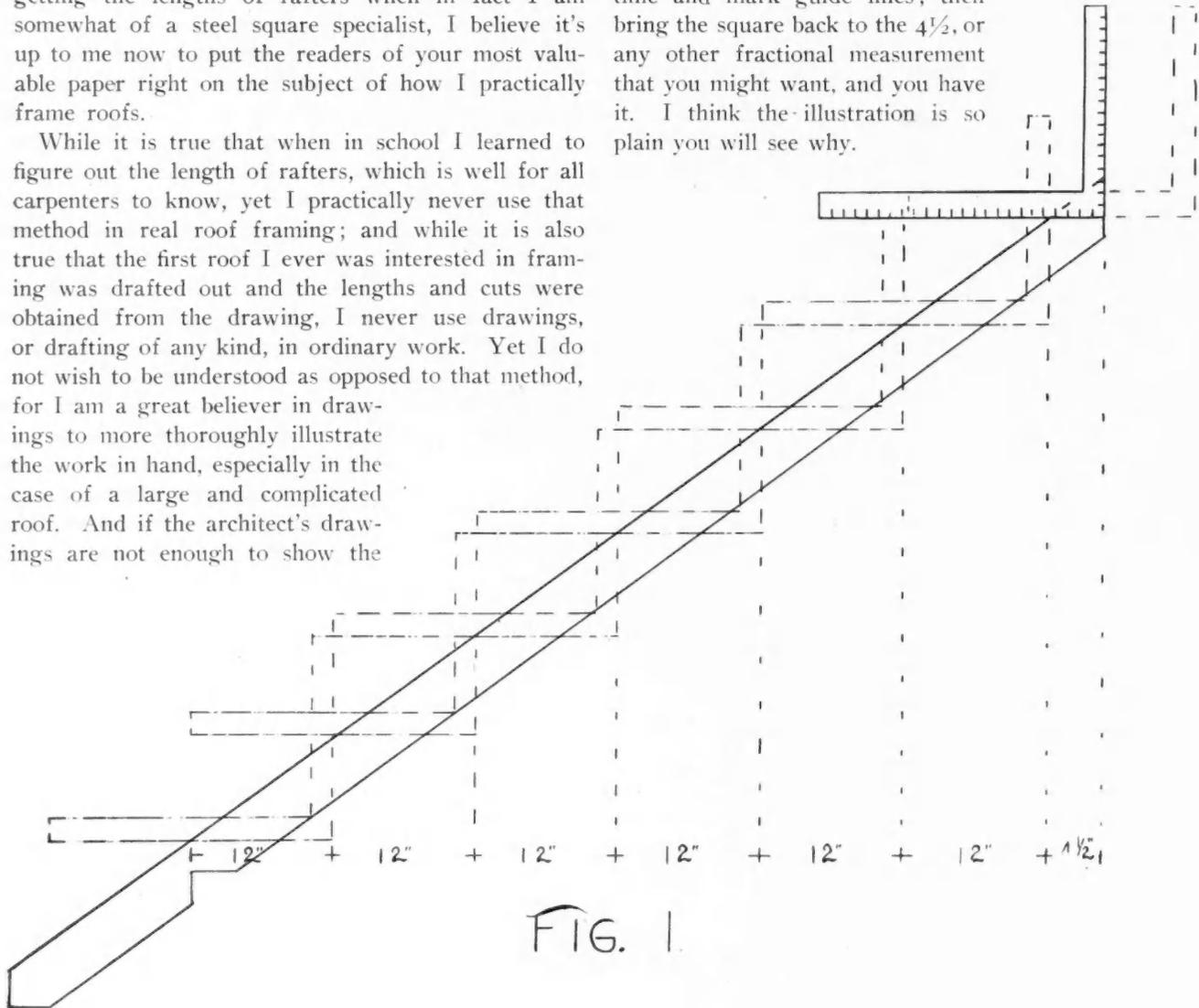
TWO SIMPLE METHODS ILLUSTRATED AND DISCUSSED OF FINDING THE LENGTH OF RAFTERS BY MEANS OF THE STEEL SQUARE

By Dwight L. Stoddard

THE article by Albert Gonne in the January issue on "Practical Methods of Roof Framing," was very good indeed, and one that I think is worthy of carrying on just a little further. As he referred to my article in the September issue in a way that some might think I advocated drafting for getting the lengths of rafters when in fact I am somewhat of a steel square specialist, I believe it's up to me now to put the readers of your most valuable paper right on the subject of how I practically frame roofs.

While it is true that when in school I learned to figure out the length of rafters, which is well for all carpenters to know, yet I practically never use that method in real roof framing; and while it is also true that the first roof I ever was interested in framing was drafted out and the lengths and cuts were obtained from the drawing, I never use drawings, or drafting of any kind, in ordinary work. Yet I do not wish to be understood as opposed to that method, for I am a great believer in drawings to more thoroughly illustrate the work in hand, especially in the case of a large and complicated roof. And if the architect's drawings are not enough to show the

lengths of rafters, and you will see how I finally found out how to cut fractional parts as easily as full feet. Suppose the run to be 6 feet  $4\frac{1}{2}$  inches; apply the square the six times, and then, instead of getting all tangled up as I did for years trying to figure out the fractional measurement, apply the square the seventh time and mark guide lines; then bring the square back to the  $4\frac{1}{2}$ , or any other fractional measurement that you might want, and you have it. I think the illustration is so plain you will see why.



full construction of the roof, I believe in making drawings to complete it.

When in my 'teens I framed many roofs with exactly the method Mr. Gonne explained, and had no trouble with any ordinary roof; yet it was years afterwards before I could frame a roof that was not in even feet without some trouble, and sometimes much figuring. Even then sometimes I was at a little loss to know if I was exactly right, for I did not thoroughly understand it. But finally it came to me, and the whole matter was so plain I never forgot it.

Fig. 1 illustrates my method for years of getting

Now for a foot run for common rafter the run for an octagon is practically 13 inches, and for a hip 17 inches; while these are not absolutely accurate, they are near enough for all ordinary work. Therefore, for an octagon use 13, and for ordinary hip 17, and use the run and apply the same as for common rafter.

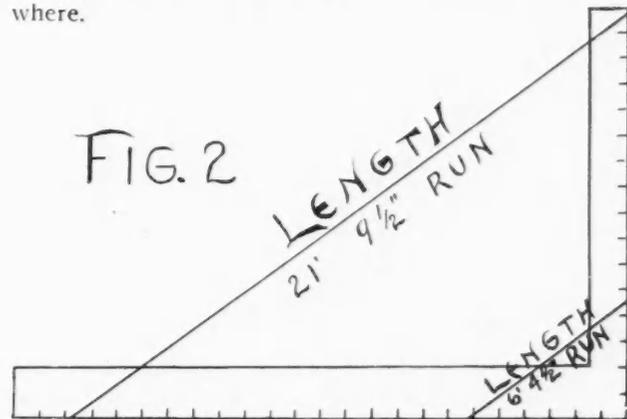
I followed this plan for many years and framed some roofs that were so large that to apply the square for each foot of run was somewhat tedious. One day, when an old-time mechanic was complimenting me on being able to frame roofs with the square, saying he regretted he did not know how to do it—the only way

he knew to get the lengths was to draw the rise and run and measure across, which gave the length—I remarked that that was the way I framed my first roof, but then learned how to frame with the square, so never used it since. In thinking it over I wondered why I had been such a fool all my life, and why, instead of applying the square for every foot of run I could not measure direct across the square and get the length, just as the old-time framers did, only save making the drawing; besides the square would be more accurate than the drawing you would lay out with a big pencil on a common board.

Now it is true that using a scale of one inch to the foot, if you make a mistake on the square measurement, the mistake on the rafter will be just twelve times as great, yet with proper care it is seldom indeed that a mistake big enough to ever be discovered is made with that method; in fact, it is not only the most rapid of any I know of but the least subject to mistake.

Fig. 2 illustrates the same rafter laid off with this method, which is simply run and rise measured across. It always gives length of rafter; it matters not whether

it is common rafter, hip, valley or jack, even or uneven pitch roof, it will always give it any time and anywhere.



Now it is true that for a small roof where the run is only a few feet so the square will have to be applied a half dozen times or so, the first method is good enough for general use; but where it is 20 feet or more you can readily see how much more rapid this last method is, since it saves twenty or more applications of the square to the rafter.

## Construction and Cost of Dormer Windows

DESIGN OF A DORMER WINDOW WITH DETAILS OF CONSTRUCTION SHOWN—COST OF MATERIAL AND LABOR ESTIMATED IN DETAIL

By I. P. Hicks

IT IS a very common thing for a carpenter to be asked, "What is it worth to put a dormer window in my house?" And the next question is, "What will it look like?" This article is intended to answer both of these questions. The drawings will show the general appearance of the dormer and our estimate in

side view of the same dormer; Fig. 3 is an enlarged drawing or detail of the construction, showing the frame work and the general plan of the cornice. With this method of framing a dormer, the ceiling joists must be spaced so that the rafters can be framed to rest on the ceiling joists as shown. The rafters can

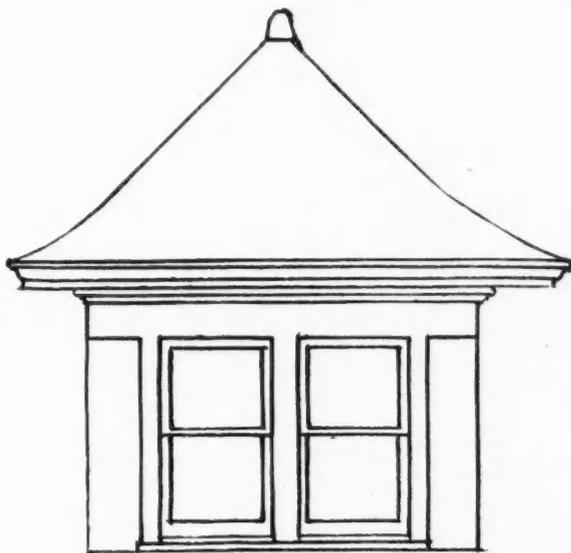


Fig. 1. Front View

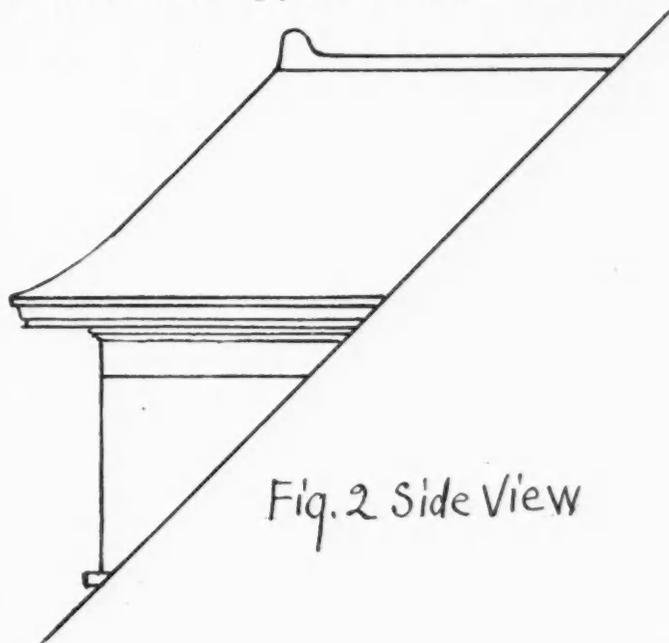


Fig. 2 Side View

detail will give approximately what it is worth to build a dormer window similar to the one shown.

Fig. 1 shows a direct front view; Fig. 2 shows a

not rest on the plate like the ceiling joists, for it would make the curve in the roof too flat. The rafters have to sit out beyond the plate, therefore the ceiling joists

must be spaced to accommodate the rafters.

The ridge cresting is a stock pattern of a galvanized iron hip finial, and gives the dormer a better appearance than a plain board ridge. The drawings are plain and easily understood; now the question is: What will it cost to build one?

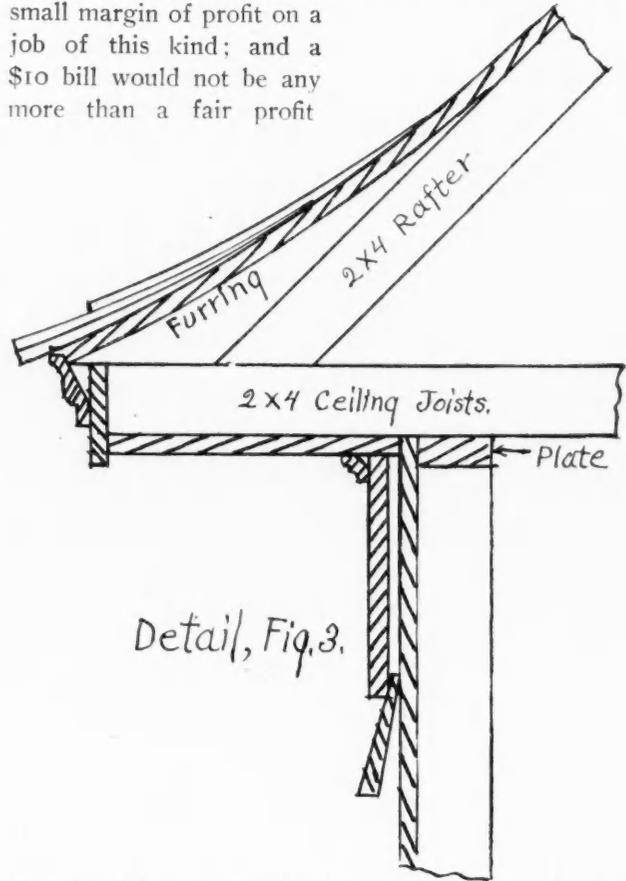
The estimated cost in detail is as follows:

4 2 by 4 by 12, 117 feet, at \$25	}	.....\$ 2.93
8 2 by 4 by 16, 117 feet, at \$25		
250 feet No. 2 Y. P. sheathing, at \$25		6.25
1500 shingles, at \$3.75		5.13
1 window frame, double		4.00
2 windows, 24 by 20, 2 light, at \$1.40		2.80
30 feet crown mold, 4 inch, 2c		.60
24 feet bed mold, 2 inch, 1c		.24
7 feet window stool, 2c		.14
7 feet apron, 2c		.14
16 feet casing, 2c		.32
7 feet head casing, 2c		.14
8 feet cap mold, 2c		.16
7 feet fillet mold, 1/2c		.04
24 feet window stops, 1c		.24
80 feet fir finish for cornice, \$40		3.20
48 hip shingles, 1 1/2c		.72
54 flashing tins, 1 1/2c		.81
1 strip of tin 4 inches by 9 feet, 5c		.45
1 finial		.60
6 1/2 feet ridge, 10c		.65
Nails		.50
Sash cord, window weights and sash locks		1.20
Carpenter work, 30 hours at 40c		12.00
Probable cost of plastering sides and ceiling of dormer		3.50
Probable cost of painting, and finishing, including roof		5.00

Total estimated cost .....\$51.76

Thus we see that the estimate, even when figured close, runs up to a pretty good sized figure. The carpenter work is figured low; some men would do the work in the time given; but more time should be figured to be safe on the job. Sixteen dollars for the

labor would not be any too much, and this on the supposition that the dormer is to be put in a new building, while in the course of construction. If the dormer is to be built in an old building or one already built, it would not be out of the way to add \$10 more to the estimate. This then, with the \$4 more added for labor, would bring the estimated cost up to \$65.76. It would not be unreasonable to allow the contractor a small margin of profit on a job of this kind; and a \$10 bill would not be any more than a fair profit



Allowing this, we have the dormer figure up to \$75.76.

Thus we see that just a common ordinary dormer such as carpenters are frequently called upon to build will figure from about \$52 to \$75; and the carpenter who figures low on a dormer wants to know what he is figuring on, for there is a whole lot more to a dormer window than most people think there is.

## An Artistic and Substantial Church

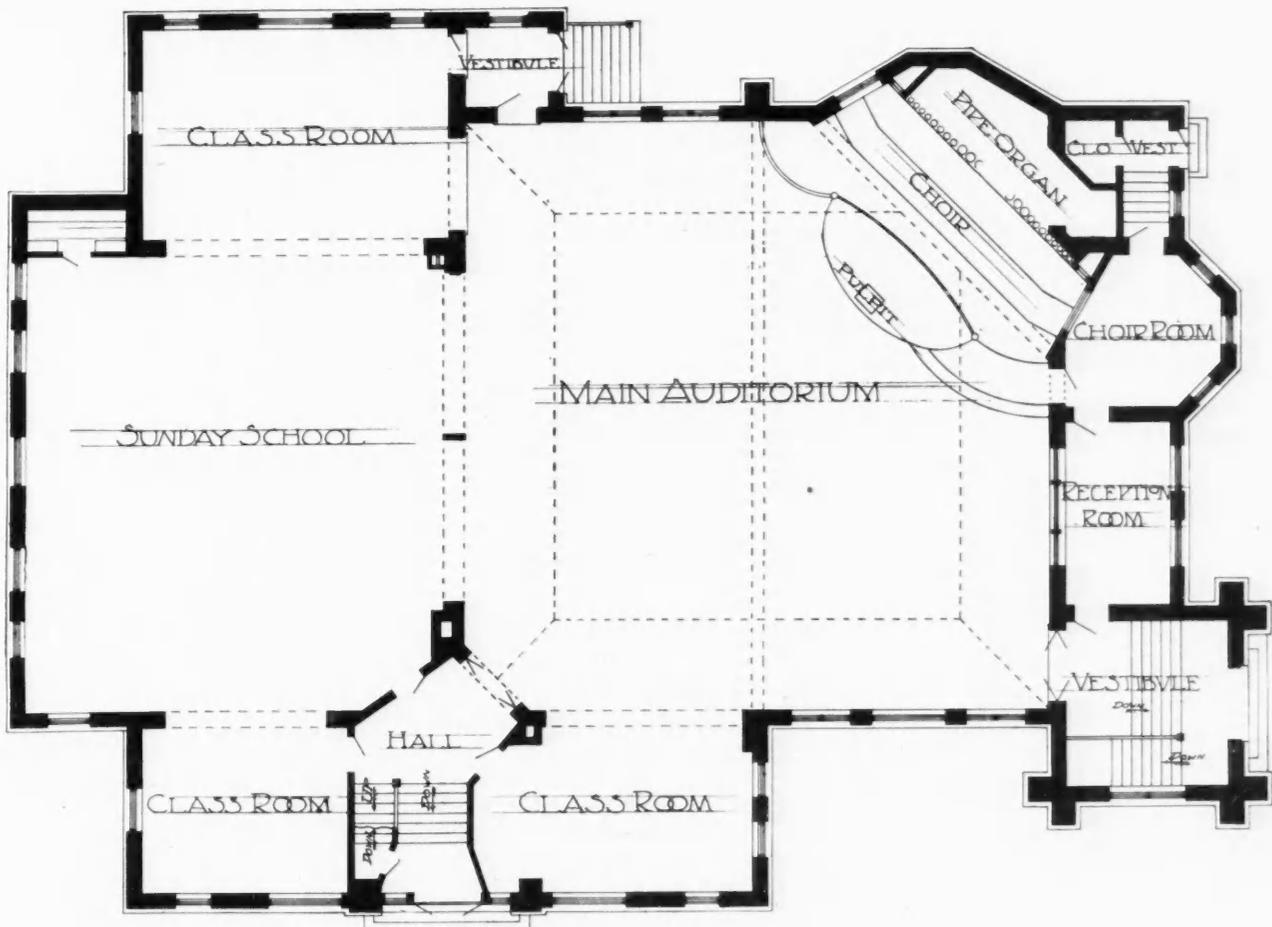
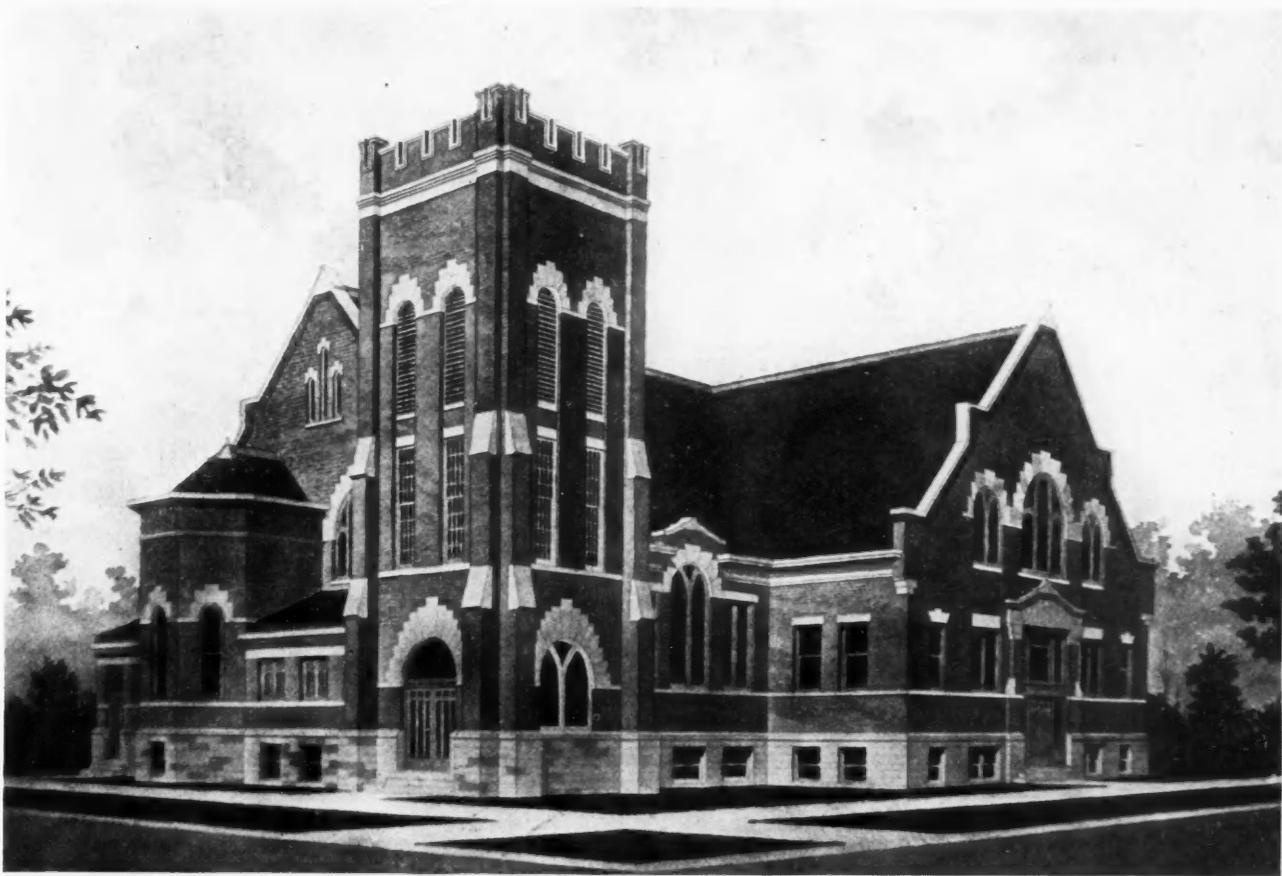
PERSPECTIVE AND MAIN FLOOR PLAN OF A MEDIUM SIZE CHURCH EXCEPTIONALLY WELL DESIGNED—  
MATERIAL TO BE USED IN ITS CONSTRUCTION

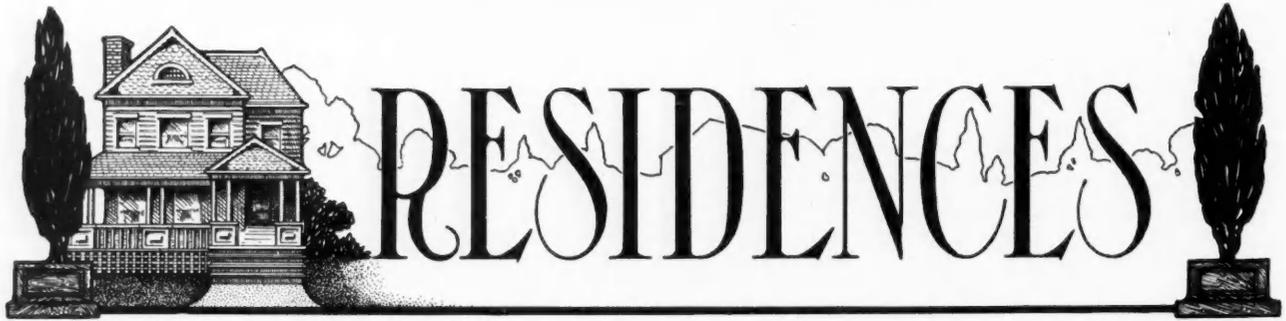
THE accompanying design, recently made by G. W. Ashby, architect, is for the Congregational church to be erected this spring at Naperville, Ill. It presents a very attractive appearance and one suggesting strength and permanence. The exterior is of dark brown paving brick, the foundation wall and exterior trimmings being of Bedford stone. The illustration shows well the pleasing result of this treatment.

There are a number of features in connection with the interior arrangement that are of special interest. Since the church is comparatively small, in order to avoid that too common stuffy effect, the main audi-

torium is made square, fifty feet each way, and without a gallery. The Sunday school room is large, and three large class rooms are provided, all of which are easily made a part of the auditorium. The two class rooms, one on either side the entrance hall, are also very useful, at times, for cloak rooms. The reception room, adjoining the tower vestibule, may serve the same purpose. The interior finish throughout is oak.

The basement is arranged to take care of the many social and institutional features of the modern church. There is dining room, kitchen, a women's reading room, men's club room, toilet rooms and heating plant.





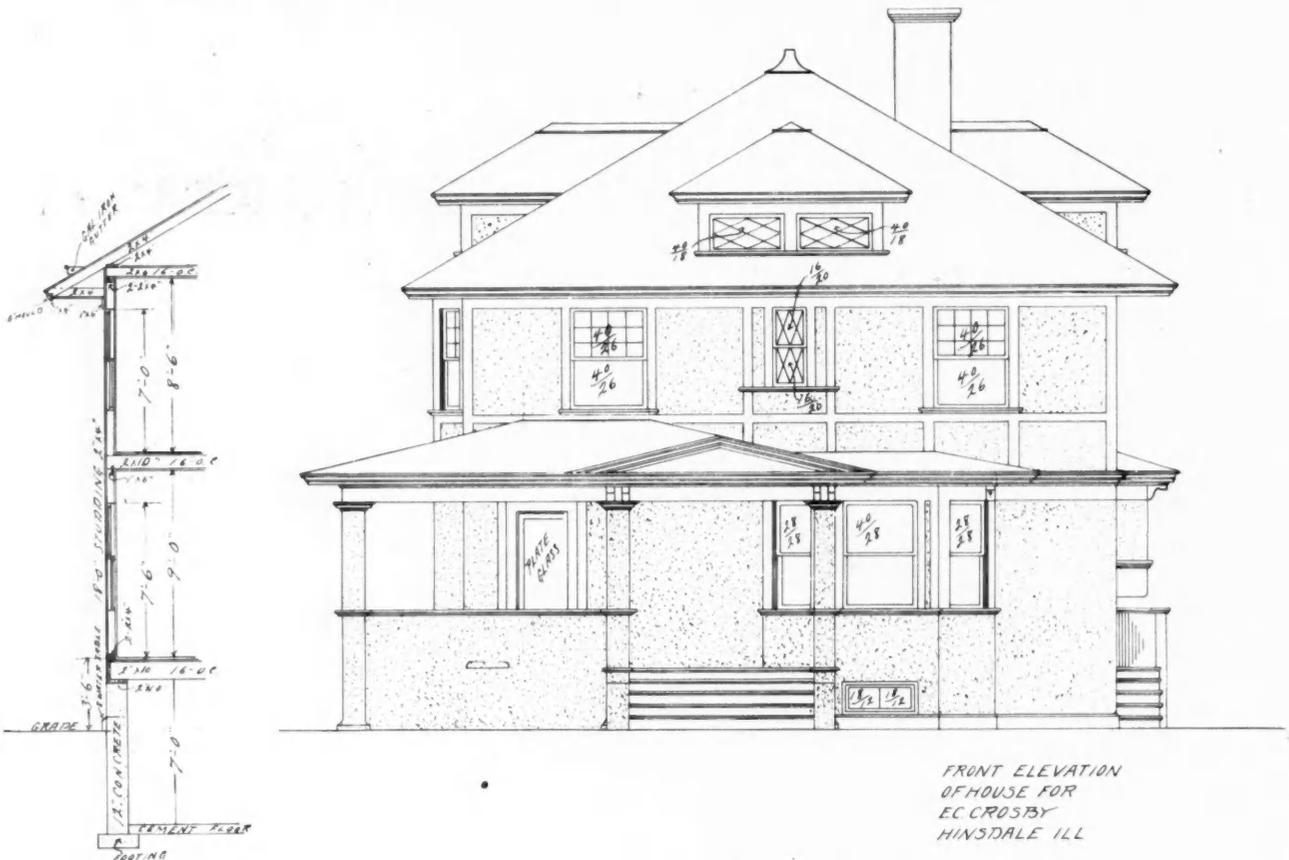
## Artistic House Designs

COMPLETE WORKING DRAWINGS GIVEN OF A ROUGH-CAST PLASTER HOUSE—EXCELLENCIES OF ARRANGEMENT AND DESIGN SHOWN

FULL working drawings, including the details of interior finish, are here shown for a modern frame residence, the exterior to be given a rough-cast, cement finish over wood lath. It is a design of some character, and one that brings out very well some of the strong points of this form of construction.

three sides. The dining room is conveniently located with respect to kitchen and pantry. The built-in cupboards, china case and book cases are an attractive feature of the first floor.

The second floor is divided into four large airy chambers, each with abundant closet room. Part of



Little of ornament is needed to make the house attractive. The cement was stained dull green; the trimming painted white. In the upper part of the walls there is some use of exposed timbers dividing the cement into panels. The casement windows and small leaded panes are appropriate to this style of house.

The first floor is divided into reception hall, living room, dining room and kitchen, besides ample closets and pantry room. The living room is very large, fifteen by twenty-four feet, and is finely lighted on

the third floor is finished, and provides one chamber and storage rooms. The basement has a cement and tile floor. It is divided into rooms for laundry, servant's bath, storage, heating plant, etc.

### The Bath Room

Different people always have had and always will have different ideas about the bath room, both as to size and equipment. Some want large bath rooms so that they can become in a measure dressing rooms as well as bath rooms, others want very small ones, with only room enough to get around; and others



LEFT SIDE ELEVATION  
OF HOUSE FOR  
E. CROSBY  
HINSDALE ILL.



RIGHT SIDE ELEVATION  
OF HOUSE FOR  
E. CROSBY  
HINSDALE ILL.

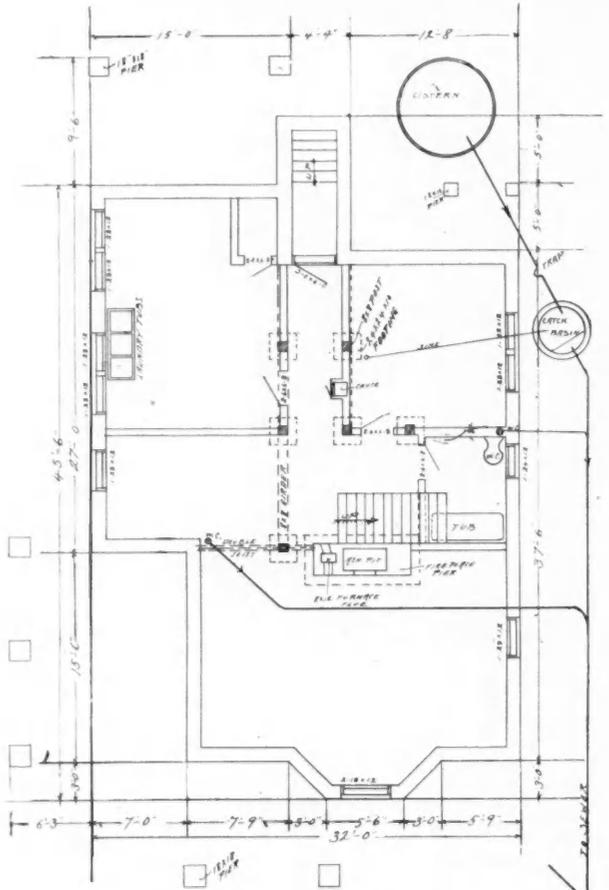


ELEVATION OF FIRE PLACE AND BOOK CASES

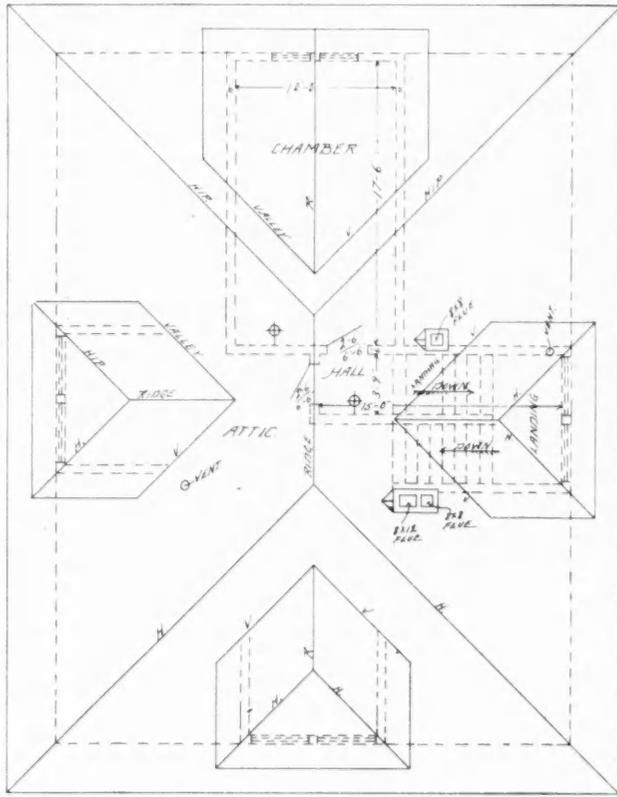
CHINA CLOSET

make them so small that it is inconvenient to get around, evidently for the sake of economy in space. Some want one kind of a tub, some another; the

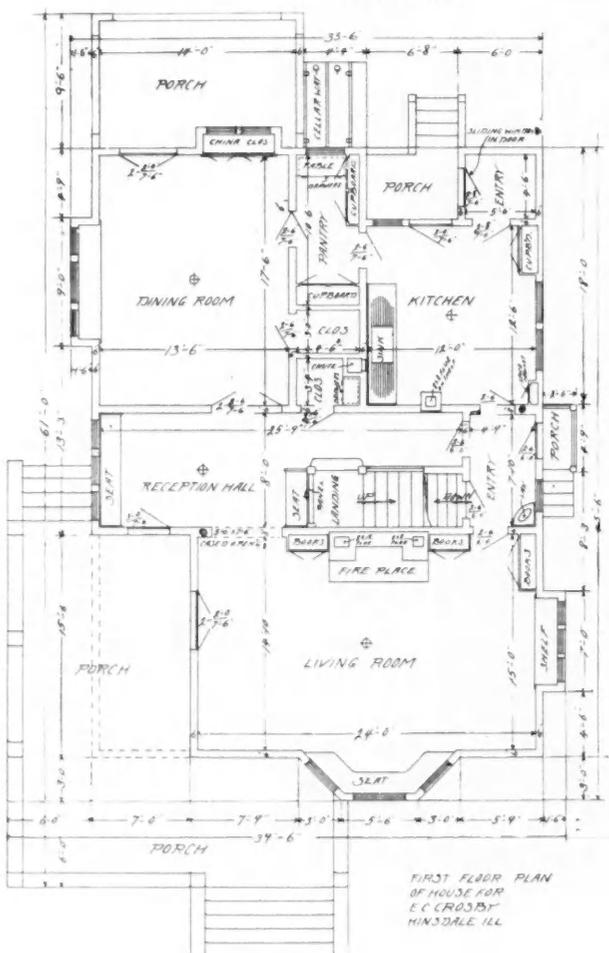
same applies to wash stands. Some want them on pedestals, some attached to the wall; some want the tub in a corner, and tightly inclosed with tiling or



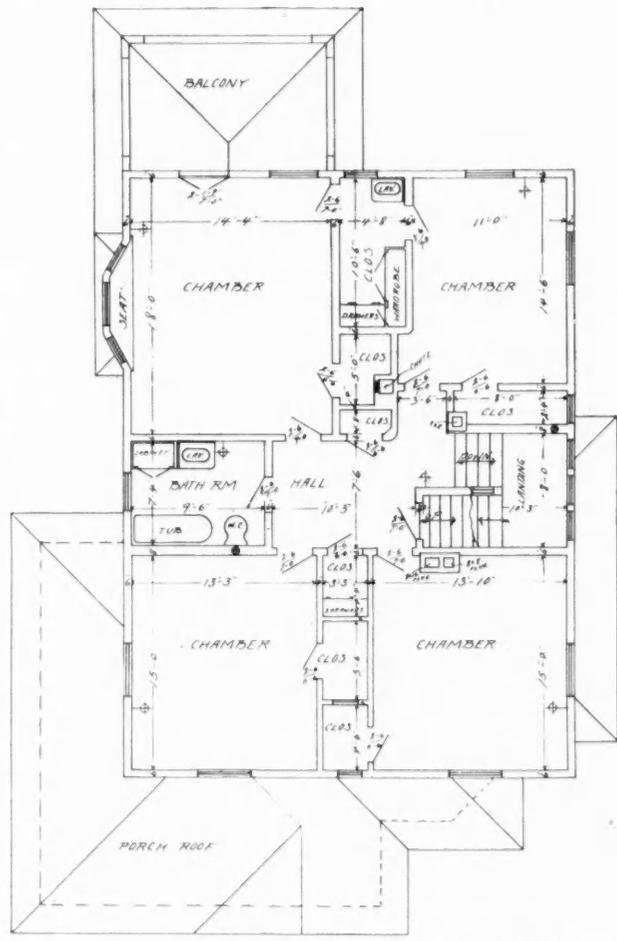
FOUNDATION PLAN OF HOUSE FOR E.C. CROSBY HINSDALE ILL.



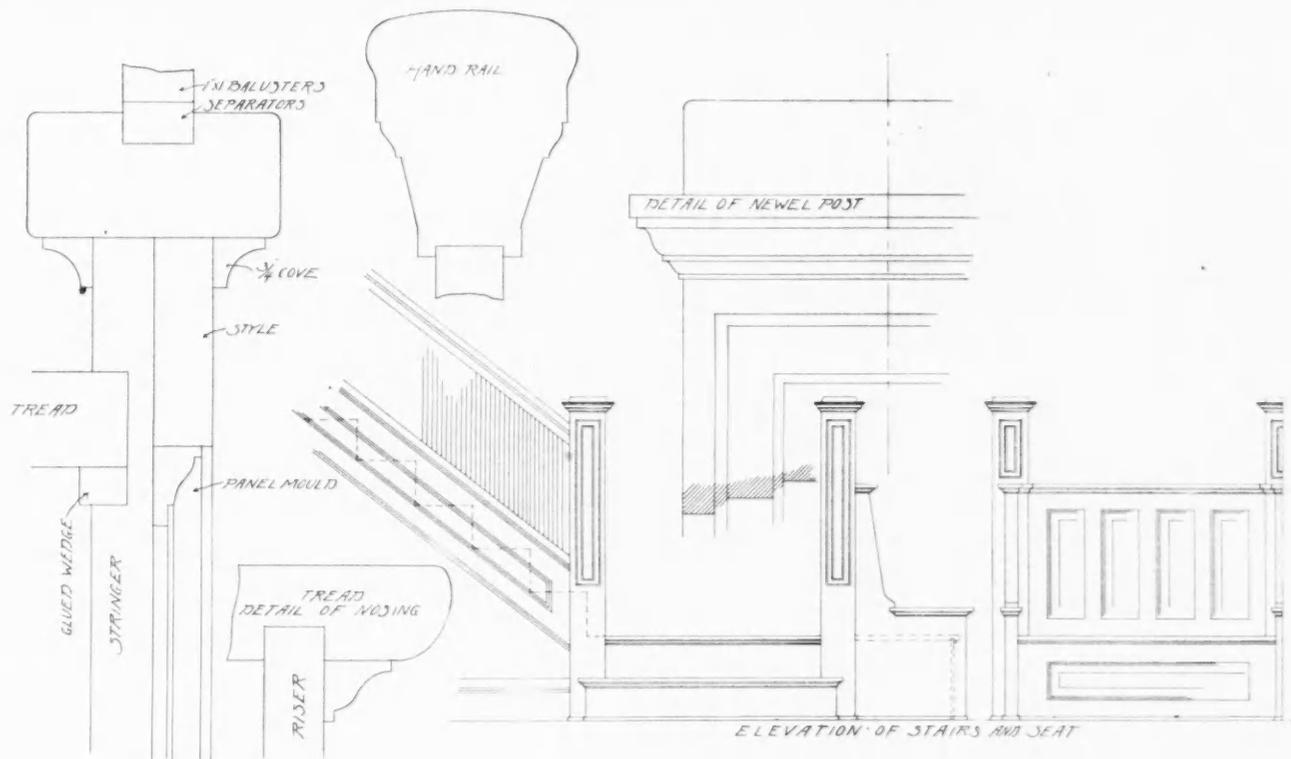
ROOF PLAN OF HOUSE FOR E.C. CROSBY HINSDALE ILL.



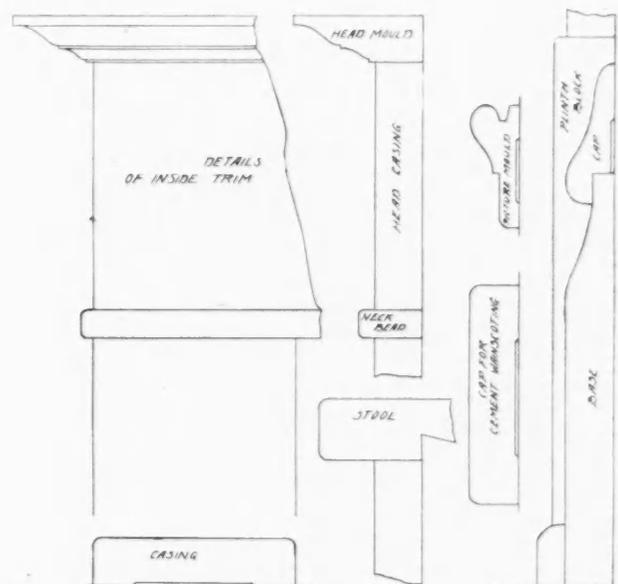
FIRST FLOOR PLAN OF HOUSE FOR E.C. CROSBY HINSDALE ILL.



SECOND FLOOR PLAN OF HOUSE FOR E.C. CROSBY HINSDALE ILL.



REAR ELEVATION OF HOUSE FOR E. C. CROSSBY HINSDALE ILL.



something, because of the difficulty of getting underneath to clean. A late idea that seems to be growing in favor is to put the bath tub in the middle of the floor, so that it can be gotten at from both sides, and have it so the floor can be cleaned under it from each side. Just how long this idea may hold, or to what extent it may take hold of the people, remains to be seen, but it is among the new ideas in bath room arrangements; and it is maintained that while it may seem awkward at first to have the bath tub sitting in the middle of the bath room floor, it is really very desirable when one gets accustomed to it, as it is especially conducive to cleanliness. The point aimed at is to have the bath room not only convenient, but as free as possible from obstructions to cleaning and from nooks or corners that may become unsanitary through lack of sufficient air and cleaning.



Built and Owned by U. G. Miller, Lebo, Kans., Cost \$2100



# CEMENT BUILDING CONSTRUCTION

## Blocks For Residence Work

PLANS ILLUSTRATING TWO WELL EXECUTED EXAMPLES OF CEMENT BLOCK RESIDENCE CONSTRUCTION—  
DESIRABLE FEATURES POINTED OUT

**T**HE success of cement blocks as a material for substantial and pleasing home construction is fully demonstrated by such results as these, attained by John Kimberley at Princeton, Ill. It is very far from the ordinary cement block house, where the main idea usually seems to be cheapness; care and

avoided by the use of the wide extending cornice. The porch treatment is very good—steps and floor of concrete, square block columns surmounted by a flattened arch, which supports the square balcony above. The details of the balcony railing are neat and correspond to those used below.



Cement Block House and Barn, Built and Owned by John Kimberley, Princeton, Ill.

attention to details have secured in this case the durability and general artistic effect of coursed ashlar masonry, and at quite a saving in cost.

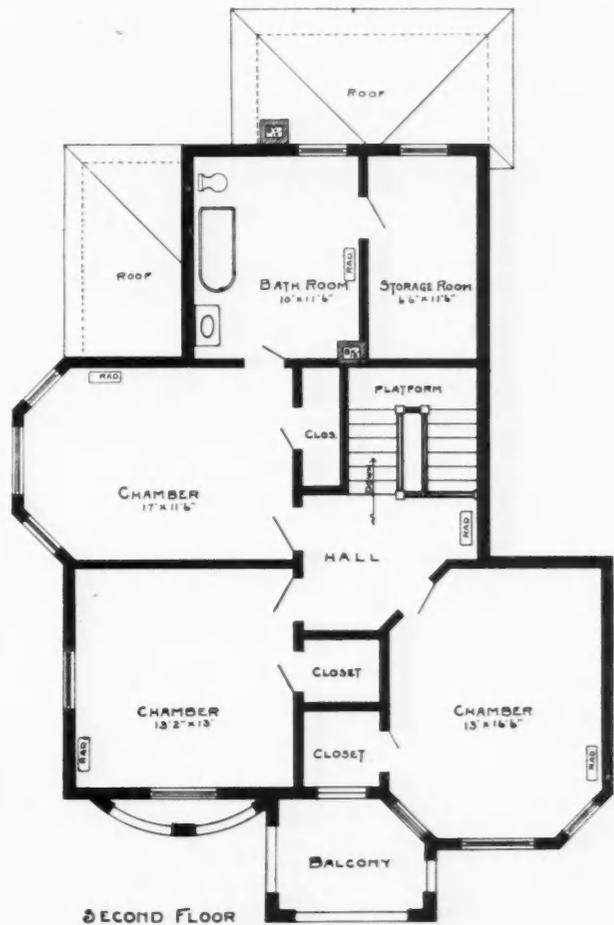
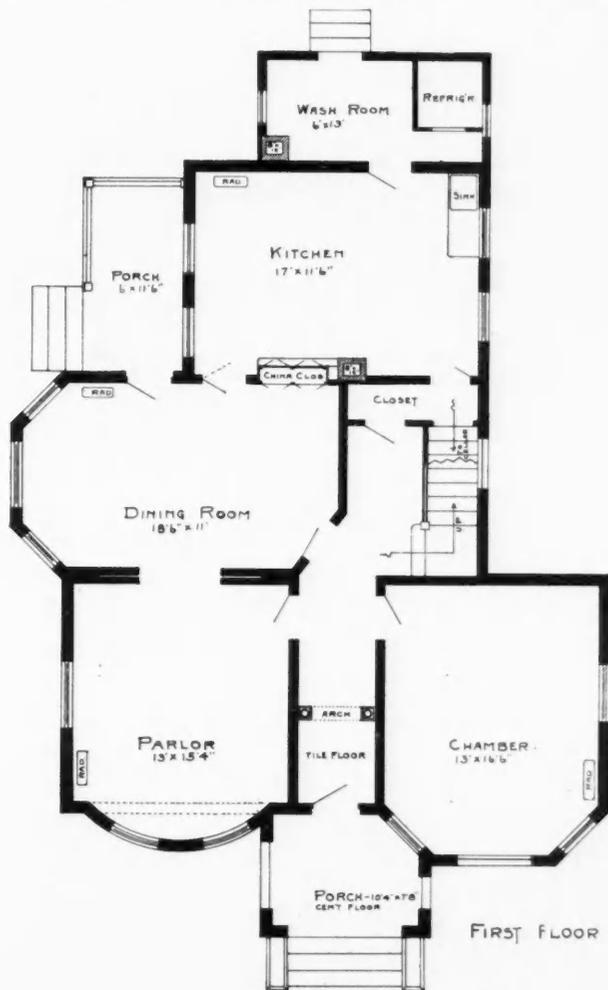
A smooth-faced block is used for the body of the wall, a rock-faced for the corners, window facings and foundation. That top heavy, unfinished impression, so often given by two-story cement block walls, and sometimes even by ashlar walls, is in this case

As will be seen from the floor plans, the rooms are very well arranged. They are of generous size, opening freely from one another, which gives a very spacious interior effect. The woodwork throughout is quarter-sawed Georgia pine in the natural colors. The plastering was applied to the concrete blocks direct.

Red and buff tile was used for the front vestibule floor. This vestibule, five feet square, is separated

from the rest of the hall by two round columns standing close to the wall on either side on square paneled pedestals, two feet eight inches high. These columns

call for cement blocks for the full height of the walls. The trouble seems to come through violating the well known law of design that the upper courses of a



are surmounted by an elliptical arch. This work was done in black walnut.

The heating system is steam. The basement under the whole house is finished, and is divided into rooms for laundry, heating plant, cold cellar, etc.

**Block and Frame Combination**

Many builders find it difficult to produce pleasing, satisfactory results in houses where the specifications

structure should seem lighter than the lower, supporting ones. This effect is satisfactorily gained in some instances by means of the use of a rock-faced block for the first story and smooth-faced for the second. A form of construction that is also very successful in this respect, and one that is proving popular in carefully planned residence work, is the cement block and frame combination.

Numerous variations of this type of construction are to be seen, all appear substantial and well proportioned. For the basement and first story walls, either the rock-faced or the smooth-faced block may be used; the second story wall is covered with clapboards, shingles, or in some cases by cement plaster on metal or wood lath. In all cases, however, the upper structure is painted or stained in a color contrasting with the natural gray of the cement blocks below.

The house designed and built by C. E. Spaulding, of Centralia, Ill., full plans of which are here given, is a very good example of combination block and frame residence work. It is a straightforward design without affectation. The house has an air of general roomy hospitality.

Reference to the first floor plan will show the very spacious interior arrangement. From the large porch



House of Cement Blocks Built by A. L. Strait at Phoenix, Ariz.. Cost \$8,500

entrance is had, through the vestibule, to the reception hall, which is paneled in oak and is made cheerful with a serviceable fireplace having seats on either side.

first floor, with the exception of the kitchen, is practically one large room.

