

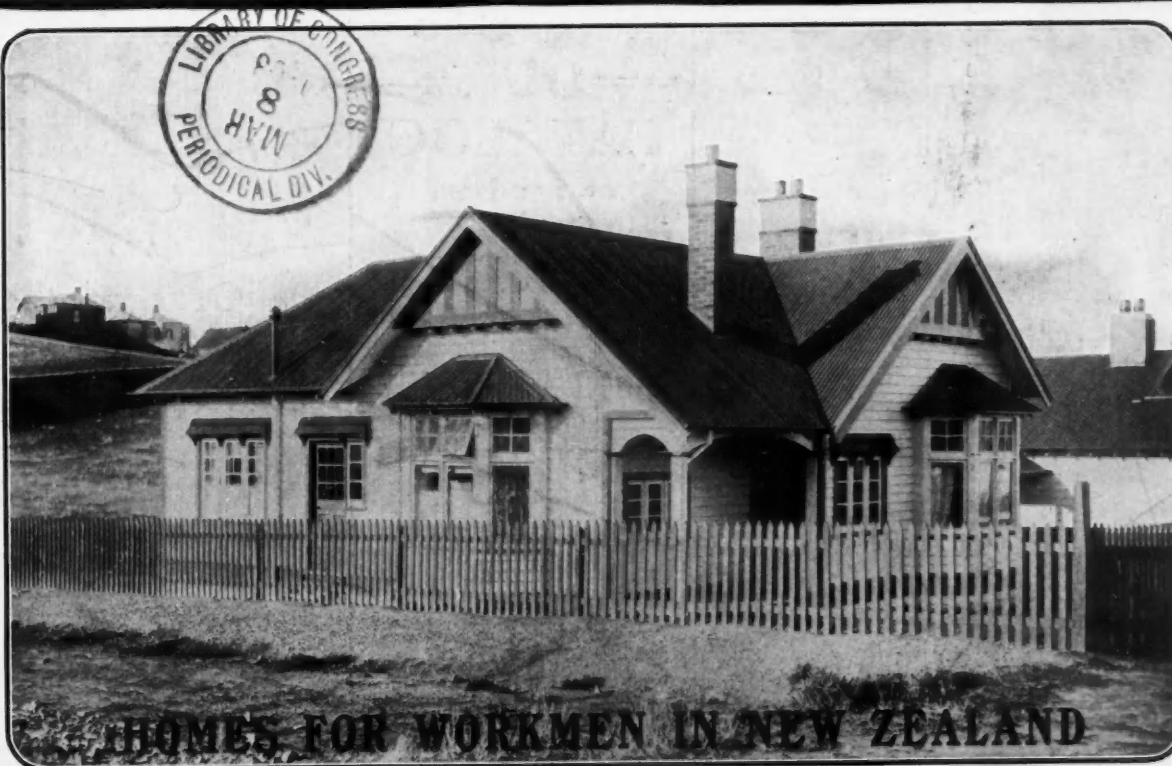
Price 20 cents

MARCH, 1908

# AMERICAN CARPENTER AND BUILDER

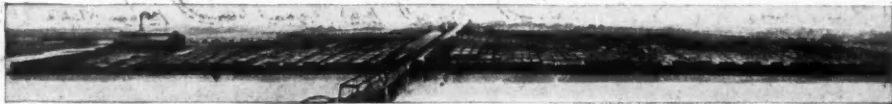