The second floor makes provision for four very



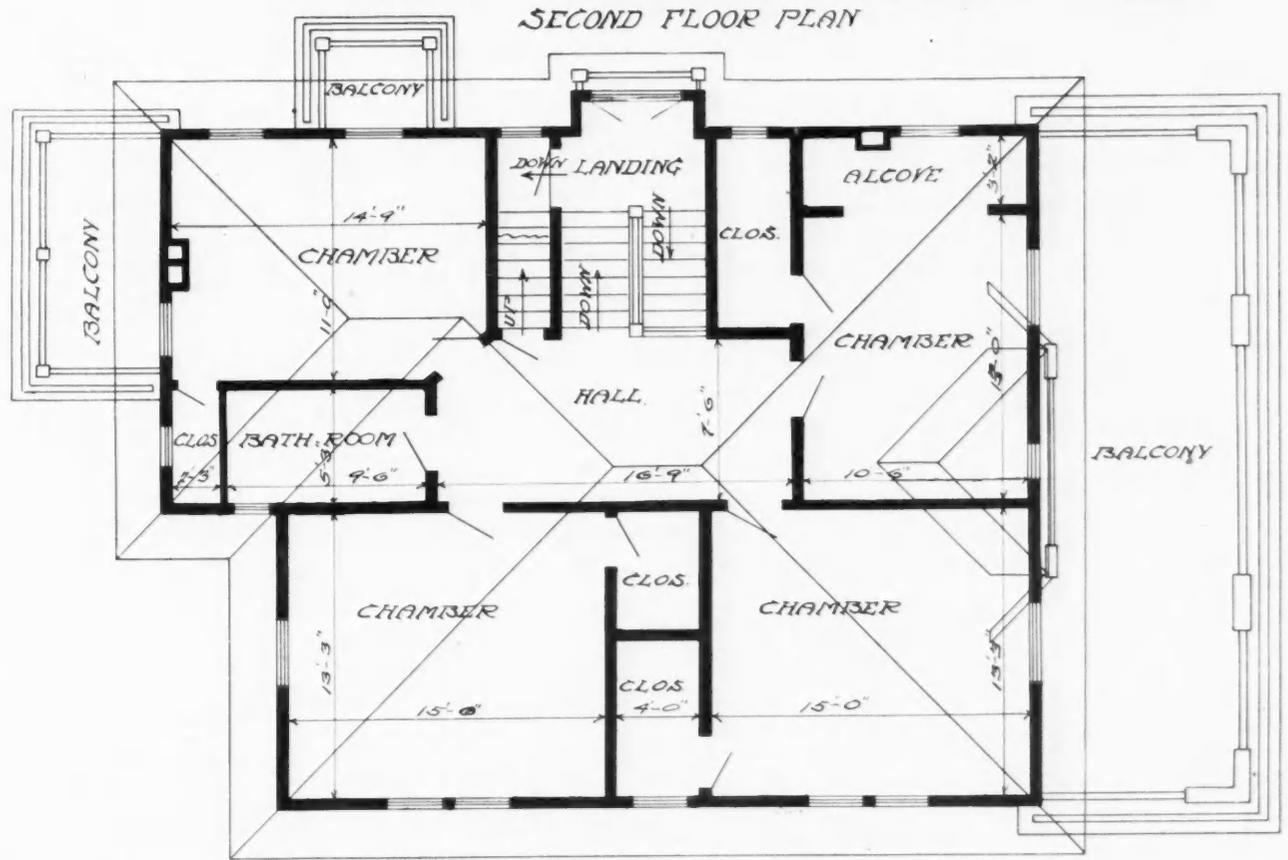
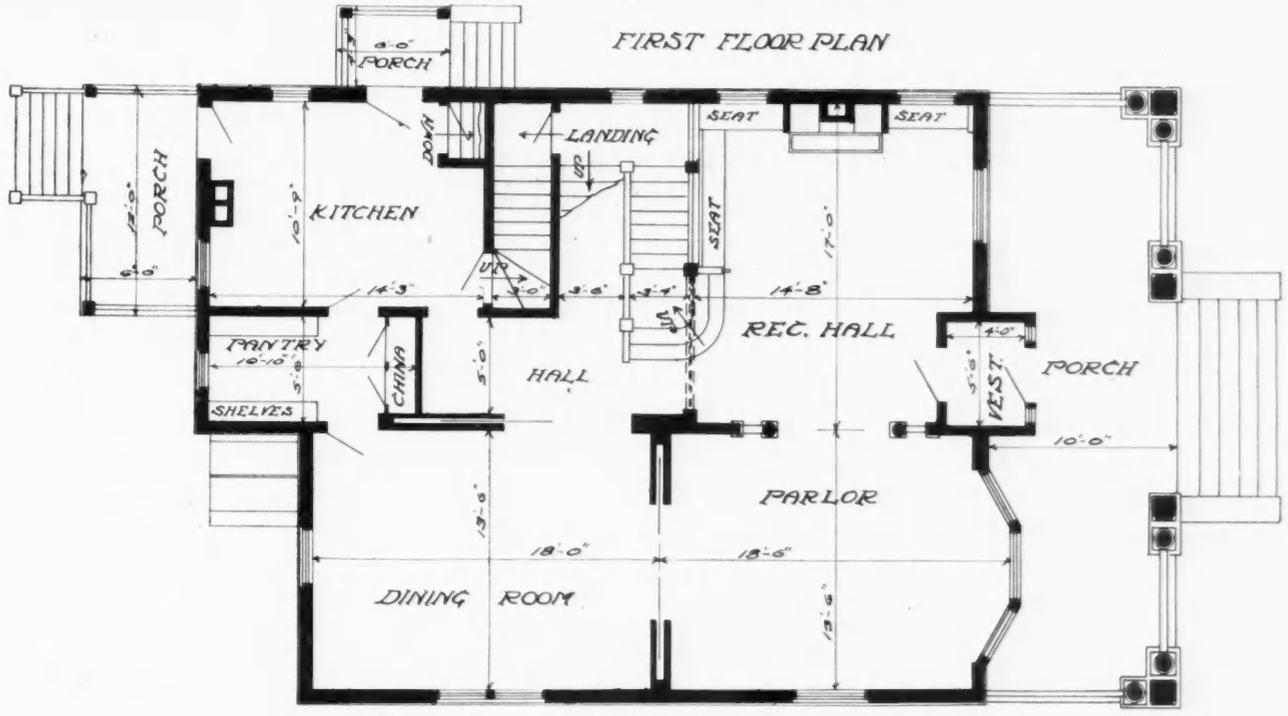
FRONT ELEVATION



RIGHT SIDE ELEVATION

To the right is the parlor, just back of that the dining room. With the wide sliding doors opened, the entire

large, nicely lighted bed rooms, each with a generous clothes closet. Three of these have a window giving



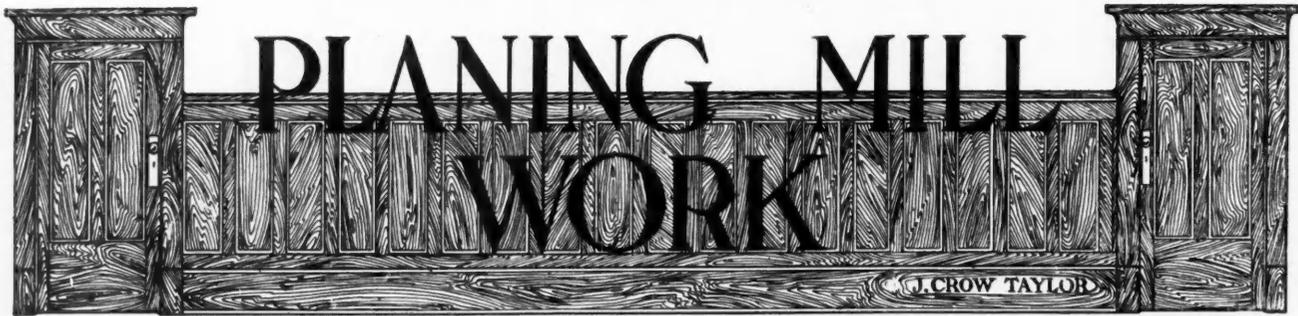
light and ventilation, which is an especially good feature. All of the porch roofs are finished as balconies.

This house, constructed of rock-faced blocks for first story and clapboard finish for the second, complete with plumbing and bath fixtures, furnace, electric wiring and gas, cost \$4,800.

**To Drive Spikes Under Water**

This simple method of driving spikes under water

may be useful to contractors. The spike is placed in a piece of iron pipe large enough to hold it loosely, together with a drift, which is used to transmit the hammer blows to the spike. The length of pipe used will depend on the depth of water and the drift should be of sufficient length to permit a handhold above the pipe. By means of this expedient spikes can be driven in several feet of water and at any angle desired, as the spike will necessarily be driven at the angle at which the pipe is held.



## Care of Rip Saws

WHEN AND HOW TO SWAGE SET A SAW—BEST KIND OF SWAGE TO USE—PROPER METHOD OF FILING FOR BEST RESULTS

**I**N RESPONSE to the following request from Charles W. Skinner, of Stillwater, Okla., this subject—always an important one in the wood-mill—is here considered.

"Please give in a short article in the *AMERICAN CARPENTER AND BUILDER* your opinion as to whether it is best to swage small circular saws from 7 to 10 inches in diameter or to set them. Also the best kind of swage to use and the proper way to hold it when swaging."

Generally speaking and for ordinary sawing the rip-saw tooth should always be swaged. The rip-saw tooth is in effect a chisel cutting a groove through the wood, and should have square even corners, whereas the cross-cut saw must separate the fibers of the wood with sharp corners at each side of its kerf. It is not so much a matter of size as to whether the rip-saw should be swaged or not, but rather a matter of the work it is to do. As to the kind of swage to use, there is quite a variety, though for small rip-saws like those mentioned there is nothing much better than what is termed an upset swage. There are several different makes of these to select from, each having its own peculiar advantages. It will be difficult to describe in detail just how to hold the swage on the tooth, but no man can do much swaging without the proper method of holding the swage suggesting itself. In the first place it must be centered and straight with the teeth, otherwise you are likely to knock one corner off; and tapping the swage with a hammer is generally, to the experienced ear, a pretty good way to detect whether or not it is being held in the right position. To do its work right it should be so held that it will do the swaging with the spreading on the front part of the tooth and leave the back straight and undisturbed.

A tooth should be swaged so that the corners come out evenly on each side; and that is why it is important to have the swage centered on the tooth. If it is not, one corner will come out heavily and the other will not spread out enough.



FIG. 1



FIG. 2

Now, while generally speaking, all rip-saws for ordinary work should be swage set rather than sprung, there are exceptions; in fact, many instances when it isn't practical to swage saws for certain kinds of work. If you want to do a fine smooth ripping or jointing for carpenter work so that it takes very little or no planing to finish off the joint, and desire to avoid all splintering, it is generally best to use a saw with quite a number of teeth made not unlike the teeth on a hand rip-saw. This is to get more points or corners to the edges of the saw, and insure smooth work and fine cutting without splintering. This applies both in rip-sawing and in cross-cutting. Sometimes a rip-saw is filed so that it is difficult to tell whether it is a rip-saw or cross-cut from the teeth, and it may be used for either work. Filing and setting in this case is necessitated by the finer teeth and the greater number of them, which makes it impossible to get onto them with a swage.

Also, in addition to the great number of teeth, making it impossible to swage the rip-saw, there are also some saws made thin and what is termed tapered ground, which are at times difficult to swage. Consequently they are frequently run with a spring set, even though the teeth are far enough apart to permit the use of a small swage. If you have a preference for thin saws in your planing mill and your power is very light, you would probably better run them thin and spring set them just a little; but do the springing right at the point, and be very careful about springing the entire body of the tooth, because when you do this, in the course of time the corner becomes somewhat rounded; and it is difficult to keep the saw behaving well or cutting as clean and lightly as it should.

A thing that is important in connection with setting, no matter whether you set with a swage or spring set, is to carefully round the saw up after it has been set. Don't do the rounding before setting, because you may have to spread one tooth more than the other; and anyway the rounding or jointing off on the saw should be done after the teeth have been spread out or sprung over the way they are to be run. Then round your saw carefully and go over it with a side file or with a gauge of some kind and see

that there are no long corners and no short ones, but that every one extends just the same. Then file the point to an exact point and no further. Use a small file on small teeth, because usually the smaller the file the finer it is cut and the keener the point it will put on the saw. Even if you are using a flat file and your teeth are large enough to swage, a 6 inch or 8 inch

file will generally do a neater and better job than the 10 inch or 12 inch mill file. This fact is so generally recognized that mill saw filers who take pride in keeping their saws sharp use the smaller files in finishing if not altogether. Sometimes they will use a heavier file in what is termed roughing off, but the pointing is done with a smaller and finer cut file.

## Features of Stone Building Construction

PROPER METHOD OF LAYING UP STONE WALLS—TERMS ILLUSTRATED AND EXPLAINED—THINGS TO WHICH PARTICULAR ATTENTION SHOULD BE PAID

By W. M. Brown, C. E.

**S**TONE is one of the earliest materials used for building purposes, and it is likely to maintain its prominent position so long as it is accessible and not too expensive. A very important consideration is the quality of the stone, whether it is of hard or soft texture, and whether it is porous or almost impervious to damp atmosphere. There are generally two parts in the stone building of walls, viz., "backing" and "facing." Fig. 1. The former is placed behind the latter, and is generally composed of rough stones, chosen by the builder for the body of the work, and built compactly with the best mortar. The facing of the wall, which is placed before the backing, is of the greater importance from an artistic point of view, as it is upon its quality and adaptability for architectural

design that it is chosen to occupy the position. It is the facing and the manner in which the stones are wrought that designate the class of work.

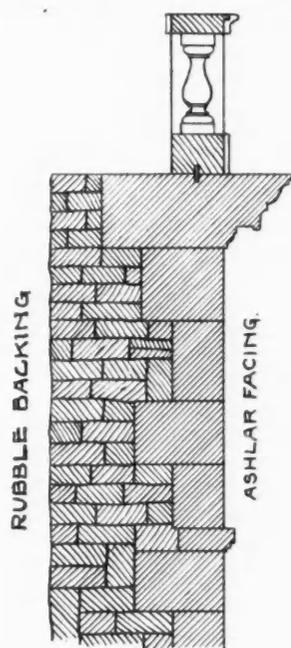


FIG. 1.

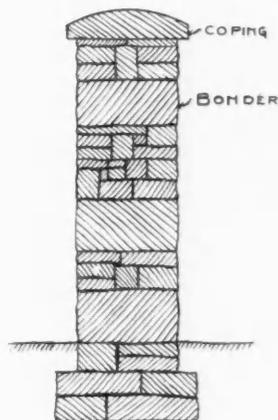
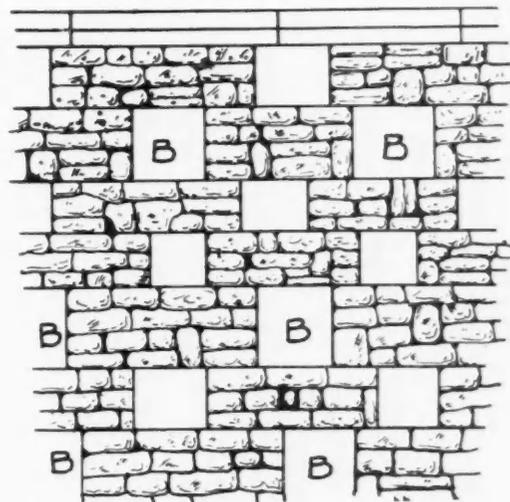


FIG. 2.

There are several varieties of stone building. The class known as "rubble work" is composed of stones of irregular size and shape that are placed in a wall after they have been sorted and rough-shaped to fit against each other, and hammer-dressed on their faces with the waller's hammer, as may be required for the quality of the work. In the rougher classes of

"rubble work" there is generally no selection of the stones, as the waller takes the stone nearest at hand that he thinks will suit his purpose, and packs in smaller stones between the larger ones. The rough nature of the work often leaves many spaces between the joints, both on the face and interior of the wall; these are generally packed up or pinned with "spalls,"



RANDOM RUBBLE BUILT TO COURSES

FIG. 3.

which are pieces hewn off the rougher stones in order to get them to fit into place. The spalls should not be placed in the heart of the work, as they are liable to drive like wedges when the superincumbent weight presses upon them, and consequently the facing stones may be forced out.

Particular attention should be given during the building of rubble, as well as in the case of all masonry walls, to see that they are all well bonded transversely, Fig. 2, and not built up with too thin scales on each face or tied together by "through stones" with the core or hearting filled in with small pieces. This is a very common fault with builders who depend upon the mortar to give stability to a wall, which, without it, would give way under its own weight. The stones best for rubble masonry are those that scapple

freely, and such as lie in four or five-inch beds. Basalts and those stones of a crystalline character are difficult to use, as they are apt to fly under the hammer; but granite and sand stones work well. Rubble may be described as either "uncoursed," "irregular," or "random-coursed," "worked-up-to-courses," or "coursed" according to the character of the stone at disposal. There are some stones, which, from their intractable nature and the absence of any distinct lines of bedding are especially adapted for uncoursed rubble, while other stones have lines of layers or courses, and therefore should be used in square rubble. Courses of random, common or rough rubble vary in depth from 12 to 18 inches. "Square-uncoursed," "random-coursed," "irregular-coursed," "snecked"—or—"squared-rubble"—are five names designating practically the same description of work. There is a certain amount of coursing, but it is not regular or continuous; "jumpers" are used, but no spalls; and, if careful attention is given to bond, the strength of the wall is considerable. Random-rubble with hammer-dressed joints and no spalls on face, often termed "cobweb" rubble, Fig. 4, is chiefly formed with broken boulders or field stones. The joints lie in all directions,

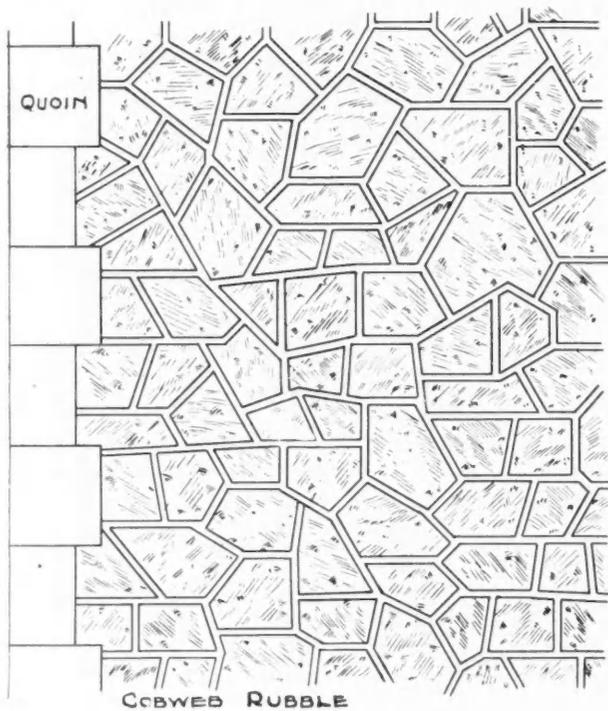


FIG. 4.

and it requires considerable experience and skill to make good work. In regular-coursed rubble, the courses vary frequently in depth, but are seldom more than 9 to 10 inches deep. Good stone found in thin beds in the quarry is commonly used. In the rougher description of rubble work, "lacing" courses are used to give the wall additional cohesive strength; these consist of two or more well bonded courses of masonry or brickwork laid at short vertical intervals.

"Block-in-course" or "hammer-dressed ashlar" is intermediate between the best rubble and ashlar. The

coursing is regular, and the blocks are roughly squared; it is often constructed of "shoddies," which are good stones less than 12 inches deep. The length of each stone is generally from three to five times its depth, and the breadth from one and a half to twice its depth. The exact proportions depend on the amount of resistance which the stone offers to cross

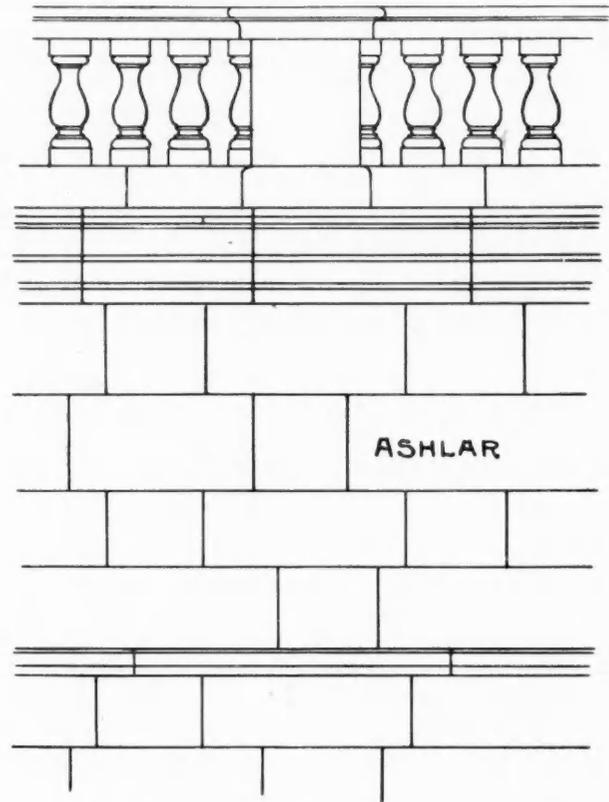


FIG. 5.

bearing. The same rules as to proportions apply to ashlar work.

Ashlar masonry (Fig. 5), is composed of large blocks, squared and regular in size, laid in courses varying in depth from about 10 to 14 inches; the bed joints should be out of winding, but not smooth, and should never be worked slack (hollow on bed) and underpinned with spalls. Such method of procedure concentrates the weight on a small area, and leads to crushing or to the joints flushing. Joints should be as thin as the class of work allows, but never so thin as to leave an insufficient bed of mortar to extend the pressure over the whole joint. Sheet-lead has sometimes been inserted in joints subject to great pressure, so as to equalize it, but it was found that it has a tendency to squeeze outward and flush the joints, thus more than counter-balancing any good it might do. The term "regular-coursed" is given to ashlar when the courses throughout the face of the building are all of the same depth. When the courses vary in depth, it is termed "irregular-coursed ashlar." If the courses are not continuous, but broken, it is "random ashlar," but the last class of work is uncommon. The courses should range with the quoim stones and

dressings. Joints can be made less than one-eighth inch thick. Plasterers' putty is frequently used to make the outer part of the joint; it extends inward about two inches. Previous to being set each stone is laid dry in its place to ascertain that it fits properly.

A wall built of solid ashlar is generally expensive, and so the term has come almost to imply a facing of ashlar with a backing of rubble or brickwork. The ashlar is frequently only four inches, and rarely more than six inches thick, with bond stones projecting into the backing. The ashlar should average about eight inches on the bed, and should bond transversely with

the back. Headers, having a length of at least two-thirds of the thickness of the wall, should be laid, one to every superficial yard of face. The backing, if rubble, should be built in courses, each leveled up to coincide with the ashlar courses. If of brick, the ashlar courses must be of suitable depth to allow of the same treatment. The greater number and greater thickness of the joints in the rubble or brickwork lead to more compression in the backing than facing, and this tends to cause the wall to bulge outward. This effect may be to a large extent avoided by building in cement or quick-setting mortar.

## Vapor System of Heating

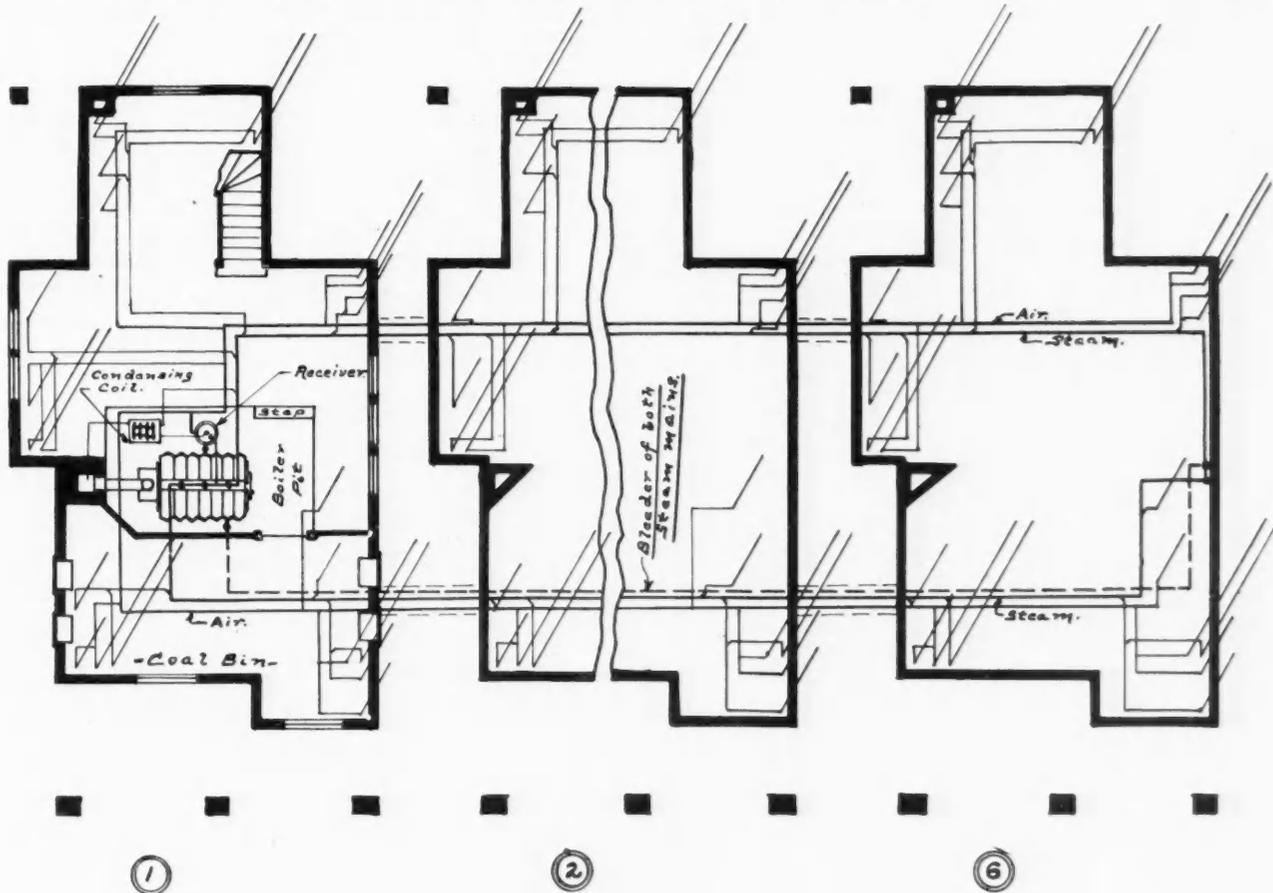
BEING THE FOURTH OF A SERIES OF ARTICLES ON HEATING OF VARIOUS CLASSES OF BUILDINGS—A CENTRAL HEATING PLANT—USEFUL DATA FOR CONTRACTORS

By Perry Weber Rathbun

A SYSTEM of vapor heating is often recommended for all classes of buildings, by the leading heating and ventilating engineers and contractors, also the most advanced architects, on account of its having proved satisfactory in operation and in general results. A vapor system consists of the ordinary hot water radiator, a regular steam boiler

and a condensing radiator with connection to flue, together with mains of sufficient size and capacity graded to alignment.

The accompanying plans show a vapor system which was designed by the writer and installed under his personal supervision. It is today, and has been the past two years, giving excellent satisfaction, proving



~Basement Pipe Plan~

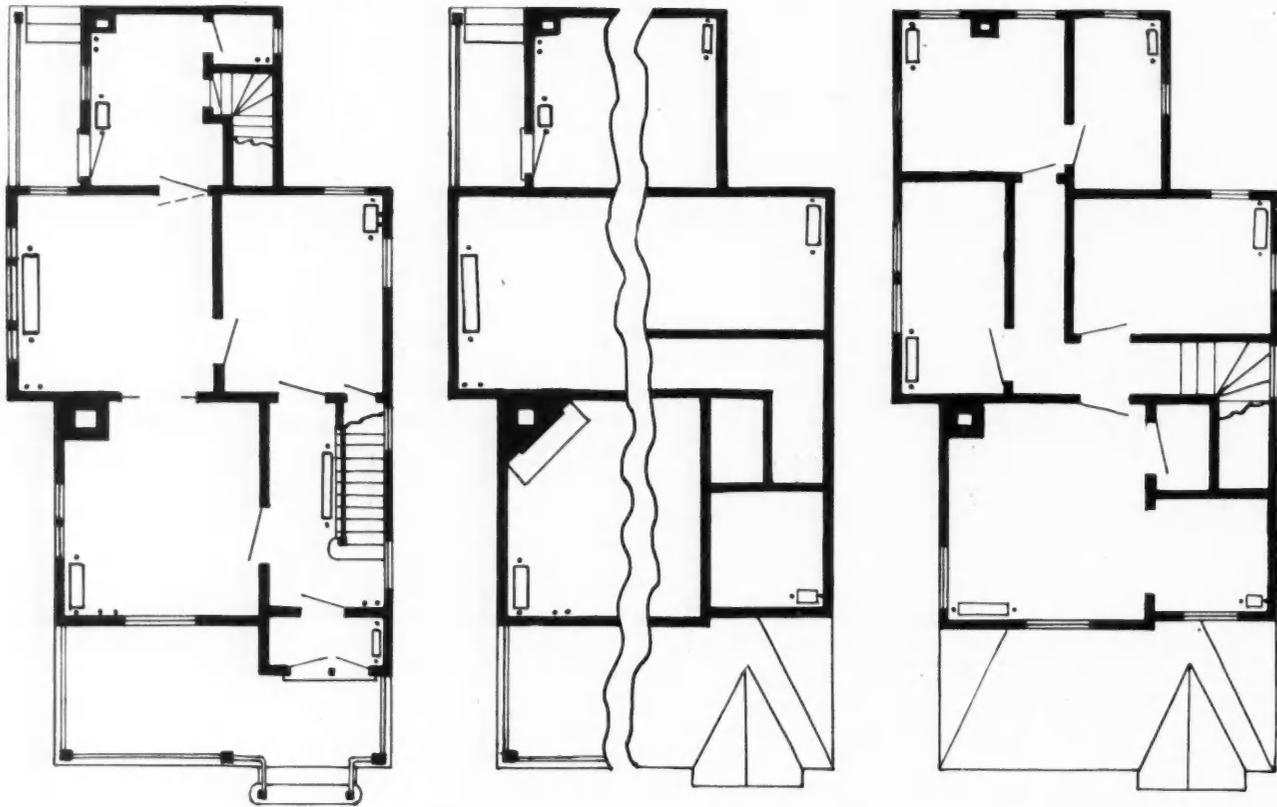
of sufficient capacity, a damper regulator, sometimes known as the receiving tank or casting, a diaphragm throttle radiator valve in the place of the common wood wheel radiator valve, an ordinary union elbow,

a great saving to the owner in the matter of coal bill. Before going further I wish to say that all flow connections to radiators are three-quarter inch, and all return connections half inch. The flow main is the

same size as for an ordinary steam system, and the return main one size smaller. Where more than one radiator is connected on one riser, the area of the taps should be computed. You will see by the accompanying layout that there are six modern residences of the same design, located alongside each other a distance of three feet apart. The boiler is placed in the corner one, which is the owner's home. Here is where the mains start and finish. This makes a central heating plant for the five residences occupied by tenants and for the owner's home. Totalizing the radiation, there would be approximately 335 feet per building. Of course it is understood that the corner house has more

from the entire system is returned into the open receiver and through that into boiler.

With most systems it has been found the most satisfactory way when installing the system, to carry the air line from the top of the receiver into a condensing coil, instead of direct to the flue. By so doing the condensing coil creates a draught and draws all the air from the system, at the same time drawing vapor into the radiator. There is a relief valve with a heavy copper float, which will generally operate at from four to six ounces pressure, placed in a connecting line from the steam space on the boiler to the top of the receiver, so that, any time more than a sufficient amount of



~First Floor Radiator Plan~

~Second Floor Radiator Plan~

exposures than the others, so requires a larger quantity of radiation. This job was installed, all material being furnished complete, for approximately 63 cents a foot.

The receiving tank or specialty, of which there are quite a number on the market at the present time, is placed at the side of the boiler. This is generally equipped with a gauge, which is marked off in ounces from zero to sixteen. The water line is the same in boiler and receiving tank, which has an opening at the bottom with connections to the system return at the boiler. As this receiver is always open to the atmosphere, there is a free circulation of water from boiler to receiver and from receiver to boiler. The main return of the system is connected into a water seal at the top of the receiver, and all condensation

vapor is generated, the pressure of this vapor will raise the float and allow the surplus vapor to pass into the receiver, thereby condensing same and venting the particles of air to the atmosphere. The receiving tank is equipped with a tight fitting drum or float, which is regulated by the amount of vapor used by the system, which averages from two to three ounces. This drum or float has connecting chains to the draft and check door and regulates them at the slightest depression, caused by the using of more or less vapor. The above is a practical means of securing fuel economy.

The diaphragm throttle valves are arranged with a number of holes of various sizes. The sizes of these holes are governed by the size of the radiator to which it is to be connected. This valve is connected to the top of the radiator for convenience sake; while the

old style valves are at the bottom of the radiator. The throttle can be so set as to heat the entire radiator or only a portion of it.

The condensing coil varies in size according to the quantity of radiation installed. From the top of the condensing coil at the opposite end from which the connection is made from the receiver, an air line is taken direct to the chimney, as it is natural for warm air to rise. This helps to create a draught in the flue and tends to make a vacuum throughout the entire system.

The following is a comparison of a vapor system with the ordinary steam and hot water heating:

Hot water system requires a large quantity of water and the consumption of much fuel to heat it. The hot water radiator, which becomes cracked and leaks, would cause much damage to walls, side of same and ceiling below. If a hot water system is operated under pressure, there is great danger of an explosion; if open to the atmosphere, the pipe lines must be many sizes larger. A compression air vent is used to vent the air, which sometimes is left open by mistake, and the surrounding decorations are ruined by a forcible stream of water.

With the vapor system there are none of the above faults, as the boiler and receiver require only enough water to fill to the water line, which, of course, requires only a small amount of fuel; vapor can be drawn through a cracked radiator or one with a small hole in it without causing the slightest damage to any surrounding decoration. The author has in mind at the present time a system which is being operated under the above conditions very satisfactorily. There is no pressure to contend with, as the operation is effected by means of natural conditions. There is no danger on account of an explosion, as the system is open to the atmosphere.

An ordinary steam system requires from one to five pounds pressure under modern conditions; and with it there is sometimes a most distressing noise, such as a nerve jarring rattle or a thump in the steam pipes and radiators, caused by the live steam coming in contact with the cold water. It is impossible to regulate a steam system perfectly, as it is either too hot or too cold. The majority of steam systems cause their owners much trouble and require considerable attention.

With a vapor system, which operates under only a few ounces pressure, the operation is noiseless, and the system requires little attention and furnishes the heat always just right throughout the entire building. When there is regulating of the heat to be done, the individual will operate the valve on the radiator in the room which he occupies.

It should be understood in studying the above described system that vapor requires 30 per cent more radiation than steam, and 30 per cent less than hot water. The following data will be found very useful to any contractor or practical builder in checking and

approving work done under sub-contract. It has been used for many years by prominent heating engineers, and has been found very satisfactory. Same is quoted from standard authority, but is not guaranteed.

SIZES OF CHIMNEYS

Hot Water	Steam	Sizes
450' Radiation	300' Radiation	8x 8"
550' Radiation	350' Radiation	8x12"
650' Radiation	450' Radiation	8x12"
1000' Radiation	600' Radiation	12x12"
2000' Radiation	1200' Radiation	12x12"
3000' Radiation	1600' Radiation	12x16"
4500' Radiation	2300' Radiation	16x15"
6000' Radiation	4000' Radiation	16x20"

SQUARE FEET OF HEATING SURFACE IN STANDARD WROUGHT IRON PIPE

In. in Diam.	Length per Sq. Ft. Rad.	In. in Diam.	Length per Sq. Ft. Rad.
1"	2.90'	2½"	1.32'
1¼"	2.30'	3"	1.09'
1½"	2.01'	3½"	.95'
2"	1.61'	4"	.84'

SIZES OF EXPANSION TANKS

Sizes	Gal. Cap.	Rad.	Sizes	Gal. Cap.	Rad.
10x20	8	250'	16x36	32	1300'
12x20	10	300'	16x48	42	2000'
12x30	15	500'	18x60	66	3000'
14x30	20	700'	20x60	82	5000'
16x30	26	950'	22x60	100	6000'

SIZES OF STEAM MAINS

Direct Rad. Sq. Ft.	1 Pipe Work	2 Pipe Work	Direct Rad. Sq. Ft.	1 Pipe Work	2 Pipe Work
130'	1½"	1¼x1"	2000'	5"	4½x4"
260'	2"	1½x1¼"	2600'	6"	5 x4½"
420'	2½"	2 x1½"	3700'	7"	6 x5"
660'	3"	2½x2"	5200'	8"	7 x6"
900'	3½"	3 x2½"	6900'	9"	8 x6"
1200'	4"	3½x3"	8500'	10"	9 x6"
1600'	4½"	4 x3½"			

SIZES OF HOT WATER MAINS

Direct Rad. Sq. Ft.	Pipe, In.	Direct Rad. Sq. Ft.	Pipe, In.
100 to 130	1¼"	960 to 1250	4"
130 to 200	1½"	1250 to 1600	4½"
200 to 325	2"	1600 to 1950	5"
325 to 410	2½"	1950 to 2400	5½"
410 to 750	3"	2400 to 3000	6"
750 to 960	3½"		



**"Where Ignorance Is Bliss"**

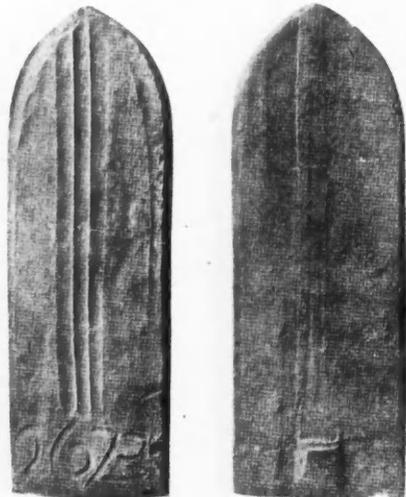
"But, after all, don't you think a good education is an essential in business success?"

"Not much," replied the wealthy man; "it was my poor education that gave me my start. I done a job of work for a rich fellow, and made out my bill for 'too' dollars; besides my bad spelling, I forgot to cross the 't.' He sent me a check for \$100."

## Framing for Tile Roof

DEVELOPMENT OF BURNT CLAY AS A ROOFING MATERIAL—PROPER FRAMING OF THE ROOF AND ITS PREPARATION TO RECEIVE THE TILE

**G**REAT advances are being made in the art of building; new materials are made use of, and old materials in new form bring back again the sturdy, substantial qualities of the building of earlier days. This is true in a very marked degree

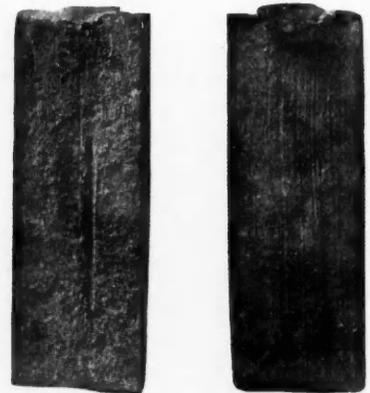


Tile from Switzerland, Made in 1673

with roofings. The red tile roofs of Holland are famous; in many places the crude burned clay slabs of the seven-teenth century still defy the storms and present the fresh, ruddy appearance of youth. The accompanying cut is an illustration of a tile made in Switzerland in the year 1673, and applied to a building about that time. This tile was secured by a representative of the National Roofing Tile Company, of Lima, Ohio, and it is through their courtesy that the illustrations are here given. In 1902 the roof, of which this tile

was a part, was being removed for the purpose of again applying it to a building, to be erected in the place of the original building.

Clay tile has also been used in this country from the first, both the imported and the crude, home-made product. The development of this roofing material is strikingly apparent by comparing the straight slab, made over eighty-five years ago and applied to a building



Early American Roofing Tile

in Germantown, Ohio, with the double interlocking tile as it is made today, which has a perfect double interlock at both ends and sides, is rain, snow and fireproof

The color is the natural "terra cotta" color of burned clay. The shades vary, according to the burn, from a light red to a rich dark red. There are also the full glazed tile colors of buff, brown or green.

There are some special features in regard to the proper framing of a roof and its preparation to receive the tile that should be noted. Rafters should be at



Big Four Passenger Station, Hartwell, Ohio. P. E. Robinson, Architect



M. E. Church, West Carrollton, Ohio. Brown & Davis, Architects

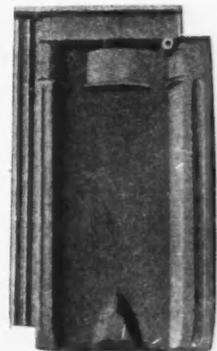
least 2 inches by 6 inches and 24 inches on centers, or closer according to length of span. Sheathing should be securely nailed, and to be either of  $\frac{7}{8}$  inch common lumber, laid tight and well joined together or matched and dressed sheathing securely fastened. Roof pitch may be as low as one-fourth (provided slope is not of extreme length) and from that to the vertical.

Before the tile are laid, entire roof should be carefully covered with one layer good roofing felt, laid to lap two inches in every course, and to be turned up against the sides of building at least four inches. If building has a box or cornice gutter, felt should lap over top of metal at least four inches, and the same at valleys. After felt is so laid, same should be stripped with good white pine plastering lath, laid parallel, true and straight, to facing board at eaves. The top edge of first line of lath should be 12 inches above the lower edge of facing board or starting strip; and thereafter not less than 12 inches nor more than  $12\frac{1}{4}$  inches space allowed from the top edge of each line of lath to the top edge of the next above and parallel. The tile hook over these strips; and each tile is fastened with a seven penny galvanized or copper wire nail.

All ridge boards should extend three inches above top of sheathing, and hip boards two and one-half inches, and both to be of seven-eighths inch common lumber. Facing board or starting strips at eaves under bottom end of tile will extend up above the top

edge of sheathing one and five-eighths inches. In all cases facing boards at gable ends should be flush with the sheathing.

In some cases an open roof construction is used; that is, no sheathing under the tile. In that case there must be a space of twelve inches between the lower edge of the lowest purline to top edge of the purline next above it and thereafter a space of not less than twelve and one-fourth inches between the top edge of each purline to the top edge of the purline next above it. These purline strips should be  $\frac{7}{8}$  inches by 2 inches or over, the bottom strip  $1\frac{1}{4}$  inch higher than the strip next above it, *i. e.*,  $2\frac{3}{8}$  inches by  $\frac{7}{8}$  inches. In this construction the hip and ridge strips should be the same as if building were sheathed.



Modern Interlocking Roofing Tile

+

I have been a subscriber to the AMERICAN CARPENTER AND BUILDER since the first issue, and can say with truth that I consider it the most helpful and practical publication for carpenters and builders that has ever been printed. You can count on me as a subscriber as long as you print the paper and I am able to read it.—  
GEO. B. NARREGANG, Aberdeen, S. D.



# CONCRETE CONSTRUCTION



## Reinforced Concrete Stairs

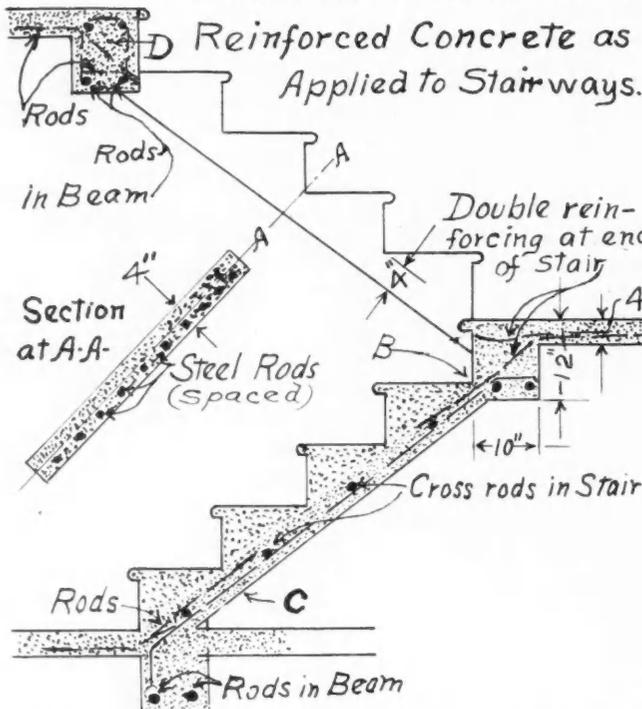
ADVANTAGES OF THIS FORM OF CONSTRUCTION—BEST METHOD OF REINFORCEMENT—CORRECT DESIGNS FOR DIFFERENT LOADS AND SPANS

By Fred W. Hagloch

CONCRETE for stairs is rapidly taking the place of other materials in buildings of every kind. Recently I designed a concrete stair for a frame dwelling, which is certainly uncommon; but the owner believed it a safety in case of fire, his residence being three stories high, all wood except stairs, which are supported on brick piers.

A few simple instructions as to the stair load and some remarks concerning the weak points of stairs built several years ago, together with a description of the reinforced concrete stairway as it is built at present, will be the extent of this article.

In the drawing is shown a stairway with platform and return, that being the type mostly used in public



buildings and apartments; but this stairway is equally well adapted to the long single flight from floor to floor, so common in dwellings or business blocks.

This design differs from the earlier form in the use of double reinforcing rods at the upper and lower ends of the flight, one set to tie the stair slab to the floor slab through the beam, the other extending the full length of the stair slab to tie it to the beam rods. This double reinforcing requires only a few additional rods,

and adds much strength to the weakest spot of the stair slab.

The thickness of the stair at its thinnest place, A A, must always be taken as the thickness of the stair slab in calculating its strength; the treads have no strength but are dead load, therefore it is well to make the treads hollow if possible.

For single flight stairs less than sixteen feet long and less than five feet wide I always use a four inch slab, unless for very heavy usages, and support it so that no two supports are more than ten feet apart.

This slab is reinforced with half inch square twisted or five eighths round rods, spaced as follows: For dwellings ten inch centers; for business blocks six to eight inch centers; and for public halls and factories, two to four inch centers. These rods have one inch of concrete under them. At every tread is a cross rod of same weight tied to each with No. 10 wire.

The full length rods all pass over or hook onto the rods in the cross beams; and the double reinforcing consist of rods about five feet long, passing over the beam with the ends projecting equally into the stair and floor slabs.

Examining concrete stairs, built without this additional reinforcing, has in several instances revealed the fact that cracks, if any, appear near the ends of the slab, in fact, within ten inches of the supporting beams, most frequently at the point marked B, but occasional at C.

Beams of size shown for spans less than ten feet between supports are amply strong if reinforced with two rods one inch diameter and placed on two inches of concrete; however, for long flights four rods should be used, as at D, the rods being looped with strap iron every two to four feet lengthwise of the beam.

The composition of the concrete should not be weaker than one part cement, two sand and four aggregates. When treads are to be cement finish it should be done same as side walks.

When treads are covered with marble or slate, a binder or light weight concrete is preferable for the treads only, and when covered with wood, locomotive cinder concrete should be used, as it can be penetrated readily with finishing nails. Great care must be used in mixing and tamping concrete for stair work.

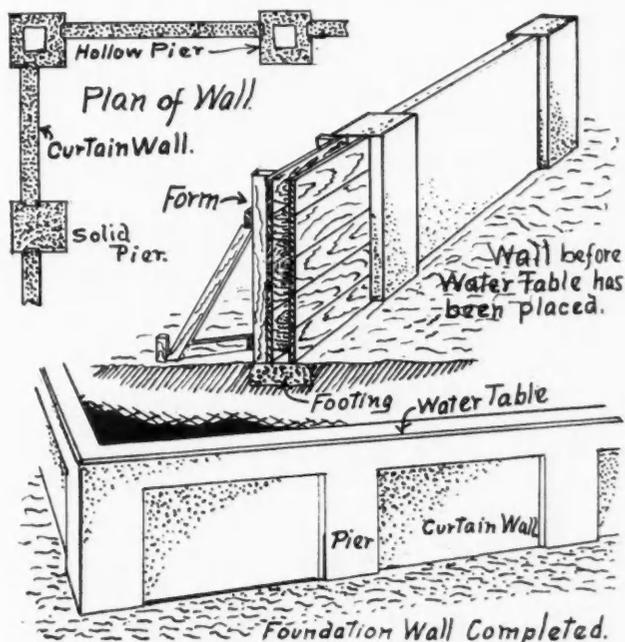
## Concrete Foundation Walls

METHOD OF CONSTRUCTION WHICH SAVES LABOR AND MATERIAL—SPECIAL ADVANTAGES WHERE BUILDING CODE PRESCRIBES THICK WALLS

**T**HAT many dollars can be saved in building cellar or foundation walls I have recently proved by using the style of wall here illustrated, which does equally as well in hollow block as in monolithic construction. The economical features are not confined alone to the saving of concrete but include the forms also, as scarcely any form is necessary for the footing; and after that the piers are built, requiring but a few forms which can be used over and over again without resawing or wasting lumber.

I always groove these piers, as shown in plan, and use but a few curtain wall forms for the foundations of buildings less than 30 by 40 feet, spacing the piers from six to eight feet apart. Between these piers the curtain walls are placed after the piers become hard.

On small work, where only two or three men are



employed, no stop need be made if four piers and three sections of curtain walls forms are used.

The water table is made after the piers and curtain walls are self-sustaining.

By the use of hollow blocks for piers and monolithic curtain walls, this method of construction is surprisingly rapid and a great saving of cost, especially in localities where the hauling adds much to the cost of concrete.

The appearance of the wall is preferable to the straight plain walls. Besides, when building codes class concrete with rubble stone walls in thickness, only the piers need be the thickness required, while the curtain wall is usually acceptable if six inches thick. I have made them as light as four inches, and when ordered to test, loaded a single hollow block pier with sufficient pig iron to equal twice the weight of the entire building, which gave a factor of

safety large enough to satisfy any inspector of the dwelling; and, there being fourteen piers in the foundation, the supporting strength was equal to twenty-eight times the weight of the building without placing a pound on the curtain walls.

In cities where 12 to 18 inch foundation walls are required to comply with an ordinance passed years ago by a council that knew cement only as common lime, I find the average inspector will accept the method here shown, but may stipulate that one pier must be tested to half the weight of the building and contents to be erected upon it. Such test will cost but a trifle and need be done but once in each city.

Since adopting this method a single wagon carries all forms and tools from one job to another; the cost of these forms, made of surface lumber, is about \$18.00, while the waste of lumber on a complete form for a dwelling foundation wall 30 by 40 by 7 feet high, for a 12 or 18 inch wall, will be \$25, to say nothing of discoloring about \$150 worth of good lumber.

By adding about one pound of ultramarine blue to each barrel of cement used for curtain walls a beautiful effect is obtained, as it gives the piers and water table a lighter color and more massive appearance.



### To Remove Stains from Concrete or Brick

Should any reader use the following formula for removing efflorescence or stains and find it to fail we would consider it a favor to be informed of the conditions under which it was used, as it has been tried in almost every kind of work, temperature and condition, and there has not been an instance where it failed to remove even the most stubborn stain or alkali efflorescence.

Dissolve one ounce oxalic acid in one pint rain water and add sufficient wheat flour to make a thin paste, which is applied to the discolored surface with a soft brush; let this remain four or five days, when it should be washed off with clean water.



### Merely Imitations

"Our talented soubrette," announced the stage-manager, "will now endeavor to entertain the audience with a few take-offs."

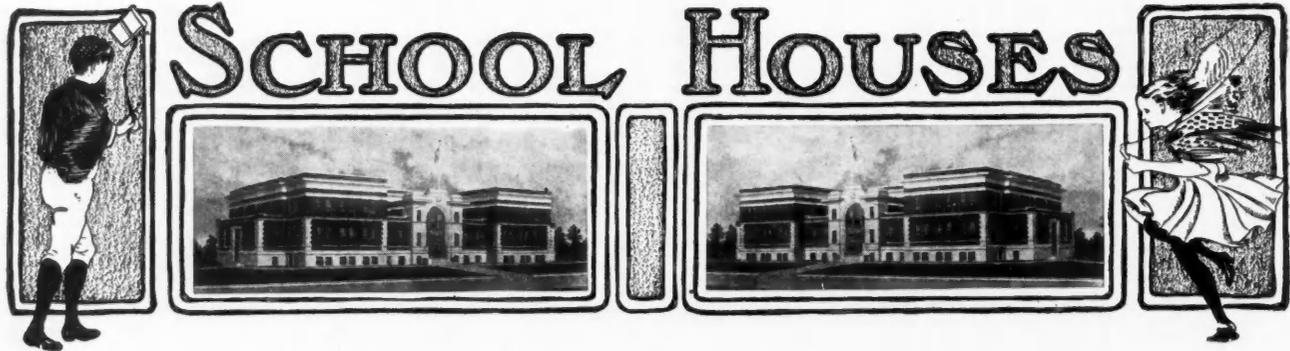
"Come along, paw," snorted Maw Hoptoad. "I hain't a-going' to stand fer no undressin' scene."



### Buttermilk

"Which is the cow that gives the buttermilk?" innocently asked the young lady from the city, who was inspecting the herd with a critical eye.

"Don't make yourself ridiculous," said the young lady who had been in the country before and knew a thing or two. "Goats give buttermilk."



## Well Planned High School Building

PERSPECTIVE AND FLOOR PLANS OF A SMALL MODERN HIGH SCHOOL—ORIGINALITY SHOWN IN ARRANGEMENT AND DESIGN

**A**N ESPECIALLY attractive design of a high school building, appropriate for a small town or city, is presented this month, from plans drawn by G. W. Ashby, architect. The style is simple—consistent with economy; but still the general effect is neat and artistic. It is a two-story building, almost square, being 75 by 85 feet. A good quality of dark brown paving brick is used for the exterior walls, with trimmings of a light colored pressed brick. The classic cornice of galvanized iron is painted and sanded to match this in color. Smooth faced Bedford lime

chemical and the physical science work; and from his private laboratory, located as here shown, he is enabled to supervise work being done in both departments at the same time. These laboratories are very well lighted and ventilated.

The second floor provides for a large drawing room, a class room and the principal's room, besides the large assembly hall. This has at one end a raised platform with a small room either side, all making an arrangement that is very good for public exercises, and one that makes possible the successful stag-



stone is the material of the basement walls. The roof is of slate.

By referring to the plans it will be seen that ample provision has been made for exits, also that the corridors are straight and broad.

The basement is finished and equipped in a very serviceable manner with lunch and locker rooms, toilet rooms, storage rooms and heating plant.

On the first floor are three good sized class rooms and the science laboratories. The arrangement of those on the right of the corridor is especially good. A single instructor usually has charge of both the

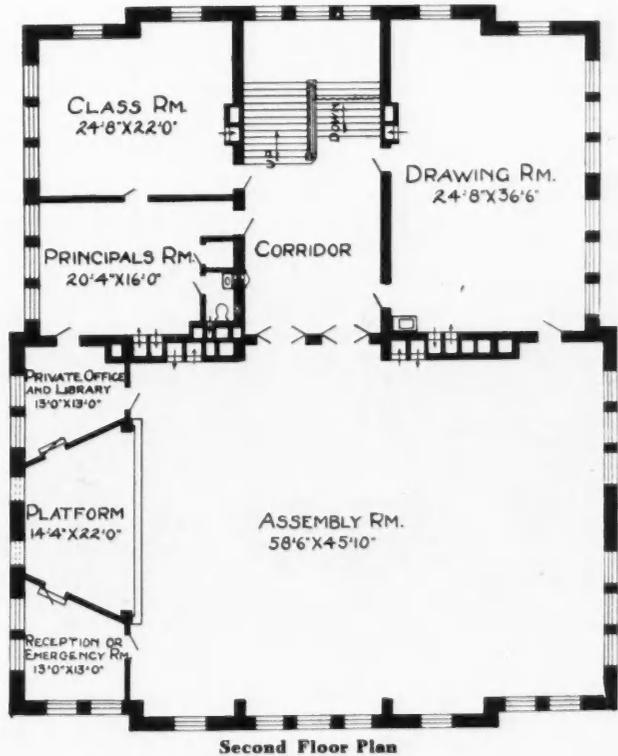
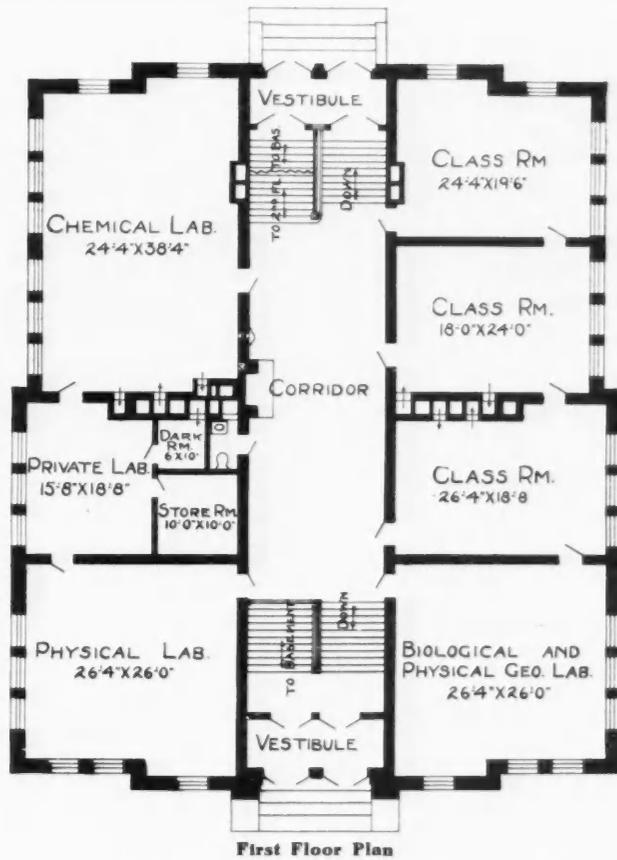
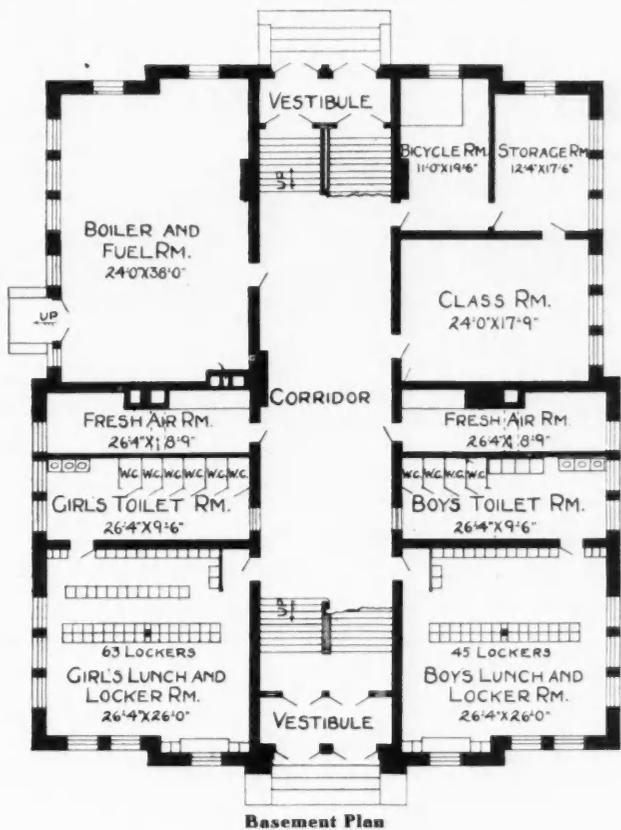
ing of high school theatricals. Also, the small room, connecting with the principal's room, can be used most acceptably as a private office and library.

Plans of the basement, and the first and second floors are given on the following page.



### Senate Office Building

If present plans are carried out, the new Senate office building will be a palace. Senators will not have to dream of dwelling in marble halls; they will be established in quarters as magnificent as those pictured



in any ordinary dream.

The House will have to arise and move more swiftly than it can under the present rules if it keeps pace with the Senate in this matter of a magnificent office building. Already, there has been appropriated \$2,500,000 for the Senate building, and an item will be put in the sundry civil bill allowing \$1,500,000

more, making a total of \$4,000,000 for the structure complete.

Richness, elegance and luxuriousness will be stamped all over the Senate office building when it is finished, as it will be at the opening of next session. It will have an elaborate scheme of mural decorations. Some of the rooms will have decorations that vie with the mural paintings in the Library of Congress. Artists of renown all over the country will be asked to submit designs.

Instead of having small electric cars running from the Senate office building to the Capitol, a moving walk or platform will be provided. The House office building will be reached in like fashion.

The House office building cost \$3,500,000. But it is simple in design. The House building is a third larger than that of the Senate.

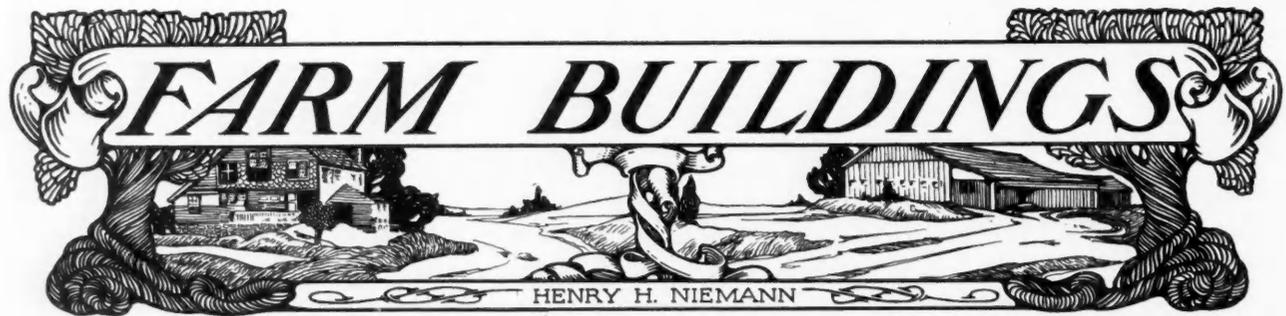
### A Good Cement for Glass

Melt a little isinglass in spirits of wine; add a small quantity of water; warm the mixture gently over a moderate fire. When mixed by thoroughly melting it will form a perfectly transparent glue, which will unite glass so nicely and firmly that the joint will scarcely be noticed by the most critical eye.

### The Why of Jonah

"I wonder why Jonah's name is used as a symbol of hard luck?" said one fisherman.

"That's easily explained," answered the other. "He let the biggest fish on record get away."



## A Residence Barn

PERSPECTIVE AND PLANS OF A VERY ATTRACTIVE BARN SUITABLE FOR CITY OR SUBURB—SPECIAL FEATURES SHOWN

**W**E ARE this month illustrating a residence barn to accommodate three vehicles and three horses. The carriage room is of good proportions and has a wide door at front and rear. The harness room and man's room are of good size, and conveniently located.

The construction of this barn is of the balloon frame; there is a concrete foundation. The ground

walls sided. The roof is of moss green stained shingle, which in connection with the white siding, grey cement and brown stained trimmings, makes a very striking exterior that would do credit to any neighborhood where the commonplace board-and-batten barn would be objectionable. This barn, though somewhat artistic in its outline, can be built at a reasonable price, and contains no work that can not be executed



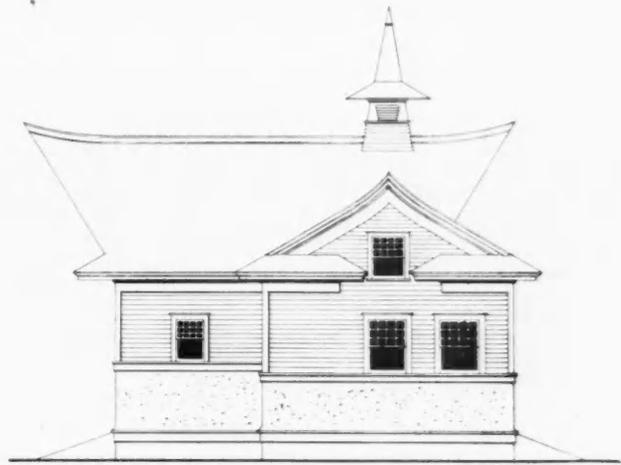
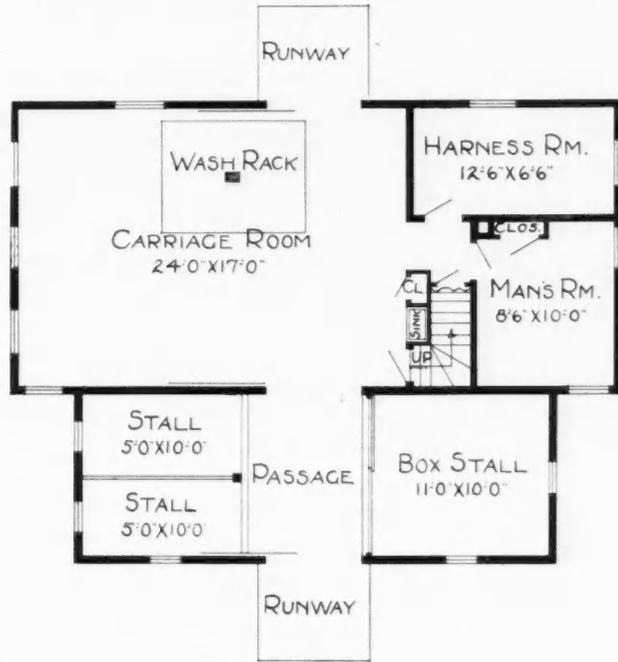
floor is of cement and all rooms are cement wainscoted up to the window sills, making the walls waterproof.

The exterior design is of a modern style with a Japanese roof. The side walls are rough cast cement up to the windows and the balance of exterior vertical

with materials that can be bought from the stock of the lumberyard.

The interior makes very good provision for two or for three horses, there being two single stalls and a large box stall. The man's room is well finished and

is very pleasant. The harness room is large and nicely lighted. There is a large convenient loft above for



hay and grain storage. The entire barn is exceptionally well lighted and ventilated.



**Edison's Storage Battery**

Mr. Edison's digression into the field of cement and concrete construction has not made necessary any cessation in his interest in electrical invention and discovery. The perfected storage battery on which he began work about a year ago is nearly ready to place on the market. "It will mean the elimination of the horse from the streets of our cities, except for pleasure," he said. "You know the horse is the greatest nuisance of life in the cities today. With a compact storage battery of almost unlimited capacity, the



traffic problem will be solved and the automobile will become so cheap as to be within the reach of every man who can now afford to own a horse."

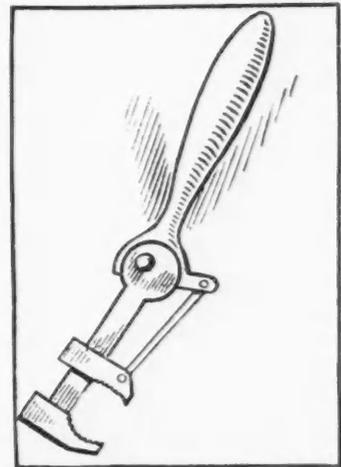


**Automatic Wrench**

In a monkey-wrench recently patented, an Indiana

man has designed a tool which is much simpler in operation than the wrenches in common use. By referring to the illustration it will be seen that ad-

justment of the jaws to fit the nut is not necessary, as the jaws automatically grip the nut as the handle is operated. After placing the jaws around the nut the handle is pulled in the direction the nut is to be turned, causing the movable jaw to move toward the other jaw. It will be obvious that the more force exerted upon the handle the greater will be the grip of the jaws. While using this tool the mechanic can work with greater speed than when compelled to adjust the jaws each time. It is claimed that the wrench is equally useful when operating on piping.



Jaws Adjust Automatically



**A Justifiable Desire**

Judge Dowling—"Have you anything to say against the verdict?"

Prisoner (who has received life-sentence)—"Only that if I don't live to serve it out I wish you would put my attorney in to finish it."—*Judge.*



**Unanswered**

"I want to ask one more question," said little Frank as he was being put to bed.

"Well," acquiesced the tired mama.

"When holes come in stockings, what becomes of the piece of stocking that was there before the hole came?"



**A** CONTRACT that doesn't hold at both ends should always be avoided.



Edward Hurst Brown

## Estimating on Painters' Work

FACTORS THAT SHOULD BE TAKEN INTO ACCOUNT—HOW A PRACTICAL COST-BOOK BASED ON EXPERIENCE MAY BE COMPILED

**P**ROBABLY no other building trade mechanics are so careless in making estimates or so in the habit of guessing at the cost of their work as the painters. Perhaps one reason for this is that their work is not done from drawings, like that of the carpenter, the mason or the ironworker, and hence that habit of carefulness and exactness which is developed from following a plan is lacking in their training. The surface upon which their paint is to be spread is ready for them before they begin work; all they have to do is to cover it. And unfortunately for the painter, he very often finds things in the house that need to be painted or varnished in order to finish them, that no inspection of the plans would show him, and even the most careful reading of the painter's specifications would fail to indicate. For example, the architect rarely thinks of mentioning the paneled wainscots, the mantels that are to be made by the carpenter, or furnished in the white, or even the shelving or elaborate fittings for pantry or linen closet, under the heading of the painter's work.

### Hasty Estimate—Poor Work

If the painter is to know all that will be in the building for him to finish, he must carefully read the entire specifications through, from beginning to end, and make note of every item in the work of other mechanics, that will come to him to finish. If he does this, and makes due allowance for the cost of finishing, the chances are that some other competitor who has overlooked these hidden items will underbid him and get the work. If he fails to take these things into account in advance, he will find when the work is ready for him, that he has estimated too low, and as human nature is just as strong in the painter as in anybody else, and as no one cares to give work for which he gets no return, the temptation is certainly very great for the painter to make good his error by furnishing inferior work and material to that called for by the specifications.

It is impossible, even for the expert, to detect wheth-

er a cheap rosin and benzine varnish costing eighty cents, or a good kouri gum varnish, worth two dollars and a half a gallon has been used—until time has caused the cheap varnish to crack and become unsightly. And every painter knows that a coat of glue size followed by one or two coats of cheap varnish will make a job that will look very well indeed—until after the bill has been paid. After that—well, the builder or the architect will be apt to get the blame for having specified inferior material, because the painter who has been guilty of such practices will never admit that he has used anything different from what the specifications called for.

### Add in the Shop Expense

But this is merely incidental to calling the attention of the painters to the fact that is well known by every leading city painter who figures on large work, that in order to do a profitable business it is necessary to measure every job carefully and estimate the cost as closely as possible before tendering a bid. And in addition to the actual cost of labor and material, the painter must make an allowance for the non-productive expenses of carrying on his business. For example, there is the rent of his shop—for even if he uses his barn for a shop, and owns his house—he is entitled to some compensation for its use for business purposes. There is wear and tear on brushes, ladders and scaffolding, cartage or the cost of keeping his horse and the repairs to his wagon, and his telephone bills. And then there is the item of insurance. And above all, the contracting painter must take his own salary into account, for he is entitled to compensation for his services, whether he works with his men or not. Every painter must figure out for himself the percentage that he should add to the cost of labor and materials to cover these incidental expenses, but experienced painters have placed it all the way from ten to twenty-five per cent, and the latter figure is nearer correct for any but a very large business.

But to come back to the subject of estimating, very

many painters do little more than guess at the cost of the work. If they are asked to figure upon a set of plans; they measure the length, width and height of the building, count the number of windows and doors and read the specifications to get a general idea of the character of the work, and guess it will cost about so many dollars. It is the same way when they come to figure on painting a house that is already built. The metal ceiling man would not think of giving a price for putting up a new ceiling unless he measured the size of the room and carefully figured out the cost. The painter, on the contrary, will glance at the ceiling and guess at the cost of painting it. Perhaps there may be some excuse for doing this, because different surfaces will require differing quantities of material per square yard, on account of the difference in absorption. And in addition, the position of the surface and the difficulty of getting at it to do the work will largely affect the quantity of labor required. But even these elements of uncertainty do not excuse the painter from his usual carelessness in the matter of making estimates.

#### How to Make a Labor Cost Book

While it is impossible to prepare any general table of estimates that would be applicable to all localities and grades of work, on account of the differences in the cost of labor in different places, it is perfectly practicable to lay down general principles by which the painter can prepare for himself a series of estimating tables based on his own experience. While the square yard forms a convenient basis for estimating the quantity of material to be employed, since one can readily determine how much surface a given quantity will cover, and can average several different surfaces, painted under different weather conditions in order to obtain this approximate material cost, the question of the labor involved is a different matter. By keeping careful record of the time required to paint a plain surface, say for example the side of a two story house, and by dividing the time, expressed in minutes, by the number of square yards, you will get the average time in minutes required to paint a square yard of weatherboards on a building of this character, and the cost per square yard of weatherboarding can thus readily be obtained for current wages and quickly adjusted to suit any changes in the wage rate. It will be found that the cost per square yard above the second story, where longer ladders or swing staging must be used, will materially advance above that of the lower stories.

By observing the cost or time required to paint the cornice of an entire house, you can readily obtain the cost per lineal foot. Keeping a sketch of the cornice in a note book, with the girth noted thereon, and the cost per foot, will give a basis upon which cost of painting similar cornices may be estimated, taking girth into account, and remembering that the cost of painting a cornice that projects very far is materially greater than that of painting a cornice of the same

girth, but with less projection. In the same way, records—together with sketches—should be kept, showing the actual cost per lineal foot of different kinds of porches, balustrades, porch floors, steps, fencing and the like.

By keeping a record of the time required to paint all the outside blinds of a house, it is very easy to ascertain the average cost of painting a single pair. In the same way the cost of painting a window or a door can be obtained. With these data on hand, and similar information in regard to the cost of painting baseboard by the lineal foot, wainscot by the square foot, or stairs by the single step, and so on, we have the data on which a fairly accurate estimate can be made of the labor cost of painting any given house. New problems as they occur should always be carefully noted and a record kept in the cost book. Having the labor cost, and the cost of material required, which can be obtained in like manner—adding to these the percentage necessary to cover the running expenses of the business, it will be easy for the painter to figure in advance, the actual cost to him of the work in question, and to this add the percentage of profit that he feels he should have, in order to obtain the price that he should quote in his estimate. He will then know that if any man underbids him very much he has either made a mistake or has omitted to allow a sufficient percentage for the non-productive expenses incurred in running his business. Little variations in estimating on the price of work of any kind may reasonably be expected, but when there is a difference of more than ten or fifteen per cent between the highest and lowest bidders on a job of painting, there is reason to suspect that the lowest man either has made a mistake which he will try to cover by slighting the work, or he has, in fixing his price, done so with the deliberate intention of doing inferior work to that called for by the specifications.

+

#### An Improved Fire Escape

T. A. Womack has applied for a patent on an improved fire escape apparatus. The device is composed of a shaft with fireproof lining which runs from pit to dome in the building in which it is constructed. Inside the shaft is a spiral stairway, and in the center is a water main furnishing a spray to cool the shaft when necessary. A skylight at the top furnishes light during the day, and it can be lighted by electricity during the night. Self-closing doors open into the shaft, giving access to the stairway at each floor. The exit from the shaft is located in the basement, and passengers do not expose themselves to the heat at any time. The particular feature of the shaft is that if the building in which it is constructed, or any part thereof, is destroyed, the shaft will stand individually.

+

**T**HERE is room for neatness in driving a nail just as well as in pushing a plane.



### Foundation for Stand Pipe

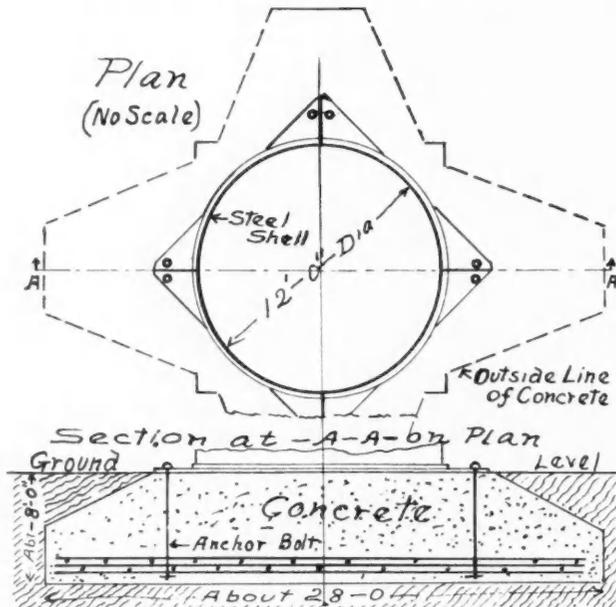
To the Editor:

St. Marys, Kan.

I am to build a steel stand pipe 150 feet high by 12 feet diameter, and would like to know the size and proper design for a concrete foundation for it; also the proper thickness of steel to make the tank.

E. S. ROBERTS.

Answer: For a stand pipe giving pressure to water mains, half inch steel plate the first thirty feet and a reduction of one-sixteenth inch every thirty feet will make top plates fourth inch; and the empty tank will weigh about forty tons and have a capacity of 525 tons of water. This requires a foundation of sufficient area to carry 565 tons plus the weight of the foundation and plus 35 tons for wind pressure. The



weight of the foundation being estimated at a half ton per square foot, which for a 12 feet diameter circle will be 60 tons, the entire load will be 660 tons, or about six tons per square foot. As moderately dry clay soil will sustain but two and one-fourth tons per square foot, 350 square feet of foundation area must be provided, which if made circular would be nearly 22 feet diameter. The accompanying drawing shows perhaps the best method, although covering a larger area than computed above.

The foundation depth must vary, depending upon the solidity of the soil. The reinforcing should not be less than one inch rods; and the anchor bolts, eight in all, not less than 2½ inch diameter to allow for deterioration. The concrete is calculated as being made of one, two and four composition.

FRED W. HAGLOCH.

### To Repair Composition Roofing

To the Editor:

Claresholm, Alka.

We have, in our town, a building with a very flat roof, covered with a cheap grade of the "oids" roofing, which leaked considerably last fall, especially after a long spell of very dry weather, followed by a sudden heavy downpour of rain,

to which the climate of this part of the world is subject. I have been asked if I could repair it by giving it a coat of tar and gravel. Not having any experience in that line, I hesitated, as I did not know how it might work on the old roofing.

Objection is made to iron, owing to the noise, as the roof is very close to the ceiling of upper rooms, and besides the cost is of considerable importance to the owner. The roof does not appear to leak at the joints, but the water penetrates clear through the felt.

If you can assist me in any way as to repairing such roofs so as to make a job one can reasonably recommend and at as little cost as possible, you will greatly oblige a subscriber to your valuable paper.

W. C. MILLER.

Answer: The best way to repair a composition roof, if it is worth repairing at all, is to give it one or two coats of Carey's roof coating. This coating will work to advantage on any composition roofing. If the water just merely soaks through, this will stop it. If there are small pin holes in the roof put on one coat Carey's roof coating, then cover with muslin and put on another coat over the muslin, and it is more than likely that the leaks will all be stopped. A few coats of this liquid covering put on at intervals, allowing each coat to get thoroughly dry before putting on the next coat, will turn a composition roof into a roof that will last for many years if the body of the composition roof is still good.

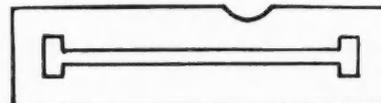
I. P. HICKS.

### Some Simple Puzzling Things

To the Editor:

Louisville, Ky.

Some of the simplest things in this world are sometimes the greatest kinds of puzzles, simply because they happen to get into the hands of some one not familiar with them. I recall one time in the early days of my apprenticeship at millwrighting, there was kept hanging up in the lounging room of a sawmill boarding house a simple looking device consisting of nothing but about six bolts and four flat bars about ¾ by 2 inches and 12 or 14 inches long that got to be known as the unsolvable problem. Two of the men at the mill had been cleaning out a car one day preparatory to loading it with lumber and came across this apparatus, or some part of some apparatus, which ever it was, and puzzled themselves considerably as to where it belonged and what it might be used for. Not being able to work it out, they carried it up to the boarding house where sawmill men,



½-inch Spindle Shaper Attachment—  
What Is It for?

river men and men of all kinds congregated at night, and not only asked of everyone there an explanation of its use, but it was kept on hand, hanging up, and every stranger, especially of mechanical turn, including all machinery salesmen that came along, was asked if he could explain the use of the device. But it so happened that no one came along who knew. Still it was a very simple device and probably a part of some mechanism that one familiar with would have been able to place at once.

This instance is recalled by an inquiry from Mr. R. B. Richardson, of Bathgate, North Dakota, who says he has bought a single spindle shaper that has a couple of attachments that he doesn't know the use of. He has asked the man who sold him the machine, and he didn't know, and as the manufacturer's name is not on the machine, he doesn't know where else to turn for information. The attachments consist of two iron plates, like drawing shown herewith, 1/2 inch thick. Unfortunately he doesn't give the dimensions of these plates and really at this writing they don't suggest their use. Possibly some man that is familiar with this type of machine and has met with these things before, can furnish the answer to this, which seems a very simple matter, yet it is rather puzzling, because the average run of shaper does not have any attachments that look like this. He also speaks of there being a slot in the table that is filled with a piece of wood and asks what it is for.

J. CROW TAYLOR.

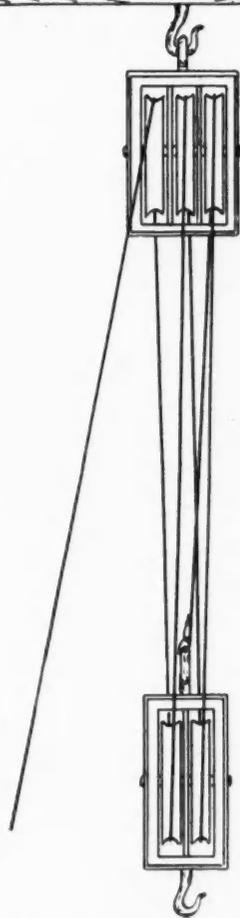
✦  
**Proper Arrangement of Pulleys**

To the Editor:

Boonville, Ind.

As I am a reader of the AMERICAN CARPENTER AND BUILDER and know of its value to carpenters, I wish, for the benefit of others, as well as for myself, to ask a question.

What is the proper way to arrange a set of ropes and



blocks consisting of a two-sheave and a three-sheave block? The point I want to know is how to thread the blocks. I have had several disputes with men as to what was the proper way.

E. P. WIRE.

Answer: To reeve the rope for a tackle composed of one

three-sheave and one two-sheave block, proceed as follows:

Pass one end of rope (or "fall," as it is termed) through an end sheave of triple block; then through one sheave of double block; then back to triple block and through center sheave; then through second sheave of double block; then back to triple block and through third sheave; and then to eye of double block, where it is made fast by a stopped half hitch.

The diagram makes this clear, the heavy line indicating the rope or fall. I have also shown the proper knot for the end of the fall at the double block.

In all double block tackles, the block with greater number of sheaves is the upper or fixed one. A proper pair of blocks would be as shown in diagram and no confusion could arise as to method of threading or reeving such a pair. Very often, however, the triple block has an eye on the under side for use in a three-sheave and four-sheave tackle, and perhaps this has caused our correspondent some confusion.

The simple rule is: Block with greater number of sheaves at top (fixed); end of rope made fast to eye in lower or moving block.

T. B. KIDNER.

✦  
**A Plank Frame Barn**

To the Editor:

Warren Ohio.

I send to you under separate cover a photograph of a plank frame barn with gambrel roof; outside rafters framed at one-half pitch and comb rafters at one-third pitch. The basement is built up of 8 by 10 inch tile. We are going to



build several more this season and think they are the coming barn in this section. We get many good points from your Journal and wish you success.

W. GROVE.

✦  
**To Prepare Kalsomine**

To the Editor:

Farmington, Ala.

How should kalsomine be prepared; what proportions of the different ingredients; and about what quantity will be required on plastering?

W. D. MCBRYDE.

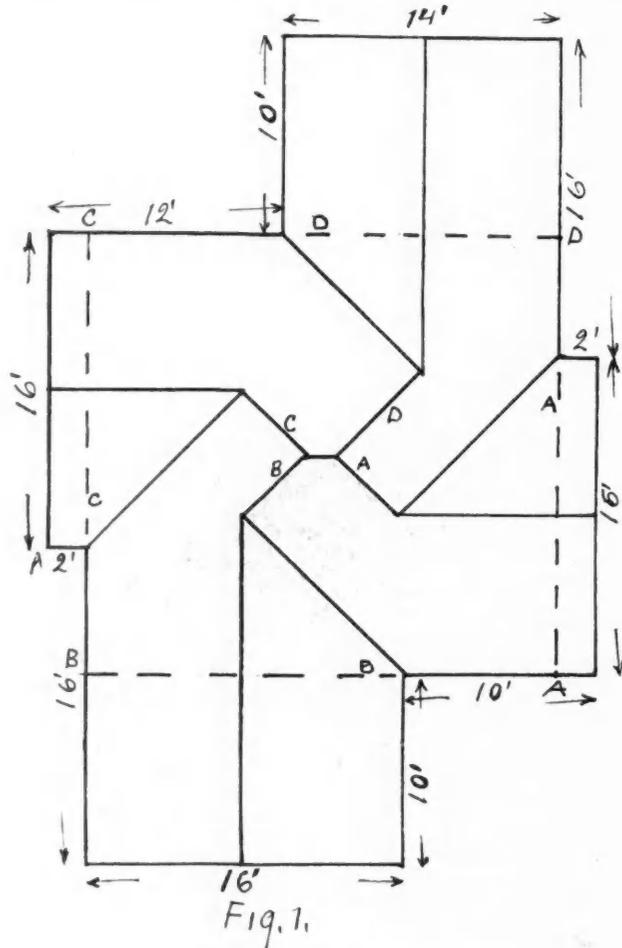
Answer: One pound of uncolored gelatine glue, as free from grease as possible, is soaked over night in sufficient cold water to cover the glue. Thirty pounds of English Cliffstone Paris white, or the best bolted gilder's whiting is also soaked over night in sufficient water to make a paste. The next morning both are heated separately with steam, or over a moderate fire in a water bath, to the boiling point, and when the glue is dissolved, the two are thoroughly mixed. In summer time about an eighth of an ounce of carbolic acid is added for each pound of glue used to

keep the mixture from souring. This preparation is used by a leading western firm of decorators, and is said to be much liked because of its free working quality. For tinting, use distemper colors, or colors ground in water, taking care to avoid colors that are affected by lime, such as chrome yellow, chrome green, Prussian blue, etc.

EDWARD HURST BROWN.

✦  
**A Roof Plan**

To the Editor: Scotttown, Ohio.  
I enclose the ground work plan of a house for which I would like a suitable roof plan. MAURICE LEMLEY.  
Answer: The plan as shown by Fig. 1 is the better plan



one of these hips, however, is intersected by a valley rafter from one of the four gables. By hipping the building as shown, the main roof extends above the gables and makes a suitable place for the ridge of gable to stop.

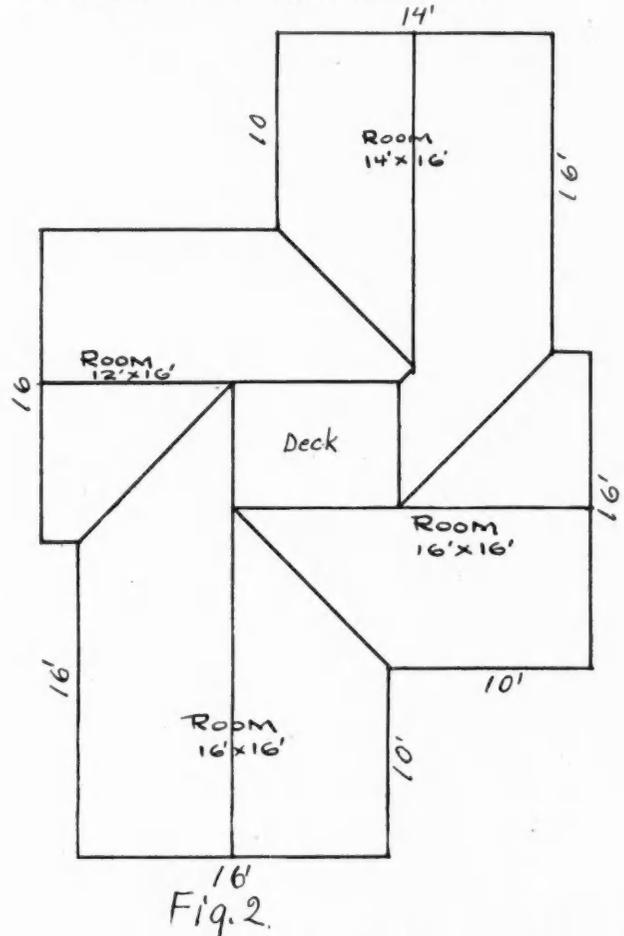
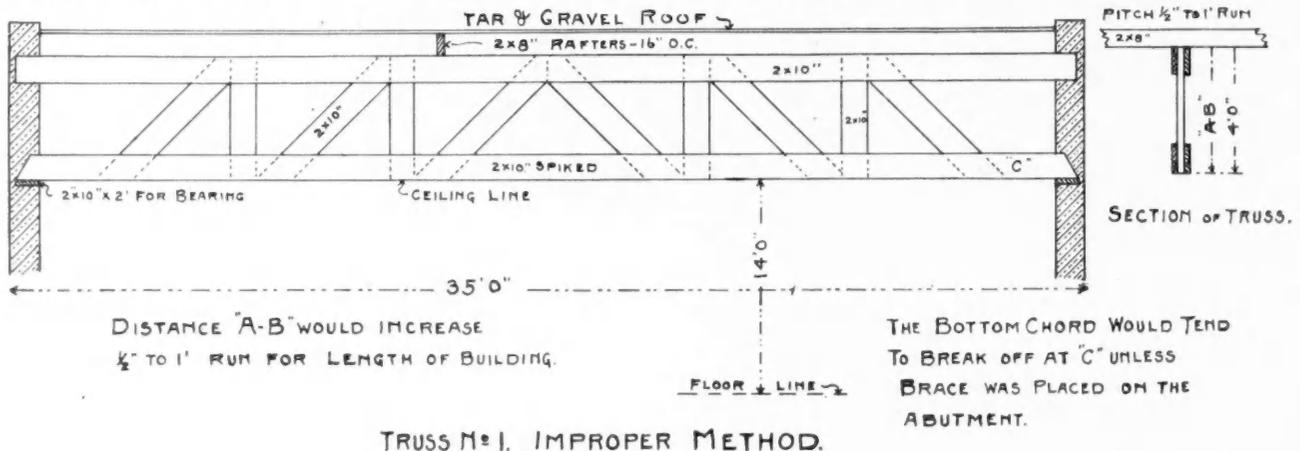


Fig. 2 shows a deck with the ridge of each gable stopping against a corner of it, except for the gable which is only 14 feet wide. Here a short hip is necessary, and the ridge dies out against the hip. We think the first plan far the best, though it is perhaps the more difficult one to frame and raise, since none of the hips in the center of the building reach to a plate. It would probably be best to frame and raise the gables, first putting in a ridge board; then the center hips could be easily cut in from main ridge to the ridge of the gables, and then the jack rafters cut in, in the usual way.  
I. P. HICKS.

and undoubtedly will make the best appearing roof. The dotted lines across the gables at A, B, C and D locate the points where the main hips would strike or intersect the main plates, providing they were continued full length. Each

✦  
**Proper Truss for Flat Roof**

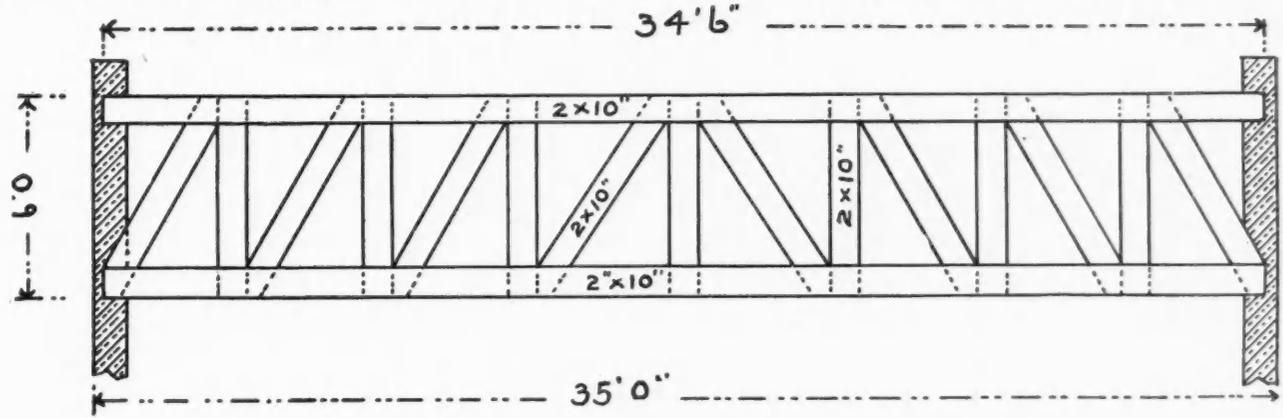
To the Editor: West Salamanca, N. Y.  
I have a problem which I wish you would aid me to solve,



TRUSS No. 1. IMPROPER METHOD.

i. e., one story brick building 35 by 65 feet to cover with flat roof, slanting the long way of building, without interior

Is this truss practical? Would 2 by 10 inches first quality hemlock, well spiked, carry this roof safely? Is the distance



**TRUSS No. 1.- PROPER METHOD.**

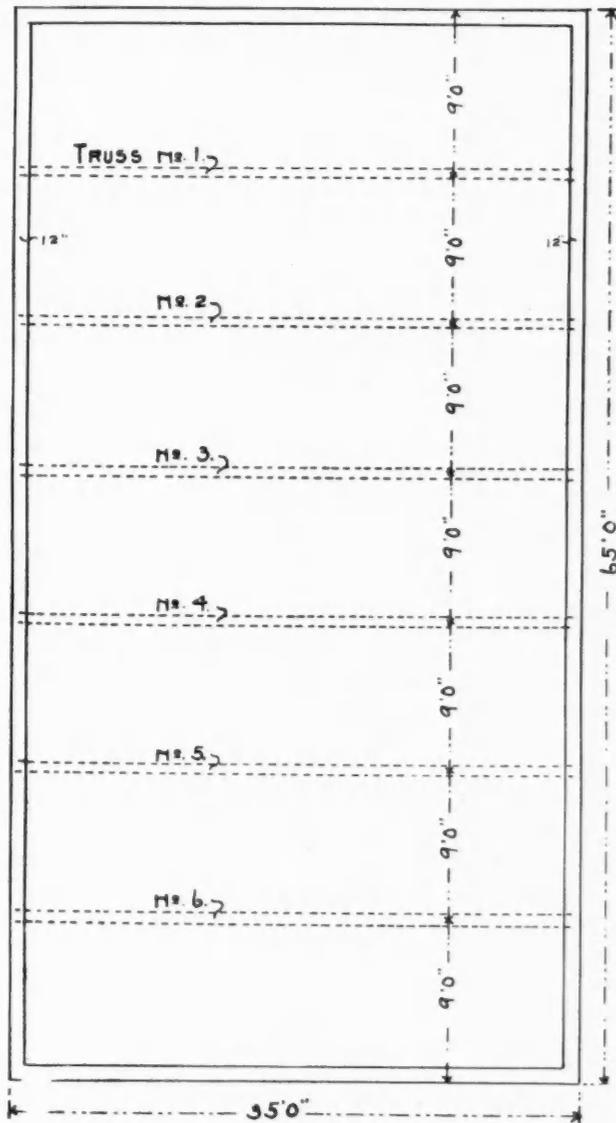
supports from floor (as posts, etc.). Owner wishes at some future time to use the west wall to build two story block on, hence the objection to a roof with ridge, causing a gutter along west wall. Am enclosing drawings of the above building.

A B, 4 feet (see section of truss) enough for truss No. 1?  
G. H. ROBINSON.

Answer: The distance 4 feet, A B, shown in your sketch is not enough unless you use counter braces and rods on the Howe principle. In roof trusses, the dead load, i. e., the weight of the truss itself and that of the purlins, roof, etc., together with the snow load are usually taken as being uniformly distributed. In this case we may assume that the sum of the dead load and snow loads are divided equally between the two supports. In other words, the end reactions are equal and the counter bracing is not necessary. But in-as-much as the first and last panel of the top chord forms no part of the truss proper, the end brace should rest on the end of chord, so as to carry the load to the abutments. Would suggest that you make truss No. 1 not less than 6 feet and put eight panels in it. Use 2 by 6 inch or 2 by 8 inch fillers cut between all ties and braced to prevent the shearing strain on the nails. The truss would be better if bolted.

Note—A truss of this kind should be framed with 3 inch camber and well spiked. Put a 2 by 8 or 2 by 6 filler between end of horizontal tie and top brace to prevent it shifting, and spike 2 by 6, 2 by 8 or 2 by 10 on each side of braces, cutting same to fit snug between top and bottom chords.

T. P. ELLIS.



PLAN.

**Attaching Woodwork to Concrete**

To the Editor: Oshkosh, Wis.  
I read the article in your March number by Mr. J. H. Godfrey, telling of the trouble he experienced in nailing a window casing in a cement block building.

We make all of our sills and caps two inches narrower to allow a 2 by 4 or 2 by 8, according to the thickness of the cap or sill, to be inserted in the wall the same as would be done with cut stone.

We also make our water tables the thickness of the wall in one solid piece 4 feet long with spaces cored out for the joists, making a much better appearing table, and making it easier to line up the joists.

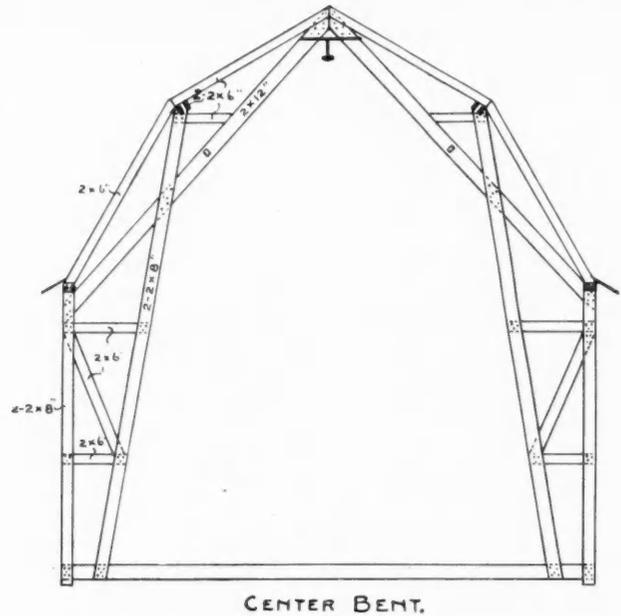
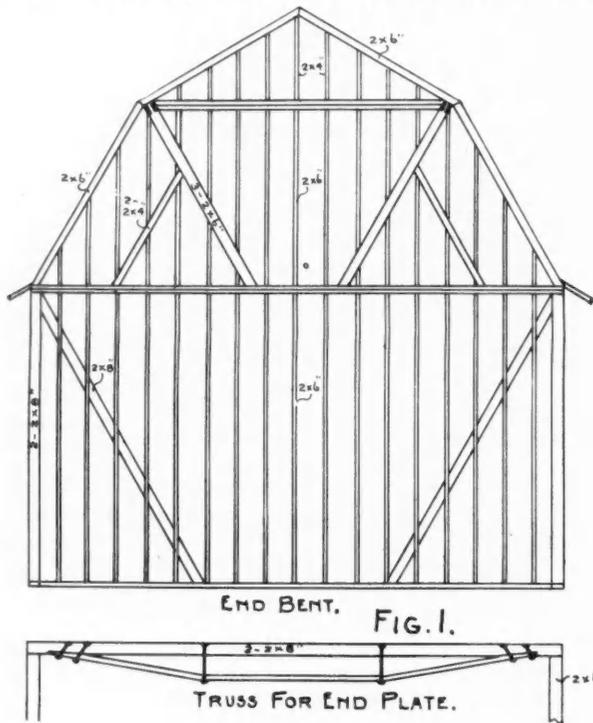
J. W. BRONK.

**Plank Framing for Barns**

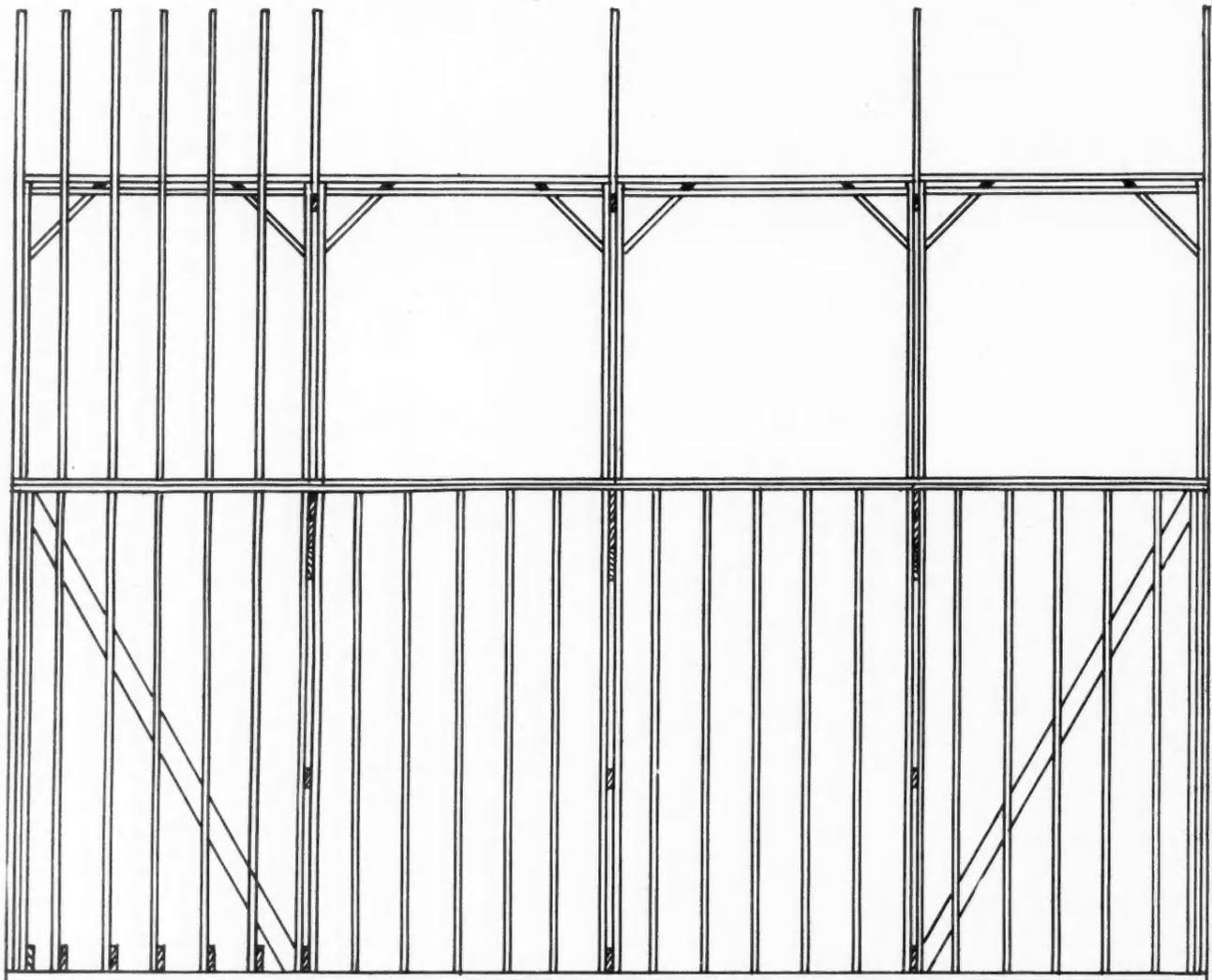
To the Editor: Fon du Lac, Wis.  
You will find enclosed drawings for a plank barn which I trust will interest some of your readers.

With the scarcity of heavy timbers and consequent cost, it is time carpenters who are to erect barns should give some study to the newer methods of framing, where no timber is

thicker than 2 inches, and from 6 to 12 inches wide. The use of modern hay and grain elevating machinery, calls for barns with open center; hence, upper cross ties, collar beams, etc., are in the way and are quite unnecessary. I find the



plank frame, which is here illustrated, is one the newest things I have come in contact with in barn framing and at the same time is fully as strong as an old fashioned frame made of timbers 8 to 12 inches square. It is about two-thirds as costly; and a first class carpenter is not required to erect it. In this plank frame, there are no timbers



larger than 2 by 12 inches, which are doubled and trebled where great strength is required. Where tensile strength is required, two 2 by 8 inch are nearly as good as an 8 by 8 inch tenoned and fastened in the old-fashioned way with a pin. In this frame there are no tenons. The frame is put together with spikes.

I have tried to make the drawings as plain as possible; at any rate, they convey the ideas intended.

JOHN SUMMERFELD.

**Sheathing Inside and Out**

To the Editor:

Beloit, Wis.

In reply to L. K., of Louisville, in regard to inside sheathing, I have a house built in that way about twenty-five years ago. I got the idea from a young man from Nebraska, in Jacksonville, Fla., in 1870. I was so well satisfied with it that two years ago when I had an addition built to my house, I finished it in the same way. There is not a break or crack in the plastering in the whole house. It is the springing of lath on studding that causes the plaster to break. Take two stout boys and let them get to scuffling and one is shoved against the wall between the studding, you will have a large space of plaster broken from the lath; while on my walls it is hard to get it off with an ax. Do not furr out the lath at all; nail directly to the sheathing.

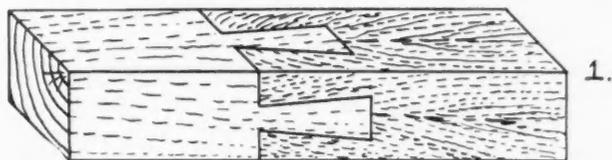
C. O. WARNER.

**Some Dove-Tail Puzzles**

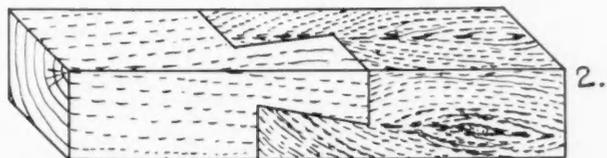
To the Editor:

Fredrickton, N. B.

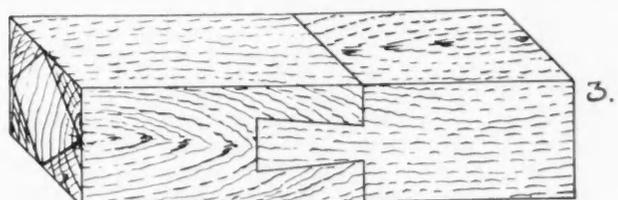
Mr. Hofman has offered us an ingenious puzzle which has mystified many a youth, and will doubtless be recognized by others besides the writer as an old friend. It would have been better, however, if Mr. Hofman had shown two faces of his block, as in sketch sent herewith, No. 1, as the single view



scarcely makes the puzzle apparent. When learning shop "wrinkles" as a boy, the writer was given Mr. Hofman's puzzle to worry over, but was first given a simpler puzzle joint of the same type, which is shown in sketch No. 2.



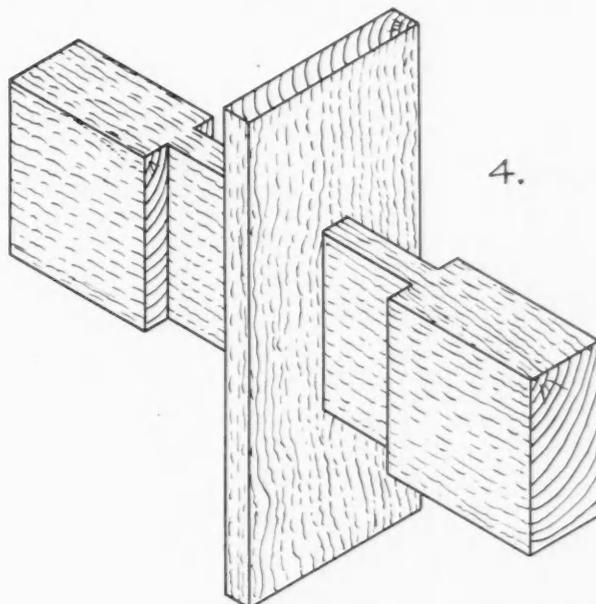
The method of construction in each case is identical, but for the sake of simplicity that for No. 2 will be given, and is as follows: A single dovetail pin is formed on the end of one square piece of wood and a corresponding socket on the end of another. No. 3 shows this dovetail closed and



Plane off corners

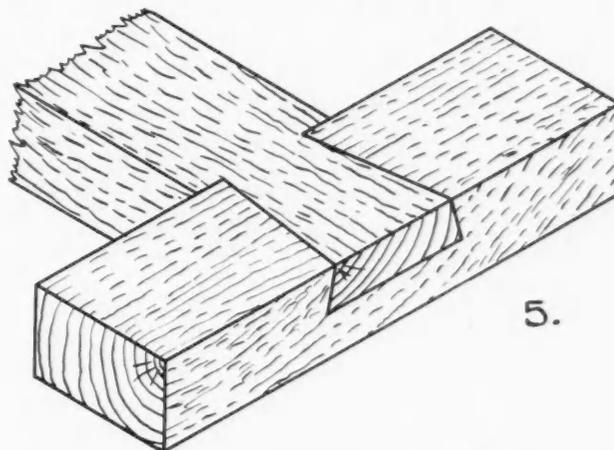
glued ready for the operation which produces the mystifying effect shown in sketch No. 2. This operation consists merely in planing off each corner until a new square piece is produced.

Puzzles of all sorts have always appealed to the writer and in consequence he has accumulated a collection of them.



Among those in wood are two which are here offered to his fellow readers of the AMERICAN CARPENTER AND BUILDER.

The first is shown in sketch No. 4 and was distributed broadcast some twenty-five years ago as an advertisement by



a firm of soap makers whose name is a household word the world over. It consists of a piece of mahogany with a mortise through the center and a hammer-headed key of white pine through it. Each piece is absolutely solid and was never cut apart or glued up in the making. How was the hammer-headed key put into the mortise?

The second puzzle offered for solution is shown in sketch No. 5 and is a tee-joint showing a dovetail on edge and face. How was the dovetail inserted? PINUS STROBUS.

**Test for Linseed Oil**

To the Editor:

Scranton, Pa.

Will you give in the correspondence columns of CARPENTER AND BUILDER some method or methods of testing the purity of linseed oil.

S. W. MARRIOTT.

Answer: The readiest tests for raw linseed oil are the taste and smell. If adulterated with mineral or rosin oil, these admixtures will make themselves very apparent. The taste of pure linseed oil is at first bland, but afterward there is a slightly bitter, but not offensive nor nauseating sensation, such as will be the case if rosin or mineral oil be present. A few drops of the oil rubbed between the palms of the

hands should give the characteristic odor of linseed oil. A faint odor of rosin or resembling machine oil, at once indicates the presence of adulteration. Paint one side of a sheet of glass with black paint. On the unpainted side place a drop or two of the oil to be tested. As it spreads out over the surface, the presence of mineral oil will be indicated by a bloom or iridescence in the presence of strong light. The same thing will be shown on a piece of black japanned tin. These are the simplest tests. The nitric acid test is more complicated, but very accurate. In a test tube, such as is used by chemists, place equal parts of the linseed oil and nitric acid, and allow it to stand undisturbed for twenty or thirty minutes, when two distinct layers or strata will be observed; the oil will be on the top and the acid in the bottom of the tube. If the oil is pure, the upper stratum is first a clear greenish yellow, turning to a cloudy yellow, and the lower stratum nearly colorless, or very pale yellow. If fish oil is present, the upper stratum will be dark brown and the lower dark orange. Rosin oil will show from dark brown to black in the upper stratum and straw color to orange in the lower. The above tests are for raw linseed oil only. Tests for boiled oil are more complex and not readily performed by the painter.

EDWARD HURST BROWN.

**Cost of Concrete Floors**

To the Editor: Crookston, Minn.  
We are going to build a school house here with the first floor and basement fireproof. So I would like a little information about concrete floors. Can you give me the figures per square foot? There will be about 4,000 square feet.

C. H. JEFFERSON.

Answer: With cement at \$2.00 per barrel and sand and gravel at \$1.50 per cubic yard, a 4 inch basement floor will cost about 14 cents per square foot.

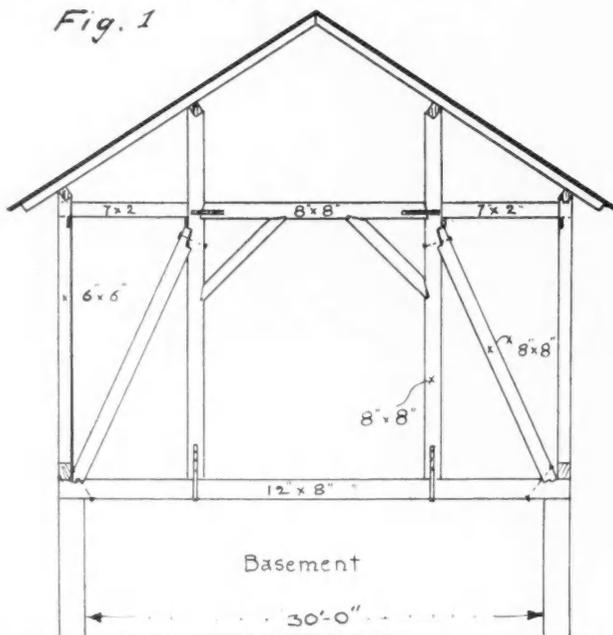
The first floor will require forms and reinforcing, and its thickness will depend on distance between supports. With supports 12 feet apart the floor would cost 32 cents per square foot, if twenty feet apart about 50 cents per square foot. These figures are approximate.

FRED W. HAGLOCH.

**To Truss a Barn**

To the Editor: Fort Atkinson, Wis.  
Enclosed is a rough sketch of a barn bent on an eight foot basement with posts in basement under purlin posts. Posts also run from sill to plate.

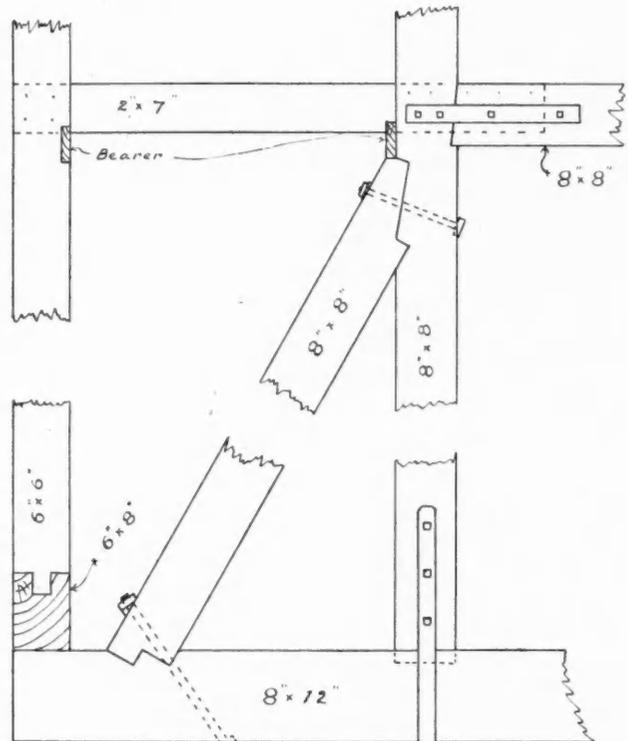
Fig. 1



Will you kindly tell me how to truss the barn so as to do away with the posts in the basement. B. C. WESTPHALL.

Answer: The annexed sketch, Fig. 1, shows a simple truss which will carry the floor and roof; the raking members

Fig. 2



carrying the stress down to the side walls of basement. Fig. 2 shows details of framing; which should be carefully done, as the truss has to bear moving loads as well as the weight of hay, animals, etc., and the roof itself. The sizes of timber given allow for trusses being about 8 feet apart.

T. B. KIDNER.

**Paint for Asphalt Floors**

To the Editor: Boston, Mass.

Can you give me through the columns of your valuable paper, a few hints on the painting of asphalt floors so the paint will adhere and wear? I have tried a thin coat of red lead for a body for my light color, so the asphalt would not turn the paint yellow and have also put good floor varnish in last coat. I have also tried white lead for first coat, but neither wears any length of time. I gave floors four coats, including varnish coat.

EDW. A. BEAN.

Answer: The painting of asphalt floors is a problem that is almost as difficult to solve satisfactorily as the painting of a cast iron drain pipe that has been tar coated, as there is an acid in the asphalt that acts destructively upon paint or varnish. The following method, given by a painter from Englewood, N. J., as having proved satisfactory in the painting of cement floors and other similarly difficult surfaces to coat, may give satisfaction and is worth trying.

Take 10 pounds of salt and 3 gallons of boiling water to 100 pounds of white lead, first broken up in 1 gallon of linseed oil. Begin by stirring the salt water slowly into the lead until you have added the entire quantity; then keep on stirring until it is thoroughly mixed with the lead—or say about twenty minutes. It will be found that it will unite with lead as well as linseed oil, but will have the consistency of soft soap. Then thin with linseed oil to a working consistency. The first coat will dry flat; the second will have a varnish like gloss.

EDWARD HURST BROWN.

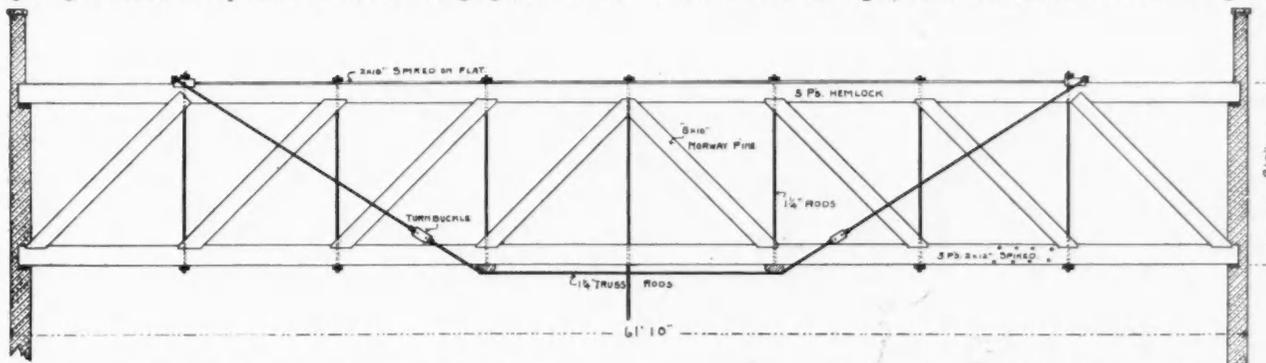
**To Strengthen a Roof Truss**

To the Editor: Tiffin, O.

Am sending you sketch of a truss which has settled about five inches. Would like to know your idea of bracing same so as to make it perfectly safe. The truss is in a theater and is above the gallery, and is used to support same.

MARTIN L. BANINGARDNER.

Answer: As the trouble with your truss is probably in the spacing of braces at top and bottom and changing them would



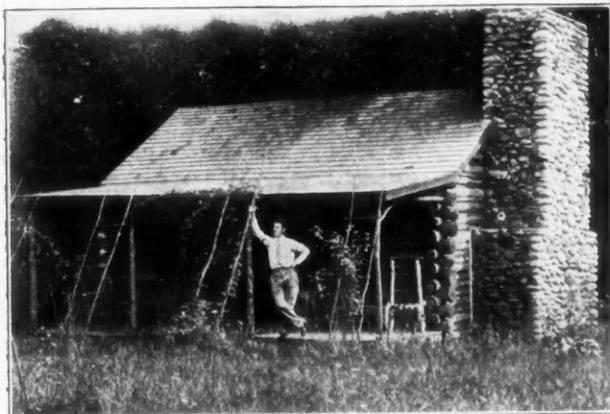
be impracticable, would suggest that you jack it up in center until you have sufficient camber in it, and reinforce the bottom chord with a couple of 2 by 12 inch planks, one bolted on each side, and put a 1 1/4 inch truss rod on each side, as shown in sketch, with turnbuckle. If ends of rods are not up-set, to depth of thread, use a heavier one, so that its diameter at bottom of thread will be not less than 1 1/4 inch. This will result in a change of length of braces and they should be replaced. As the middle vertical rod carries no part of the load of the truss proper, it is not necessary to have nut and washer under bottom chord and the rod may pass on down through the gallery. Theoretically the rod serves only to prevent deflection in the two unloaded middle chord panels under their own weight, but in practice it is usually employed for convenience. Top chord should be reinforced with a 2 by 10 spiked on flat between angle washers. See that foot of end brace is held rigidly in place.

T. P. ELLIS.

**A Well Built Log Cabin**

To the Editor: West Shokan, N. Y.

This is the picture of a log cabin I built, for a summer camp for a city party, here in the Catskill mountains. It has a cobble stone chimney laid up in black cement, an open



fireplace with crane and corner seats each side of fireplace. It is very comfortably fitted up, is 14 by 20 feet on the ground, and is built of hemlock logs.

The April number of the AMERICAN CARPENTER AND

BUILDER contained a piece on "shacks"; so I thought I would send my cabin. I have been a subscriber to the magazine since its birth, and find it O. K. H. H. VINCENT.

**White Facing for Blocks**

To the Editor: Mesick, Mich.

I have been a subscriber to your paper ever since it started, and think it is all right, as we can learn so much through its

correspondence columns. I would like to ask you if you can give me a formula for making a waterproof facing for concrete blocks that is white. Also what is the cost?

ORLIN CRITTENDEN.

Answer: There are various methods of making white facing for cement blocks; one barrel white Portland cement to one barrel marble dust and one barrel sea sand will make a quarter inch pure white facing for 500 blocks size 8 by 16 inches. The cost of this material will be \$9.60.

One barrel white cement, one barrel regular Portland cement, two barrels marble dust and two barrels white or sea sand will produce an almost white facing for 1,000 blocks, the material costing about \$12.50.

I prefer the latter, it being stronger and only a shade darker than the first. The difference is so small that it can only be detected when both facings are in the same wall.

Either of the above facings will be found to be nearly waterproof; and a single application of any transparent waterproofing, such as the soap and alum solution, used on the finished face, will produce an absolute waterproof surface that will not discolor.

FRED W. HAGLOCH.

**To Saddle a Hip**

To the Editor: Philadelphia, Pa.

Will you please show in the AMERICAN CARPENTER AND BUILDER, under the head of shingling, how to saddle a hip. I am a charter member of your magazine and have been anxious to see this subject treated in its columns, as I find many carpenters who cannot saddle a hip without being shown.

CHAS. H. ECKMAN.

Answer: In regard to saddling a hip, if it is meant to put saddle boards on the hip similar to saddle boards on the ridge of a roof, there is nothing to it except to get the proper bevel for the boards to miter over the hip and nail them on. There are plenty of metal hip shingles, made expressly for hips, which are easily put on, will look better and be better than any style of saddling hips with wood. Of course the metal hip shingles should be put on straight so that it will look like a job. The top of the metal shingle should go under the course of wood shingles above, as each course is laid. These metal shingles can be put on each course of shingles as laid, or they can be left off till the shingling is done, when they can easily be run up the hips. It may be easier to keep them straight if they are all put on in finishing up the hip after the shingles have all been laid.

I. P. HICKS.

# PRACTICAL TRADE APPLIANCES

## The Latest Development in Concrete Block

The illustration below shows a block house plastered, which is a new development in the construction of concrete block houses. It carries with it this advantage over the



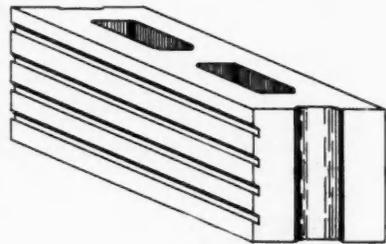
ordinary block house, that there is not the monotonous effect of imitation of rock. It also can be made waterproof at a very little expense, owing to the fact that it is only neces-

sary to put the waterproofing on the plaster. This can be either smooth or rough cast as one may desire.

This is something that the public have been looking forward to for some time. That is, to get a concrete block house, having the advantage of the air space and besides have the feature of appearing not to be imitation of rock, as well as being absolutely waterproof.

The Burrell Manufacturing Company, who are manufacturers of the X-L-ALL block and brick machine, have invented a special face plate as illustrated below by cut.

You will note that the block has grooves in which are dovetails. This is done for the purpose of carrying the plaster, having the same effect as steel or wood laths. When you have a house built of concrete blocks as shown above and plastered with waterproofing, you have something, we might say, that will last forever. There is nothing to rot out and besides there is an artistic effect both in design and finish. The above block



Hospital erected by the United Verde Copper Co., Jerome, Ariz., using 2 24-inch and 7 18-inch "Burt" glass top ventilators. Other hospitals using "Burt" Ventilators are: Mercy Hospital, Pittsburg; State Sanatorium for Treatment of Tuberculosis, Howell, Mich.; St. Luke's Hospital, Utica, N. Y.; Akron City Hospital, Akron, Ohio.

## Burt Ventilators

are as efficient in the red hot desert as they are in the crowded cities. They are built with strictly high grade workmanship and material. All Burt's are provided with patented sliding sleeve dampers, which never shut out the light, even when the damper is closed.

No matter where ventilation is required Burt Ventilators will do the work more efficiently and with less fuss about it than any other ventilators made.

Send for our new 92-page catalog giving fine illustrations of mills, shops, factories, and residences where Burt Ventilators are in successful use.

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

GEO. W. REED & CO., Montreal, Sole manufacturers of "Burt" ventilators for Canada.

## Ventilation in the Desert

The United Verde Copper Co., of Jerome, Arizona, has just finished a new hospital building.

The United Verde, one of the largest and richest copper mining companies in the world, decided to make this hospital perfect in every respect.

They, therefore, selected nine glass top Burt Ventilators to be used on this building.



Notice Sliding Sleeve Damper (patented). Furnished with flat wired glass, up to and including the 66-inch size. Metal Tops furnished if desired.

# FORD'S GALVANIZED RUBBER ROOFING

Forty Years of Reputation  
Behind it



## "GALVANIZED"

That Word Means Something

In the manufacture of **Ford's Galvanized Rubber Roofing** a special process is used which is the development of forty years experience. The process involves extreme heat and great pressure. The result is a roofing which absolutely resists the elements, wind, rain, hail, heat and cold. The quality of the elastic mineral coating is such that extremes of temperature do not affect it.

It is equally good on the shack on the Yukon, the factory, home, school or shed in a temperate climate, or the bungalow in the tropics.



## OUR OWN PRODUCT

We Guarantee It

We manufacture every square foot of **Ford's Galvanized Rubber Roofing** in our mills. We know every ounce of material used. We keep it uniform in quality and right in price, because from the raw material to the finished roll it is our own product. Very few self-styled manufacturers of ready-to-lay roofings make the products they sell entirely. We do.

It is odorless, and for this reason the lighter plies may be used for sheathing, keeping the building warm in winter, cool in summer.

"As Good  
as the  
Best  
and Better  
than the  
Rest"



Easy  
to Lay  
Requires  
No  
Special  
Tools

This view shows Three Ply "Ford's Galvanized Rubber Roofing" being laid on the New Hampton Auditorium, New Hampton, Ia. The cut below shows the completed structure.

## THE POSITIVE GUARANTEES WE GIVE

The guarantees named below are positive and are **Based on Actual Time Tests** in all climates and under all conditions

### ON THREE PLY

We give guarantee through dealers direct to consumer or contractor for **15 Years** on Three Ply.

### ON TWO PLY

We give guarantee through dealers direct to consumer or contractor for **10 Years** on Two Ply.

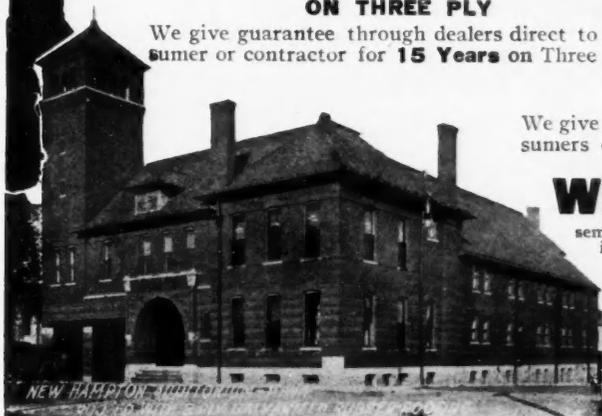
### ON ONE PLY

We give guarantee through dealers direct to consumers or contractor for **5 Years** on One Ply.

**WARNING** This roofing cannot be bought of "mail order" or "catalog houses," and the public is warned against cheap imitations sold under names closely resembling our brand. **FREE:** We will send free samples, special roofing information, and names of nearest dealers, free to all who write.

SEND FOR FREE SAMPLES TODAY

**FORD MAN'FG. CO.** 131 W. Wash. St.  
ESTABLISHED 1865 CHICAGO



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



## See Here! Mr. Carpenter,

That trademark is something for you to remember, for every good live man wants and will have first-class tools, and experience has proved that the Simonds is the world's best hand saw.

If you're more than an *average* man, you're looking for the best saw. Every hustler wants a saw *with an edge that holds*, and that's the Simonds, and you'll always know it by the trademark.

That trademark means that this saw is

### **MADE OF SIMONDS STEEL**

made especially for the Simonds Saw in Simonds Mills.

By our patented process, we get the most evenly and correctly tempered saw on the market. No one else can quite make it, they don't know how. We are advertising, so *you* won't forget the Simonds trademark.

If you will only try the Simonds Saw, you will agree with us, and the hundreds of Carpenters already using them, that

### **Simonds Saws are The Best, And They ARE The Best.**

Each Simonds Saw comes packed in a separate case. Remember the trademark when you buy. Every saw absolutely guaranteed free from imperfections in workmanship or material.

When you need a saw buy a Simonds. Let us know the kind and size you want and we will tell you the name of our nearest dealer and will also send you a free copy of "Simonds Carpenter Guide," a useful and instructive booklet.

## **Simonds Mfg. Co.** Fitchburg, Mass.

Chicago  
San Francisco

New York  
Portland

New Orleans  
Seattle

The above block has been shown to many architects and without exception they have nothing but words of praise for same, claiming that it is something that has been long wanted. And several of the architects are adopting this block in residence construction. For further particulars, prices, and catalogues, we refer you to the Burrell Manufacturing Company, 106 Grove Street, Bradley, Illinois.

### **Chicago Millwork Supply Company**

The evolution of an idea, studied, labored at constantly and energetically, has marked the success of most of the world's great accomplishments. This is true of the success



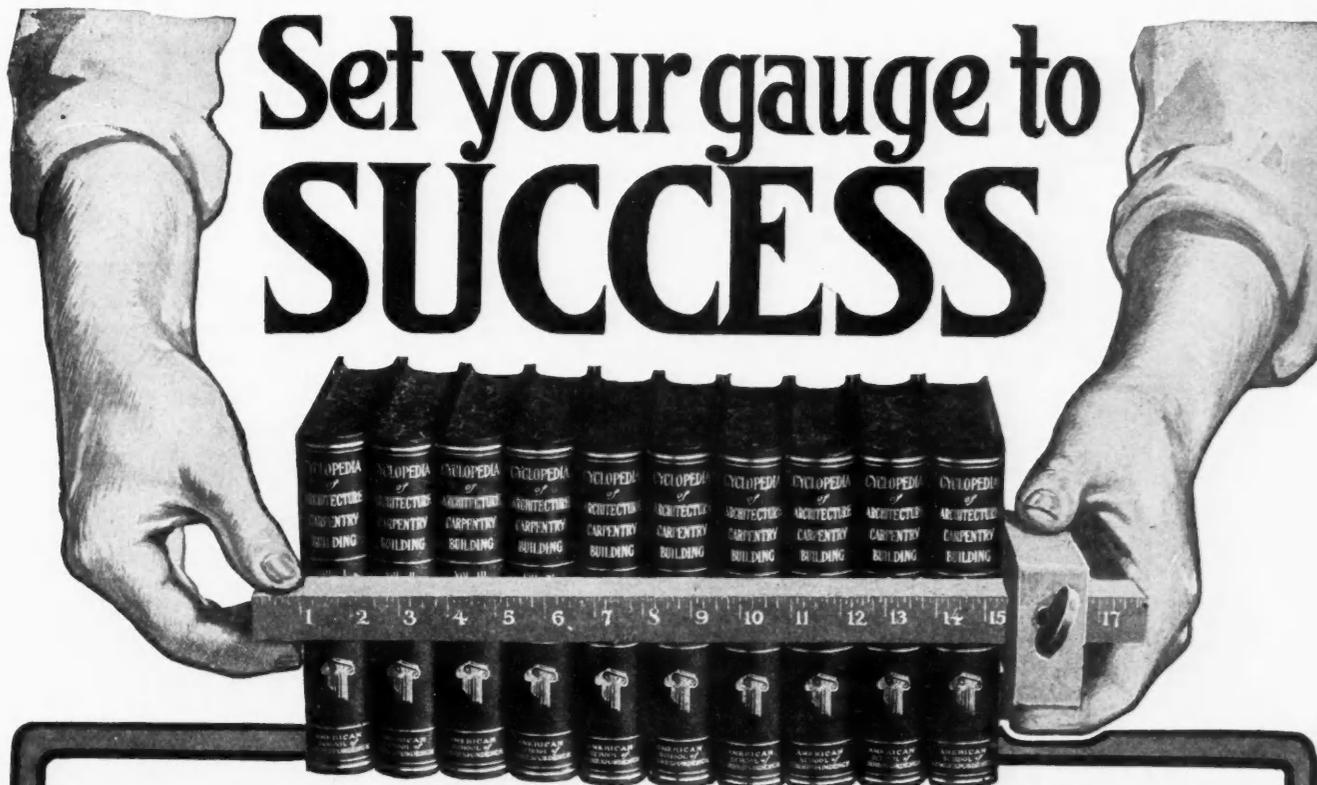
attained by S. M. B. Hunt of Chicago, who has from the first been at the head of the Chicago Millwork Supply Co., one of the largest manufacturing concerns of its kind in the United States.

The main capital Mr. Hunt started with was brains and the ability to put into practical force the ideas he created, as to building up the business of selling millwork "From Manufacturer Direct." To begin with, he was certain of success, because of the great economic principle at the base of the business. After that it was the problem of keeping at a high standard all the merchandise involved, and of being able to present to the trade printed literature, such as illustrated catalogs, etc., that would truthfully show the goods, values and prices. The main success of the Chicago Millwork Supply Co., through Mr. Hunt's untiring efforts, lies in the fact that the goods are as good as described in every case; and orders are accepted on the "money-back-if-not-satisfied" basis.

The business of the company has grown so fast that they have been forced to enlarge their plants several times; and the Chicago end of the business has recently moved into a very large, new building, erected by the company at 236 to 242 West Twentieth street, Chicago.

Today the well known phrases, "From Manufacturer Direct," and "Get in Line with Economy's Sign," are accepted by contractors, builders and owners everywhere, as being identified with the advertising literature of the Chicago Millwork Supply Co.

Above is published a portrait of Mr. Hunt, who is a young man to have reached the pre-eminent place he now occupies



# Set your gauge to SUCCESS

If you are a **Carpenter, Contractor, Builder, Real-estate Dealer, Architect, Draftsman or Mechanic**, this set of books offers you exceptional chance to advance in your present occupation. If you have no regular trade or profession now, this is an exceptional opportunity to acquire the special training that you need. You should let no opportunities slip by to make yourself master of a well paid trade, or profession. **Set your gauge to success and turn the clamp down hard.**

## CYCLOPEDIA OF Architecture, Carpentry and Building

offers you unusual opportunities for increasing your knowledge of your trade or business. It is laden with money earning, money saving, money producing, practical plans and ideas.

**Ten Massive Volumes** each nearly one foot high, handsomely bound in red half morocco. Over 4,000 pages: 3,000 illustrations, full page plates, plans, sections, etc. Printed on highest grade paper: entirely new type--DE LUXE books in every particular. This work fully covers everything pertaining to building. It is a masterpiece of complete, concise, practical, "ready-to-use" information. Every demonstration is derived from the practical experience of the greatest expert in the building industries of the world. **We employ no agents to annoy you**, thus giving us the opportunity of selling direct to you at the very lowest price.

To the up-to-date builder, the most important subject today is the use and possibilities of **Reinforced Concrete**. The cyclopedia contains the latest and most comprehensive information on this subject, written especially for **home study** by the men who are responsible for the tremendous advance and popularity of this new building material.

In every day matters of the trade the Cyclopedia is an invaluable guide. It tells you how to plan a house, estimate its cost, buy the material, decorate it inside and out, and save money for yourself and your client. It is especially good on house sanitation--plumbing, heating, and ventilation--a subject concerning which you cannot know too much.

**Free for Examination \$24.00 instead of \$60.00 No Advance Payment**

Sent by prepaid express. Pay \$2.00 within 5 days and \$2.00 per month if you wish to keep the books: otherwise notify us to send for them at our expense. **In any case you lose nothing.**

**The work contains over 200 plans of artistic moderate priced houses**, chosen by a staff of architects as typical of the best work of the best architects of the entire country--invaluable to anyone contemplating building or alterations. **Also over 40 practical problems in construction** with solutions.

The hundreds of hints and suggestions to house builders and house owners in this work will save many times its cost. The chapters on plumbing, heating--including furnace, steam, hot water, and exhaust steam--and ventilation, are especially complete, as are also the chapters on estimating, the law of contracts, liens, etc., specifications, superintendence, hardware, painting, plastering, etc.

### PARTIAL LIST OF CONTENTS

Reinforced Concrete: Testing, Mixing, Frost Effects, Finishing, Construction Forms, Retaining Walls, etc.; Structural Steel Buildings; Practical Problems in Construction with Solution; Estimating; Superintendence; Contracts and Specifications; The Law of Building Contracts; Materials; Masonry; Foundations; Carpentry; Stair Building; Framing; Steel Square; Plastering; Hardware; Painting and Glazing; Heating--Furnace, Steam, Hot Water; Plumbing; Ventilation; Electric Wiring for Bells, Lights, Burglar Alarms; Elevators; Architectural Drawing; Mechanical Drawing; Freehand Drawing; Perspective Drawing; Shades and Shadows; Architectural Lettering; Rendering in Pen and Ink and Wash; Water-Color Hints for Draftsmen; The Greek and Roman Orders of Architecture; Roofing; Tinsmithing; Sheet Metal Cornices; Skylights; Test Questions.

A.  
C. & B.  
5-08,  
American  
School  
of Correspond-  
ence:

Please send set Cy-  
clopedia Architecture,  
Carpentry, and Build-  
ing for free examination.  
I will send \$2 within 5  
days and \$2 a month until  
I have paid \$24.00; otherwise  
I will notify you to send for  
the books.

Name.....  
Address.....  
Occupation.....  
Employer.....

**CUT OUT THIS COUPON**

**AMERICAN SCHOOL OF CORRESPONDENCE  
CHICAGO**



# FREE

**If You Send Us  
The Coupon Now**

**O**F course you know all about the kind of paint and varnish removers that keep your new finish from drying—you have tried **that** kind.

**But**—have you tried the **other** kind—Johnson's Electric Solvo—the kind that **won't** keep your new finish from drying? Practically **all** high grade paint and varnish removers are exactly alike, **except** in this one very vital respect.

They're all made through license under a certain patented formula.

They all follow the formula pretty closely, **except Johnson's Electric Solvo.**

The formula calls for a large percentage of paraffin and this paraffin is what keeps the new finish from drying.

Now in Johnson's Electric Solvo we use only about one-fourth of the specified amount of paraffin.

Because by a special secret combination of materials we are able to produce even better results in removing the old finish without an excess of paraffin to spoil the new finish.

That's all there is to it.

And don't forget that Johnson's Electric Solvo doesn't cost you a cent more than the other kind.

Tear out the coupon on the opposite page, fill it out and mail it to us **now** before you forget it.

We will send you, all prepaid at our expense, a sample of Johnson's Electric Solvo.

Address:—

**S. C. Johnson & Son**  
**Racine, Wisconsin**

*"The Wood Finishing Authorities"*

**Send The  
Coupon  
To Us  
Now**

## FREE Wood Panels For You

**W**HEN you cut out the coupon on the opposite page, and send it to us, we will also send you a set of wood panels finished in various shades with Johnson's Artistic Wood Finishes, if you can make good use of them and will so write on the coupon. This set of wood panels will be mighty handy to show your customers so they can pick out just exactly what they want. And then you will give them just what they want, because you will find that Johnson's Wood Dyes will always match up exactly with the samples. For all woods to be finished Natural and in Golden Oak, Dark Oak, Antwerp Oak and Green Antwerp Oak, we advise the use of Johnson's Paste Wood Filler and Johnson's Prepared Wax. For all woods to be finished in all **other** shades, we recommend Johnson's Wood Dyes, and for filled-grained effect on open-grained woods, the use of Johnson's Paste Wood Filler over the Dye, followed by Johnson's Prepared Wax.

The wood panels will show you the superiority of such finishes.

**Delicate  
Shades In  
Johnson's  
Wood Dyes  
Are Now Sold In  
Bottles—Satisfaction  
Guaranteed**

**11 Shades In Bottles  
3 Shades In Cans**

So that there will never be the slightest possibility of disappointment with Johnson's Wood Dyes—delicate shades are now sold in bottles. It has cost us something like \$50,000.00 to make this change in our Wood Dye business. But we believe it is worth the money through the confidence of absolute satisfaction with Johnson's Wood Dyes. Bottles are the only containers for delicate shades that are absolutely impervious to chemical action and therefore you need never fear that Johnson's Wood Dyes will ever "turn out wrong."

Johnson's Wood Dyes are made in the following shades:—

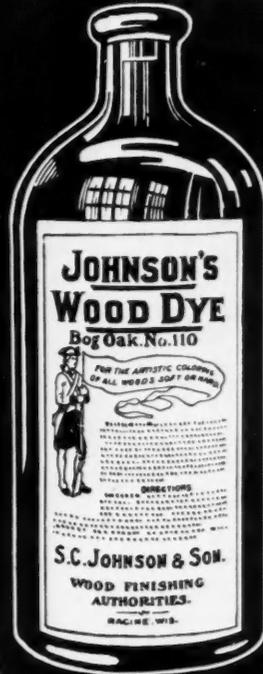
- |                           |                         |
|---------------------------|-------------------------|
| No. 126—Light Oak         | No. 128—Light Mahogany  |
| " 123—Dark Oak            | " 129—Dark Mahogany     |
| " 125—Mission Oak         | " 110—Bog Oak           |
| " 130—Weathered Oak       | " 121—Moss Green        |
| " 131—Brown Weathered Oak | " 122—Forest Green      |
| " 132—Green Weathered Oak | " 172—Flemish Oak       |
| " 140—Manilla Oak         | " 178—Brown Flemish Oak |

Any desired shade can be secured by mixing Johnson's Wood Dyes—to lighten colors use alcohol—to darken use Flemish Oak, No. 172. Cut out the coupon below and send it to us for samples of Johnson's Electric Solvo, Johnson's Wood Dyes (any two desired shades), our handsome 48-page Book Edition ACB-5, and if you can use them and request it, we will also send you a set of wood panels finished in various shades with Johnson's Artistic Wood Finishers, Johnson's Wood Dyes, Johnson's Paste Wood Filler and Johnson's Prepared Wax. The book tells all about finishing, refinishing and polishing woods. It's full of practical ideas of great value to painters and wood finishers.

**S. C. Johnson & Son**  
**Racine, Wis.**  
*"The Wood Finishing Authorities"*  
**Send The Coupon  
To Us Now**

and we will send you the samples of Johnson's Electric Solvo, Johnson's Wood Dyes, our handsome 48-page Book "The Proper Treatment for Floors, Woodwork and Furniture," and wood panels, if you ask for them.

**Free**



**FREE  
Coupon**

Station ACB-5  
**S. C. Johnson & Son**  
**Racine, Wis.**

Gentlemen—My paint dealer's name is .....

His address is.....

for which please send my **Free**, prepaid, two (2) samples of Johnson's Wood Dye.....shades, and one (1) sample of Johnson's Electric Solvo, and copy of your new 25c book, "The Proper Treatment for Floors, Woodwork and Furniture," all **Free** as per your offer.

My name is.....

City.....

Is your roof waterproof to stay? Not unless your roofing is made of natural asphalt. That is the only material which gives a roof resisting, lasting life.

## Genasco Ready Roofing

is made of Trinidad Lake Asphalt  
—the best in the world.

Ask any progressive dealer for Genasco. See that you get what you ask for, if you want to be sure your roof will stay waterproof. Write for Book 76 and samples.

THE BARBER ASPHALT  
PAVING COMPANY

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

PHILADELPHIA

New York San Francisco Chicago

## ROOFING SLATE

Genuine Bangor and Albion Bangor  
Structural Slate, Vaults,  
Blackboards, Etc.

We are the largest manufacturers of

**"CLEAR BLACK"**

For Electrical Work. Write for Price List.

**BANGOR SLATE MINING CO.**  
Trust Building. BANGOR, PA.

## SLATE PRODUCTS

FOR CONTRACTOR AND BUILDER

Roofing Slate Blackboards  
Grave Vaults All Slate Products

WRITE FOR PRICE LIST

**PITTSBURG SLATE CO.**  
Houck Bldg. BANGOR, PA.

in the world of business. He has a thorough knowledge of every phase of the buying, manufacturing and selling of everything identified with the millwork business. At present a very complete and comprehensive new catalog for the Chicago Millwork Supply Co., is being prepared, and will be ready for mailing in a few days. It will be sent free to any one writing to the address given above.

### The Honeywell System of Hot Water Heating

The Honeywell Heating Specialty Company, of Wabash, Ind., is the inventor and manufacturer of a hot water heating system which is undoubtedly far in advance of any other method of hot water heating, in cost of installation, efficiency and fuel economy. In proof of this statement, the Honeywell system is recommended and used by hundreds of the most reliable and progressive heating engineers, steam fitters and architects throughout the United States, Canada and parts of Europe, and during the past two years over eight thousand (8,000) systems have been installed.

The Honeywell Heat Generator and Unique Radiator Valve are devices which appeal to every intelligent tradesman and house owner because their value is quickly seen and appreciated.

In the Honeywell system the pipe areas are 50 per cent smaller and the radiators are 15 per cent smaller than those employed in any other



POSITION OF VALVE WHEN  
RADIATOR IS CLEARED OFF

method of hot water heating, thus lessening the cost of pipe, fittings, pipe covers, radiator valves, radiators and labor, in all amounting to approximately 20 per cent, which large saving in first cost cannot consistently be overlooked. There is a more potent reason for using smaller pipe and radiators than the mere saving in cost, i. e., a lessening of the water contained in the system, amounting to approximately 33 per cent, thus securing that rapidity of action which counts for everything in a hot water heating job.

Through the action of the Honeywell Heat Generator, the water is caused to circulate from three to five times faster than is possible in the old-fashioned, large pipe systems; this, in connection with one-third less water to drive around, produces and maintains an average higher temperature in the radiators, thus liberating a larger number of heat units in the rooms; this with one-third less water to heat makes the Honeywell System a great fuel saver.

One of the disadvantages of the old-fashioned method of hot water heating is its slowness to heat in the morning, due to the large quantity of water to heat and circulate. This is entirely overcome in the Honeywell System; and a building can be heated as quickly with this system of hot water heating as with steam.

Because of the very rapid circulation, the water is caused to flow over the heated plates of the boiler more rapidly and thereby absorb more of the heat units from the fire, thus liberating more heat into the rooms. This is what makes the Honeywell System a great fuel saver.

Another of its excellent qualities is the wide range of temperatures. With the Honeywell System any temperature between 85 degrees and 240 degrees may be secured and

# Congo ROOFING

Never Leak



Illustration Shows Congo on Roof of L. S. White Foundry, Endicott, N. Y.

“*A Congo Roof*” is the answer to all roofing difficulties. No leaks, no worry, simply solid satisfaction.

Congo is unaffected by climatic or weather changes. Once laid in place it can be relied upon to give *real* protection.

Congo is a vast improvement over the old style roofings of tin, slate, shingle and asphalt.

Congo is easily laid. A hammer, a knife and a ladder are all you require. Cement, nails, and caps are furnished free with every roll.

Before ordering your new roofing, send for free Booklet and Sample of Congo. Once you see how tough, pliable and waterproof it is, you will order no other kind.

---

## UNITED ROOFING & MFG. CO.

Successors to Buchanan Foster Co.

555 West End Trust Bldg., Philadelphia, Pa.

Chicago and  
San Francisco

# Books on Estimating

## Estimating Frame and Brick Houses

This book tells how to estimate, step by step, the cost of labor and materials necessary in building a frame or brick house from the excavation for foundation through the various processes up to painting. Simple and practical 224 pages. **\$1.00.**

## Estimators Price Book and Pocket Companion

This book gives the contractor and builder a handy reference book for the prices of all kinds of building material. It lists in systematic form all items which make up a complete builder's estimate. Approximate prices are given with a blank column in which to mark your correct local prices. This book will be quite a time-saver. By I. P. Hicks. 172 pages, pocket size. **\$1.00.**

## Builders' Guide

An easy practical system of estimating materials and labor for contractors, carpenters and builders. Gives the average day's work that can be performed by various building mechanics, and the average rates on which to figure in almost all details of building construction. By I. P. Hicks. 160 pages. **\$1.00.**

## Estimating

A practical system of estimating, taking up each successive step in detail and covering all the important points in building construction. As a practical example a complete plan of a house is given, and an estimate worked out from this. By Edward Nichols. 140 pages. **\$1.00.**

## Contracts and Specifications

A practical working guide of forms for the contractor, architect and owner. The duties and responsibilities of each are fully explained. Forms of public and private specifications, contracts, etc., are given. By James C. Plant. 130 pages. **\$1.00.**

## The Building Estimator

This book covers practically the entire field of building construction from small buildings up to large hospitals, office buildings, machine shops, etc. Photographs of the various buildings are given to show the style of building on which the facts are based. Treats of concrete work, steel construction, etc. One of the best books on the subject. By William Arthur. 184 pages. **\$1.50.**

## How to Measure Up Woodwork for Buildings

Giving reliable directions to enable builders to measure up the quantities of woodwork for brick or frame houses. By Owen B. Maginnis. 79 pages. **50 cents.**

The above books are well known as trustworthy guides. We recommend them. Any book sent post-paid on receipt of price. Money refunded if not satisfactory. : : : : : : : : : :

**Industrial Publication Co.**

14 Thomas Street,

NEW YORK

maintained, and when the higher temperatures are required for extremely cold weather, it is equal in heating power to a steam heating plant when operated at 10 pounds pressure.

Another desirable feature is that it is unnecessary to spoil nicely decorated rooms with large, unsightly piping, because the circulation is so rapid that a  $\frac{3}{4}$  inch pipe will supply plenty of water to the largest radiator that may be used.



The Unique Radiator Valve is another of the splendid features of the Honeywell System. With this valve, the pipes are connected to but one end of the radiator, making it easy to remove carpets in house cleaning time. Should it be necessary to add more sections to a radiator, it is easily and quickly accomplished without making more holes in the floors. When the Unique Valve is used it is not necessary to cut or take up any flooring or joists on the upper floors. This point will be appreciated by every house owner who contemplates the installation of a heating job.

Owing to the by-pass arrangement of the valve, hot water is always being delivered right through the valve, even though the valve be closed, and in a few seconds after opening the valve hot water is passing entirely through the radiator.

Much more could be said in favor of this splendid system of hot water heating, and it will pay any one who contemplates installing a modern heating system to write the Honeywell Heating Specialty Company, of Wabash, Ind., for full information.

## Perfect Quality Metal Ceiling

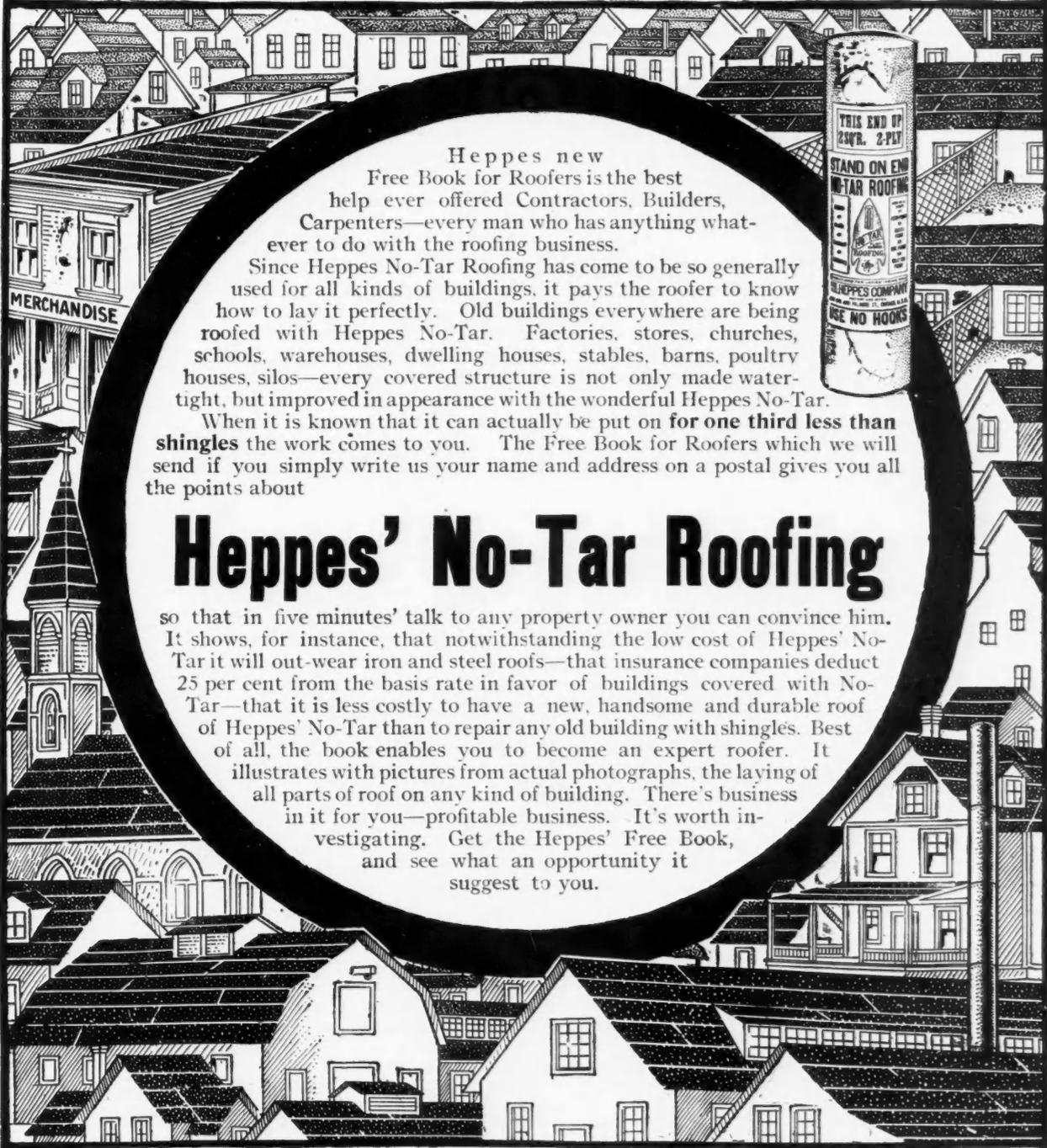
This being the age of specialties, your attention is invited to the manufacture and erection of Steel Ceiling. Our grandfathers, and perhaps even our fathers, can remember the old log cabins with their mud daubed and whitewashed interiors. A step in advance was the plain plastered wall, followed by attempts at decorations with wood, plaster of Paris and other combinations. Lastly, the metal interior was introduced,



which for several years numerous firms have been manufacturing, and which some are pleased to call wall paper designs. But it has remained, however, for F. O. Schoedinger to perfect and reach the height of metal interior ornamentalations. His designs are of the most elaborate and pleasing to those of good taste, and even to the most critical. His patterns are of the most artistic on the market, not the gaudy, incoherent mass of scrolls, but the rich deep designs sought after and admired by all who have seen them.

He manufactures the invisible joint, causing the same to be fire, water and dust proof—perfectly sanitary, affording no harbor for germs and parasites. Hence, it is recommended by architects and physicians for schools, churches, stores, lodge rooms, amusement halls, hospitals, offices and residences. Progress in the manufacture of Steel Ceiling means not only growth in the size of a factory, but it also means the perfection of processes and secrets of manufacture which

# Write for Heppes Free Book for Roofers—Let Us Show You How to Get All the Roofing Contracts You Can Handle



Heppes new Free Book for Roofers is the best help ever offered Contractors, Builders, Carpenters—every man who has anything whatever to do with the roofing business. Since Heppes No-Tar Roofing has come to be so generally used for all kinds of buildings, it pays the roofer to know how to lay it perfectly. Old buildings everywhere are being roofed with Heppes No-Tar. Factories, stores, churches, schools, warehouses, dwelling houses, stables, barns, poultry houses, silos—every covered structure is not only made water-tight, but improved in appearance with the wonderful Heppes No-Tar. When it is known that it can actually be put on for one third less than shingles the work comes to you. The Free Book for Roofers which we will send if you simply write us your name and address on a postal gives you all the points about

## Heppes' No-Tar Roofing

so that in five minutes' talk to any property owner you can convince him. It shows, for instance, that notwithstanding the low cost of Heppes' No-Tar it will out-wear iron and steel roofs—that insurance companies deduct 25 per cent from the basis rate in favor of buildings covered with No-Tar—that it is less costly to have a new, handsome and durable roof of Heppes' No-Tar than to repair any old building with shingles. Best of all, the book enables you to become an expert roofer. It illustrates with pictures from actual photographs, the laying of all parts of roof on any kind of building. There's business in it for you—profitable business. It's worth investigating. Get the Heppes' Free Book, and see what an opportunity it suggest to you.

**SAMPLES FREE** Write today and we will send you with Heppes' Free Book for Roofers, Free Samples of all weights of Heppes' No-Tar Roofing. There's a weight for every purpose—sidings as well as roofings. Remember Heppes No-Tar is not like any of the "Ready Roofings." Heppes' No-Tar is made of natural asphalt (no tar) and the best long wool fiber, into which the waterproofing has been forced under intense heat and tremendous pressure. It is coated with flint. There's practically no wearout to it. Get the Samples and test them to your own satisfaction. **WRITE RIGHT NOW!**

**THE HEPPES COMPANY** 632 S. 45th Avenue CHICAGO



# Get This New Millwork of You Can't Buy New Millwork Or Builders' Supplies of Better Quality No Matter How Much You Pay

I've been all through the Millwork and Builders' Supplies Manufacturing Business from the ground up—I've spent my life at it, and I know that I've got to tell the truth to you about our goods or I can't do business with you. All I ask you to do is, give me the chance to prove the High Quality of our goods to you, and then I know that our prices will speak for themselves. I'll save you good money on every order when you satisfy yourself that my Millwork and Builders' Supplies are all up to the High Standard of Quality that your work demands. Now prove it by writing me, and save yourself from 20 to 150 per cent on every order you ever send me after you get my New 1908 Big Free Millwork

Catalog. Write a postal for it, or use the Free Coupon on the page opposite. Don't let anything stop you from sending me your name and address so I can send you this

**FREE**

**Get This Big Millwork Catalog Free**

Big 1908 General Millwork Catalog, postage paid and free to you. Remember, we guarantee satisfaction or money back. It will pay you to write me now before you overlook the matter. Address me personally

**E. P. HOERR, President**  
**SCHALLER - HOERR CO., Chicago, Ill.**  
 FACTORIES AND MILLS: 413 to 415 Blue Island Ave.  
 402 to 416 West 15th St.

# Big Book Free About Highest Quality

**Local Dealers Have to Charge You 20 to 150 Per Cent More Than We Do and We Sell You Highest Quality Goods Direct**

Our business is done direct with you—the **Contractor and Builder**—the man who needs and uses High Quality Millwork and Builders' Supplies. We haven't anything against the "local dealer"—but he can't make you the low prices that we can, for the same high quality goods. He can't deliver what you need as promptly—safe delivery guaranteed—as we can, because he don't and can't carry a large stock of all you need—sizes, etc., as we always do at our Mill and Factory. And, of course, **The Lumber Trust** would like to prevent our selling direct to you because local dealers buy of the trust, which keeps prices as high as it can possibly get.

But here's our proposition to you—

## We Cheerfully Furnish You with Estimates Free of Charge

When you get our Catalog and Estimate on your work—decide for yourself under our Guarantee to you. We let you see the goods, and if not perfectly satisfactory in every way you don't have to keep them. Send me word of what you want now—or are going to want in the Millwork Line or in Builders' Supplies. Or just write me a postal or the coupon below first, if you wish, so I can send you our Big New 1908 Catalog Free. In either case I'll do just what you ask me to do and do it promptly. It won't cost you a cent until you decide to place a trial order with us. And when you do place a trial order with us you'll find that you will save from 20 to 150 per cent on local dealers' prices.

That's worth while investigating—isn't it?

Put it up to us to prove the High Quality of our goods—all up to the Official Goods and Standards that can be bought anywhere—no matter what you pay.

Remember that we don't claim to save you "just half" on every single item. You know that that isn't the way anybody's prices can run on all material of high quality.

But what we do claim, as our free Catalog and prices and the goods will prove, is to save you at least 20 per cent on everything, and on many things you will find that dealers have to charge you 150 per cent more than we do.

On almost all orders we can save you half or more than half, as you will see.

Send us your estimates to figure for you promptly free of charge and you'll find that you can underbid your competitors and make more money besides.

So get in a position to save money in your own pocket by writing me today for our

## Big Free 1908 General Millwork Catalog and Low Prices

Address me personally—

**E. P. HOERR, President**

**SCHALLER-HOERR CO., Chicago, Ill.**

FACTORIES AND MILLS: 413 to 415 Blue Island Ave.  
402 to 416 West 15th St.

Here are a Few of the Items Shown in the Free Millwork Catalog of

# SCHALLER-HOERR CO CHICAGO

Local Dealers would charge you from 20 to 150 per cent higher prices than we will, direct from our mill, for the following and several thousand other articles of highest quality Millwork and Builders' Supplies:

Astragal moulding.....	4-panel pine.....	Rails.....
Astragals, folding door.....	5-panel pine.....	Roofing, all kinds.....
Attic sash.....	5-cross panel pine.....	Sash and windows.....
Baluster stock.....	Drawer cases.....	Screen doors and windows.....
Balusters, colonial.....	Flooring.....	Spindles.....
Barn sash.....	Frames.....	Stain, oil and varnish.....
Base.....	Front doors.....	Stairs, complete.....
Blinds.....	Gable frames.....	Storm sash.....
Brackets.....	Glass.....	Thresholds.....
Building paper.....	Grates.....	Transom sash.....
Casing.....	Grilles.....	Wainscoating cap.....
Ceilings.....	Gutters.....	Window glass.....
Cement brick machines.....	Hot bed sash.....	Window frames.....
Clapboards, steel.....	Interior columns.....	Windows and sash.....
Colonial columns.....	Lattice.....	
Door frames.....	Mantels.....	
Doors.....	Mouldings.....	
Panel.....	Newels.....	
Screen.....	Paints.....	
With yellow pine panels.....	Picture moulding.....	
Yellow pine.....	Quarter round.....	

Our low prices direct to you are for all Millwork and Supplies of the very highest quality—better than you can expect to get of local dealers. Our Big Free Millwork Catalog illustrates and accurately describes several thousand bargains in all brand-new goods. You could not get better goods than ours no matter how high prices you paid. Get our free catalog and prove this.

Cut or Tear Out and

Send Me This  
**FREE BOOK COUPON**

E. P. HOERR, President

**Schaller-Hoerr Company**  
413 to 415 Blue Island Ave.  
Chicago, Illinois

Send me your New 1908 Big Free Millwork Catalog with all latest low prices direct from your mill and factory.

Name.....

Postoffice or Street.....

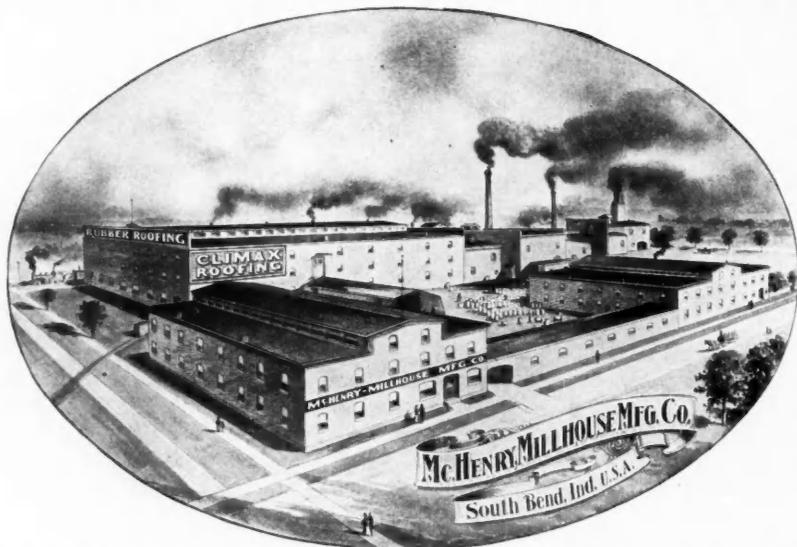
City..... State.....

bring the product to the highest possible plane as regards material, construction and finish.

When thinking of Steel Ceilings don't forget "The Perfect Quality Steel Ceiling" manufactured by F. O. Schoedinger, 146 and 148 North Third street, Columbus, Ohio. An illustrated catalogue mailed free of charge.

**Directions for Applying Prepared Roofing**

The boards of the roof should be seasoned, of uniform thickness, laid close together, thus making a smooth surface,



and should be well swept to remove nails, chips, etc. On a sloping roof it can be laid from gable to gable, or from ridge to eaves. Overlap joints three inches, cement between laps,

and place nails two inches apart. End should project at eave 1 1/2 inches and be nailed to edge of board (not on top). When roof is covered, coat seams and caps or top of nail heads thoroughly with cement to prevent rusting. A coat of Standard Elastic Paint should be applied every two or three years.

The best plan is to lay the roofing up very close about the chimney, copings, walls, etc., and then taking a separate strip, lay it closely about the wall or chimney, letting one end project out over the roof. Nail this very tight and cement heavily. Fasten the other end on the wall and on coping with a strip, finishing the top of the strip to make a tight joint. Cap the ridge with a strip of roofing cut for the purpose. Always cement all joints heavily.

The above valuable information was obtained from the McHenry-Millhouse Manufacturing Company, of South Bend, Ind. Their roofing, the "Veribest," is perhaps the best rubber surface composition roofing made today. Nothing but high-grade materials and perfect processes are used in its manufacture. The result is a roofing that is recognized as the standard of the trade.



The prices are attractive, and further information will be very gladly furnished in regard to this high-grade roofing, to any reader of the AMERICAN CARPENTER AND BUILDER who



# CARBORUNDUM



WE WANT EVERY

## CARPENTER AND MECHANIC

To know the superior quality of Carborundum Sharpening Stones

A man who loves a tool with a keen, lasting edge can't afford to be without Carborundum—he won't be without it if he once realizes its superiority.

For Sale by Dealers everywhere.



**THIS POCKET STONE  
BY MAIL 15 CENTS**

Let us send you this little Machinist's special Pocket Stone.

**By Mail 35 Cents**

## THE CARBORUNDUM COMPANY

Niagara Falls,    :    :    :    :    :    :    New York



**The Touch of Time Has Tested Vulcanite FOR SIXTY YEARS**

Vulcanite is a natural **Mineral Rubber** which we control. It is mined the same as coal and costs us \$100 a ton. It is the best and most expensive material used to manufacture ready-to-lay-roofing. Vulcanite was first made in Europe sixty years ago. It is the most extensively used roofing in European countries today. Vulcanite was awarded the **highest honors** in America at the Philadelphia Exposition thirty years ago. It is not the cheapest roofing at first cost but **is cheapest** in the end.

In the process of manufacture **Vulcanite** is all subject to enormous pressure, consequently is made dense and very firm. Each square weighs considerably more than other roofings, and ply for ply is much thicker.

In the manufacture of **Vulcanite Roofing** all

the felt used is a pure all-wool felt—there is not a particle of paper or other cheap filler in it. The base of most cheap prepared roofings is a felt composed of a large percentage of waste paper added to the wool pulp. Our free booklet tells the entire process of manufacturing **Vulcanite**—write for it.

HEAT TEST

**WE GIVE GOOD GUARANTEES**

**Vulcanite** is guaranteed by us as follows: Three Ply to wear **fifteen** years. Two Ply to wear **ten** years. One Ply to wear **five** years. We are manufacturers and our guarantees are good.

**TO DEALERS WHO SELL IT.**—**Vulcanite** is guaranteed as above and dealers are authorized to give customers written guarantees in our name.

**TO CONTRACTORS WHO LAY IT.**—In bidding on roof contracts the contractor is authorized to guarantee **Vulcanite** as above. We will stand behind every contract guaranteed.

**TO OWNERS WHO BUY IT.**—Owners of buildings on which **Vulcanite** roofing is laid can have a direct guarantee from us through the dealer and contractor as above named

**FREEZING TEST**



Put a Piece of it on ice, or expose it to zero temperature; if it becomes brittle, if you can break it like glass—Don't Buy It.

**FIRE TEST**



Lay a Live Coal on It; if it takes fire—Don't Buy It.

**WATER-PROOF TEST**

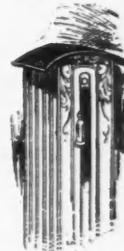


Soak It in water over night; if it absorbs moisture and gets soft and flimsy — Don't Buy It.

**ACID TEST**



Immerse It—in acid; if it is affected in any way—Don't Buy It.



Lay a Piece of **Vulcanite** Roofing on a steam pipe or radiator for several hours. If the coating melts or evaporates—Don't Buy It.

**BOOKLET OF VALUABLE ROOF INFORMATION SENT FREE**

**FREE SAMPLES**

**Vulcanite** will not freeze or crack in winter—will not crumble in dry weather—will absolutely refuse to leak in wet weather. If your dealer does not carry "**Vulcanite**," write us for samples and free booklet. See "**Vulcanite**" before you buy other roofings.

**WRITE TODAY—SURE**  
**PATENT VULCANITE ROOFING CO.** 825 Campbell Ave. CHICAGO



drops a line to the McHenry-Millhouse Manufacturing Company, South Bend, Ind.

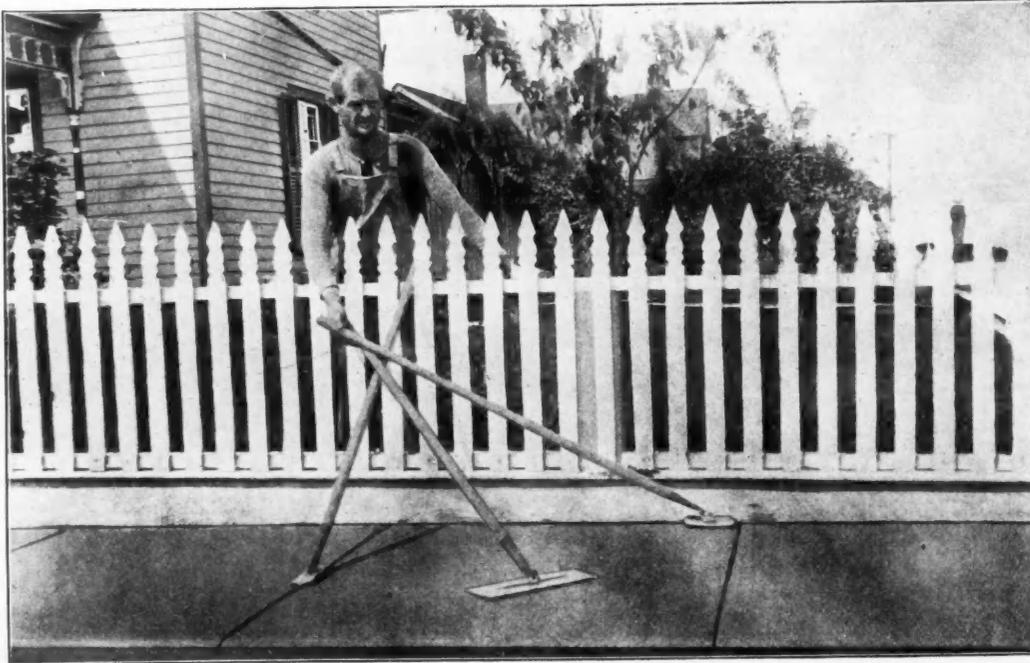
### Concrete Workers' Tools

In this number will be found an attractive announcement of the Arrowsmith Concrete Tool Company, of Arrowsmith, Illinois. The inventor and patentee of the concrete workers' tools manufactured by this firm is a practical concreter of many years' experience, and learned all the backsets and

work. The creasers and edgers are exactly the shape found to be needed by a practical concreter. The easy position of the operator as compared to the old back-breaking method is a feature that should not be overlooked. There are a number of advantages in the construction of these tools which are fully shown in the new catalogue of this firm.

In the patented coupling of the Arrowsmith tool coupling, sand does not bother in the least. Then also the slotted plate to receive the handle connection to fit it allows the

grooved cap to be loosened without letting the trowel slip out of place when a new position is needed. With this tool work can be finished as rapidly as the top coat can be put on. There is an emergency handle for the spreading of top coat work which has the same patented fastening that is used on all long-handled tools. With these tools practical concreting is made easy. Write for their new catalogue, which gives additional details, in regard to these practical and labor saving concrete workers' tools; and also valuable infor-



disadvantages there was to the laying of sidewalks and floors of concrete. He is also a first-class mechanic, and combines with his inventions most essential features—durability and neatness of workmanship, which make tools practical. Knowing full well the needs of proper tools for speedy work in concreting, he set about to make and patent what has proved to be among the most reliable and durable

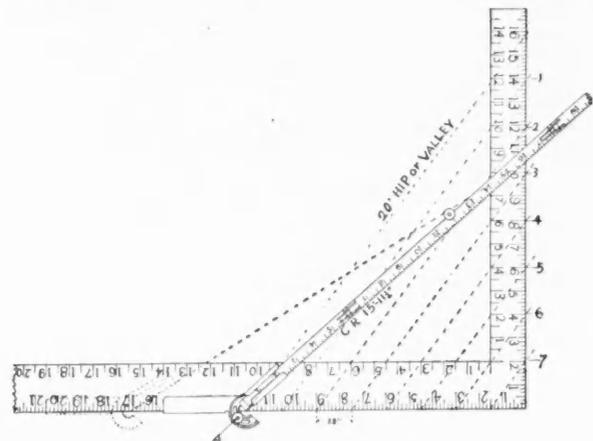
set of tools for sidewalk and flooring that has yet been brought to the notice of workmen. The superior merit of these tools is readily understood when it is known that top coating of concrete can be worked without the floating process, and the tedious waiting for it to set a little before it can be finished. Sometimes in the work the finisher has to wait a long

time when conditions are not right for this setting before the finish by the usual method. But with this set of tools it is said the finishing can be done wetter than in any other process. Some of the cuts in the firm's catalogue show that sides of buildings and paling fences are never in the way. The work can be done from the opposite side of the fence or the opposite side of the walk, no matter how wide, and is limited only by the length of the handles used. The great speed in creasing and edging is because of the easy position of the adjustable handles. These tools are all perfectly shaped for rapid and practical

information and instructions as to the proper proportioning and mixing of materials for successful concrete work.

### A Very Unique and Useful Tool

Great interest has been awakened among building contractors and carpenters in general over the invention of an Omaha man, Mr. E. Oehrle. Mr. Oehrle has perfected and



placed on sale what is known as the "Acme Self-computing Framing Tool"; and his invention is both a labor and time-saver. The tool is made for use in connection with an ordinary carpenter's square. The cut shown here is two-thirds full size, so one can see that the tool itself is of convenient size to carry in the pocket.

When the rule is placed in the tool it comes to a stop, so that when it is placed on the square, the corner of the rule becomes the pivotal point; and it will always measure accurately from the edge of the square no matter in what

# LUMBER AND BUILDING MATERIAL

## Special Offer To Contractors And Builders

Buy At **WRECKING PRICES** **CHICAGO HOUSE WRECKING CO.** An Opportunity To Save **25 TO 50 PER CENT**  
**IMPORTANT! Send Us Your Lumber and Building List for Our Estimate**

### Brand New Lumber for Sale

The Chicago House Wrecking Company is the largest concern on earth devoted to the sale of Building Material and General Supplies direct to the Carpenter and the Contractor. By dealing with us you are purchasing at first hands. This company was organized in 1893 for the purpose of dismantling the Columbian Exposition at Chicago. Since that time we have successfully purchased and dismantled every Exposition of any note. We have from this one source alone sold over One Hundred and Sixty-five Million feet of lumber. It was from this natural cause that we engaged in the lumber business. We found that it was impossible for us to successfully take care of the thousands of our customers and supply them with lumber from this one source. As a consequence we purchased outright various saw mills and also bought at forced sales millions of feet of high grade, brand new lumber. In addition we have for sale a complete stock of mill work, plumbing material, heating apparatus, structural iron, hardware and everything that enters into the construction of a building of any kind or for any purpose. Our fame is National. No other firm can make the sweeping statement that we do: That you can come into our establishment and buy everything needed both to build the building and completely equip it. We invite inspection of our stock.

### Fifty Million Feet In Stock

At the present time, we have for quick sale over fifty million feet of brand new, first class, high grade lumber of every kind. We can furnish you lumber for building houses, churches, barns, stores and factories. And it is the best grade of lumber. Just as good lumber as is to be found anywhere on earth. We are making special prices to those who buy at once. Never in years has lumber been offered at such prices as we offer it. The best proof of this is to allow us to make a bid on your estimates. Just make a complete list of everything you need for any particular job you may have on hand and it will surprise you what we can do in the way of prices. Nothing like it was ever heard of. The best and most convincing proof of our prices is the fact that during the past sixty days while others have been bewailing poor business, we have steadily increased and have sold vast quantities of lumber and building material. Much more in fact than we have ever sold in any corresponding period in the history of this business. You will save in dealing with us. Our broad and binding guarantee protects you absolutely. You will get from us just the material that you purchase. It stands to reason that our goods must be right. How else could our business have attained its wonderful commercial proportions? All we ask is an opportunity to convince you. Or, better yet, come on to Chicago, visit our yards, see our goods. We will show you it is all that we represent. Then and there we will make you a price so low that it is bound to secure your business. You can't overlook such a chance as we offer. It is the opportunity of a life time. You will never again be able to purchase lumber and building material at such low prices as we offer today. Write for particulars.

### Satisfaction Guaranteed

We guarantee absolute satisfaction. We mean every word of that. We want your business only on a square business-like basis. We will deal honestly and fairly with you. If you buy any material not fully up to our description, we will either refund the purchase price or exchange it for correct material. This company has a capital stock and surplus of over One Million Dollars. We refer you to any Bank or Banker anywhere. Write to any commercial agency or ask us for names of people who have bought their lumber from us recently and we will send you copies of hundreds of letters received by us daily. Our best advertisement is the vast number of satisfied customers. **Write Today For Our Low Lumber Prices**  
Ask us to send you our latest lumber price list. It will be sent you so clearly and plainly that you can tell at a glance just what our quotations are. The grades are clearly defined. No attempt to humbug you on quality. We want to furnish you just what you buy. We want you to be able to say you "buy your lumber and building material from us and get value for your investment." That's the way we built up this business. That's the way we intend to continue to build. We require your patronage and good will. Out-line your needs and we will make you a reply so convincing and clear that you can't help but give us the business.

## Everything Used In Building Sold At A Big Reduction

### BARGAINS IN DOORS

5000 4-panel doors 1 3/8-in. thick, size 2 ft. 6 in. x 6 ft. 6 in. **98** each. Size 2 ft. 6 in. x 4 ft. **\$1.05** each. We carry a complete stock of brand new doors of all sizes and in every specification. Handsome high grade front and vestibule doors, strictly "A" quality and the best of their respective kind. They are set with level plate glass, or we can furnish them glazed with fancy lace design, double-strength glass. They range in price from **\$3.75 to \$20.00**. High grade front doors, brand new stock strictly "A" quality White Pine, glazed with sand blast glass size 2 ft. 6 in. x 6 ft. 6 in. **\$3.15**. Other sizes at proportionate prices. **Corridor Redwood Sash Doors**, strictly first class glazed with clear glass, 2 ft 6 in x 6 ft. 6 in. **\$2.50**. 2 ft. 8 in. x 6 ft 8 in. **\$2.60**. Double Sash Doors for stores or vestibule strictly "A" quality White Pine, 1 3/8 in. thick, glazed, size 5 ft. x 7 ft. with double strength glass **\$6.00**. All sizes in stock up to 6 ft. x 8 ft. Brand new 3 cross panel O. G. Doors with panels raised both sides, size 2 ft. 6 in x 6 ft. 6 in. **\$2.07**. Size 3 ft. x 7 ft. 6 in. **\$3.00**. A complete stock of all sizes. Four Panel O. G. Doors White Pine size 2 ft. x 6 ft. 10,000 used doors from various wrecking operations. In this lot we have doors taken from small cottages and buildings ranging from 2 ft. x 6 ft. up to 4 ft. x 8 ft. in good condition at **40c**. Also fancy glazed front doors for residences ranging in various sizes at **\$1.50** and up. One lot of large barn doors used at the St. Louis Exposition, fancy designs, strongly built, each **\$2.00**. Write at once for full particulars.

### HIGH GRADE NEW MILL WORK

We are in better shape to quote low prices than any other concern on earth. We do not buy our goods in the regular way. We purchase at Sheriff's Sales, Receivers' Sales and Manufacturers' Sales. We can furnish you mill work of every kind and character. We can furnish everything needed in mill work both regular and special. Send us memorandum of your requirements. Let us make you an estimate. Note our low quotations. Colonial Porch Columns, strictly No. 1 Poplar, trimmed, sizes, 6 in. x 6 in. 4 ft. long at **\$1.25**; 8 in. x 8 in. 4 ft. long at **\$1.45**; 6 in. x 6 in. 8 ft. long at **\$1.70**; 8 in. x 8 in. 10 ft. long at **\$2.70**. Fancy Porch Columns, sizes, 4 in. x 4 in. 8 ft. long, at **65c**; 5 in. x 5 in. 9 ft. long at **\$1.15**; 6 in. x 6 in. 10 ft. long at **\$1.50**. Fancy Porch Newels, 4 in. x 4 in. 4 ft. long at **35c**. Stair Newels at **\$3.15** and up. Angle Newels at **\$1.00**. Fancy Stair Balusters at **90c**. Porch Balusters at **50c**. Corner Beads at **10c**. Base Angles, per 100 ft., **\$1.00**. Porch Spindles at **20c**. Porch Brackets at **7c**. Fancy Face Brackets at **35c**. Adjustable Gable Ornaments at **\$1.25**. Corner Blocks 2 1/4-c. Head Blocks at **4-12c**. Base Blocks at **4 1/4-c**. Top Rail, per 100 ft., **\$3.90**. Bottom Rail, per 100 ft., **\$3.00**. Quarter Round, per 100 ft., **30c**. In fact we can furnish at exceedingly low prices everything you can possibly require in mill work. Get our prices on Flooring, Shingles, Ceiling, etc.

### BARGAINS IN WINDOWS

5000 windows from various wrecking operations at prices ranging from **29c up**. In this lot are a number of windows that are very fancy that will be sold at half the price of new ones. Fancy front windows, brand new, high grade 1 3/8 in. check rail, they are up-to-date in design, bottom sash glazed with double strength clear glass, top sash with fancy ornamentations, size 3 ft. 8 in. x 5 ft. 2 in. **\$4.90**. 4 ft. x 5 ft. 10 in. **\$6.35**. Cottage front windows size 3 ft. 8 in. x 4 ft. 2 in. **\$3.52**. 4 ft. x 5 ft. 2 in. **\$4.20**. 4 ft. 6 in. x 6 ft. 2 in. **\$6.89**. Two light check rail windows, size 1 ft. 8 1/8-in. x 3 ft. 2 in. **63c**. 1 ft. 1 1/8-in. x 4 ft. 6 in. **74c**. 2 ft. 1 1/8 in. x 3 ft. 10 in. **81c**. 2 ft. 2 1/8 in. x 4 ft. 10 in. **95c**. Four light check rail windows size 2 ft. 1 in. x 3 ft. 10 in. **70c**. 2 ft. 5 in. x 4 ft. 6 in. **95c**. Eight light check rail windows size 2 ft. x 4 ft. 6 in. **77c**. Cellular sash two lights, size 2 ft. 1 in. x 16 in. **39c**. 2 ft. 9 in. x 20 in. **62c**. 500 Storm Sash, first class, two light brand new at **74c**. 265 Fancy windows from the St. Louis Exposition, each **60c**. 1000 second-hand Barn Sash, each **25c**. 5000 used Sash from the St. Louis Exposition glazed with 1 3/8 in. ribbed factory glass in all sizes which we will sell at per sq. ft. **6c**. All kinds of Window Glass, Plate Glass, Ribbed Sky-light Glass and everything required in Window Glass and Sash.

## DON'T BUY YOUR BUILDING MATERIAL UNTIL YOU WRITE FOR OUR ESTIMATE

### Rubberized Galvo Roofing \$1 25 Per 108 Square Feet.

The greatest Roofing value on earth. No higher grade manufactured. Unexcelled as to quality, wear and economy. Easy to put on. Requires no previous experience. Can be put on over shingles without removing them. Does not require a coating after it is on the roof. Weather-proof and fire-proof. Contains no coal tar, resinous or injurious compositions. This roofing is brought direct from manufacturers and is usually sold at double our price. It is guaranteed to give lasting service. Rubberized Galvo Roofing is slate color, tough, leather-like material made of a combination of wool felt and highest grade of natural, pure asphalt. Makes buildings warmer in winter and cooler in summer. Not affected by acids or gases. Has rubbery surface and on this account we call it Rubberized Galvo Roofing. It toughens and hardens with age. We furnish with each order sufficient cement to make the laps and large head nails to put it on with. It is appropriate for any kind of building. **1 ply per sq., \$1.25. 2 ply per sq., \$1.40. 3 ply per sq., \$1.75**. These prices are per sq. of 108 sq. ft., and are F. O. B. Cars, Chicago. Also have in stock 1000 sq. of pure asphalt rock surfaced roofing bought by us at manufacturers' sale. Put up two to five lengths to a roll and each roll contains 108 sq. ft. Price per 108 sq. ft. including nails and caps **\$1.50**. Red, Rosinized Building Paper per roll 500 sq. ft. **45c**. Slaters' Roofing Felt, per roll of 500 sq. ft. **75c**. Write for free samples.

### PLUMBING AND HEATING

**\$1.25** for a White Enameled Kitchen Sink, 3,000 in. common cast iron, flat rim, white porcelain enameled, brand new kitchen sinks 16 in. wide and 24 in. long, with nickel plated strainer and collar for connection, all ready to install. Kitchen sinks with backs, made in one piece at prices ranging from **\$7 to \$15**.  
Steam and Hot Water Heating Apparatus. We guarantee to save you from 30 to 50 per cent on heating jobs of every kind. Send us your blue prints and specifications for our estimate. Our plants are of the most moderate construction. Write for anything.  
**\$3.50** for a White Enamel Lavatory. In assorted styles and shapes for straight wall or corner of room. Our price is for lavatory sink, including waste plug, nickel plated overflow and brackets. Other styles including supply pipes, basin cocks and all nickel plated appliances, ranging in price to **\$20.00**. We carry in stock at all times everything needed for installing a plumbing job of any kind. No other concern on earth has such an enormous quantity of brand new material for sale. Send today for our plumbing catalog.

### White Enameled Bath Tub

**\$6.00** buys a White Enameled Bath Tub. 600 "New Style" bath tubs, finest galvanized steel with the enamel baked on the inside, nicely finished on the outside, heavy wood rim, 5 ft. long. **Bath Room Outfits \$25**. With steel enameled tub, vitreous earthen closet bowl, polished, hard-wood seat and tank, complete with nickel trimmings ready to install. Other complete outfits from **\$35.00 to \$150.00**.  
**Plumbing Material of all kinds** at prices that do not represent cost of production. We buy at Sheriff's and Receivers' Sales only; that's why we can undersell all. Send today for our low estimates on plumbing material.

### FREE 500-PAGE CATALOG No. 742

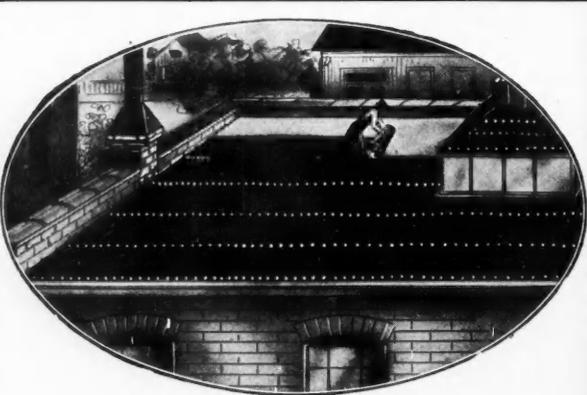
We urge you to write at once for this bargain book. It is just out and ready to be sent on request. It contains a full record of our wonderful stock of Building Bargains. It also shows what we have on hand from our mammoth wrecking operations. It contains a record of thousands of bargains secured by us at Sheriff's, Receivers' and other sales. It is a book that must be in your hands if you want to be posted. It also contains a complete account of our purchases of Household goods from Sheriff's and Receivers' Sales. Cut out the Coupon in the corner of this advertisement and mail it to us and we will immediately send you this book.  
**CHICAGO HOUSE WRECKING CO.**  
35th and Iron Streets, Chicago, Ill.

### OUR FREE PUBLICATIONS

**BUILDING NEWS.**—We publish regularly a pamphlet devoted entirely to building material. It contains some 64 pages of sound information bearing strictly on items of interest to the Contractor and the Builder. Quotes our low prices on lumber and all kinds of mill work. Acquaints you with the various bargains we are constantly purchasing. If you want it ask us to put your name on our mailing list.  
**BOOK OF PLANS.**—We issue a catalogue containing from 50 to 100 designs of modern Bungalows, Cottages and Barns. We can furnish you a proposition to supply complete, all the material needed for the construction of any one of these plans and in addition we will supply blueprints and complete specifications. It is valuable and will be sent free.

### FREE CATALOG COUPON

Fill Out, Cut Out, and Mail.  
Name.....  
Town.....  
County..... State.....  
Shall we send 500-Page Catalog.....  
Do you want our Plan book.....  
What items in this ad most interest you?  
.....  
I am a reader of American Carpenter and Builder.  
Address Chicago House Wrecking Co.



## Asphalt Roofing

Lay it yourself—all material, nails and cement furnished **ONE-HALF** expense saved. Write for Samples and Circulars.

Manufactured by

**McHenry-Millhouse Mfg. Co.**

SOUTH BEND, IND.

## Buy Tools and Supplies In New York at Wholesale



Write us today for a free copy of this Great Catalogue No. 94.

IT WILL SAVE YOU MANY A DOLLAR

This Big Book of 700 page lists, illustrates and describes over 70,000 articles for the shop, farm and home, all at lower prices than you can buy them in any store anywhere. It is Free.

### We Sell to You at Wholesale Prices

in small quantities or large. You save the usual dealer's profit. Our line of FINE HIGH GRADE TOOLS—every one of them guaranteed—has never been approached in any catalogue. Give us a fair trial order and satisfy yourselves that all we say is true. Money back if not satisfied.

### New York the Cheapest Market

Almost everything sold by catalogue comes from New York. Thousands of buyers come here every day to make their purchases. You can do as well or better and save time and traveling expenses if you have our catalogue.

### We Sell Reliable Goods Only

We have been continuously in business since 1816, and have the books to prove it. We can't afford not to give you the best value for the money. We guarantee safe delivery of everything ordered from us. We refer, by permission, to the publisher of this paper as to our absolute responsibility. Even if you want nothing today you may tomorrow. Get the Catalogue now. It contains list of over 100 premiums we give FREE to our customers. Address

- Just a Few Lines
- Builder's Hardware
- Cement Workers' Tools
- Clamps
- Drawing Materials
- Expansion Bolts
- Fencing
- Hangers
- Hardware
- Hinges
- Mitre Boxes
- Oil Stones
- Faints
- Plumbing Supplies
- Roofing Material
- Sash Cord
- Sash Pulleys
- Saws, Saw Sets
- Spring Hinges
- Tools, all kinds
- Tool Boxes
- Chests, Cabinets
- Vises

And thousands of other things you need.

**White, Van Glahn & Co.,** Dept 3, 37 Barclay St., NEW YORK CITY  
Oldest Mail Order House in America. Established 1816

position the rule is swung. If the corner of the rule is worn off, which is usually the case, it will always measure from where the corner should be.

The lengths and cuts for any rafter or brace for building, or of any run or rise, even or uneven pitches, may be gotten in far less time than by taking the rule and measuring across the square. The tool also gives the lengths and cuts for all



jacks. Figures are stamped on it showing how it may be used for polygon cuts and how to obtain rafters for all polygon roofs of from three to ten sides.

In stair work, to lay off for the rise and tread, all that is necessary is to find the width of the tread, and the rise is given instantly without figuring.

The tool also divides and subtracts. No carpenter or building contractor can well afford to be without this handy and time saving tool. The price is within reach of any and all. The tool is nicely finished in copper and nickel plate, cannot rust, and is of such convenient size that it can be carried in the pocket for ready use. Complete explanation, illustrated by cuts, goes with each tool. Our readers will find on page 174 the advertisement of this handy and useful tool.

### Adjustable Dado and Grooving Head

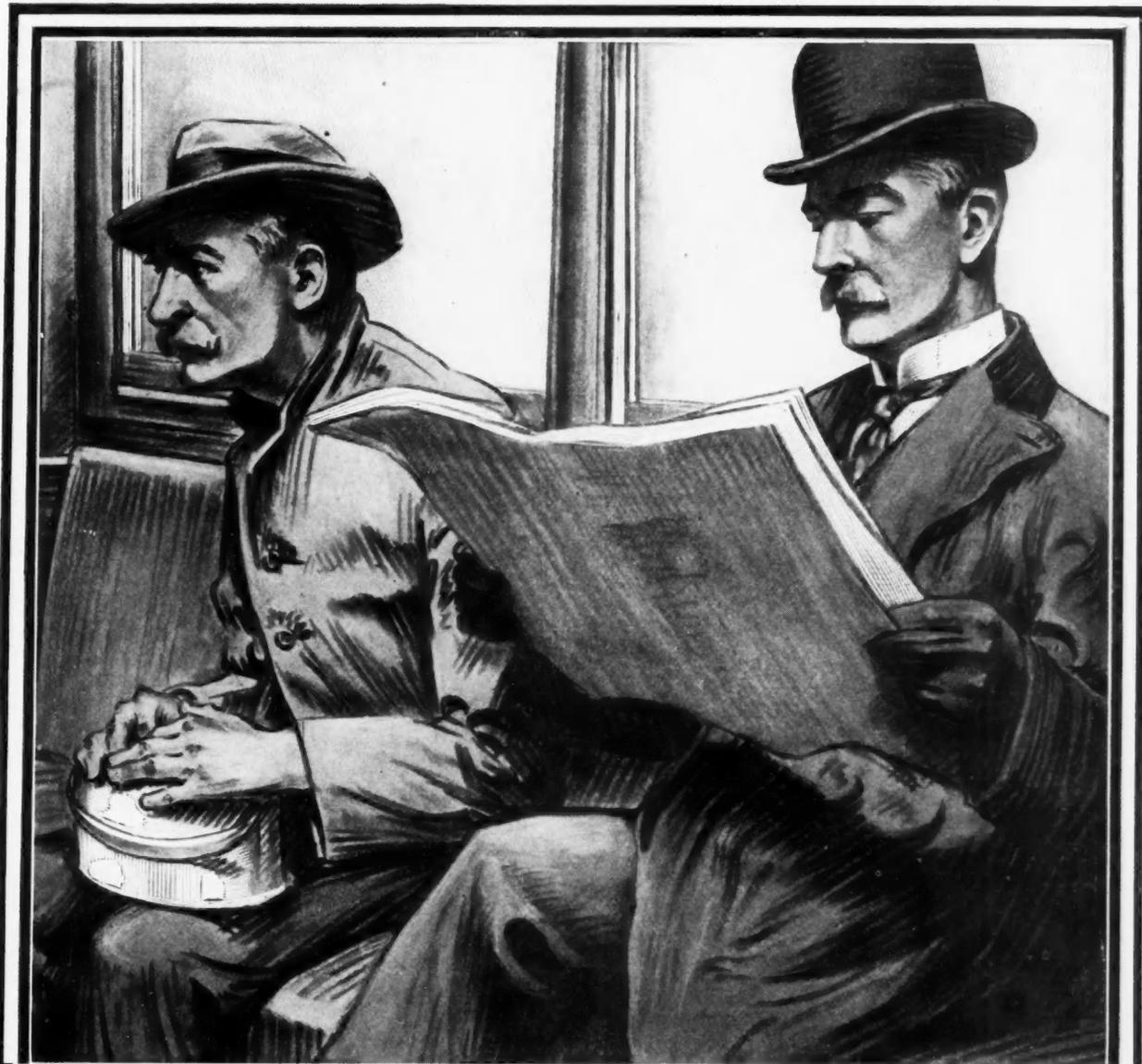
A new tool of special interest and value to machine wood workers is the No. 60 grooving head, made by the Parks Ball Bearing Machine Company, of Cincinnati, Ohio. The illustration shows well the stout construction of this tool, and the way in which it is used.

This form of grooving head is far superior to ordinary wobble saws. It is provided with side cutters, the kind all wood workers know is best for gaining or cleaning the sides of a groove.

The side cutters are diametrically opposite each other so one set cuts one side of the groove and the other the other side. The fronts of the teeth between the side cutters are beveled, half on one side and half on the other. The points strike with a shearing cut which takes less power and also obviates the tendency to glance off or follow the grain or throw the wood sidewise. Instead of the saw fitting the shaft, it is bored to fit a standard size hub and where the saw rests, is rounded, like a ball to allow the saw to tilt and still maintain a bearing without lost motion.

It is perfectly safe to be run at any high speed to which wood working machinery is run as it is a solid disk, no particular strain on the head. The saws are easily adjusted to cut any fractional part of an inch in width and depth according to diameter of saw.

On long mandrels as many saws as may be desired can be used side by side to make a wide cut or series of cuts, each as wide and as far apart as may be desired by using washers



# The Story of the Street Car

Side by side they sit; the one filling an important position in the world, enjoying a good income, and with every mark of prosperity—the other bent down with hard toil, working in a by-the-day job at poor wages. **Why is it so?** The answer is **training**.

Probably they started on an even footing 10 or 15 years ago but, the one man secured the training that enabled him to rise to the highest position in his chosen trade, the other either would not take the trouble to secure this training or did not realize the immense value of it.

If **you** are an untrained man and want to advance, write today to the International Correspondence Schools and learn how you can better your position, and how you can have your salary raised. You will be surprised when you learn what a practical plan this is—how you can secure in your own home, in your spare time, without leaving your present position the training that will qualify you for rapid and sure advancement. Last year I. C. S. training brought increased salaries amounting in one year to over two million dollars to the small percentage of I. C. S. trained men that **voluntarily** reported their advancement. If you want **your** position bettered and **your** salary raised, mark and mail this coupon. It puts you under no obligation to do this much, so **do it NOW**.

**International Correspondence Schools**  
**Box 910, SCRANTON, PA.**

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

Architect	Civil Engineer
Architectural Draftsman	Mechanical Engineer
Contractor and Builder	Mechanical Draftsman
Building Inspector	Electrical Engineer
Structural Engineer	Elec. Power Station Supt.
Structural Draftsman	Foreman Machinist
Plumbing & Heat'g Cont'r	Sheet-Metal Pat. Drafts'n
Supt. of Plumbing	Mining Engineer
Foreman Steam Fitter	Railroad Construct'n Eng.
Plumbing Inspector	Bookkeeper
Heating & Ventil'g Eng.	Ad Writer
Bridge Engineer	Civil Service Exams.

Name \_\_\_\_\_

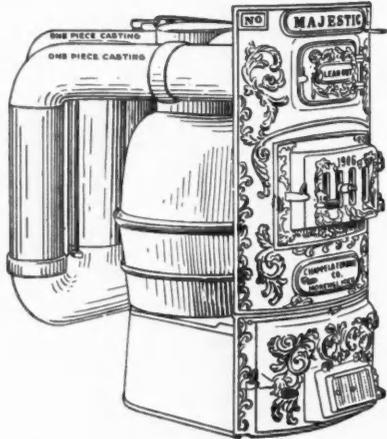
St. and No. \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

# MAJESTIC

ALL CAST IRON

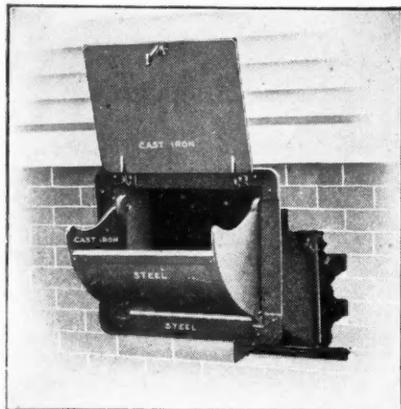
## WARM AIR FURNACE



Manufactured in three styles, suitable for burning Hard or Soft Coal, Coke or Wood. Send us your plans. We will make heating plans and quote best wholesale price on complete outfit.

## THE MAJESTIC

### COAL or WOOD CHUTE



A modern up-to-date convenience. The cost is so small that no residence, old or new, should be without one.

**GOOD LIVE AGENTS WANTED**

Write us for catalogue and our special proposition to contractors

**Majestic Furnace & Foundry Co.**  
101 to 109 West St.      **Huntington, Ind.**

between them. Cuts bottom of groove level when rounded at desired depth. A double tenon can be made on the end of wood by using two saws.

This grooving head adds much to the value of the wood working machines made by this company, of which there are a great number, hand, foot and power. A card addressed to the Parks Ball Bearing Machine Company, Cincinnati, Ohio, will bring an interesting catalogue quoting interesting prices on wood working machines and attachments.

### The Deck Gravity Level

The accompanying illustrations give various views of the gravity level put on the market by the T. F. Deck Gravity Level Company, Ohio building, Toledo, Ohio. The level is simple and durable in construction and so arranged as to automatically indicate horizontal and vertical positions and the angle of any deviation correctly, without any adjusting. Fig. 2 shows the interior of the level—A is the pinion; B the multiple gear wheel; C the roller bearings, and D the pendulum and weight. As the name implies, the level is operated by the law of gravitation as exemplified in a plumb. The



Fig. 1. The Deck Gravity Level

plumb bob or pendulum is suspended from a shaft which rotates in roller bearings. It is explained that this arrangement of the pendulum, shaft and roller bearings produces 75 per cent more power than is lost by friction, so if one end of a 24 inch level stock is raised 1-16 inch the indicator will instantly move 1-16 inch on the graduated dial, which is graduated the same as a rule or square. Fastened on the shaft is a multiple gear wheel of brass, in which are cut 150 teeth, so accurately spaced as not to vary one-half thousandth of an inch. The teeth of this gear wheel mesh in a pinion; to one end of the pinion staff is attached an indicator which points to the graduations on the dial, showing whether the work is level or plumb.

A brake is also provided which operates upon the shaft in such a manner that pressing on the lock button which is on

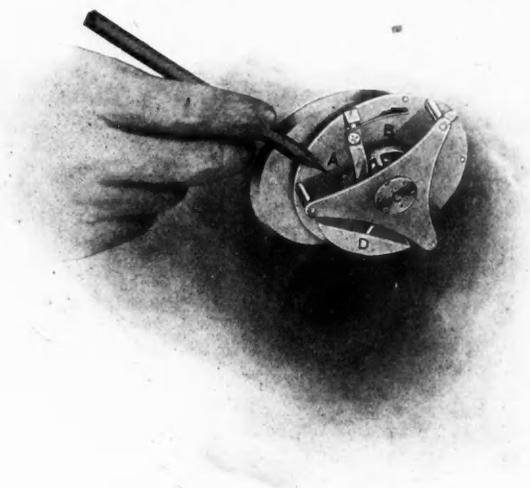
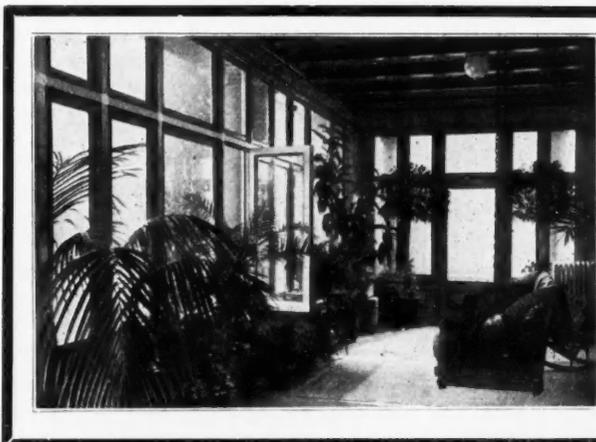


Fig. 2. Interior of Movement

top of the level stock will at once stop the swinging of the pendulum and indicator; while pressing the lock button and giving the button a quarter turn will lock the movement. It is pointed out that notwithstanding the extreme sensitiveness



## INCOMPLETE

Is your house if not equipped with an interchangeable screen and glass panel, porch enclosure, also door and window screens.

We manufacture everything in high grade door and window screens, interchangeable screen and glass panel porch enclosures, portable screened lawn and camping tents.

A good proposition for the contractor or agent. For catalogue and information write to

**THE FRANK W. MILLS CO.**

200-220 W. Mound Street,

COLUMBUS, OHIO



## Look Into This System

There is no reason why you should not use the best system of store front construction—it costs no more.

We urge those who are contemplating a modern store front, to compare the Petz system with any system offered. It offers distinct advantages in strength; in economy of room; in artistic design and finish—it is easily installed. All glass set from the outside. Endorsed by all plate glass insurance companies. Don't adopt any construction until you have read our booklet "Listen to Petz." It's free. Write for it today.



DETROIT SHOW CASE CO.

491 West Fort Street :: :: DETROIT, MICH.



### WE CAN SAVE YOU MONEY

#### ON— Jail Cells and Window-Guards

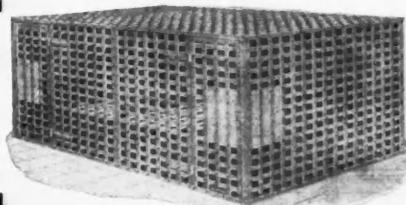
FIRE ESCAPES, IRON STAIRS, FENCING AND ARCHITECTURAL AND ORNAMENTAL IRON WORK

Catalogue on Request

**OHIO STRUCTURAL IRON COMPANY**

Warren Street

SANDUSKY, OHIO



### LIGNINE CARVINGS, UNBREAKABLE

Will they break or check? No Sir!

Will they crack or shrink? No Sir!

LIGNINE CARVINGS are stronger than wood.

Are attached by nailing and gluing.

Are finished with filler or stain.

Write for sample and catalogue showing Capitals, Pilasters, Newel Ornaments, Drops, Rosettes, Scrolls, Shields, etc.

ORNAMENTAL PRODUCTS CO., 552 W. Fort St., DETROIT, MICH.



## "NICE" LIQUID WOOD FILLER

THE RECOGNIZED STANDARD SURFACER

It dries flat, works freely, does not show laps and requires little, if any, sandpapering. Light shade is perfectly transparent and will not mar the color of the lightest woods. It enables the finisher every time to make a high-class job with two coats, one of "Nice" Filler and one of Varnish or Hard Oil. It makes the very best flat stain by simply adding color in oil to suit. It has remarkable covering capacity (800 square feet to gallon) and is the most durable coating known for natural woods.

Will you let us send you our booklet "Natural Wood Finishing," just off the press? It's worth having and will only cost you a postal.

**EUGENE E. NICE,**

Manufacturer of everything in Paints, Fillers and Varnishes for interior and exterior painting and finishing

272-274 S. 2d St., Philadelphia

L. A. WATERS, PRESIDENT  
SCRANTON, PA. J. M. ARMSTRONG  
MANAGER

## The Pittston Slate Co

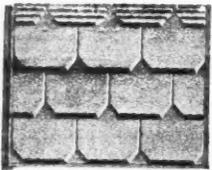
Miners, Manufacturers and Shippers of  
**UNFADING BIG BED  
ROOFING SLATE**

The Material Is Strong and Imperishable  
The Color Uniform and Unchangeable

— WRITE FOR LIST —

SLATINGTON . . . PENNSYLVANIA

### "EASTLAKE" Metal Shingles



For roofing all buildings with one quarter pitch or more.

**NEVER LEAK**

They reduce the fire risk, and cost of insurance. Superior and cheaper than wood shingles. Any good carpenter or mechanic can lay our shingles.

**Tools Required—  
Hammer and Shears**

Write for Catalogue and Prices

**THE W. J. BURTON CO.**  
Manufacturers of all kind of Roof Trimmings

DETROIT . . . MICHIGAN

## Easy to Lay



# Amatite

TRADE MARK

## ROOFING

The first ready roofings, made some thirty years ago, lasted a very short time. Then manufacturers improved the goods and smooth surfaced roofings of various kinds were developed that would endure fairly well if the top surface was given a coat of heavy waterproof paint every two years. Now comes Amateite—with a mineral surface which requires no painting and which will last longer without painting than the other kind did with constant painting. The top surface, being mineral, is unaffected by weather or climate. It really protects. The waterproofing material in Amateite is pitch—the best resistant to water known. Water will in time dissolve or disintegrate almost anything, but it is powerless against pitch. Roofings of twice the price often do not protect as well because they are not waterproofed with pitch. Amateite is easy to lay—any one can do the work. We furnish you free nails and liquid cement for laps. Investigate the cost of Amateite in your locality. You will be astonished at its low price. Samples and illustrated Booklet FREE on request to nearest office.

**Barrett Manufacturing Company**

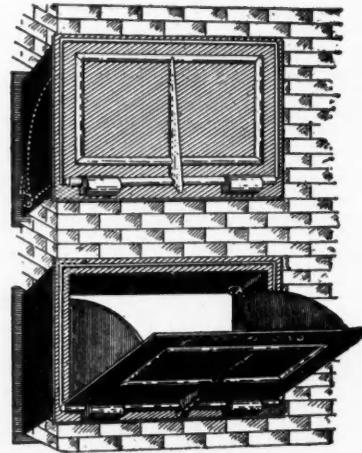
New York Chicago Boston Philadelphia Cleveland Cincinnati  
Minneapolis New Orleans St. Louis Allegheny Kansas City

of the instrument, it is wholly practical and extremely durable.

The line includes levels for the use of carpenters, masons, millwrights and machinists; also a special level for leveling line shafting and machinery.

### All Steel Burglar-Proof

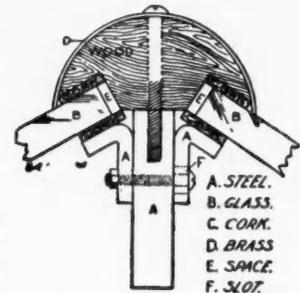
A device that is a very decided improvement in house designing and one that is being specified and used by progressive builders everywhere is the all-steel, self-locking coal chute. Its general advantage over the old, troublesome, dangerous, cellar-window method is well known.



The burglar-proof coal chute, as made by C. H. Shultz, of St. Joseph, Mo., is a very interesting detail of construction. It is so simple in its working that it can not get out of order, and is very easily applied to new or old buildings. Its simple construction makes it very low in price; yet it is very neat in appearance, and is strong—absolutely burglar-proof. There is no trouble in

its operation, for it locks itself when closed and can be opened only from the inside.

Another great improvement in building construction is effected by the use of the Shultz Modern Store-front. This is a strong ingenious detail. The glass is held very securely and provision is made for expansion and contraction. In appearance the Shultz is easily first.



Very instructive and interesting information in regard to coal-chutes, store-fronts and other improved building details is contained in the new Shultz catalogue. It will pay you to write for it.

### A New and Unique Brace

A carpenter has, besides his many other troubles, great trouble with three of his different tools in their relation to the chest.



In the first place, the saw, on account of its length; then the steel square, on account of its long side arm, and last of all the unruly brace, that seems to have no place and will never stay even there.

The E. S. Brace Company, of Niagara Falls, N. Y., are putting on the market a brace that is unique in every respect. It is adaptable to all manner of work, in fact it is a 6 inch sweep, an 8 inch sweep and a 10 inch sweep in one; and is but a trifle greater in price than the ordinary brace.

The cut here shows the handle and bars drawn out to show the mechanical arrangement. At three of the corners is a clamping bracket made from seamless steel, which grips the sweep

**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.

**Help Wanted.**

FREE PENCILS TO CARPENTERS, see ad. on page 164. Gage Tool Co.

**For Sale.**

FOR SALE—Two concrete block machines, first-class in every respect, only used once. Address, T. REED CHUNN, care of Edwards Manufacturing Co., Cincinnati, Ohio.

FOR SALE—100 Concrete Mixers, all makes; 500 Block Machines, all makes; 20 Kramer Automatic Tampers. Write for 120 page Catalog. United Cement Machinery Mfg. Co., Plain City, Ohio.

LUMBER CHEAP—Write for low delivered prices on any you may be in need of. J. H. Baxter, 1139 5th St., Port Arthur, Texas.

**Patents.**

C. L. PARKER, Solicitor of Patents, 20 Dietz Bldg., Washington, D. C. Handbook for inventors sent free upon request.

**FREE**  
**Read This Offer**

**W**E WILL SEND YOU FREE, postpaid, samples of "Steel-Polished Perfection"—a brand of hardwood flooring which has no equal for precision in matching and which never shrinks—because it is thoroughly seasoned by the exclusive and expensive "Schroeder steaming-and-drying process." "Steel-Polished Perfection" has a beautiful, richly-polished surface and is better in every way than you ever thought it possible for flooring to be.

And yet this accurate-fitting, shrink-proof brand of hardwood flooring costs you no more than the inferior flooring product of ordinary planing mills.

In fact, it can be laid in so much less time than any other brand that it is really the cheapest flooring on the market. It is practically "finished" as soon as laid, without any laborious "hand-surfacing" to get it ready for the polish.

Tell us your requirements. Write us a postal today and we will SEND SAMPLES, TESTIMONIALS, QUOTE PRICES AND SEND YOU A HANDSOME BOOKLET ON FLOORING MANUFACTURE.

You want the best, don't you—flooring that matches perfectly and never shrinks? Then drop us a postal or a letter—right now.

**John Schroeder Lumber Co.**

Cape Street, near Commerce. MILWAUKEE, WIS.

January 23, 1908.

Gentlemen: We wish to say in reference to your "Steel-Polished Perfection" that it is absolutely the best thing we have ever used in the shape of hardwood flooring. We have not had a moment's trouble with it. The machine work on it was right; it laid with even face and matching; was tight and has remained so.

Yours very truly,  
M. L. GRANGER & COMPANY,  
Hornell, N. Y.

"Creole"  
"Etowah"  
"Cherokee"  
"Kennesaw" } **Georgia Marble**  
THE GEORGIA MARBLE CO., - - TATE, GA.

**STUDY OUR**  
**Concrete**  
**COURSES**

**MANUFACTURE OF CEMENT PRODUCTS,**  
i. e. BLOCKS, BRICK, ETC.

**Reinforced Concrete Design:**  
**Concrete Construction and**  
**Contracting, Plain and Reinforced**

These courses are all meritorious. The first teaches a new and scientific method of making Concrete Blocks that gives as low as 4 per cent absorption, and remarkable strength. Such Blocks will win the favor of Architects; the cost is practically no higher. Free Catalog explains. Please indicate the course you are interested in : : : : :

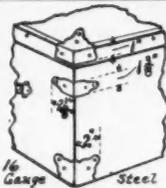
**Institute of Concrete Engineering**  
**581 Caxton Bldg. CLEVELAND**



Send us two or more names of persons who are interested in or want to buy Hot Water Heating Plants and we will send this scale. Back inches are divided into 6, 10, 12, 16, 20 and 40 parts. Also free catalog on request. our two-page ad in American Carpenter and Builder for January, 1907  
**ANDREWS HEATING CO.** 949 Heating Bldg. Minneapolis. 978 La Salle Bldg. Chicago.

**DO YOU WANT SLATE?**

**R**oofing Slate for Houses, Barns, Sheds and Railroad Stations. Clean and ornamental, rain, wind and fireproof.  
**B**lackboards for Schools, Colleges, etc., are being used all over the World, need no better commendation, "it is just the thing."  
**S**tructural and Electrical Stock, Steps, Sink Tops, Wash Tubs, Window Sills, etc., superior to all other stone for such purposes.  
**S**laters' Supplies, Hand-made Slaters' Tools, Snow Guards, Slaters' Cement, Nails, Felt, Slate Punching and Cutting Machines, etc.  
Write for prices and I will tell you all about Slate. D. McKenna, Slatington, Pa. U. S. A.



**TOOL CHEST CORNERS**

Every Mechanic who has a number of tools wants a strong Tool Chest and should have a set of my **Pressed Steel Corners** which are far superior to cast brass or wrought iron. To introduce these corners, I will send you postpaid a complete set (12 corners, 4 each shown in cut) on receipt of your dealer's name and \$1.50. Nickel or Brass Plated. Japanned \$1.00

M. A. ERICKSON, 1518 Monroe St., N. E. MINNEAPOLIS, MINN.

**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.**

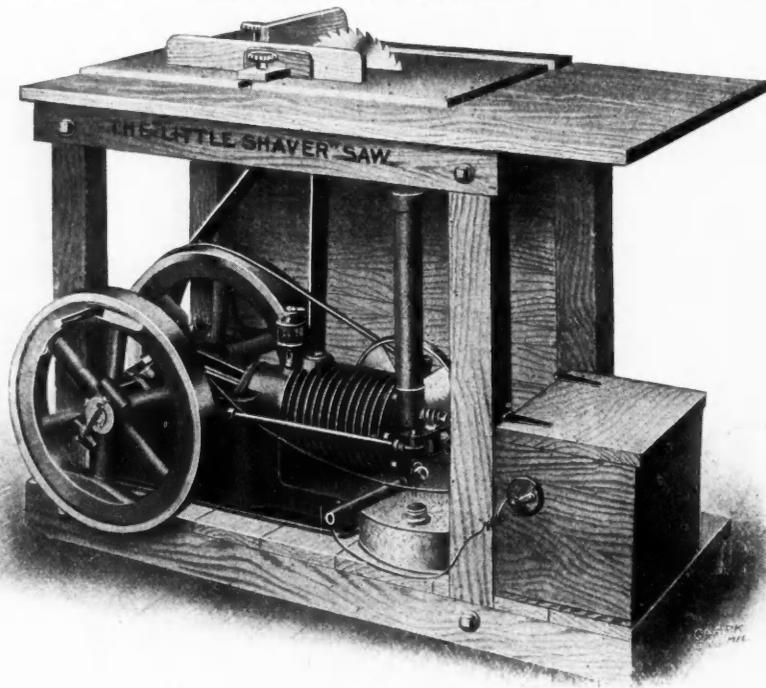
H. J. KICHLINE, Sales Agent

bar at any desired place for any desired sweep, and guarantees strength and rigidity. Near the ratchet is a trigger for instantaneously gripping the lower sweep bar. Both sweep bars are graduated, thus assuring perfect alignment.

You, Mr. Carpenter, have been looking for something just like this. Let them tell you more about it. A post card or letter to E. S. Brace Company, Niagara Falls, N. Y. (Niagara Machine Company, Agents), will bring you full information. In writing please mention the AMERICAN CARPENTER AND BUILDER.

### Another Time Saver

A glance at the illustration shown on this page of the Little Shaver Portable Saw, will be sufficient to convince any Carpenter Contractor that it is an exceptionally handy outfit, and one that will enable him to do a great deal of



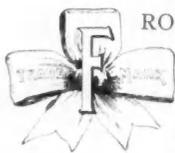
this mill work right on the job, do it quickly, and at a very small expense.

With this outfit two saws are furnished, a cross-cut and a rip saw, and it is also fitted with gauges, which will enable him to do cross-cutting, rip-sawing, mitering, etc. The table can be raised by means of an adjusting screw under the left hand corner of the table.

The engine furnished with outfit is built on the most modern lines, and can be operated by any one. It will develop 2½ h. p. under continuous brake test, which gives an abundance of power to run the saw.

The Inter-State Equipment and Engine Company, Old Colony building, Chicago, Ill., are putting this saw on the market, as you will notice from the advertisement on another page. They will be glad to send their proposition and printed matter to anyone interested in a Labor Saving Tool of this kind.

### Ford Building Materials



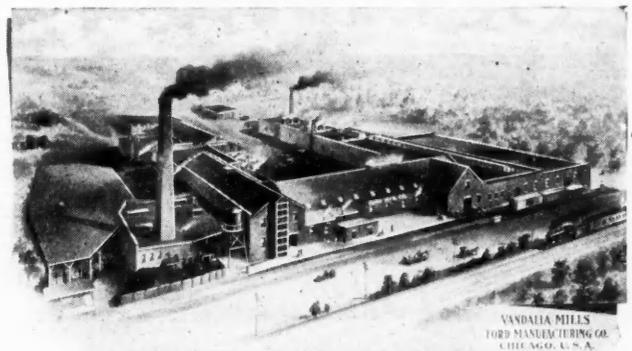
FROM 1865 to the present time the Ford Manufacturing Company, of Chicago, and Vandalia, Ill., have been making and marketing their own products and each year has seen a steady growth in the demand and sale of their line until today they are among the world's leading manufacturers of high-grade goods in the lines of prepared roofings, building papers, asphalt felts, insu-

lating and sheeting papers and rubber paint. To gradually build up a business of the magnitude which theirs has attained must surely have required a strong basic principle. The Ford basis has been quality first, last and all the time. They made quality the keynote of their products from the start and the result has been satisfied customers and increased trade for goods bearing the Ford trade-mark. No goods have been marketed under this brand that were not up to the highest standard of perfection in materials and methods used in their production. Their galvanized rubber roofing has, after years of severe tests, been recognized as second to no product in the line.

One of the leading features about galvanized rubber roofing is the fact that the Ford Manufacturing Company stand behind it with three distinct guarantees that are based on actual time-tests of the goods. They absolutely guarantee Three-Ply galvanized rubber roofing for fifteen years. Two-ply for ten years and One-ply for five years. Anyone using their roofing can depend on these guarantees being made good.

The plant of the Ford Manufacturing Company, which is located at Vandalia, Ill., is an ideal one in every respect. It covers over six acres of ground and is equipped with the best machinery that money can buy. This plant is the development of over forty years' experience, which certainly counts for something when actualities are considered. The main office of the company is located at Chicago and the officers are: J. W. Ford, president; J. W. Ford, Jr., vice president; W. O. Ford, secretary and general manager, and P. Sander, treasurer.

In addition to their celebrated galvanized rubber roofing the Ford Manufacturing Company produce a number of products of high repute, names of these being as follows: "Solid Asphalt Roofing," "Gravel Surfaced Roofing," "Asphalt Felt," "Tarred Felt," "Mineral Rubber Coating," "Elaterite Rubber Coating," "Asphaltum Coating," "Lion Brand Insulating Paper," "Cyclone Sheeting," building paper, dry saturating felt, deadening



felt, carpet lining, bottle wrapper, asphalt products, and last, but not least, their well-known No. 1, No. 2 and No. 3 "Elaterite Rubber Paint," each for a special purpose.

### Shingle Stains

As a rule too little attention is paid to the shingles of a house, when in reality they should be considered first. The



## Pick Just the Mantel You Want

Here is one of many Lorenzen Mantels. You can take your choice of hundreds of others—Colonial, Craftsman, Early English and period styles in all woods and finishes. You know how much a mantel adds to a room—particularly

### LORENZEN MANTELS

They have a distinction of design and workmanship not possessed by any others. Our well-equipped factory, skilled workmen, large stock of air-seasoned lumber of every description, and years of experience making mantels, are a strong guarantee to you of quality and reliability. As for our prices—our immense output enables us to sell close and distance all competition.

**Free Catalog**—Let us send you the largest and finest catalog of wood mantels ever issued. Each copy costs us nearly \$1. But we send it free to any carpenter or builder. If you don't find what you want in it give us specifications and we will make to your order. Write for the catalog today.

**Tiles and Mosaics**—We furnish and set all kinds of Tile and Ceramic Mosaic work and will be pleased to submit designs and estimates on application.

**Chas. F. Lorenzen & Co.**

305 No. ASHLAND AVE., CHICAGO

No. 468.—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.

# MORGAN

**MAKES AND GUARANTEES  
THESE PRODUCTS**



The Materials named below are the development of ONE **BASIC VEHICLE**, but each is different in character and has a specific use of its own. Singly and collectively they form the

**GREATEST DISCOVERY OF THIS ADVANCED AGE OF BUILDING, FOR WATERPROOFING, COATING, COLORING OR PLASTERING CONCRETE, CEMENT BLOCKS, AND BRICK** wherever employed below or above the ground.

## WE SUPPLY FREE SAMPLES

analysis of a piece of the brick, stone, block or substance to be waterproofed interior. In requesting samples, give details on the above points

of any of these materials to any contractor, builder, owner or dealer. To do this we must know exactly what purpose the material is for and difficulties to be overcome. This often requires us to make a chemical whether it is below or above ground, and if for application to exterior or

## COATINE

is a cement that is made of silicates and oxides with the addition of **Our Vehicle**. It produces a cement that is waterproof and can be used for all concrete work, also on top of or below regular concrete. In either case it will make the concrete impervious to water. A mixture of our COATINE in the bottom of a pit before the foundations are put in makes them absolutely watertight at the bottom. Our COATINE can be used on brick walls, plaster walls old cement walls and in fact, any place where you want to put a coating that will adhere to any and all kinds of surfaces, making them positively watertight. The adhesive and wearing qualities of our COATINE are beyond question. It will stand all scientific and service tests. It is made in non-fading colors

## MORGANITE

is a liquid form (not a paint). It is one of the greatest productions that has been put on the market of late, as it answers the present demand for something that will waterproof, thus preserving and protecting cement and brick buildings. One application of our MORGANITE on a brick or cement building will make it absolutely waterproof. It is made in non fading colors and can absolutely be depended upon to both waterproof and color cement brick and cement blocks. Our MORGANITE prevents the cement, brick and mortar from crumbling, and a building coated with it will never peel, as there is no possible chance to do so, as the MORGANITE goes into the material, becoming a portion of it, locks up, and is unaffected by alkalis, gases, etc. These results are produced by chemical action caused by the MORGANITE coming in contact with brick, cement or mortar

## MORGANWALL PLASTER

forms the waterproofing, two putty plaster coats, the hard finish coat, the sizing and if desired, the tinting needed for the walls or ceiling of any building. It combines all in one coat and completes the job at one operation. It makes a waterproof stainless wall. It saves 70% in labor and material over the usual method of plastering. It does away with the crude proposition of only partially waterproofing as is the case with all other forms of dampproofing materials. Morganwall Plaster contains lime, silicates and oxides together with **Our Vehicle** for thoroughly mixing. It prevents staining or discoloring and has greater adhesive qualities than cement or plaster

WRITE NOW---TODAY

**H. B. MORGAN & CO.** Sole Mfrs.

1107-1111 Seventy-Sixth St. ...CHICAGO...

UNIVERSAL COMPOUND CO., Eastern Agents, 88 Maiden Lane, New York City

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

preserving and beautifying of shingles is as essential as that of any other part of the building. This can be done by using a good grade of shingle stain that contains the best preserving qualities and brings out the artistic effect of the wood. The shingle stains advertised in this number by M. M. Davidson & Sons, of Springfield, O., are excellent for this purpose.

### Artistic School House

This building is another example of what can be done with concrete blocks in school architecture. It was built at Syracuse, N. Y., by the Onandago Pressed Stone Company. Miracle machines were used in the manufacture of the blocks.

rafters, laying off and leveling buildings, getting height of any object, etc.

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

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

### Besser Concrete Machinery in the Lead

The Besser Manufacturing Company, of Alpena, Mich., report a very gratifying amount of business in 1908.

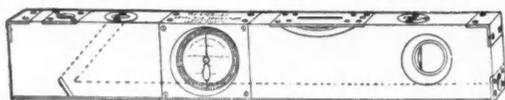
With the big line this company manufactures and the money



### New Level and Grade Finder

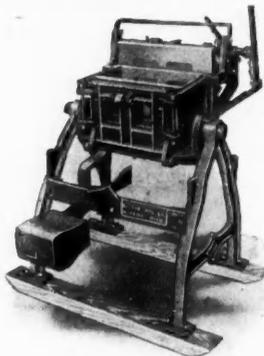
An instrument of great interest and value to architects and engineers, as well as to carpenters, bricklayers and masons, has been perfected and placed on the market by Edward Helb, of Railroad, Pa. It is called the American Combined Level and Grade Finder.

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



serviceable in all forms of grading, laying out roads, landscape gardening, placing of pipes for drainage, getting fall of water, getting grade of hills for automobilists; cutting of

making possibilities which their various machines offer, there is hardly a place where their machinery is not found in operation, and daily shipments are being made to all points from Maine to California.



The Besser cement tile machinery especially is in great demand. The United States government is using it in the reclamation service. Their improved molds are made as large as 60 inches.

The Besser automatic tamper tile machines, which have a capacity of 2,000 tile per day and up, although on the market for but two years, are now in use in nearly every state, and in some states dozens are in daily

**1,000,000 SOLD**  
In 1908 will be Our Record

*“It's All in Our Blades”*

**Did You Ever See A Man Shave With a**



**FRAME**

Why invest \$4.00 to \$5.00 in a frame and 5 cents in blades.

**GUARANTEE**

Money back if you want it.

**25c**

By Mail.

This is the **ORIGINAL**

25-Cent Razor, accept no other.

Agents wanted in every City for our New Razor and Auger Bits.

**SHRP-SHAVR RAZOR CO. 108 Duane St., Smith & Hemenway Co. NEW YORK CITY**

**ARE YOU Going to Build?**

GET THIS  
**800 PAGE BOOK**  
**FREE**

**THE FOSTER-MUNGER CO.**

If You Intend Building or Making Alterations of Any Kind You Should Not Fail to Get this Great Book.

Send ten 2-cent stamps to pay postage and we will mail you at once our 800-page official book, with plans, photographs, plates and 8,000 designs of everything entering into the construction of any building. It covers every department. Stairs, interior finish, mantels, grilles, wood carpet, sash, doors, blinds, art glass, columns, porch work, hardware, etc., etc. Send today for book No. 3.

**THE FOSTER-MUNGER CO.,**  
20th and Sangamon Sts., Chicago.

**WHAT POSITION CAN HE HOLD**



ANY POSITION for which he has trained himself: the untrained man must take *any job he can get*. The Chicago Sunday Tribune recently carried the following advertisement:

**POSITION WANTED BY A MAN** at any kind of work to make a living. Age 30. Formerly employed in machine shop. Grammar school education. Ten years' experience. Least salary \$30.00 per month.

Does that hit YOU? Are you glad to get "any kind of work" at the poorest kind of wages? Are you content to drudge along day after day and just barely "make a living?"

A man **trained** in any branch of carpentry and building--building superintendence, carpentry and joinery, contracts and specifications, estimating, heating and ventilation, plumbing, stair building, electric lighting and wiring, mechanical and architectural drawing, etc.—can ask for **\$30.00 a week**—and get it. Use the coupon below and let the American School tell YOU how to get the thorough training in carpentry, contracting and building that will raise your salary. We employ no agents. Like all strictly educational institutions, we depend upon our usefulness for our growth.

During the recent panic, when men who had only shop experience to recommend them were being laid off all over the country, less than three per cent of American School students and graduates lost their jobs. They were too valuable to let go. We can give you the same training in your own home, without the loss of a day's time or a dollar in wages.

If you don't like your present job, fit yourself for a better one. If your pay envelope isn't fat enough, let us show you how to fatten it. If you want to hold a responsible position a year from today, mail this coupon TODAY.

**American School of Correspondence**  
**CHICAGO**

----- COUPON—Clip and mail today -----  
Am. Carp. and Bldr. 5-08

American School of Correspondence

Please tell me how I can fit myself to earn a good salary in the position marked "X".

... Architect	... Surveyor
... Architectural Draftsman	... Telephone Engineer
... Contractor and Builder	... Hydraulic Engineer
... Superintendent of Construction	... Irrigation Engineer
... Heating and Ventilating Engineer	... Resident Engineer
... Boiler and Sheet Metal Pattern Draftsman	... Steam Engineer
... Mechanical Engineer	... City Engineer
... Civil Engineer	... Bridge Engineer
... Electrical Engineer	... Special Engineer's Course (Preparatory to License Examinations)
	... College Preparatory Course

Name .....

Address .....

Occupation..... Age.....

operation. This machine makes 4 inch tile for less than one cent per foot.

The call from cement block manufacturers is for a block machine which will use quite wet material and also have speed. These are the main features of the Besser face-down machine and their order books show that block makers have found what they want in the way of a block machine.

The Besser brick machines and mixers are also having a large sale.

Constant enlargements have been made to the Besser factory, but at times they are unable to keep up with the demand. They advise customers to get their order in early and thus avoid any possible delay.

### Improved Combination Floor Scraper

There have been floor scrapers and floor scrapers placed on the market the past few years, some have one good point, others another. A floor scraper that seems to embody all the good features has been perfected and placed on the market by John F. Weber, of West Allis, Wis. It is the most complete machine on the market, being, in fact, five machines in one.

The Weber Floor Scraper, besides being an ordinary floor scraper, is also a sander, a polisher, a bowling alley jointer and a bowling alley scraper—all in one. It can be changed from one to the other instantly. There is nothing similar to it on the market today doing this work.

The finely illustrated catalogue No. 11, which fully describes this useful machine, and gives much other valuable information in regard to floor surfacing, is well worth writing for.



### A Furnace of Merit

The Jumbo Furnace Company is a firm that believes in making a first-class article, and on account of their long experience in the furnace business, they have developed a furnace claimed to be so simple in form that they are able to make the heaviest steel furnace on the market and at the same time sell it at about the same price as furnaces of much cheaper and lighter construction.

They have a moisture feature connected with their furnace which will appeal to many. They furnish a water tank of several times the capacity ordinarily used in a furnace, furnishing much more moisture to the air all the time than is generally furnished.

The smoke of their furnace is taken from the very bottom below the grate line, thus insuring a greater draft than has been used in furnace construction before.

Any of our subscribers interested in heating will be well paid if they will send for their interesting catalogue to the Jumbo Furnace Company, of Des Moines, Iowa.

### Floor Surfacing Machinery

As evidence that the building trades are reviving, the American Floor Surfacing Machine Co., Toledo, Ohio, report a great improvement in their eastern business as well as

throughout the other sections of the country, where their floor surfacing machines are used. The business of this company covers all parts of the United States and elsewhere, therefore they are in a position to keep in close touch with all business in this line.

These machines are in general use by leading contractors and floor companies from New England to San Francisco and from the Lakes to New Orleans, it being the oldest and most thoroughly tried out machine of this class on the market; owing to the manner of its construction, having a roll on each end, covered with sandpaper, driven 600 r. p. m., and being self propelling, insures its work to be regular, even and smooth. It has proved perhaps the most profitable adjunct to contractors and builders of anything connected with their outfit. The machine can be operated as readily backward as forward and can finish up close to the wall, not only surfacing the floor, but also polishing and buffing it as well. It does this not only better, but at a fraction of the cost of hand labor or any other method.

This machine has surfaced every kind of a floor from common pine to the finest parquetry and in all classes of buildings throughout the United States and Canada; also a number of machines have been shipped to foreign countries.

It will pay every contractor, and others who are seeking to get into a profitable business, to write for new booklet describing this machine, with testimonials from those who have used the machine from three to five years, and who have built up a permanent and paying business in this line.

### An Improved Metal Lath

Old-fashioned wood lath, although it was not fireproof, was a great deal more satisfactory from a plastering standpoint than the expanded metal and other forms of plastering surfaces on the market today. It seems that the only object taken into consideration in turning out an expanded metal lath is to make a lath that will contain less metal to the square foot than any other lath. This lath consists mostly of meshes, and the minimum amount of metal used makes it very pliable and permits it to sag between the studding. It also incurs a great loss of plaster because of the waste due to its falling down behind the partition and stripping when green, and also to the fact that with this lath there is as much plaster on the rear of the partition as there is on the finished side.

The plasterers, therefore, are welcoming with a great deal of pleasure a new Sheet Metal Lath, which in structure is very similar to the old-fashioned wooden lath.

Clincher Lath is manufactured by the American Rolling Mill Company and has an absolutely smooth plastering surface, a small, well arranged key, which forms a perfect clinch for the plaster. This key is cut so it forms a channel-iron construction on the rear of the lath and does not permit the lath to sag between the studding, and there is no waste of plaster due to its falling down behind the partition.

The construction of this lath is so perfect that it can be covered with one-third to one-half the mud necessary to cover an expanded metal lath.

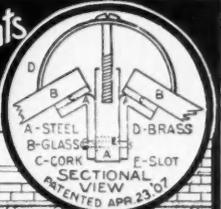
The American Rolling Mill Company, of Middletown, Ohio, manufactures this lath, and will give prompt and courteous replies to any inquiries they may receive.

### Wood-Working Machinery Catalogue Free

We are in receipt of a finely illustrated catalogue from the Standard Machine Tool and Supply Company, Kansas City, Mo. When these machines were first put on the market they were manufactured in a small way, but almost immediately they became popular from the fact that they were, from the start, good honest machines sold at moderate prices. Improvements in design and detail were made from time to time till today they stand unrivaled for quality and merit;

## SHULTZ'S MODERN Store Fronts

of Steel and Brass CORK BEDDED  
CORNER POSTS, MULLIONS AND TRANSOM BARS

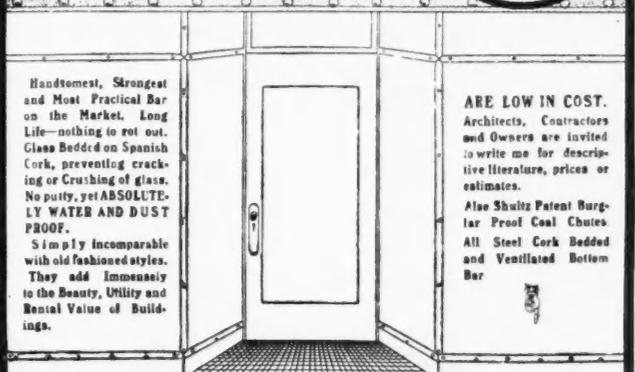


Handsome, Strongest and Most Practical Bar on the Market. Long Life—nothing to rot out. Glass Bedded on Spanish Cork, preventing cracking or crushing of glass. No putty, yet ABSOLUTELY WATER AND DUST PROOF.

Simply incomparable with old fashioned styles. They add Immensely to the Beauty, Utility and Rental Value of Buildings.

**ARE LOW IN COST.** Architects, Contractors and Owners are invited to write me for descriptive literature, prices or estimates.

Also Shultz Patent Burglar Proof Coal Chutes. All Steel Cork Bedded and Ventilated Bottom Bar



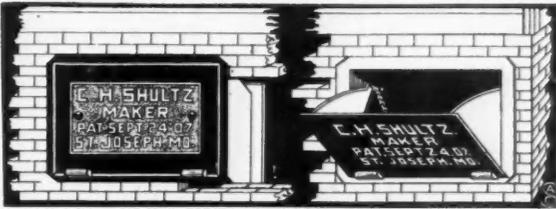
C. H. SHULTZ, MANUFACTURER, ST. JOSEPH, MO.

## SHULTZ'S

### All-Steel Burglar-Proof Coal Chute

The Neatest, Strongest and Most Convenient Coal Chute Made. Prices also Lowest. No modern residence complete without it. Locks itself when closed up. Can only be opened from inside.

	9-in. wall	13-in wall	
MADE IN	No. 2-16x20 . . .	\$8.00	\$ 8.50 } FREIGHT
TWO SIZES	No. 3-18x24 . . .	9.00	10.00 } PREPAID



Special Sizes Made to Order. Architects, Contractors and Owners are invited to write for descriptive circular.

**C. J. SHULTZ, MANUFACTURER,**  
ST. JOSEPH, MO., U. S. A.

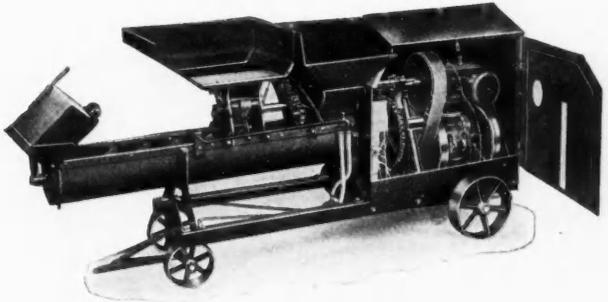
Also Shultz Patent Sash Bars, Mullions, Corner Posts, Etc.

# FLINT-COAT ROOFING

One Ply \$1.35	Two Ply \$1.65	Three Ply \$1.90	Four Ply \$2.20
----------------	----------------	------------------	-----------------

ROCK ASPHALT ROOFING    ACME RUBBER ROOFING    EVERY ROLL GUARANTEED PERFECT

Write for Samples and Prices. **BUY DIRECT** You will **SAVE 25 to 50%** **ROCK ASPHALT ROOFING CO., 605 Y. M. C. A. Bldg., CHICAGO**



# MIXERS

ASK FOR  
NEW CATALOG

## Eureka Machine Co.

835 May St., LANSING, MICH.



## WANTED--A RIDER AGENT

IN EACH TOWN and district to ride and exhibit a 1908 Model "Ranger" bicycle furnished by us. Our agents everywhere are making money fast. Write for full particulars and special offer at once.

**NO MONEY REQUIRED** until you receive and approve of your bicycle. We ship to anyone, anywhere in the U. S. without a cent deposit in advance, *prepay freight*, and allow **TEN DAYS' FREE TRIAL** during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle you may ship it back to us at our expense and *you will not be out one cent.*

**FACTORY PRICES** We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. **DO NOT BUY** a bicycle or a pair of tires from anyone at any price until you receive our catalogues and learn our unheard of *factory prices* and *remarkable special offers* to rider agents.

**YOU WILL BE ASTONISHED** when you receive our beautiful catalogue and study our superb models at the *wonderfully low prices* we can make for 1908. We sell the highest grade bicycles for less money than any other factory. We are satisfied with \$1.00 profit above factory cost. **BICYCLE DEALERS**, you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

**SECOND HAND BICYCLES.** We do not regularly handle second hand bicycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from \$3 to \$5 or \$10. Descriptive bargain lists mailed free.

**TIRES, COASTER-BRAKES, single wheels, imported roller chains and pedals,** parts, repairs and equipment of all kinds at *half the usual retail prices.*

**DO NOT WAIT,** but write today and we will send you **free** by return mail our **large catalogue**, beautifully illustrated and containing a great fund of interesting matter and useful information; also a *wonderful proposition* on the first sample bicycle going to your town. It only costs a postal to get everything. **Write it now.**

**MEAD CYCLE COMPANY    Dept. D-122    CHICAGO, ILL.**

# CORTRIGHT

**METAL SHINGLES**

**NEVER  
NEED  
REPAIRS**

## Earning Capacity:

Can a roof earn dividends? A Cortright Metal Shingle Roof can, of that we are positive, because we have the assurance of thousands of contractors and builders who have proved it, and thousands more building owners who claim the same thing from their standpoint. If you want to know why, write for our 56 page book—"Rightly Roofed Buildings."

**Cortright Metal Roofing Co.**  
Philadelphia and Chicago



### It Is Not The First Cost

of a metal ceiling that makes it cheap. The cost of a ceiling is not complete until the work is accepted by the architect or owner. If the plates do not fit, your expense may be enormous. Better be

on the safe side and get "Canton" Metal Ceilings. We have a reputation for good work.

Our book "Art in Metal Ceilings" free.

**THE CANTON ART METAL CO.**  
Formerly THE CANTON STEEL ROOFING CO.  
CANTON, OHIO

New York Branch  
No. 525 W. 23rd ST.

Minneapolis Branch  
No. 253 SECOND AVE. S.

## BUILDERS OF CATALOGS

### From The Foundation To The Last Brick

We are experts in producing designs, illustrations, zinc etchings, half tones and color plates, for all advertising purposes.

We print folders, circulars, booklets and catalogues.

In fact, we handle your advertising from start to finish.

You do yourself an injustice by not conferring with us on your next order for engraving and printing.

Write for "Graven Message"

**Dearborn Engraving Company**  
ENGRAVERS PRINTERS

1322 Wabash Avenue, Chicago, Ill.

## SHINGLES THAT LAST

**The National Sheet Metal Roofing Co.**

Rain proof Durable SHINGLES JERSEY CITY N.J. WALTER'S Tiles Rust proof Ornamental

Write for Catalogue, Samples and Prices

and the prices are still moderate. To buy cheap machinery is not good business since an inferior machine is dear at any price. A good feature about this catalogue is that telegraphic code words are given and can be safely used to designate any of the machines when telegraphing. By their use, telegrams may be materially shortened. Lieber's Code may also be used. We would advise anyone interested in the wood-working machine line to write for this beautiful catalogue. When writing them please mention the AMERICAN CARPENTER AND BUILDER.

**Leaving the Bunch Behind**

Along with marbles and baseball, renewed interest in wheeling manifests itself as a sure indication of spring and the joys of outdoor exercise.

Nothing ever invented serves so admirably the triple purposes of utility, exercise and pleasure as does the bicycle. The best grade of wheels are now selling for less than one-third the prices of ten years ago, and at that the rider gets a better mount than was possible then. The coaster brake and two speed gear features alone mark a big step forward in bicycle construction since the boom days.

Inquiry among jobbers and dealers discloses a demand for bicycles, not only from the small boy (who has always ridden) but also from his older brother and his father also. The lady cyclist is also venturing timidly forth from the mysterious retreat wherein she has hibernated for a decade and she's not in bloomers either; thank the Lord for that.

"Leaving the Bunch Behind" is the attractive picture adorning the gold embossed, 1908 catalogue cover of the "oldest exclusive bicycle house in America," a copy of which has just reached us. The catalogue is a work of art and is brimful of valuable and interesting matter for riders or those thinking of buying wheels. It is well worth getting and may be had by writing the Mead Cycle Co., Dept. DX-122, Chicago. They also send a wheel for 10 days' free trial and will engage live agents.



**The Architect's Problem**  
**Preservation of Steel and Iron in all Structures**

The corrosion of steel, reinforcing fabrics, and exposed iron in buildings causes constant concern.

The preservation and protection of steel has been the subject of scientific and practical experiment by our corps of experts for many years.

Red Lead mixed by hand used to be regarded as the best coating, but it works hard and settles quickly.

**Lowe Brothers**  
**Red Lead Metal Preservative**

being a highly ground paint, overcomes these difficulties, covering perfectly, spreading easily, remaining in suspension indefinitely. It is the best preservative offered to-day, and is specified and used by many of the largest railroads and contracting bridge companies in the country.

A few dollars invested in the early part of the building means years of wear and assures safety. "Preservative and Protective Metal Coatings" tells how to do it. Shall we send it to you? See Sweet's Index, pages 1378-1379.

**The Lowe Brothers Company**  
 Established 1862 Paintmakers—Varnishmakers  
 450-452 E. Third St., Dayton, O. Chicago New York Kansas City

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.)

**Art Leaded Glass**

Makers of Memorial Figures and plain Decorative Windows, also residence work in L'Art Nouveau styles and beveled plate in metal copper finish. Designs submitted on application. *Grand Prize Louisiana Exposition.* Correspondence solicited. Established in 1883.

**The FLANAGAN & BIEDENWEG COMPANY**  
 57 to 63 Illinois St. CHICAGO, ILL.  
 (Near Franklin)  
 Telephone North 218

**The Wolverine Furnace**

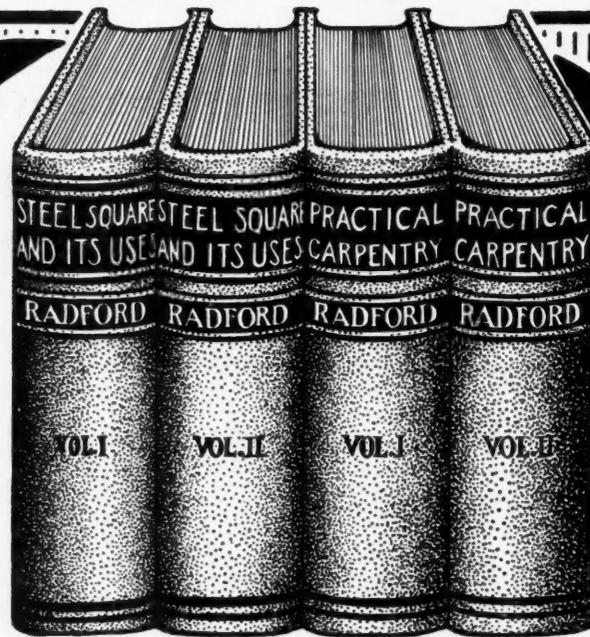
and the **Wolverine System** of heating and ventilating are things you want to investigate before you place your contract for heating apparatus. We sell direct to you at manufacturer's prices, not only the furnace but all piping, registers and other fixtures all cut and fitted ready to put together.

Then, we send our own salaried mechanic to install your job if you live within our local territory. If not, our engineering department prepares complete plans and instructions that any good mechanic can follow.

It costs you nothing to investigate and to receive our written proposition. Write for our large illustrated catalogue that describes and illustrates these furnaces and explains the **Wolverine System** of installation and contains lots of other interesting and valuable information. It is mailed anywhere **free postpaid** on request. Drop us a postal and ask for catalogue No. 25.

**Marshall Furnace Co.**  
 221 Exchange Street  
**Marshall, : : : Michigan**

# OPPORTUNITY TO INCREASE YOUR INCOME



## FOUR NEW BOOKS

Edited Under the Personal Supervision of

**WILLIAM A. RADFORD**

Editor in Chief of the AMERICAN CARPENTER AND BUILDER

Assisted by ALFRED W. WOODS and WILLIAM REUTHER

### THE STEEL SQUARE AND ITS USES

TWO VOLUMES

A Complete Encyclopedia on the Practical Uses of the Steel Square

**JUST PUBLISHED.** This very valuable and practical work is published for the first time. It is up to the minute, being issued January 1, 1907. This splendid edition is a brand new book from cover to cover, written in simple, plain, every-day language so that it can be easily understood and followed. Information of value that has appeared in former works appears in this work, together with a vast amount of new, practical, every-day information, such as is necessary for every progressive and successful artisan to know.

**REMEMBER,** this work is absolutely up to date (being issued January 1, 1907). Each volume measures 6x9 inches, and contains over 300 pages, being the largest books on the steel square ever published. They are bound in cloth with attractive cover designs, handsomely stamped. Printed on the best quality of paper. Each volume contains 50 modern house plans.

### PRACTICAL CARPENTRY

TWO VOLUMES

A Complete Up-to-Date Explanation of Modern Carpentry

**NEW SPECIAL EDITION.** This work, "Practical Carpentry," is absolutely new, being completed only January 1, 1907. It is written in simple, plain, every-day language so that it can be easily understood. It will not bewilder the working man with long mathematical formulas or abstract theories.

**SPECIAL CHAPTERS** are devoted to building construction, which takes the carpenter from foundation to roof, with complete illustrations of each detail, such as foundation, windows, cornices, doors, roofs, porch work, etc. There are also special chapters devoted to good and faulty construction and all kinds of framing.

Price Per Volume

**\$1.00**

**American Carpenter and Builder**

185 Jackson Boulevard  
Chicago

A C & B.  
5-08

Enclosed

find .....  
dollars for which  
send me Steel  
Square and Its Uses,  
Vol. I and Vol. II, and  
Practical Carpentry, Vol.  
I and Vol. II

Name.....

Address.....

**== HERE ARE 4 BOOKS ==**



That Should be in the Hands of  
**Every Man Interested In  
 Building Construction**—  
 No Matter in What Capacity.

Acknowledged by all experts to be the most complete up-to-date and practical books ever written upon the following subjects:

**Practical Plumbing by Questions and Answers**

Covering the theory and practice of Plumbing and Sanitary Engineering in all its branches.

**Practical Lead Worker and Joint Wiper**

Covering every detail in joint-wiping from cutting and preparing the pipe, wiping every kind of joint, soldering, lead pipe bending, etc., etc.

**Modern Plumbing Plans**

Over 125 plans, elevations, drawings and details showing how to connect every kind of fixture, etc.

**Modern Gas Fitting Plans and Rules**

The only book of its kind ever printed. Over 100 plans, elevations, details, etc., covering the piping of stores, office buildings, dwellings, apartments, residences, flats, schools, etc.

These books will be found indispensable to all Plumbers, Architects, Plumbers' Helpers, Gas Fitters, Builders, Sanitary Engineers, Inspectors, Physicians, those preparing for plumbers' license examinations, and also for property owners who desire to do their own plumbing and gas fitting. These books are all illustrated with hundreds of plans, elevations, details and half-tones.

Sent Postpaid

on receipt of

**\$1.00 Each**

or

**\$3.75 for the Set**

Address all mail to

**THE MARVIN PUBLISHING COMPANY,**

402 Century Building  
 KANSAS CITY, MISSOURI

**GENUINE BANGOR**

Roofing Slate,  
 Structural Slate,  
 Blackboards.

Large Facilities, Prompt Deliveries

**EAST BANGOR CONSOLIDATED SLATE CO.**

East Bangor, Pa.

**WOOD ROLLING PARTITIONS**

FOR CHURCHES, SCHOOLS and PUBLIC BUILDINGS

**FLEXIFOLD DOOR @ SHUTTER CO., Worcester, Mass.**

WRITE FOR CIRCULARS

ESTABLISHED 1884

**THE E. J. JOHNSON CO.**

38 PARK ROW  
 New York

**Slate Blackboards**

Producers of

Branch Office  
 626 Park Building, Pittsburg, Pa.

Large Stocks  
 Prompt Shipments  
 Correspondence Solicited

**ROOFING SLATE**

**DOW**

Wire & Iron Works

(Incorporated)

LOUISVILLE, KY.

**IRON LINTELS**

Beams, Angles, Anchors, Hangers,  
 Ornamental Cast Iron Fronts and Stairways.

## The New Kenmore Albany, N. Y.



One of the Best Hotels in the City. European Plan  
\$50,000 SPENT ON IMPROVEMENTS

### \$1.50 AND UPWARDS

150 Rooms with Shower and Tub Baths; 175 Rooms with hot and cold running water; Telephone in every room. Special attention paid to tourists. Cuisine and Service unexcelled. Nearest Hotel to Capitol Building, Theatres and Union Station.

J. A. OAKS

Also LAKESIDE HOTEL, Modern Summer Resort, with all Improvements. Situated at Thompson's Lake, Helderberg Mountains, N. Y. Altitude 1,650 feet. Seventeen miles from Albany.

WRITE FOR DESCRIPTIVE BOOKLET

"Nothing Finer the World Over"

## HOTEL PONTCHARTRAIN

Cadillac Sq., Cor. Woodward Ave.  
DETROIT, MICH.

### Absolutely Fireproof

Combines more up-to-date features than any other hotel in the country. Appeals particularly to tourists and travelers.



MERRILL  
AGCYNR

Conducted on European Plan—Unsurpassed Cuisine—Excellent Service.

RATES: \$2.00 Per Day and Upwards

PONTCHARTRAIN HOTEL CO., Props.

GEORGE H. WOOLLEY, } Managers  
W. J. CHITTENDEN, Jr., }

## DO YOU USE GLASS IN YOUR BUILDINGS?

IF SO, LET US

## Show You How!

BY DEALING DIRECT  
With the Designers and Makers

Art Glass  
Sand Blast and Chipped  
Window and Plate Glass

Write Today  
for Catalog

Most Artistic Ever Issued

Suess Ornamental Glass Co.

Throop and 21st Sts.  
Dept. C. CHICAGO

## SHINGLE STAINS

Made from creosote oils will add years to the life of your roof. We employ the best grades of creosote oil and material in the manufacture of our stains and are positive that they will give you more satisfaction and better service than any stain now manufactured. Our stains are made in any color and quantity desired and ready to ship as soon as your order is received. If interested send for circular to

M. M. Davidson & Sons

115 W. Pleasant St., Springfield, O.

## STEEL BEAMS & LINTELS



CAST-IRON  
COLUMNS ·  
SIDEWALK LIGHTS

# There's Always Big Inducements on Our Slate

- Caps
- Grilles
- Columns
- Brackets
- Balusters
- Mantels
- Mouldings
- Stair Work
- Porch Work
- Gable Ornaments
- Etc.

We manufacture Everything in the Cabinet Line

PROMPT SHIPMENTS

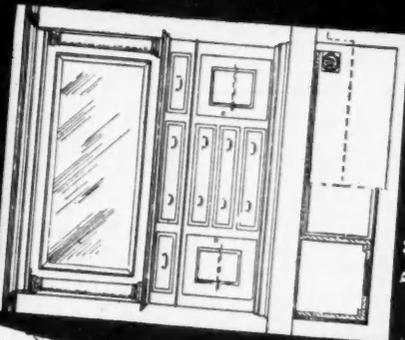


## Embossed Mouldings

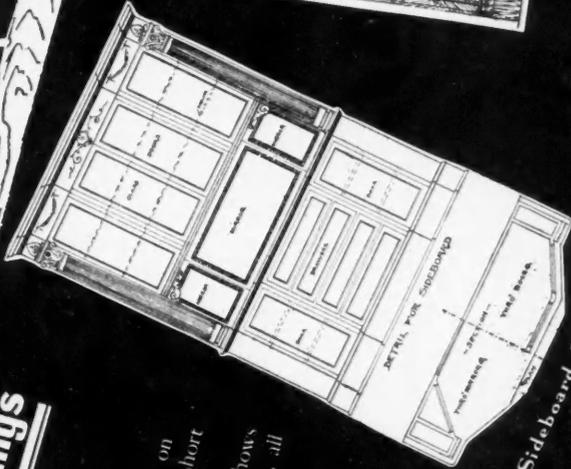
### Our Specialty

SEND FOR OUR CATALOG No. 17  
Here are a few items of our product on which we will quote special prices for a short time.

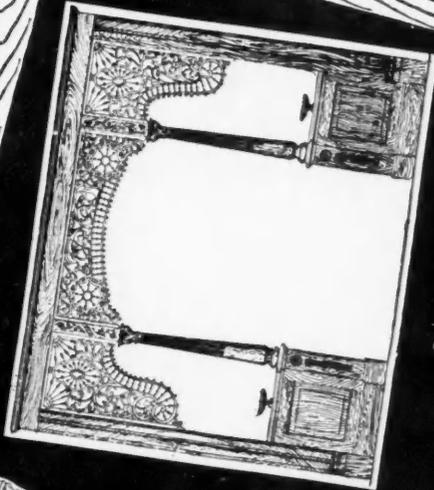
Send for our New Catalog No. 17. It shows our complete line. It contains 96 pages, all illustrated. Do it now—Write today.



Buffet Side Board No. 402



Sideboard Style G



Grille No. 532



Card Rail No. 5A 1 1/4 x 1/2 in.



Plate Rail 3 in., 4 in., 5 in.

We are Specialists in Our Particular Line

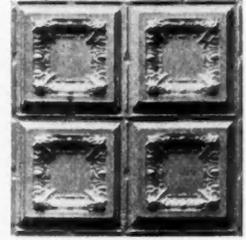
Send for our New Catalog No. 17

**CHICAGO EMBOSSED MOULDING CO.**

583-587 Austin Ave.  
CHICAGO



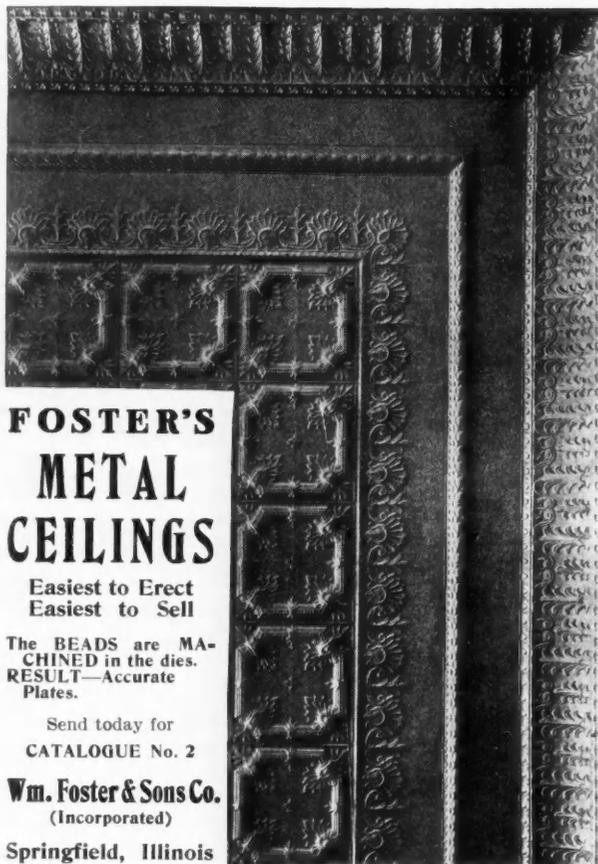
## “Quality” Ceilings



Our aim is to produce the best goods on the market—quality above all else. How we are succeeding is being proven every day by our products themselves. Our Ceilings and Side Walls are clear, sharp and perfect in every detail. The designs are new and artistic, the joints dust-proof and practically invisible : : : : : : : : : : :

*Our new Catalog, explaining all about them will be sent upon request*

**F. O. SCHOEDINGER, ::: Columbus, Ohio**  
**Dept. 5 146 - North Third Street - 148**



### FOSTER'S METAL CEILINGS

Easiest to Erect  
 Easiest to Sell

The BEADS are MA-  
 CHINED in the dies.  
 RESULT—Accurate  
 Plates.

Send today for  
 CATALOGUE No. 2

**Wm. Foster & Sons Co.**  
 (Incorporated)

Springfield, Illinois

# GRILLES

## COLUMNS AND CONSOLS

In quality and price our work is not surpassed.

You will make no mistake in writing us before ordering elsewhere.

Send for  
**Catalog No. 14**

It contains many fine designs of modern Grilles, Columns and Consols.



Consol Design No. 1

**Northwestern Grille Works**  
 CHRISTENSON BROS., Props. 1452 Milwaukee Ave., Chicago



# CONTRACTORS

We wish to convince you of the **Superior Quality** of our line of **Patented Grates, Artistic Wood Mantels and Tiles.**

A trial order is necessary to do so. Remember you run no risk, for we make shipments subject to approval and **Prepay the Freight.**

Large, handsomely illustrated catalogue of **Original and Correct** designs will be forwarded at request.

Send your business card and receive **Wholesale Prices.**

Our **Patented Grates** will heat from **one to five** rooms in **zero** weather.

Contracts taken for **Tile Floors** and **Wainscoting.**

**HEITLAND GRATE & MANTEL CO.,**  
 No. 124 S. 5th St., - - - - **QUINCY, ILLINOIS**



# Mullins Makes Everything in Art Architectural Sheet Metal Work

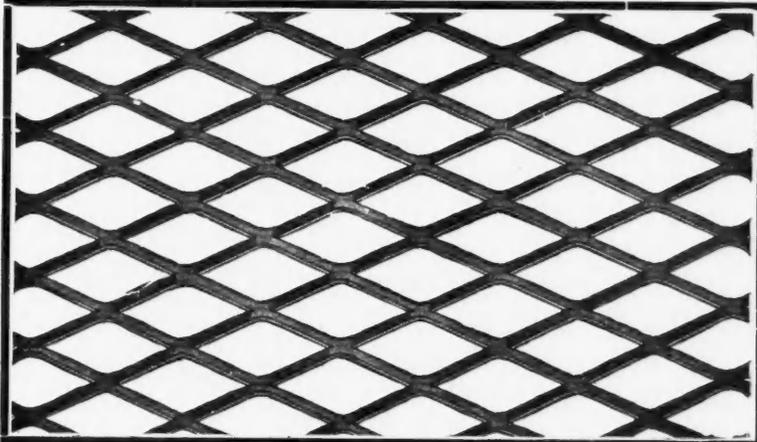
Our factory is the largest and best equipped in the world and our wide experience and skilled artisans enable us to execute the most intricate and delicate work ever attempted in sheet metal, promptly and with complete satisfaction.

## Our 120 Page Catalogue

of stock designs will be sent on request. Estimates, models, designs, etc. submitted for architects, builders and contractors.

**The W. H. Mullins Co., 214 Franklin Street, Salem, Ohio**

*Makers of everything in Sheet Metal.*



## Northwestern Expanded Metal Company

**D. D.**

### Expanded Steel Plastering Lath

	Weight per Bundle	Yards per Bundle	Sheets per Bundle	Weight per in	Yards in 100 lbs.
No. 27 Gauge	27½ lbs.	12	9	2½ lbs.	43
No. 26 "	30 lbs.	12	9	2½ lbs.	40
No. 24 "	40½ lbs.	12	9	3.4 lbs.	29½

Telephone Harrison 799  
945 Old Colony Building

:: CHICAGO

**SYKES** TWO BEST LATHS IN THE WORLD

**METAL LATH & ROOFING CO.** NILES, OHIO.  
U. S. A.

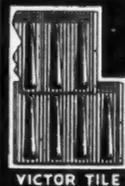
## EASY MONEY AND PLEASANT WORK

Both combined in laying **Montross Metal Shingles**. The profits are large because our Metal Shingles are in demand. Absolute protection against sparks, lightning or leaks

*Send for Catalog Now Before You Forget*

**MONTROSS METAL SHINGLE CO.**

Camden, N. J.



**COMMONWEALTH HOTEL** Opposite State House  
BOSTON, MASS.



Offers rooms with hot and cold water for \$1.00 per day and up; rooms with private bath for \$1.50 per day and up; suites of two rooms and bath for \$3.00 per day and up. Weekly rates on rooms with hot and cold water and shower baths, \$6.00 to \$9.00; rooms with private baths, \$9.00 to \$12.00; suites of two rooms and bath \$15.00 to \$22.00.

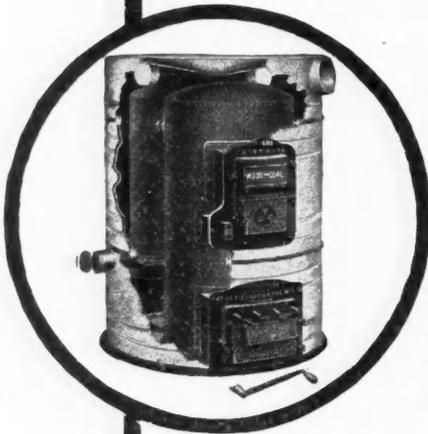
Absolutely Fireproof—Stone Floors, nothing wood but the doors.  
Equipped with its own Sanitary Vacuum Cleaning Plant  
Long Distance Telephone in Every Room  
Strictly a Temperance Hotel—Send for Booklet  
STORER F. CRAFTS, - - Manager.



**The Front Rank Steel Furnace**

Reduces Your Fuel Bill—  
Because it does not Waste  
—Burns any Kind of Fuel

Distributes heat evenly and plentifully  
in the coldest weather.



Let us help you arrange your heating plans—We make no charge for furnishing estimates.

Our latest Catalogue gives complete details and other heating information. It will pay you to send for it — It's free.

*Write us today and tell us, please, the name of your local Furnace dealer.*

**Haynes - Langenberg Mfg. Co.**

4045-4057 Forest Park Boulevard : ST. LOUIS, MO.

**SUCCESS!**

**I**S YOURS, Mr. Contractor, if you can estimate accurately. The up-to-date builders are adopting The Lightning Estimator as the standard for estimating residence work. **Why?** Because it teaches easy, rapid and accurate methods, all based upon actual cost of labor and material. Largest endorsement and sale of any book of its kind now on the market.

Lessens the risk of errors and omissions which often cause loss. Based on actual experience, not theories. Treats residence work from start to finish exclusive of plumbing and heating. While it is a book particularly for the carpenter, it includes masonry and concrete work, as required on residence work. It is brief and to the point, each subject being easily found and understood. Put your business on a better basis by sending a **one dollar** money order today for a copy of the new fifth edition.

The following letter from one of our customers who knows a good thing is just a sample of many on file in our office:

Libby, Mont., Mar. 2, 1908.  
Bradt Publishing Co., Jackson, Mich.

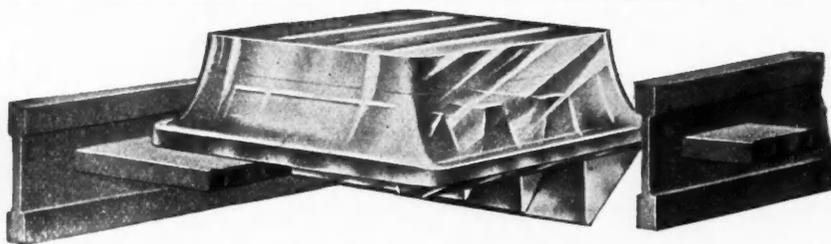
Gentlemen: Your Lightning Estimator received, and it is a dandy, and I consider every page of it worth the price. There is more (REAL) information and solid sense between the covers of your little book than some would or could crowd between the covers of a book as large as Webster's unabridged dictionary. I would not take \$5.00 for it if I could not get another.

Yours for success,  
EDWIN C. CHAPMAN.

**BRADT PUBLISHING CO.**

1260 Michigan Avenue.

Jackson, Mich.



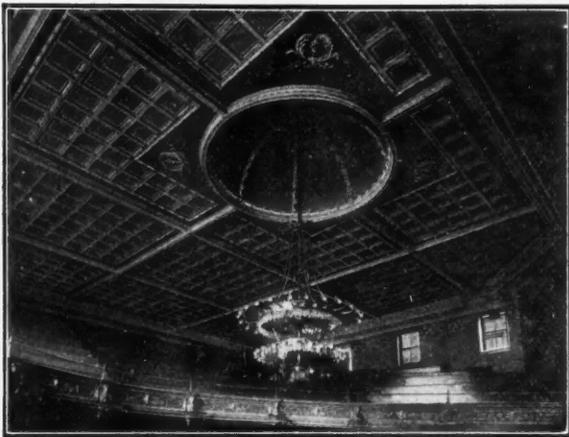
**100% More**  
**Light**

in dark interiors by the use of

**3-WAY PRISMS** Prism Glass of all kinds, Vault Lights, Window Lights, Skylights, Wired Prisms

See pages 522-23-24-25 in Sweet's Index, at all Architects' and Builders' offices.

**AMERICAN 3-WAY PRISM COMPANY**  
134 North 10th Ave. (Catalogue on request) **PHILADELPHIA**



**Before installing Steel Ceilings of any description get details of BERGER'S "CLASSIK"**

Write TODAY for catalog **D-55**. Show your clients our handsome steel ceilings. Most complete line of artistic steel ceilings in existence. Clearly stamped, easy to erect. Appropriate designs for all kinds of rooms. Send sketch and dimensions of rooms for free suggestions and exhibition drawings.

**THE BERGER MFG. CO. CANTON, O.**  
 New York, Philadelphia, St. Louis, Boston  
 Chicago, Atlanta, San Francisco, Minneapolis.  
 Steel Ceilings, Roofing, Cornices, Skylights, Etc.

## Metal Ceilings and Side Walls

*Edwards Embossed*

Catalog "A"  
on request ::

**I**F you will send us sketch of rooms with dimensions marked and any suggestions you may have to offer, we will forward a carefully prepared drawing, showing just how the ceiling will look when finished, and a lump price for material delivered to your nearest railroad station.

**THE EDWARDS MANUFACTURING CO.**  
 "THE SHEET METAL FOLKS"

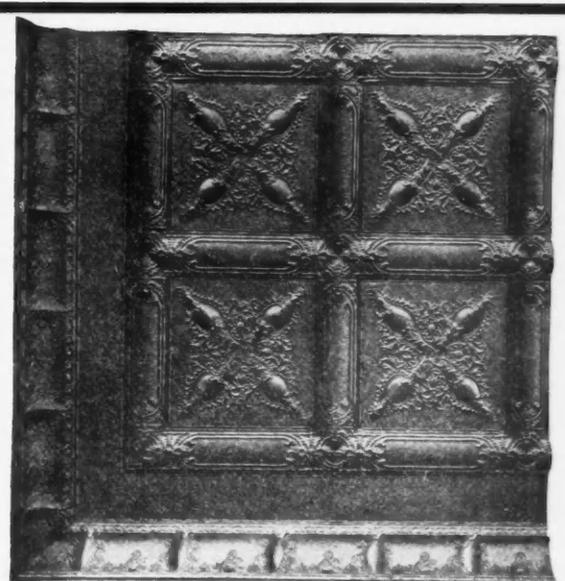
401-417 Eggleston Ave.,  
 CINCINNATI,  
 U. S. A.

**Health Ceilings  
 Health Side Walls**



They might well be termed as above, for they do **not** gather moisture, are **not** filled with poisonous coloring matter and **cannot** fall, crack or become unsightly. Eller's Steel Ceilings and Side Walls have for many years been the standard of quality—look for the trade-mark—it means perfection in every feature.

**Eller Manufacturing Company**  
 Canton, Ohio



**ART METAL CEILINGS**

LET US FIGURE WITH YOU  
 We make PROMPT SHIPMENTS

**The Kanneberg Roofing & Ceiling Co.**  
 CANTON, OHIO.

*Manufacturers of Everything in Sheet Metal*

# Heating Plans Free!

## For Any Building HOUSES, CHURCHES, SCHOOLS AND STORES

Much of the happiness and comfort of any home depends on the way it is heated. Experience has taught that properly distributed warm air is the best system for heating a home, church, school or other building.

The Hess method of warming and ventilating is far superior to steam, hot water, or other systems, and costs much less to install and maintain. We can satisfy any contractor, builder, or owner on the economy and quality. In order to demonstrate that we know our business we offer to send free heating plans, prepared in detail for any building. This we will do whether you buy of us or not.

**The Hess Steel Furnace** is sold direct from our factory to builders, at one small profit.

### We Charge Nothing for this Service

When we say our heating plans are free we mean it. All you have to do is to send us the information as described below and we will have our heating and furnace experts prepare special plans for the building to be heated, and forward to you free of expense. This will prove of great value to you and save you money and mistakes.

#### Information Wanted

Send us a rough sketch of the [house, church, school or other building you want to heat. This sketch need not be drawn to scale but must clearly indicate the location and size of rooms, measuring inside from wall to wall. Show the partitions by single lines; the doors by spaces in the lines; the chimney by a square; stairs by parallel lines; mark folding or sliding doors, if any. Make a separate sketch for each floor, and mark the size of each room in figures. Tell whether the upper story is a full story or half story. Give width of stairways—mark on plan. State thickness of floors. In the cellar plan indicate the piers, posts and beams, the location of chimneys, fuel supply, and the cellar stairs or entrance. Show the direction of the joists by an arrow, thus ← →

#### Our Selling Plan

Under our selling plan we guarantee our furnace to heat the rooms connected to it and will refund the money, or give a larger furnace free, if it fails to operate as guaranteed.

By making no charge for heating plans or estimates, and giving the manufacturer's best price for the full equipment, we have met success beyond our expectations. The responsibility for what we sell you and how it works is all on us—**We have to make good.**

Our plan insures the proper size and arrangement of pipes, registers, furnace, etc., as when we plan all the equipments we sell we know the work is right. Write for our free booklet and complete information.

### HESS WARMING AND VENTILATING COMPANY

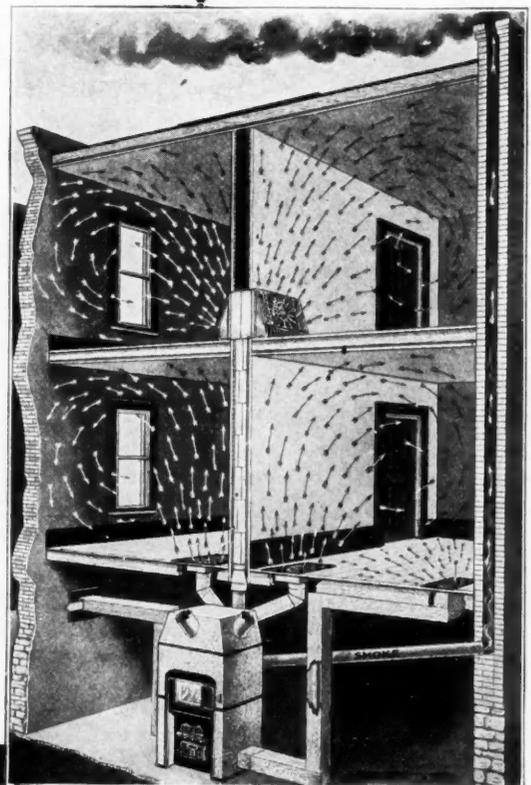
920 Tacoma Building - CHICAGO



**\$49.00** Buys this  
**Leader**  
**Steel Furnace**  
**No. 45.**

Heats 7 or 8 Rooms

Freight prepaid to any station east of Omaha, north of Ohio river. Five other sizes at proportionate prices.



**BOVEE COMPOUND RADIATOR FURNACES**



Having the only perfect HOT BLAST VENTILATING SYSTEM. We save you 50 per cent on the cost and 35 per cent on the fuel.

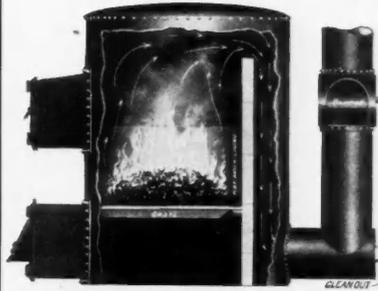
We have been 14 years in the furnace business and have the best equipped plant in the West.

We make 24 different furnaces and can furnish you

any kind of a Hot Air Furnace you want, including our Celebrated Waterloo Furnace for \$40.00. Send for catalog and specifications. BOVEE GRINDER AND FURNACE WORKS, 50 W. Eight St., Waterloo, Ia.



**The JUMBO FURNACE Will Make It Hot for You, and Our Price Makes It Hot for Our Competitors**



The Jumbo heats the house perfectly and moistens the air at the same time.

Made of very best steel absolutely guaranteed.

Write today for full information

**Jumbo Furnace Co.**  
Stuart Bldg.,  
Des Moines - Iowa

**Hot Water Heating At Much Lower Cost**

If you contemplate installing Hot Water it will be to your interest to investigate

**THE HONEYWELL SYSTEM**

It is not only the cheapest system to install, but by far the most sightly, efficient, responsive and economical system on the market. It contains one-third less water and heats one-third quicker with a resultant saving in fuel. The water circulates from the boiler to the radiators from **three to five times faster** than in the old style system, hence quick results from firing with a minimum loss of heat in transmission. No large, unsightly piping through the rooms with this simple system. Owing to the very rapid circulation of the water  $\frac{3}{4}$ " pipes are amply large to supply any sized radiator on the upper floors.

**Every Radiator** heats perfectly with the water at a temperature as low as 85 degrees, which can be increased to a temperature of **240 degrees** (hotter than steam) **without boiling** inside of a **few minutes**, giving the system the efficiency of steam at 10 lbs. pressure to meet extremely cold weather, while retaining all the valuable features of the mild temperatures of hot water.

**Over 6000 Systems Installed In 1907**

Indorsed and Sold By The Leading Manufacturers of Heating Materials.



Honeywell Heat Generator

Free engineering advice given the trade on all installations. Failures absolutely guaranteed against.

If you have an unsatisfactory job of hot water heating, we can cure it at a very small cost and without remodeling.

Write us for full information regarding this eminently successful system that is revolutionizing hot water heating.

**HONEYWELL HEATING SPECIALTY COMPANY**

Plant and General Offices

WABASH, - - - INDIANA



For Honeywell "NRI" The Water Radiator Valve.



**COMPO-BOARD**

A substitute for Lath and Plaster  
Can be put on by any Carpenter.

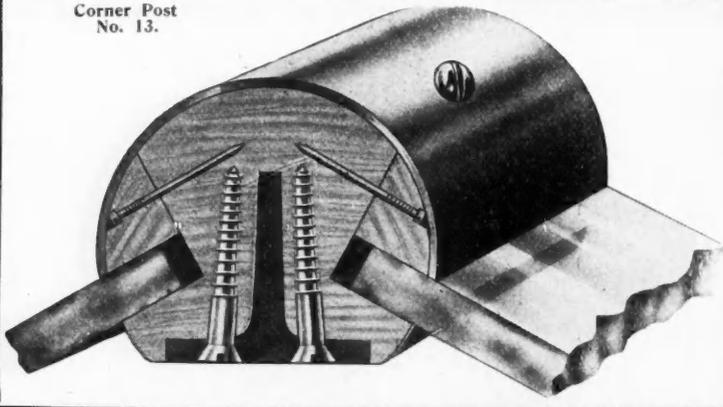
It is Warmer, more Durable,  
Quicker and more Easily Applied.

Manufactured all 4 ft. wide, 8, 9, 10,  
11, 12, 13, 14, 15, 16, 17 and 18 ft. long.

For Sample, Price and  
full Description, Write

**Northwestern Compo-Board Co.**  
MINNEAPOLIS :: :: :: MINN.

Corner Post  
No. 13.



### COULSON PATENT Store Front Construction

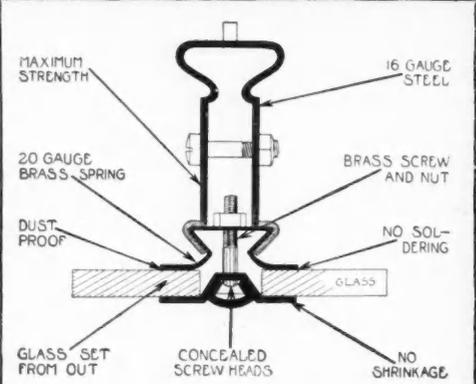
We know to be the best and only practical construction of its kind. We can convince you of the same if you will write to us for a description and our Catalogue D-800: : : :

---

**J. W. COULSON & CO.**  
Main Office: 96-98 N. Third Street Columbus, Ohio

## Kawneer System

of Glass Setting  
FOR STORE FRONTS



MAXIMUM STRENGTH  
20 GAUGE BRASS SPRING  
DUST PROOF  
GLASS SET FROM OUT  
CONCEALED SCREW HEADS  
16 GAUGE STEEL  
BRASS SCREW AND NUT  
NO SOLDERING  
GLASS  
NO SHRINKAGE

**No. 7 DIVISION BAR**  
(Half Size)

Pat'd under Plym Patents  
May 6, '06 July 7, '07 Dec. 6, '06  
Others Allowed

Agents and Branches in all Principal Cities

**Kawneer Mfg. Co.**  
121 Factory St., Niles, Mich.

60,000 columns at an average of \$5.00 each, or 6,000 at \$50.00 each, gives you an idea of the annual capacity of our plant.

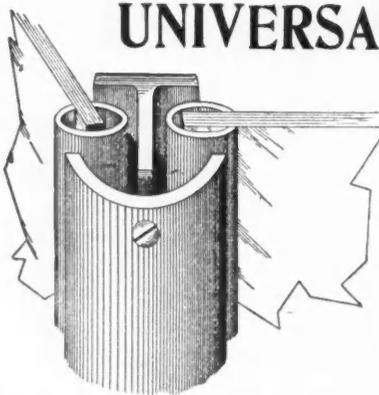
We own the largest factory building in the world devoted exclusively to the manufacture of high grade column and porch work.

Send for catalogue M19 of columns, and M29 of sun dials and pedestals.

**HARTMANN - SANDERS COMPANY**  
Sole Manufacturers of  
**KOLL'S PATENT LOCK JOINT COLUMNS**  
Elston and Webster Aves., CHICAGO, ILL.  
Eastern Office, 1123 Broadway, NEW YORK CITY.  
The best columns for porch, pergolas or interior use.

## UNIVERSAL STORE FRONT CONSTRUCTION

### ALL METAL BAR



The first bar made to set glass from the outside! Others follow. All corners and angles look alike. Bar comes fitted ready to screw to building. WHEN WINDOWS ARE ENCLOSED GLASS WILL NOT FROST.

**Our Universal Sash Bar Meets Every Condition of Store Front Construction**

Always a sure fitter. Used for Corners, Divisions, Transoms, Mullions, Sills, Jambs, Circles, Domes and any and all angles. Send us your blue prints for estimates. We deliver the goods.

**VOLTZ MANUFACTURING COMPANY, St. Joseph, Mo.**  
1101 and 1103 S. Eighth Street Two Blocks East of Union Station

**The Contractors' Signal of Success**



**FROM  
MANUFACTURER  
DIRECT**

**"Let's Shake Hands Under It for 1908"  
WE WILL ALWAYS USE YOU RIGHT**

**CHICAGO MILLWORK SUPPLY CO.  
236-242 W. TWENTIETH STREET, CHICAGO**

FROM  
MANUFACTURER  
DIRECT

**"JUST TO BOOM BUSINESS"**

We are naming special bargains on Stock Millwork to start the spring trade. The items here are samples of a few only. Send us your lists for estimates.

FROM  
MANUFACTURER  
DIRECT

**OUR GREAT CATALOG No. 15—312 PAGES—IS FREE**

We would appreciate 10 cents in coin or stamps to cover cost of mailing.

Contractors and builders owe it to themselves as shrewd business men to **save middle-men's profits** by buying **direct** of the manufacturers. Thousands do—why not you? Buying direct broadens your business experience. **It will pay you to push "stock-stuff."** You don't have to guess what your profits will

be when you buy of us. Our immense warehouse located at Chicago, the **"Great Central Market,"** supplemented by two large factories at the base of supply makes us the **largest manufacturers of stock millwork selling direct.** We ship without delays. **Begin now.** Buy all you can direct. **It will pay.**

**50% SAVED OVER DEALER'S PRICES ON ECONOMY FLINT COATED ROOFING**

**SEND FOR FREE SAMPLES**

PRICE PER SQUARE OF 108 SQ. FEET

**ONE PLY COMPLETE \$1.40**

**TWO PLY COMPLETE \$1.80**

**THREE PLY COMPLETE \$2.20**

**DOORS**



**THIS DOOR \$1.90**  
Painted and Glazed D. S.

Net Cost—C-520 Painted

Size	Th'ns	Glazed D. S.	Glazed Cut
2-6 x 6-6	1 1/2	\$1.90	\$2.25

This Building is Covered with  
**C. M. S. Co.'s Economy  
Flint Coated Roofing**



**OUR ECONOMY BRAND ROOFING**

Is a flexible asphalt fabric. Each roll contains all the nails, metal caps and cement you need in laying it. We fully guarantee every roll, carry a large stock and can ship at once any sized order.

Compare our samples and prices and quality with your local dealers'. Look into it carefully and see that the saving is all we claim. Don't take our word for it. Look it up. Don't put on cheap burr cull shingles at a high price and have your customer kicking. Give him a modern roofing at a fair price that will out-last shingles and cost less.

**OUR ABSOLUTE GUARANTEE  
GOES WITH EACH ROLL  
WRITE TODAY**

**MANTELS**



**THIS MANTEL \$25.65**  
as described below

Style "C" 2289

DESCRIPTION—Selected oak, gloss finish. Height 6 ft. 1 in., width 4 ft. 4 in. to 5 ft. French bevel plate mirror 16x 28 in. Tile opening 36x36 in. Price includes woodwork finish, enamel tile for face and hearth, grate, tile frame, etc., complete ready to set up.

**CHICAGO MILLWORK SUPPLY CO., 236-242 W. 20th St., CHICAGO**

FROM  
MANUFACTURER  
DIRECT

FROM  
MANUFACTURER  
DIRECT

# A \$3000 HOME FREE

**E**VERY man has an ambition to own a home. But it is once in a life-time that an opportunity like this is offered. Here an attractive, beautiful home is held out to you—it is within your grasp.

## Own Your Own Home

Thousands and thousands of men and women work and toil for years to save enough money to build a home. It is a most laudable ambition, and one which holds out the greatest possible happiness. For what can a man desire more, particularly if he has a wife and possibly a family, than a comfortable home-like home all his own? It is worth the toil and sacrifice of years, and the reward makes all the effort seem but light.

Realizing this great and praiseworthy ambition, the American Carpenter and Builder decided to place two beautiful homes within the reach of two men who, by their efforts, show that they are most entitled to them.

It will be the work of only a few months to secure one of these homes—it will not take years to save the money. What a short cut for an ambitious and home-loving man!

## This is YOUR Opportunity

Don't make the mistake of thinking that this is a good opportunity for some other fellow. It is your opportunity. It may be the other fellow's, too, but it is just as much yours. Aren't you just as capable as he? Aren't you just as ambitious to own a home? Aren't the opportunities in your vicinity just as great as they are in any other? You are mistaken if you think they are not.

Russell H. Conwell, in his famous lecture on "Acres of Diamonds, or, How to Get Rich," says: "Where can

I get rich? Right where you are. At home. Not somewhere else. Not a man has secured great wealth by going away who might not have secured as much if he had stayed at home."

Don't make the mistake of thinking that if you were located somewhere else you would win, but not where you are. Your opportunity is just as good, perhaps even better, than any other man's. Get to work where you are. And get to work right now.

## Your Wife's Happiness Assured

Think of the happiness of the wife—that is, or is to be—when you can tell her that hereafter we can live in "Our Own Home." You can give her no greater pleasure in life than the possession of a home all your own. And you can have it, too. And have it this very summer. You don't have to wait and save and figure, and figure and save.

You may have been looking forward to the dim future—to prospect of saving so much a year, and have thought that about year after next, perhaps in 1910, "we will have money enough to build, providing we can take out a mortgage," and then "if we can pay off so much a year in ten years we will have it all paid for."

How different it will be if you grasp this opportunity! Before another snow flies you and your wife and family will gather at your own fireside, in a home that is all your own. No rent to pay; no interest to pay; no mortgage to lift.

Read our liberal offer very carefully. Then don't lose one minute. Write us before you sleep.

Remember, it is the man who sees and grasps the opportunity that is before him, and is within his reach, who wins.

## Two Grand Prizes

**FIRST PRIZE—Home valued at \$3,000.00**

Including Lumber, Millwork, Hardware, Plumbing, Furnace, Mantels and Paint

**SECOND PRIZE—Home valued at \$2,000.00**

Including Lumber and Millwork

In case of a tie (which is extremely improbable) the cash value of the prize will be equally divided.

## Monthly Prizes

**FIRST PRIZE—Cash, \$50.00**

**SECOND PRIZE—Cash, 25.00**

The first home will be given to the person securing the largest number of subscribers to the AMERICAN CARPENTER AND BUILDER before July 1, 1908.

The second home will be given to the person securing the second largest number of subscribers before July 1, 1908.

The first and second monthly cash prizes will be given to the persons securing the first and second largest numbers of subscribers in any one month.

These monthly cash prizes will be duplicated each month.

In addition to all of the above prizes, 25% (50 cents) may be retained by the contestant on each and every subscription secured.

## Great Prize Contest

**T**HIS is the greatest offer ever made or ever even thought of. Two handsome homes are to be given away absolutely free to the two men who secure the largest number of subscribers to the American Carpenter and Builder before July 1, 1908. We pay you liberally for all the work you do in good solid cash, and in addition to this make you a present of a home.

This is not all. There are also cash prizes amounting to \$450. Think of it! Four Hundred and Fifty Dollars in Cash!

This \$450 and these two beautiful homes are all in addition to a liberal cash payment for every subscription you secure.

Please take note of this important point—we make no stipulation as to how many subscribers you must have to secure a home. We are taking all the risk. It

may take only a very few. We want you to fully realize just what the wonderful offer means:

**First.**—Twenty-five per cent (50 cents) on each subscription.

**Second.**—\$50.00 a month if you secure the most subscriptions in that month.

**Third.**—A beautiful and expensive home if you secure the most subscriptions during the contest.

Even if by some possibility you should miss the first home, there is still another; and if you miss the \$50.00 a month you will receive \$25.00 if you get the second largest number of subscribers. You certainly can get the second if you miss the first. But you are not going to miss the first. Don't think that way for one minute. Just go in with a determination to win and you will win. And we will do all we can to help you win.

WRITE TODAY FOR 16-PAGE BOOKLET AND FULL PARTICULARS.

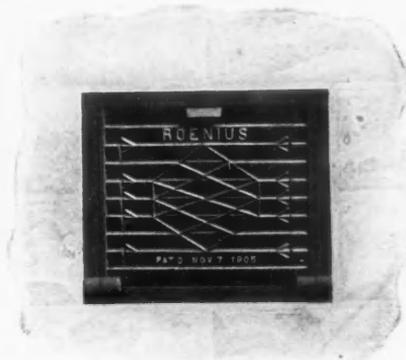
## American Carpenter and Builder

185 Jackson Boulevard, Chicago

# ROENIUS

== WOOD and COAL ==

# CHUTES



CLOSED AND LOCKED



CLOSED AND LOCKED

**10,000**  
**in use**

Have stood the test, because they are of good, common sense construction. They **do the work and stand the abuse** Coal Chutes are intended for. No adjustable parts, easily opened, easily locked. Notice long anchorage and long spout on both Chutes. Write for agency and prices.

**Grand Rapids Foundry Co.**  
**Grand Rapids, Wisconsin**

## MODELS

Models and Dies for Metal Ceilings.  
Machinery for Metal Ceilings and Boats.  
Mechanical Installing of Metal Ceiling Plants.  
Models for Buildings, Bridges, Theaters and Railway Stations.  
Made of Composition Correct to Scale from Architect's Plans.  
Models and Molds for Concrete Stone.  
Models, Stucco and Composition Work.  
Make Sketches and Estimates Free of Charge.

MAIL DIRECT TO THE  
**ACORN MODELING WORKS**  
2238 Shelby Street  
INDIANAPOLIS, : : INDIANA

## CLINCHER

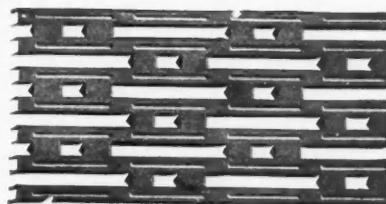
MEANS

## LATH Economy

Easy to Handle  
Easy to Erect  
Easy to Plaster

Level Plastering  
Surface

**No sagging between the Studding**



Write for sample and price  
Dept. C

**The AMERICAN**  
**Rolling Mill Co.**

Middletown, Ohio

**ASHBY  
SCHOOL HOUSES**

display a composition of utility, durability and good, pure architecture without any "gingerbread."

No buildings are too large or too small for our personal and prompt attention.

We develop your own ideas into a practical set of plans and specifications with which they can be executed to the smallest details into a building that can be built within your means and to your entire satisfaction.

Ashby's Portfolio of School Houses will be sent to parties interested in the erection of a school building for which plans have not yet been procured.

**G. W. ASHBY—ARCHITECT  
11th Floor, Medinah Bldg.  
CHICAGO, ILL.**

# THE ONLY MACHINE

## WITH THE SELF-LOCKING MOLD!



# THE Brandell

## CONCRETE BLOCK MACHINE

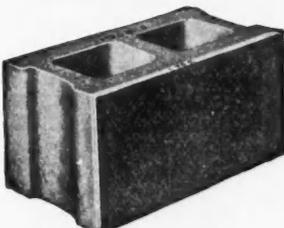
It Makes MORE and BETTER Blocks with LESS LABOR and Fewer Motions

**ACTUAL**  
**CAPACITY**  
**250 BLOCKS**  
**PER DAY**

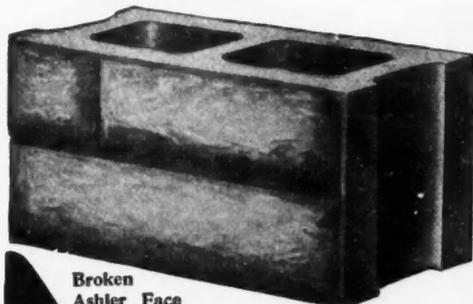
FINE CATALOG SENT FREE



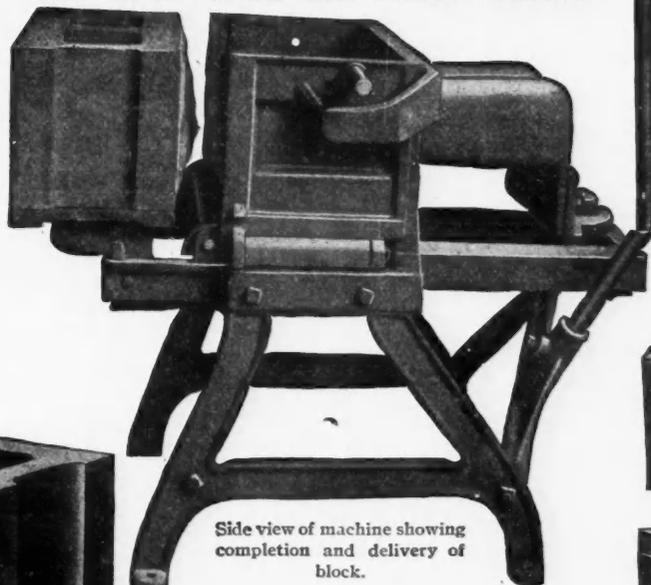
Rock Face Octagon Block



Plain Face Block



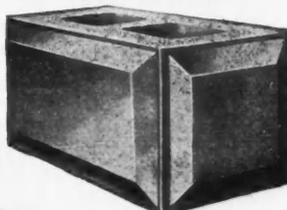
Broken Ashler Face



Side view of machine showing completion and delivery of block.



Rock Face Block

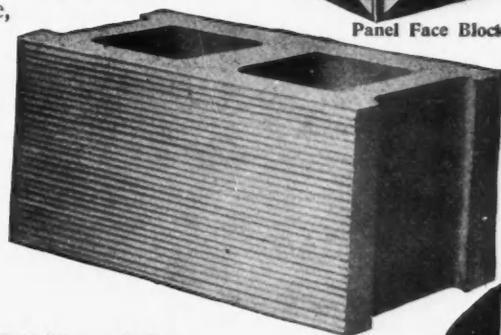


Panel Face Block

### THE REASON WHY

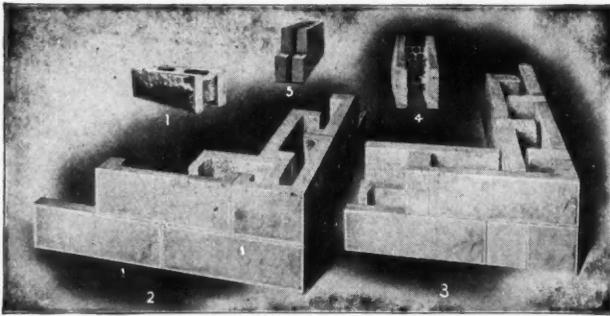
On account of its **Self-Locking Mold**, which is patented and not found in any other machine,

the BRANDELL is the fastest operating and most labor-saving concrete block machine on the market. After filling and tamping a saving of 20 to 30 per cent is made in the labor required to discharge the block and prepare the machine ready to mold the next block. The Self-Locking Mold accomplishes this. This saving will make a Brandell pay for itself in a short time. All blocks are made **face down** on the Brandell, by which a clear, sharp impression of the face is obtained and a natural looking stone free from defects is produced. Let us tell you about all the other good points of the Brandell.



**BRANDELL CONCRETE BLOCK MACH. CO.**

Cor. Madison and Dearborn Sts. CHICAGO, ILL., U. S. A.



Down Face

MADE ON THE FRANCISCO  
Coarse Material

Wet Process

## THE FRANCISCO ADJUSTABLE CONCRETE BLOCK MACHINE

builds all of the walls shown in cut, down face, wet process, coarse material, with no extra expense, with the exception of cores for wall No. 3 and No. 4, using the same pallettes for all five walls. You also make on our No. 4 machine the 32 inch block, 24, 20, 16, and fractional block, using the same pallettes, also, all of your long stone to 5 feet, the 8, 10, 12 inch block for width of wall, with no extra expense for parts or face plates. The machine is adjustable to any fraction of an inch in width to 20 inches, in length to 5 feet, in height to 16 inches, which enables you to build your entire building on the one machine. Send for new catalog No. 4.

AGENTS WANTED

FRANCISCO BLOCK MACHINE CO.  
338 North High Street - COLUMBUS, OHIO

## BESSER CONCRETE MACHINERY

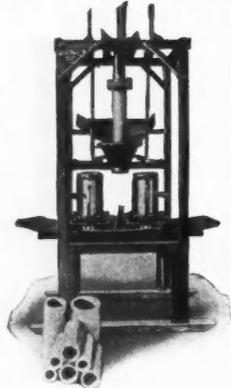
Will Give You **ALL THE PROFITS**

Besser can furnish all your machines to best advantage and at all prices, as he is for the best plants everywhere.

### BESSER CEMENT TILE MACHINERY

is earning 100% profit for satisfied users in every state. All sizes, 2 inch to 60 inch. You can make 4 inch tile for one cent each with our Automatic Tamper. Our tile molds are famous.

Why don't you get the profits in the Tile Business? Small investment. But you must get Besser Machinery.



Our Automatic Tamper Tile Machine, with a Capacity of 2,000 Tile a Day and Upwards.

Besser Face Down is the only block machine to obtain full value from the Face Down Principle. It makes the cheapest and best block in endless varieties. It is the only machine to combine the use of wet material with great speed.

Besser Mixers, all types and prices, will save you money.

Besser Large Capacity Brick Machines, Shingle Machines, etc.

Besser has everything for you in High Grade Improved Machinery.

Buy from us and get started right as thousands are doing. To overcome competition install Besser Machinery.

Send for free literature and 25 cents for Big Catalogue and Instruction Book.

**The Besser Mfg. Co.** 604 Eighth Street  
ALPENA, MICH.

Manufacturers of the most complete line of Concrete Machinery.



NEW 1908

## LIGHTNING Block Machine

Makes 400 or More Concrete Blocks Per Day  
Automatic Self Locking Doors

The cleanest, quickest and simplest machine on the market. All working parts protected from dropping cement.

The price is the most interesting thing about it—suits everybody.

Write for Illustrated Circular  
**Detrick Concrete Machine Co.**  
14 and 16 South Canal St.  
Dayton, Ohio

## OUR PLAN

Will enable you to engage in a big industry which requires very little capital and will yield large profits. If you are a contractor, concrete manufacturer, or wish to engage in a profitable business, we want you to investigate our

### U. S. Cement Shingle Machine

The only machine on the market that makes a cement shingle which can be laid over felt or tarred paper and which fastens to the sheathing with wire nails. Absolutely rain, snow and wind proof. Impervious to moisture—warm in winter and cool in summer. Write for our Catalogue, and get our price before buying any other make. We save you 25 per cent.



THE U. S. CEMENT MACHINE CO.  
DESHLER - - - - - OHIO

## Acme Cement Block Machine

Equals any Machine, at any Price

**\$40.00** Complete Outfit  
8 x 8 x 16

Makes block face down. Any size from 8x8x16 to 12x12x24. All on same frame with substitution of plates. Wood or iron pallets. Dry, medium, or wet mix

Write today for Catalogue

**COLGAN MACHINERY & SUPPLY CO.**  
2052 Parsons Avenue : : COLUMBUS, OHIO

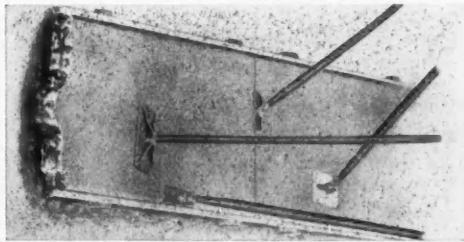


## It's damp proof

A TWO-PIECE wall with a 2-inch continuous air space, bonded with metal ties. No water-proofing ever needed. Plaster (skin-coat) directly on inner wall—no furring or lathing.

The Edmondson Block Machine makes these blocks of any size up to 4x8x16 inches. Some makers average 750 blocks a day. The most satisfactory and profitable block machine yet devised. Write us about it.

**Edmondson Concrete Machinery Co.**  
1543 Williams St. SOUTH BEND, IND., U. S. A.



**!!CONCRETERS!!**

Your interests lie in the use of our FINISHING TOOLS. You will pay out less for expert finishers and ADD MORE MONEY TO YOUR OWN PURSE. You can turn out a better class of work with our tools. MEN WILL WORK FOR FAR LESS WAGES in using these tools with ADJUSTABLE LONG HANDLES. There

is no delay in the finishing of work in the evening or at noon on account of waiting for concrete to set. FINISHING CAN BE DONE AS FAST AS TOP COAT CAN BE SPREAD ON. NO MORE BACKACHES AND RHEUMATISM from wet knees slopping around in the concrete. You can do ALL YOUR WORK STANDING, AND MUCH FASTER. YOU CAN POSITIVELY SAVE THE PRICE OF A SET OF TOOLS IN TWO DAYS' WORK. No other tools on the market are so complete and practical. You are positively wasting your time by not sending for our catalogue and price list.



Trowel

SEND AT ONCE TO  
**Arrowsmith Concrete Tool Co.**  
 Arrowsmith, Illinois



**T**HE only machine that will make the block for which the people have been waiting.

The X-L-ALL face-down block machine will make blocks with which you can make a plastered house, as per illustration. This is a deviation from the sameness and monotony caused by using the imitation rock faces.

The X-L-ALL block machine has a special face to make a dovetail block which has the features of the steel lath.

Send for our catalog No. 6D; it will explain our line of cement tools, such as block machines, brick machines, column molds, batch mixers, traction mixers.

**BURRELL MANUFACTURING CO.**  
 106 Grove Street :: :: BRADLEY, ILLINOIS

**Modern Practical Carpentry**

AN EXHAUSTIVE TREATISE ON

**The Practice of Carpenters' Work**  
 FOR THE USE OF CARPENTERS, BUILDERS,  
 SUPERINTENDENTS AND ARCHITECTS

BY **GEORGE ELLIS**

Author of "Modern Practical Joinery"

406 Large Quarto Pages; 1,100 Illustrations; Cloth Bound  
 PRICE \$5.00, PREPAID

**T**HIS book is a practical up-to-date treatise paying particular attention to heavy timber construction and difficult complicated work, and is for these reasons indispensable to the mechanic who desires to prepare himself with knowledge of how to lay out and erect such work. Information of this kind has been difficult to obtain, and the author clearly explains matters from the standpoint of the practical man.

The book contains a full description of the methods of constructing roofs, from the simple lean-to up to the elaborate trussed roofs used in churches; house-framing, floors, partitions, with various structural details; scaffolding, showing needling, centering arches and domes, building grand stands, cofferdams, caissons, piers, bridges, timber work for foundations, tunnels, excavations, etc.; also new and simple methods of finding the bevells of and setting out roofs, domes, steeples, etc.; theory of trussing; failures in construction, with descriptive notes on the woods used in carpentry, strength of timber, the use of the steel square and other tools, and a dictionary of technical words.

**Industrial Publication Co.**  
 14 Thomas Street NEW YORK

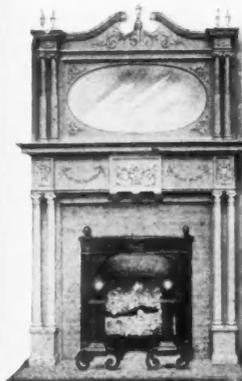
**\$5000.00 Worth of Proof**

that **KING MANTLES** save money over every other make of mantles of like quality. This proof is worth considering by the man who is building or remodeling a house and wants the most artistic mantles for the price he pays. The proof that

**KING MANTLES**

save money, is offered to those interested in mantles, in our catalogue "DeLuxe," 80 pages (11 x 14), including the beautiful supplement "Colonial Beauties," that cost us 50c to deliver.

We send them on receipt of 12c to pay cost of mailing to interested parties only — who name number of mantles required.



**FREE.** Our book of proof called "Evidence," 72 pages, showing 45 leading styles in **KING MANTLES** with letters from satisfied purchasers, some in your locality.

**KING MANTLE CO.**  
 551-553 West Jackson Ave.  
 KNOXVILLE, :: TENN.

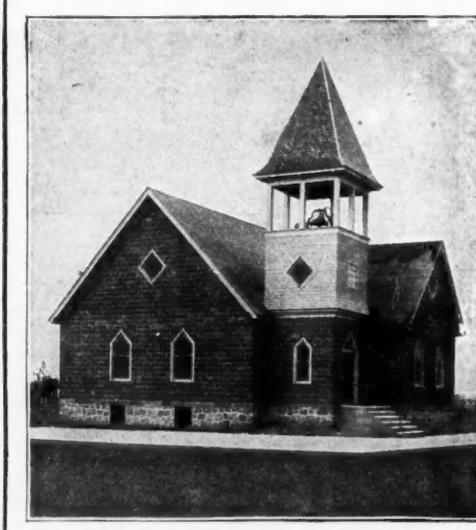
# Cement World

The Best, Largest and Most Practical Trade Magazine of  
**CEMENT CONSTRUCTION**  
 More Illustrations, More Pages of Good Instructive Reading than Any Other  
**Carpenters and Builders**

Should Know all About Cement, the Coming Building Material



Elevations,  
 Details and  
 Plans of  
**Residences,**  
**Churches,**  
**School  
 Houses,**  
**Warehouses,**  
**Farm  
 Buildings,**  
**Public  
 Buildings**  
**Are Regular  
 Features of the  
 Cement World**



Special Articles of Importance to Builders Appear Every Month  
 Its Editors and Writers are Authorities in This Field

## GET POSTED ON THE NEW INDUSTRY

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 learn how to use cement as a substitute for wooden structures. This time has already arrived in many parts of the United States and Canada. Experiments in concrete and cement houses are a thing of the past. It has been proven that they are a success. Thousands of new patents covering the use of cement as a building material are being taken out yearly. Do not delay studying this question fully—it will be time well and profitably spent. You may have to use the knowledge soon. Many practical articles appear in each issue that will save money for Cement World readers.

### SUBSCRIPTION PRICE \$1.00 PER YEAR

The Cement World has more paid-in-advance subscribers than any other cement paper published. It has subscribers in every state and many foreign countries. It is "the World's Greatest Cement Paper."

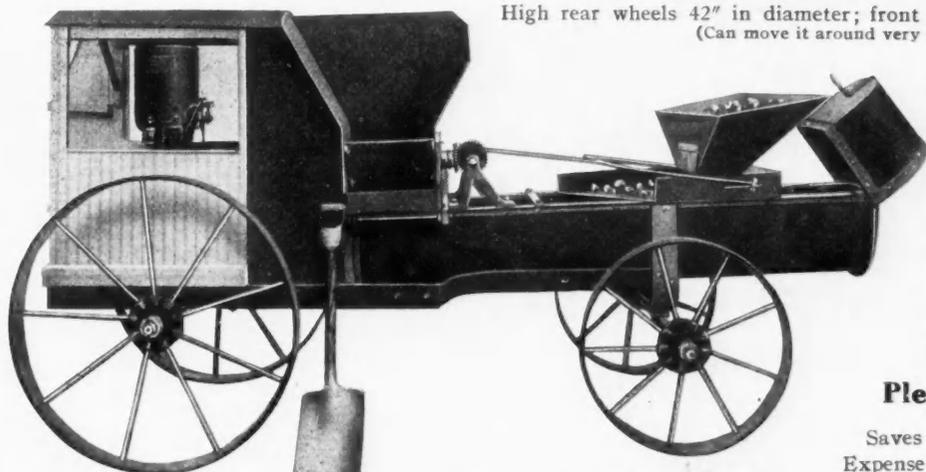
**CEMENT WORLD**  
 241 Fifth Avenue . . . . Chicago

Enclose please find \$1.00, for which send me the Cement World for one year, beginning with the \_\_\_\_\_ issue.  
 Name \_\_\_\_\_  
 Street \_\_\_\_\_  
 Post Office \_\_\_\_\_  
 State \_\_\_\_\_  
**A. C. B.**

— The 1908 Leader —  
**ADVANCE CONCRETE MIXER**

The talk of the Chicago and Buffalo Cement Shows

"HIGH UP AND LOW DOWN"



High rear wheels 42" in diameter; front wheels 30" in diameter  
 (Can move it around very easily.)

Low hoppers, only 3' 6" from the ground.

Has positive and accurate stoker feed for all materials.  
 (Proportions from 1 to 2, to 1 to 10.)

The Advance is continuous in operation and continuous in satisfaction.  
 (Its advantages solve the mixing problem.)

Furnished with

**Plenty of Power.**

Saves Labor, Material, and Expense. Get Booklet "A"

The Advance (high up and low down) with Cement, Sand-gravel and Stone Bins.

**Advance Concrete Mixer Co.**

JACKSON,

: : : : : :

MICHIGAN



Price

**\$40.00**

**A PERFECT BLOCK TURNED OUT EVERY TWO MINUTES OF THE WORKING DAY**

No Chipped Edges. No Cracked Blocks. A perfect crystallization, owing to the wet mixture used producing a hard, dense and non-absorbent block.

This machine makes profits—builds a substantial business—makes satisfied customers for you.

**THE DUNN COMBINATION CEMENT BLOCK MACHINE**

is built to give all these results, and the hundreds of cement block manufacturers using the Dunn Combination Cement Block Machine prove it.

It makes Face Down, Side Face, Two-Piece Wall and Veneer construction. The efficiency of the machine is increased more than three times by these interchangeable features. There is no limit to size, number of shapes or variety of designs. Wood pallets are used.

But you don't have to take our word for it before you buy it. You can prove these facts to yourself on the machine in your own home town. The machine will stand on its own merits. That's probably the way you would like to buy a machine. That's the way we are willing to sell it to you.

Send for our illustrated catalog. It shows what the machine is and just how it works.

**W. E. DUNN & Co., 341 Grand Ave., Chicago, Illinois**

**MAKE YOUR OWN BUILDING MATERIAL**

You Can Do it With an "Automatic" Block Mold—Price \$10

Then all you need is cement, sand and water and you can make neat, attractive, practical concrete blocks that are CHEAPER and MORE DURABLE than any other building material. Thousands are making their own foundation blocks, terrace blocks, blocks for barns, granaries, etc. It requires no skill. We teach you how to mix your material, cure the blocks, operate the mold.

The "AUTOMATIC" is the ONLY Concrete Block Machine that REQUIRES NO PALLETS. First cost is the only cost. Write for our illustrated booklet. It's free for the asking. Write today. Address:

JOHNSON CONCRETE MACHINE CO., 326 Mass Bldg., Sioux City, Ia.

**KANSAS CITY SLATE & TILE ROOFING CO.**

CONTRACTORS AND WHOLESALE DEALERS IN

**ROOFING SLATE AND TILE**

Send us your estimates and Write for CATALOGUE No. 27

2027--2029 Forest Ave., KANSAS CITY, MO.

# EVERYTHING IN CEMENT MACHINERY

**T**O BE in the concrete making business in the Miracle way is to be in it in the most profitable way—the most satisfactory all round. For example, in tile and sewerpipe making—With

## MIRACLE SEWERPIPE AND TILE MOLDS

you can start upon a small and inexpensive scale—say \$57.50 for a complete outfit for making 24-inch pipe.

You can make 110 feet of this pipe per day, and when you consider that the first 68 feet you sell pays for the entire equipment you can judge how quickly you will be making clear profit on your outfit.

And you will make Tile that will sell at the same price as burnt clay at about 150 per cent profit.



## OUR NEW CATALOG

We have just received our new catalog, which is more complete and attractive than ever before, has over 500 illustrations, pages 9 x 12. We want to place this catalog in the hands of all our cement working friends and while the regular price is 25 cents, if you will tell us what line you are interested in and ask for Catalog K we will be glad to mail it free.

### ADDRESS

**Miracle Pressed Stone Co.**

Largest Manufacturers of  
Cement Machinery in the World

**Minneapolis, - - U. S. A.**

Miracle Concrete is our new little trade magazine, published "when the spirit moves us." Send in your name and we will place it on our complimentary list.

# HAVE YOU SEEN IT?

**What the UNITED STATES TRADE REPORTS  
has to SAY ABOUT US**

The following is an editorial which appeared in the **United States Trade Reports** journal under date of April 11th, 1908, and was entirely unsolicited.

al. to write them direct

to

## FACTS ABOUT CONCRETE BLOCK MACHINES.

arts

ality In these days of fierce competition when every  
being manufacturer is pushing his products into the  
n ex- market with all the energy at his command,  
o. L. there is often a temptation to sacrifice an element  
of excellence for reaching a reduction  
t his in cost. Complaints are heard regarding the  
com- inferiority of some makes of Concrete Block  
erson- Machines now on the market being sold as  
pt to first class, and we feel that we are doing a  
redit practical service to our readers when we recom-  
mend a really meritorious article which can be  
relied upon.

As this paper is maintained on the principle  
of furnishing its readers with accurate advice,  
we have decided to go into the matter with  
great care. We are aware, of course, that the  
buyer is at a disadvantage. He cannot depend  
on the statements of sellers as each thinks that  
which he represents to be the "ne plus ultra"  
of the manufacturers art. No journal devoted  
to the trade could afford to give a definite and  
correct answer to the question regarding ex-  
cellence, and the customers are demanding that  
their products shall possess a degree of quality  
which shall be commensurate with the price.

The Reports therefore, decided to make a  
thorough examination, the result of which  
would be a decided answer which could be  
relied upon by all. Every point was carefully  
considered and every effort was made to cause  
this research to be complete in every respect.

As a result we are prepared to state that  
there is no make of Concrete Block Machines  
on the market to-day of the qualities which  
make for excellence, superior to that produced  
by the Multiplex Concrete Machine Co., Toledo,  
Ohio.

It is a pleasure to us to give them our edi-  
torial commendation and at the same time  
supply our patrons with accurate advice on  
such an important subject as this.

The scout cruiser Chester, built by T...

If you are interested write for catalogue

**The Multiplex Concrete Machine Co.**

743-44-45 Ohio Building, TOLEDO, OHIO



# FACTS FOR BLOCK MAKERS TO CONSIDER

## Reasons WHY HERCULES Concrete Block Machines are in Demand Everywhere



Made of Hercules Blocks

**FIRST**—They are not experiments. They have been tested, tried and used for years by the world's best engineers, contractors and builders. They have a world-wide reputation.

**SECOND**—They are **unlimited** as to production. All sizes, designs and styles of stone can be made from 3 inches to 6 feet long, 4 inches to 16 inches high, 4 inches to 20 inches wide—a range of sizes impossible to produce on **any other machine made**. You can take orders for any size of stone without fear of competition.

**THIRD**—Hercules Machines allow you to make a **wet** block. Other machines only make them damp. The use of plenty of water insures perfect chemical action at the time the stone is made. A **wet** mixture and a **coarse** aggregate for back of block—that's the Hercules plan and it's the only plan to follow in order to make a **really concrete block**.

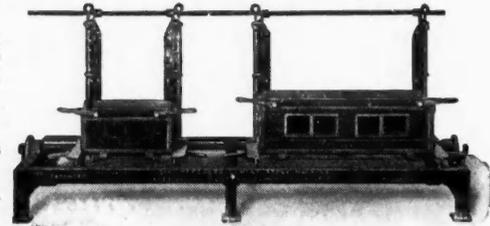
**FOURTH**—The capacity of our Hercules regular machine can be doubled at any time. In other words, two stone of the same or different sizes can be made at **one** time on the **one** machine. This makes it really

two machines in one. This saves the purchase of a second machine.

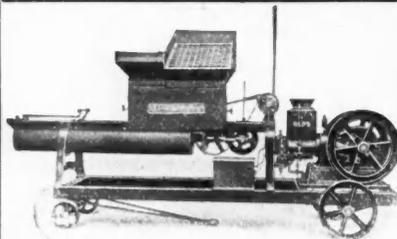
**FIFTH**—You can install Hercules Machines with **any** outfit you require, the **cost depending upon the outfit**. Other parts for **any other size or design** can be added **gradually according to the demand**. In this way you **start at little expense** and then grow. One machine will do it all.

**Don't handicap** and limit your output by starting wrong. This is a mistake made by many and always regretted.

Better send today for our 70-page catalogue, which explains fully our Hercules Machines.



CENTURY CEMENT MACHINE COMPANY, 273 W. Main St., ROCHESTER, N. Y.



## The U. S. Standard Concrete Mixer

### CLAIMS

1. To mix as well as the best.
2. To divide the different ingredients more reliably into any desired proportion.
3. To measure the ingredients more accurately than any known mixer.

## The U. S. Standard Cement Block Machine Claims Superiority

1. For accuracy and perfection in construction.
2. For adaptability to an almost endless variety of blocks.
3. For strength and beauty of blocks.
4. For speed.
5. For moderation in price.

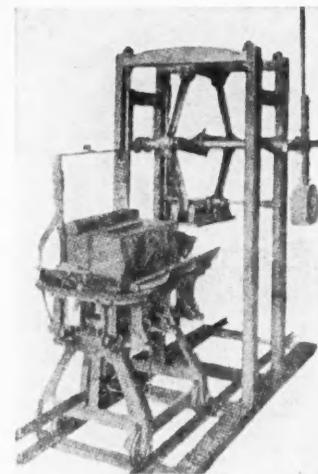
Manufactured by  
**THE ASHLAND STEEL RANGE & MFG. CO.**  
Ashland, Ohio

Government and Foreign  
Sales Department, B-21, Produce  
Exchange, New York,  
U. S. A.

Catalogue A sent free upon application.



# "SOMERS" PRESSURE Block Machines



### Chief Features are

The enormous pressure of 30 tons which creates a **Dense, Compact Block** and

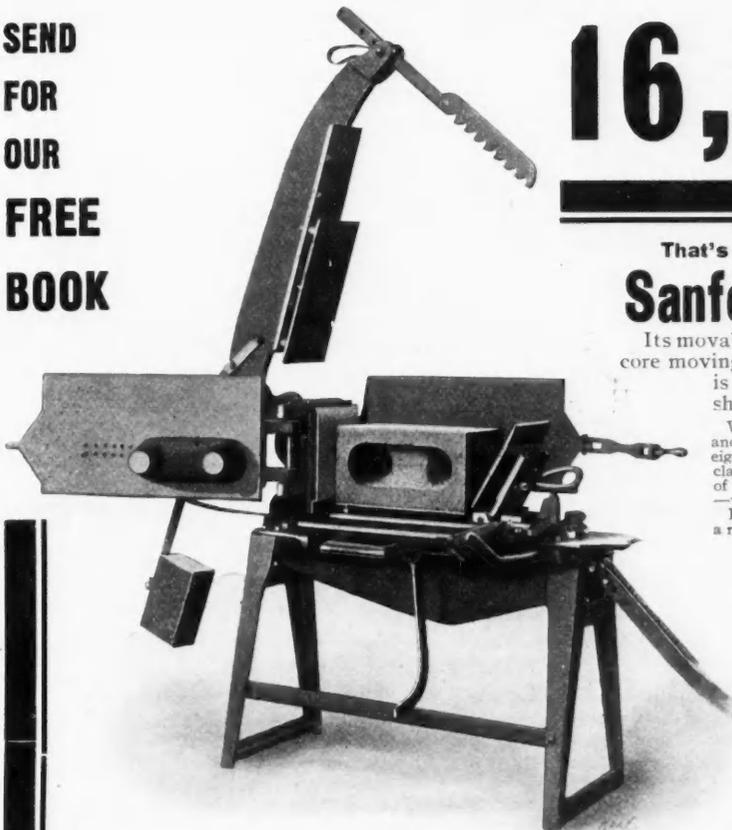
### Our Guarantee

That 3 men can make two perfect blocks per minute on this machine, and by adding two molds its capacity can be doubled.

Fully described in illustrated catalog.

**SOMERS BROS., Mfrs.**  
URBANA, ILLINOIS

SEND  
FOR  
OUR  
FREE  
BOOK



# 16,800 POUNDS PRESSURE

## That's only ONE of the many advantages of the Sanford Pressure Machine

Its movable Automatic Core is an entirely new feature, the core moving down with the pressure of the machine. This is a feature of absolute, tangible merit, and you should learn all about it.

With a cement block machine built and sold in nearly every township and eight out of ten of the advertised ones claiming to be "the best", the question of which machine to buy is a vital one—vital to profits.

But you may put it down that when a machine is so constructed as to produce a block at an actual uniform pressure of 16,800 pounds—every block—that is a safe machine to buy.

Blocks from the Sanford simply **must** be good. The pressure is absolute on every one—just as you set it, within a range of from 13,000 to 16,800 pounds.

With a tamping ma-

chine physical exhaustion precludes the making of as good a block near the close of day as was possible with the strength of the morning.

The Sanford being a pressure machine does not weaken. "Concrete Block", in reference to the pressure machine, says, "Its use saves labor charge and has the additional advantage of being uniform throughout the day's work."

The Sanford machine is the one safe machine to buy—the one best to buy—because it is

**The only Face-down Pressure Machine made**

Sold strictly on its merits. 300 to 500 veneered hollow blocks, or 400 to 600 veneered slab blocks in an 8-hr day. You need our catalogue today.

**The Sanford Concrete Machinery Co.**

Ask for information regarding Mixers and Cars.  
Toledo, Ohio 1645-46-47 Nicholas Bldg.

Simplicity } in **THE X-L CONCRETE STONE MACHINE** is { Efficient  
Practicability } Economical

Guaranteed to Equal in Efficiency any Four Other Make of Machines and Saves 20 to 50 per cent in the Construction of "Dry Walls."

A NEW AND EXCLUSIVE FEATURE. INTERCHANGEABLE AND INTERMIXABLE PLATES.

Increase the efficiency of the machine ten-fold over the solid hinged plate type of machines.

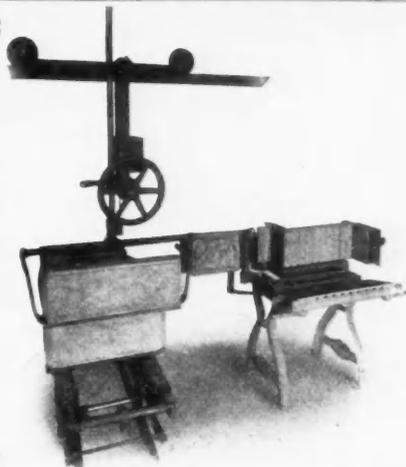
**Bear in Mind** you don't require five or six different size machines when using an X-L Machine.

Porch Piers and Ornamental Blocks in almost endless varieties can be made. These are the Stepping Stones to Success in the concrete block business.

LET ME TELL YOU HOW WE DO IT  
E. E. EVANS, General Manager

**THE X-L CONCRETE STONE MACHINE CO.**

111-113 West 18th St. - - - KANSAS CITY, MO.



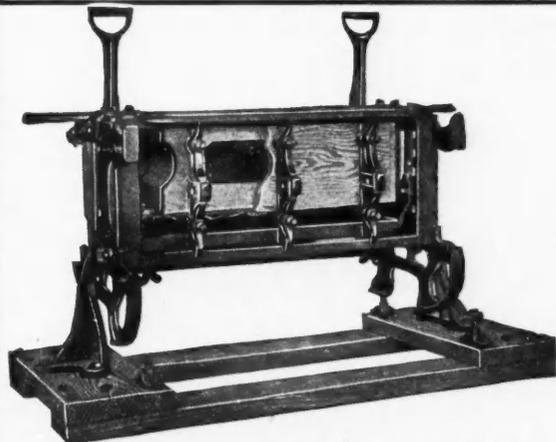
## The Improved "MILES" No. 2

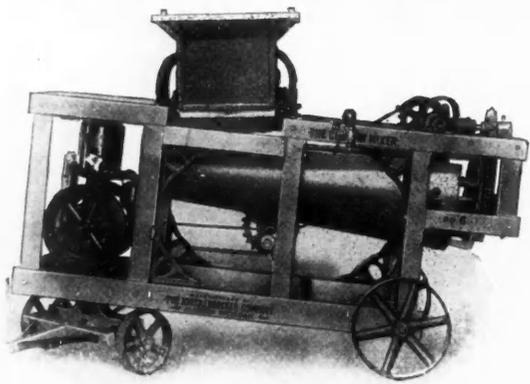
The Machine

that makes TRUE, WET CONCRETE STONE  
that makes BLOCK of ANY ANGLE  
with MOVABLE END GATES  
that is demonstrated before you buy  
that makes the GREATEST RANGE of Work  
that makes you want another just like it

The same principle has operated successfully for five years and is fully covered by our patents. VERTICAL CORES. Meet us at Buffalo Convention. Get Our 1908 Catalog.

**THE P. B. MILES MANUFACTURING CO. Inc.**  
109 W. Cortland Street, Jackson, Mich.





**“The Coltrin Mixer is a Pippin”**

WATERTOWN, S. DAKOTA, Nov. 5, 1907.  
MR. NILS ERICKSON,  
MINNEAPOLIS, MINN.

DEAR SIR:  
The Coltrin Mixer we bought of you is a pippin. Does all anyone can ask for. Will mix the concrete in fine shape as fast as ten men can wheel it away. Anyone wanting a mixer cannot beat the Coltrin.  
Yours truly,  
WESTERN CEMENT CONST. CO.

THE COLTRIN CONCRETE MIXER  
Mfgd. Exclusively By  
THE KNICKERBOCKER COMPANY  
JACKSON, MICHIGAN

# Wet Process Concrete Blocks

**By the Pettyjohn System**

The manufacturing of Concrete Blocks is rapidly nearing perfection, but the up-to-date manufacturer must use modern machinery and employ improved methods. Three features are important in perfect block making:

**WET PROCESS                      FACE DOWN                      DAMP CURING**

These splendid features are combined in the new Pettyjohn Invincible Machine, and no other. Made in three lengths, 16-inch, 24-inch and 40-inch. Tandem Invincible makes two blocks at once. Price \$65 and up. Single Invincibles, \$35 and up. Sold on trial always, guaranteed to give satisfaction or money refunded.

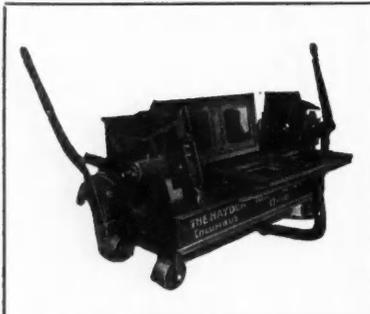
With our **TRIPLE TIER RACKING SYSTEM** green blocks can be stacked three high direct from machine with inexpensive home-made rigging. This economizes space, reduces off-bearing distance, and above all insures slow, even, damp, perfect curing and bleaching. Plans and blue prints free to customers.

Send for our latest edition of “Stone Making” (just published), a book of valuable data for the block maker—FREE.

**THE PETTYJOHN COMPANY,                      -                      -                      -                      -                      634 No. Sixth St., Terre Haute, Ind.**

## THE HAYDEN AUTOMATIC BLOCK MACHINE CO.

112 W. Broad St., Columbus, Ohio  
Manufacturers of High Grade  
Concrete Block Machines, Mixers,  
Stone Crushers, Etc.



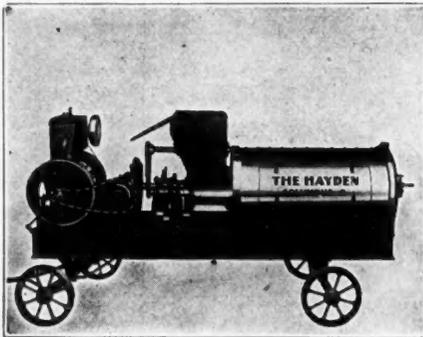
**The Hayden Down Face Machine.**

The Most Simple and Effective Mechanical Principles Embodied in this Mixer

**POINTS OF SUPERIORITY IN THE HAYDEN MACHINE**—Great Strength, Limitless Range, Rapidity, Ease of Operation, Simplicity of Construction.

The only Block Machine on the market strong enough to withstand the heavy strain of pneumatic tamping.

**BUY A HAYDEN FOR RESULTS**  
Send for Catalogue M Today  
Eastern and Foreign Sales Agent, H. W. Remington,  
19 South St., New York City



**The Hayden Improved Mixer.**

# “BRADFORD PRESSED BRICK” “BRADFORD REDS”

Trade-Mark—Sept. 12, 1905—July 15, 1907



Size 2 1/4" x 4" x 8 1/2"

Positively Unequaled for Richness of Color  
Perfection of Shading and Uniformity of Size

MANUFACTURED EXCLUSIVELY BY  
**Bradford PRESSED Brick Company**  
BRADFORD, PA.

Standards, Romans, Moulded and Ornamentals  
Selected Brick for Mantels

**Classified List of Advertisers**

For Index See Next Page

**AMATITE READY ROOFING**  
Barrett Manufacturing Co.

**BARRETT SPECIFICATION ROOFING MATERIALS**  
Barrett Manufacturing Co.

**BICYCLES**  
Mead Cycle Co.

**BLACKBOARDS**  
Johnson & Co., E. J.  
East Bangor Cons. Slate Co.

**BLINDS**  
Burlington Venetian Blind Co.  
Phoenix Sliding Blind Co.

**BOOKS**  
American School of Correspondence.  
Bradt Publishing Co.  
Industrial Publishing Co.  
Marvin Publishing Co., The.  
Stoddard, Dwight L.

**BRICK MANUFACTURERS**  
Bradford Pressed Brick Co.

**BUILDERS' HARDWARE AND SPECIALTIES**

Acorn Modeling Works.  
Allith Manufacturing Co.  
American Hardware Mfg. Co.  
Automatic Door Rail Co.  
Bergen Iron Works.  
Champion Safety Lock Co.  
Chicago Spring Butt Co.  
Grand Rapids Hardware Co.  
Ives Co., H. B.  
Kees Manufacturing Co., F. D.  
Mallory Manufacturing Co.  
Mulvey Manufacturing Co.  
National Manufacturing Co.  
Ornamental Products Co.  
Pullman Manufacturing Co.  
Rehm Hardware Co.  
St. Louis Hardware Co.  
Samson Cordage Works.  
Seneca Pattern & Supply Co.  
Silver Lake Co.  
Wagner Manufacturing Co.  
Zero Valve & Brass Mfg. Co.  
Zimmerman, C. E.

**BUILDING STONE**  
Georgia Marble Co.

**CEMENT BLOCK MACHINES**  
Ashland Steel Range & Mfg. Co.  
Besser Manufacturing Co.  
Brandell Concrete Block Machine Co.  
Burrell Mfg. Co.  
Century Cement Machine Co.  
Colgan Concrete Machine Co.  
Detrick, D. F.  
Dunn & Co., W. E.  
Edmundson Concrete Block Machine Co.  
Francisco Block Machine Co.  
Hayden Automatic Block Machine Co.  
Johnson Concrete Mach. Co.  
Miles Manufacturing Co., The P. B.  
Miracle Pressed Stone Co.  
Multiplex Conc. Block Mach Co.  
Pettyjohn Co.  
Runyan Concrete Machine Co.  
Sanford Concrete Machy. Co.  
Somers Brothers.  
South Bend Machine Mfg. Co.  
U. S. Cement Mach Co., The.  
X-L Concrete Stone Machine Co.

**CEMENT BRICK MACHINES**  
Miracle Pressed Stone Co.

**CEMENT WORKERS' TOOLS**  
Arrowsmith Concrete Tool Co.  
Miracle Pressed Stone Co.

**COAL CHUTES**  
Grand Rapids Fdy. Co.  
Majestic Furnace & Foundry Co.  
Shultz, C. H.

**COLUMNS**  
Hartman-Sanders Co.

**CONCRETE MIXERS**  
Advance Concrete Mixer Co.  
Hayden Automatic Block Machine Co.  
Knickerbocker Co., The.  
South Bend Mach. Mfg. Co.

**CORNICES**  
Eller Manufacturing Co.

**DRAWING MATERIALS**  
Andrews Heating Co.  
Rich, J. & G.

**ELEVATORS**  
Eaton & Prince Co.  
Sedgwick Machine Works.  
Sidney Elevator & Mfg. Co.

**ENGRAVERS**  
Dearborn Engraving Co.

**FLOOR SURFACERS**  
Ackermann & Co., John B.  
American Floor Surfacing Machine Co.  
Drew, Samuel.  
Fox Manufacturing Co.  
Hurley Machine Co.  
Interstate Equip. & Eng. Co.  
Miotke, Jos.  
Schleuter, M. L.  
Weber Manufacturing Co.

**FOLDING DOORS**  
Flexifold Door & Shutter Co.

**GAS AND GASOLINE ENGINES**  
Gade Bros. Manufacturing Co.

**GLASS**  
American 3-Way Prism Co.  
Anderson & Co., Geo. H.  
Flanagan & Biedenweg Co.  
Suess Ornamental Glass Co.

**GRILLES**  
Northwestern Grille Works.

**HEATERS**  
Bovee Grinder & Furnace Works.  
Haynes-Langenberg Mfg. Co.  
Hess Warming & Ventilating Co.  
Honeywell Heating Specialty Co., The.  
Marshall Furnace Co.

**HOTELS**  
Commonwealth Hotel.  
Hotel Pontchartrain.  
New Kenmore, The.

**HOUSE PLANS**  
Ashby, G. W.

**INSTRUCTION**  
American School of Correspondence.  
International Correspondence Schools.

**IRON WORK**  
Caldwell & Drake Iron Works.  
Dow Wire & Iron Works.  
Ohio Structural Iron Co.

**LEVEL AND GRADE FINDERS**  
Am. Comb. Level & Gr. Finder.

**MANTELS**  
Heitland Grate & Mantel Co.  
King Mantel Co.  
Lorenzen & Co., Chas. F.

**METAL CEILINGS**  
Berger Manufacturing Co.  
Canton Art Metal Co.  
Edwards Manufacturing Co.  
Eller Manufacturing Co.  
Foster & Sons Co., Wm.  
Kanneberg Roofing & Ceiling Co.  
Schoeidinger, F.O.

**METAL SHINGLES**  
Burton Co., The W. J.  
Cortright Metal Roofing Co.  
Edwards Manufacturing Co.  
Montross Metal Shingle Co.  
National Sheet Metal Roofing Co.

**METAL WORK**  
American Rolling Mill Co.  
Burt Manufacturing Co.  
Mullins Co., W. H.  
Northwestern Expanded Metal Co.  
Ritzler Cornice & Ornament Co., The J. A.  
Sanitary Metal Tile Co.  
Sykes Metal Lath & Roofing Co.

**MILLWORK**  
Chicago Embossed Moulding Co.  
Chicago House Wrecking Co.  
Chicago Millwork Supply Co.  
Foster-Munger Co.  
Gordon, Van Tine Co.  
Schaller-Hoerr Co.  
Schroeder Lumber Co., John.

**PAINTS, VARNISHES, ETC.**  
Lowe Bros. Co., The.  
Nice, Eugene E.  
Johnson & Son, S. C.  
Davidson & Sons, M. M.

**PAVEMENT FILLER**  
Barrett Manufacturing Co.

**PITCH**  
Barrett Manufacturing Co.

**PLASTER BOARD**  
Northwestern Compo-Board Co.

**PLUMBERS' SUPPLIES**  
Karol, B. B.

**PUMPS, TANKS, ETC.**  
Myers & Bro., F. E.

**ROOFING MATERIALS**  
Barrett Manufacturing Co.  
Barber Asphalt Roofing Co.  
Barrett Manufacturing Co.  
Ford Manufacturing Co.  
Heppes Co., The.  
McHenry & Millhouse.  
National Roofing Tile Co.  
Patent Vulcanite Roofing Co.  
Rock Asphalt Roofing Co.  
United Roofing & Mfg. Co.

**SHEATHING PAPERS**  
Barrett Manufacturing Co.  
Hewitt Co., C. B.

**SKYLIGHTS**  
St. John & Barquist.

**SLATE ROOFING, ETC.**  
Bangor Slate Mining Co.  
East Bangor Consolidated Slate Co.  
Hower, J. K.  
Johnson & Co., E. J.  
McKenna, David.  
Pittsburg Slate Co.  
Pittston Slate Co.

**STORE FRONT CONSTRUCTION**  
Coulson & Co., J. W.  
Detroit Show Case Co.  
Kawneer Manufacturing Co.  
Shultz, C. H.  
Vultz Manufacturing Co.

**TOOLS**  
Am. Combined Level & Grade Finder.  
Belden Machine Co., The.  
Brace Co., E. S.  
Braunsdorf-Mueller Co.  
Calhoun, J. R.  
Carborundum Co.  
Deck Gravity Level Co., T. F.  
Disston & Sons, Inc., Henry.  
Dixon Crucible Co., Jos.  
Forest City Bit & Tool Co.  
Gage Tool Co.  
Goodell Manufacturing Co.  
Goodell-Pratt Co.  
Lancaster Machine & Knife Works.  
Leonhart, R.  
Lufkin Rule Co.  
Mack & Co.  
Marsh, H. C.  
Marshalltown Trowel Co.  
Mayhew Co., H. H.  
Miller Manufacturing Co., A. W.  
Millers Falls Co.  
Morrill, Chas.  
Nicholls Manufacturing Co.  
North Bros. Manufacturing Co.  
Oehrle Mfg. Co., E.  
Orr & Lockett Hardware Co.  
Parker Co., Chas.  
Pike Manufacturing Co.  
Prentiss Vise Co.  
Progressive Manufacturing Co.  
Reynolds, Chas. H.  
Sargent & Co.  
Seymour & Whitlock.  
Sheldon & Co., E. H.  
Simonds Manufacturing Co.  
Snow & Petrelli.  
Stanley Rule & Level Co.  
Starrett & Co., L. S.  
Taylor Mfg. Co., James L.  
Tower & Lyon Co.  
Walters Sons, Wm. P.  
White, Van Glahn & Co.  
Woods, A. W.

**WALL PLASTER**  
Morgan & Co., H. B.

**WIRE SCREENS**  
Phillips Co., The A. J.  
Miles Co., The Frank W.

**WOODWORKING MACHINERY**  
Barnes Co., W. F. & Jno.  
Chicago Machinery Exchange.  
Cordesman-Meyer & Co.  
Crescent Machine Co.  
Lovell Machine Works.  
Marston & Co., J. M.  
Mattison Machine Works, C.  
Parks Ball Bearing Machine Co.  
Seneca Falls Manufacturing Co.  
Sidney Tool Co.  
Smith Machine Co., H. B.  
Standard Machine Tool & Supply Co.

CONTENTS FOR MAY, 1908

	Page		Page		Page
Art and Craft of Cement Surfaces.....	182	Fireproofing and the Carpenter.....	177	School Houses .....	220
Artistic and Substantial Church, An.....	200	Foundation for Stand Pipe.....	226	Sheathing Inside and Out.....	231
Artistic House Design.....	202	Framing for Tile Roof.....	216	Senate Office Building.....	220
Attaching Woodwork to Concrete.....	229	Good Cement for Glass, A.....	221	Some Dove-Tail Puzzles.....	231
Automatic Wrench.....	223	Hare and the Tortoise, The.....	178	Some Simple Puzzling Things.....	226
Bath Room, The.....	202	How to Make and Read Drawings.....	196	Something the Boys Can Make.....	193
Block and Frame Combination.....	207	How to Use the Steel Square.....	191	Steel Square.....	191
Block for Residence Work.....	206	Improved Fire-escape, An.....	225	Test for Linseed Oil.....	231
Bungalow Building.....	180	Justifiable Desire, A.....	223	To Drive Spikes Under Water.....	209
Buttermilk.....	219	Manual Training.....	193	To Prepare Kalsomine.....	227
Care of Rip Saws.....	210	Merely Imitations.....	219	To Remove Stains from Concrete or Brick.....	219
Cartoon.....	179	Old vs. New.....	178	To Repair Composition Roofing.....	226
Cement Building Construction.....	206	Painting.....	224	To Saddle a Hip.....	233
Concrete Construction.....	218	Paint for Asphalt Floors.....	232	To Strengthen a Roof Truss.....	233
Concrete Foundation Walls.....	219	Planing Mill Work.....	210	To Truss a Barn.....	232
Construction and Cost of Dormer Windows.....	199	Plank Frame Barn, A.....	227	Unanswered.....	223
Correspondence.....	226	Plank Framing for Barns.....	229	Vapor System of Heating.....	213
Cost of Concrete Floors.....	232	Practical Carpentry.....	196	Weight of Building Materials.....	197
Durability.....	187	Practical Roof Framing.....	198	Well Built Log Cabin, A.....	233
Edison's Storage Battery.....	223	Proper Arrangement of Pulleys.....	227	Well Planned High School Building.....	220
Editorial.....	177	Proper Roof for Flat Roof.....	228	"Where Ignorance Is Bliss".....	215
Estimating on Painters' Work.....	224	Reinforced Concrete Stairs.....	218	White Facing for Blocks.....	233
Farm Buildings.....	222	Residence Barn, A.....	222	Why of Jonah, The.....	221
Features of Stone Building Construction.....	211	Residences.....	202	Your Magazine and You.....	177
		Roof Plan, A.....	228		
		Rustic Frankness.....	190		

INDEX TO ADVERTISEMENTS, MAY, 1908

For Classified List of Advertisers see preceding page

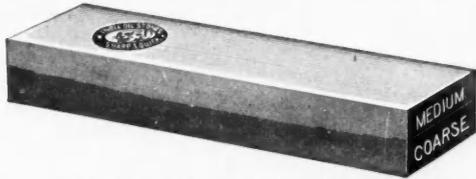
	Page		Page		Page
Ackerman Co., John B.....	159	Fox Manufacturing Co.....	163	New Kenmore Hotel, The.....	266
Acorn Modeling Works.....	277	Francisco Block Machine Co.....	280	Nice, Eugene E.....	253
Advance Concrete Mixer Co.....	283	Gade Bros. Manufacturing Co.....	171	Nicholls Manufacturing Co.....	164
Allith Mfg. Co.....	172	Gage Tool Co.....	164	North Bros. Manufacturing Co.....	170
American Combined L. & Gr. Fdr.....	165	Georgia Marble Co., The.....	255	Northwestern Compo-Board Co.....	273
Amer. Floor Surfacing Mach. Co.....	158	Goodell Manufacturing Co.....	173	Northwestern Expanded Metal Co.....	269
American Hardware Mfg. Co.....	170	Goodell Pratt Co.....	Cover	Northwestern Grille Works.....	268
American Rolling Mill Co.....	277	Gordon, Van Tine & Co.....	Cover	Oehrle, Manufacturer, E.....	174
American School of Correspondence.....	237	Grand Rapids Hardware Co.....	173	Ohio Structural Iron Co., The.....	253
American School of Correspondence.....	259	Grand Rapids Foundry Co.....	277	Ornamental Products Co.....	25
Amer. 3-Way Prism Co.....	270	Hartman-Sanders Co.....	274	Orr & Lockett Co.....	176
Anderson & Co., G. H.....	166	Hayden Automatic Block Machine Co.....	288	Parker Co., The Chas.....	161
Andrews Heating Co.....	255	Haynes-Langenberg Manufacturing Co.....	270	Patent Vulcanite Roofing Co.....	247
Arrowsmith Concrete Tool Co.....	281	Heitland Grate & Mantel Co.....	268	Pettyjohn Co., The.....	288
Ashby, Geo. W.....	278	Heppes Co., The.....	243	Phillips Co., A. J.....	166
Ashland Steel Range & Mfg. Co.....	286	Hess Warming & Ventilating Co.....	272	Phoenix Sliding Blind Co.....	168
Automatic Door Rail Co.....	171	Hewitt & Bro., C. B.....	175	Pike Manufacturing Co.....	Cover
Bangor Slate Mining Co.....	240	Honeywell Heating Specialty Co., The.....	273	Pittsburg Slate Co.....	240
Barber Asphalt Paving Co., The.....	240	Hotel Pontchartrain.....	266	Pittston Slate Co., The.....	254
Barnes Co., W. F. & John.....	167	Hower, J. K.....	255	Prentiss Vise Co.....	161
Barrett Mfg. Co., The.....	162	Hurley Machine Co.....	160	Progressive Manufacturing Co.....	163
Bergen Iron Works, The.....	175	Industrial Publication Co.....	165	Pullman Manufacturing Co.....	176
Berger Manufacturing Co., The.....	271	Industrial Publication Co.....	242	Rehm Hardware Co.....	168
Besser Manufacturing Co.....	280	Industrial Publication Co.....	281	Reynolds, Chas. H.....	165
Bovee Grinder & Furnace Works.....	273	International Correspondence Schools.....	251	Rich, J. & G.....	165
Brace Co., The E. S.....	165	Interstate Equipment & Engineering Co.....	155	Ritzler Cornice & Ornamental Co., The J. A.....	176
Bradford Pressed Brick Co.....	288	Ives Co., The H. B.....	265	Rock Asphalt Roofing Co.....	261
Bradt Publishing Co.....	270	Johnson Concrete Machine Co.....	283	Runyan Concrete Machinery Co.....	285
Brandt Concrete Block Machine Co.....	279	Johnson Co., The E. J.....	265	St. John & Barquist Co.....	158
Brandtsdorf-Mueller Co.....	160	Johnson & Son, S. C.....	238	St. Louis Hardware Manufacturing Co.....	174
Burlington Venetian Blind Co.....	168	Jumbo Furnace Co.....	273	Sanford Concrete Machinery Co.....	287
Burrell Manufacturing Co.....	281	Kanneberg Roofing & Ceiling Co.....	271	Sanitary Metal Tile Co.....	Cover
Burt Manufacturing Co.....	234	Kansas City Slate & Tile Roofing Co.....	283	Sargent & Co.....	174
Burton Co., The W. J.....	254	Karol, B. B.....	168	Schaller-Hoerr, Co.....	244-245
Caldwell & Drake Iron Works.....	266	Kawneer Manufacturing Co.....	274	Schleuter, M. L.....	158
Calhoun, J. R.....	174	Kees Manufacturing Co., F. D.....	166	Schoedinger, F. O.....	268
Canton Art Metal Co.....	267	King Mantel Co.....	281	Schroeder Lumber Co., John.....	255
Carborundum Co.....	246	Knickerbocker Co., The.....	288	Sedgwick Machine Works.....	171
Century Cement Machine Co.....	286	LANCASTER Machine & Knife Works.....	156	Seneca Falls Manufacturing Co.....	167
Champion Safety Lock Co.....	173	Leonhart & Co., R.....	160	Seneca Pattern & Supply Co.....	173
Chicago Embossed Moulding Co.....	267	Lorenzen, Chas. F.....	257	Seymour & Whitlock.....	164
Chicago House Wrecking Co.....	249	Lovell Machine Works.....	172	Shelden, E. H.....	170
Chicago Machinery Exchange.....	166	Low Bros. Co., The.....	263	Shultz, C. H.....	261
Chicago Millwork Supply Co.....	275	Lufkin Rule Co.....	162	Sidney Elevator Manufacturing Co.....	171
Chicago Spring Butt Co.....	176	McHenry-Millhouse Manufacturing Co.....	250	Sidney Tool Co., The.....	Cover
Classified Department.....	255	McKenna, David.....	253	Silver Lake Co.....	173
Colgan Machinery & Supply Co.....	280	Mack & Co.....	163	Simonds Manufacturing Co.....	236
Commonwealth Hotel.....	270	Majestic Furnace & Foundry Co.....	252	Smith & Hemenway Co.....	259
Cordesman-Meyer & Co.....	170	Mallory Manufacturing Co.....	168	Smith Machine Co., H. B.....	169
Cortright Metal Roofing Co.....	262	Marsh, H. C.....	176	Snow & Petrelli.....	160
Coulson & Co., J. W.....	274	Marshall Furnace Co.....	263	Somers Bros.....	286
Crescent Machine Co., The.....	167	Marshalltown Trowel Co.....	Cover	South Bend Machine Mfg. Co.....	285
Dearborn Engraving Co.....	262	Marston & Co., J. M.....	167	Standard Machine Tool & Supply Co.....	168
Deck Gravity Level Co., T. F.....	156	The Marvin Publishing Co.....	265	Stanley Rule & Level Co.....	157
Detrick, D. F.....	280	Mattison Machine Works, C.....	168	Starrett & Co., L. S.....	164
Detroit Show Case Co.....	253	Mayhew Co., H. H.....	162	Stoddard, Dwight L.....	166
Disston & Sons, Inc., Henry.....	161	Mead Cycle Co.....	261	Suess Ornamental Glass Co.....	266
Dixon Crucible Co., Jos.....	160	Miles Co., The Frank W.....	253	Sykes Metal Lath & Roofing Co.....	269
Dow Wire & Iron Works.....	265	Miles Manufacturing Co., The P. B.....	287	Taylor Manufacturing Co., James L.....	173
Drew, Samuel.....	157	Millers Falls Co.....	161	Tower & Lyon Co.....	164
Dunn & Co., W. E.....	283	Miller Manufacturing Co., A. W.....	162	United Roofing & Manufacturing Co.....	241
East Bangor Consolidated Slate Co.....	265	Miotke, Jos.....	157	U. S. Cement Machine Co., The.....	280
Eaton & Prince Co.....	171	Miracle Pressed Stone Co.....	284	Voltz Manufacturing Co.....	274
Edmondson Concrete Machinery Co.....	280	Montross Metal Shingle Co.....	269	Wagner Manufacturing Co.....	170
Edwards Mfg. Co., The.....	271	Morgan & Co., H. B.....	257	Walters Sons, Wm. P.....	163
Eller Manufacturing Co., The.....	271	Morrill, Chas.....	176	Weber Manufacturing Co.....	156
Erierson, M. A.....	255	Mullins Co., The W. H.....	269	White Van Glahn & Co.....	250
Eureka Machine Co.....	261	Multiplex Concrete Mach. Co.....	284	Woods, A. W.....	174
Flanagan & Biedenweg Co., The.....	263	Mulvey Manufacturing Co., Chas.....	175	X-L Concrete Stone Machine Co., The.....	287
Flexifold Door & Shutter Co.....	265	Myers & Bro., F. E.....	171	Zero Valve & Brass Manufacturing Co.....	175
Ford Manufacturing Co.....	235	National Manufacturing Co.....	175	Zimmerman, Chas. E.....	166
Forest City Bit & Tool Co.....	158	National Roofing & Tile Co., The.....	164		
Foster-Munger Co., The.....	259	National Sheet Metal Roofing Co.....	262		
Foster & Sons Co., Inc., Wm.....	268				

NOTICE TO ADVERTISERS

New copy, changes and corrections for advertisements must reach office of American Carpenter and Builder, 186 Jackson Boulevard, Chicago, not later than May 20 in order to insure insertion in the June number.

✦ ✦ **Combination** ✦ ✦  
**INDIA OILSTONE**

Size  
 7  
 x  
 2  
 x  
 1



2  
 G  
 R  
 I  
 T  
 S

✦ **CARPENTERS** ✦  
**This Is the Best All Round  
 Oilstone  
 On the Market**  
**WHY?**

**Because,**—The India Oilstone is made by a special process which makes it sharp and quick cutting.  
**Because,**—They are the Most Durable.  
**Because,**—Each Stone is Guaranteed.

Secure one from your dealer. Take no substitute. If your dealer does not keep the India Line, we will gladly send you the above stone PREPAID for \$1.00. Send for Booklet on Oilstones showing other shapes

Sole Selling Agents, Dept. 6

**PIKE MFG. CO., Pike, N. H.**  
**NORTON CO., Worcester, Mass., Manufacturers**

**Sanitary  
 Metal Tile**

ARTISTIC, DURABLE  
 ECONOMICAL, NONCORROSIVE

For  
**Walls and Ceilings  
 of Bath Rooms,  
 Kitchens,  
 Lavatories,  
 Stores,  
 Hospitals, etc.**

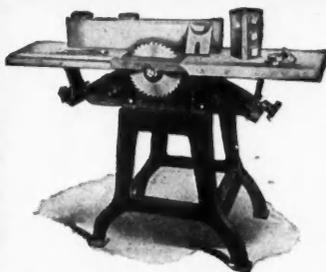
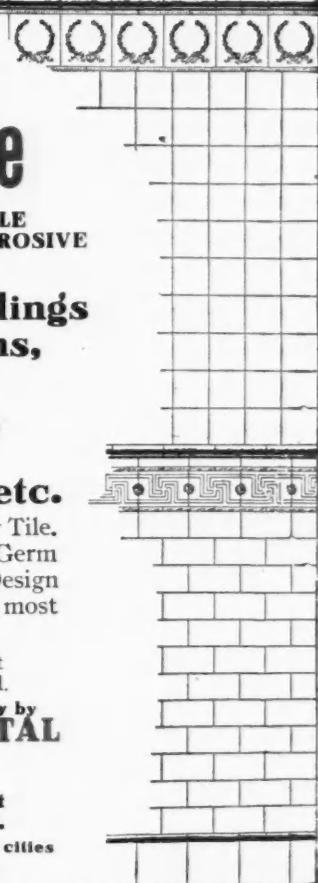
More durable than Clay Tile.  
 No blow can break it. Germ  
 Proof, Water Proof. Design  
 and colors equal to the most  
 artistic ceramics.

Set in Special Cement  
 No Nails Being Used.

Manufactured Exclusively by  
**SANITARY METAL  
 TILE CO.**

33 Prospect Street  
 BROOKLYN, N. Y.

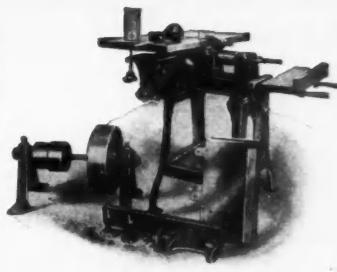
Agencies in all principal cities  
 Write for catalogue



Front View of Combination Jointer

**Something New**

The picture of our new Combination Saw Table and Jointer hardly does justice to this machine which we have designed especially to meet the requirements of contractors and builders. Five machines are combined in one, and it is really surprising what a great variety of work it can do. We have made a very reasonable price on this machine and will be glad to quote you and send further details with a large picture of it which will show more clearly the details of construction. : : : : :



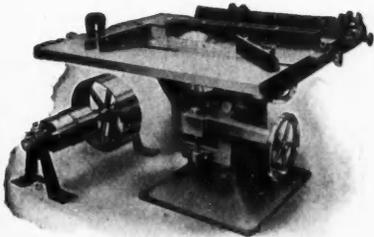
Back View of Combination Jointer

**We also make "DEFIANCE" line of Woodworking Machinery**

*We have exclusive representation in all of the largest Cities in the United States: : : : :*

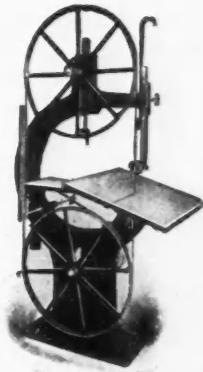
consisting of BAND SAWS, SAW TABLES, JOINTERS, SWING and CUT OFF SAWS, TURNING LATHES, PLANERS, SAW ARBORS and MANDRELS. Also special heads, rip and cut-off gauges.

Write us for free catalogue to-day.  
 When writing mention this paper.



**The Sidney Tool Co.**

SIDNEY, OHIO



# 29 QUICK DELIVERY BARGAINS

## A SPECIAL RUN OF HIGH QUALITY MILLWORK Ready for "RUSH ORDERS"

### READY

FOR  
Quick Delivery on  
"RUSH" Orders from  
Carpenters and Contractors

The special lots of Building Material offered on this page have been turned out with extra care to meet the requirements of contractors and builders, who are keen judges of quality. The prices speak for themselves. They average 50 per cent lower than what retail dealers charge. The goods are piled up in our warehouses, ready to load on the cars at the drop of the hat. If you don't say, after sending us a trial order, that our building material is the finest, brightest and best made of any you ever used, we miss our guess.

Our object in getting out these special lots for contractors and builders exclusively is to prove to you that we can take better care of your interests than any other building material concern in the country—give you greater value, better shipping service and lower prices.

Look Over the List and  
Order Today

The items on this page are the staples, that you use in large quantities right along. Order what you need and we will take the risk of satisfying you. If goods are not right up to grade, don't accept them! We will pocket the loss cheerfully, refunding every cent you paid us.

### OUR GUARANTEE

insures quality, safe delivery anywhere and absolute satisfaction. We have built up the largest factory to contractor building material business in the United States, by dealing on the square with our thousands of customers.

It stands to reason that in selling goods under an iron-clad Guarantee, we keep the quality up to the highest point, as a matter of self protection.

Again we say—Send us a trial order from this page and let us show you how we make good on every item.

Yours truly,

GORDON, VAN TINE CO.

WE SAVE YOU 50%

- LOT NO. 1—11,000 feet Red Oak Flooring,  $\frac{3}{8}$ x $\frac{1}{2}$  inches. Best quality. Random lengths. Wrapped in paper. Per 100 lineal feet..... **80c**
- LOT NO. 2—600 Window Frames. Northern White Pine, for window 2 feet 5 inches wide by 5 feet 6 inches high, or smaller opening. Each..... **\$1.35**
- LOT NO. 3—600 Door Frames. Northern White Pine for 2 feet 8 inch by 6 feet 8 inch doors and smaller. Each..... **\$1.75**
- LOT NO. 4—2,500 Corner Blocks. White or Yellow Pine. Each..... **2c**
- LOT NO. 5—2,500 Base Corners. White or Yellow Pine.  $1\frac{1}{2}$ x14 inches. Each..... **2c**
- LOT NO. 6—2,500 Corner Beads. White or Yellow Pine.  $1\frac{1}{2}$ x4 feet. Each..... **8c**
- LOT NO. 7—1,800 Best Quality Screen Doors.  $1\frac{1}{8}$  thick, stained Walnut, black wire cloth. Each..... **96c**
- LOT NO. 8—575 Turned Porch Columns. 4x4—8 feet. Washington Fir. Each..... **60c**
- LOT NO. 9—1,545 Turned Porch Balusters.  $1\frac{1}{4}$ x24 inches. Beautiful design. Each..... **5c**
- LOT NO. 10—3,300 Porch Spindles.  $1\frac{1}{8}$ x8 feet. Finely turned. Each..... **11c**
- LOT NO. 11—4,900 feet Beaded Porch Rail.  $1\frac{1}{4}$ x1 $\frac{1}{4}$ . Washington Fir. Per lineal foot..... **2c**
- LOT NO. 12—530 Turned Porch Newels. 4x4—4 feet. Each..... **34c**
- LOT NO. 13—12,000 feet Quarter Round. Yellow Pine. Best Grade. Per 100 lineal feet..... **25c**
- LOT NO. 14—10,500 feet Lattice.  $\frac{5}{16}$ x1 $\frac{1}{8}$ . Best Quality. Per 100 lineal feet..... **34c**
- LOT NO. 15—7,100 feet Parting Stop.  $\frac{1}{2}$  inch by  $1\frac{3}{16}$ . Yellow Pine. Per 100 lineal feet..... **30c**
- LOT NO. 16—750 Rolls Tar Felt. Best Grade. Weight 15 pounds to 100 square feet (about 52 pounds to a roll). Price, per pound... **2c**
- LOT NO. 17—530 Hot Bed Sash. 3x6—1 $\frac{1}{8}$ . Best Quality. Clear Glass. Made with best Cypress. Each..... **\$1.60**
- LOT NO. 18—960 5-Panel Painted Doors. 2 feet 6 inches by 6 feet 6 inches—1 $\frac{1}{8}$ . Good strong doors. Made from Kiln Dried Stock. Each..... **\$1.19**
- LOT NO. 19—1,840 Yellow Pine "B" Quality Doors. 2 feet by 6 feet— $\frac{7}{8}$  inch. Each..... **80c**
- LOT NO. 20—3,200 feet Oak Plate Rail. (Projects  $\frac{3}{4}$  inches from wall.) Per foot..... **7c**
- LOT NO. 21—2,500 Plain Rail Windows. 1 $\frac{1}{8}$  inches—8 lights, 8x10—Glazed Clear Glass. Each..... **57c**
- LOT NO. 22—1,265 4-Light Barn Sash. 1 $\frac{1}{8}$ —size of glass 8x10. Each..... **43c**
- LOT NO. 23—500 Attic Sash. 1 light, 16x20—Glazed Clear Glass. Each..... **55c**
- LOT NO. 24—4,800 feet Window and Door Stops. 1 $\frac{1}{8}$  inches wide. Yellow Pine. Best Quality. Per 100 lineal feet..... **30c**
- LOT NO. 25—5,600 feet Y. P. Casing. 4 $\frac{1}{4}$  inches. Best Quality. Per 100 lineal feet..... **\$1.75**
- LOT NO. 26—6,200 feet Yellow Pine Base. 7 $\frac{1}{4}$  inches. Best Quality. Per 100 lineal feet..... **\$2.84**
- LOT NO. 27—520 Gable Ornaments. Adjustable to any house. Beautiful design. Each..... **80c**
- LOT NO. 28—422 Cupboard Doors. 1 foot 6 inches by 2 feet 6 inches—1 $\frac{1}{8}$ . Ready to hang. Each..... **72c**
- LOT NO. 29—900 Hardwood Thresholds.  $\frac{5}{8}$ x3 $\frac{3}{4}$ —3 feet long. Bundled in lots of 10. Each..... **5c**

**SNAPS** are advertised on this page every month. Watch for them.

**WRITE FOR GRAND FREE BUILDERS' CATALOG** and get your name on our Free Mailing List for Bulletins of Special Bargains. We save you an average of 50%, Freight Included.

**GORDON, VAN TINE CO. 413 FEDERAL ST. DAVENPORT, IOWA**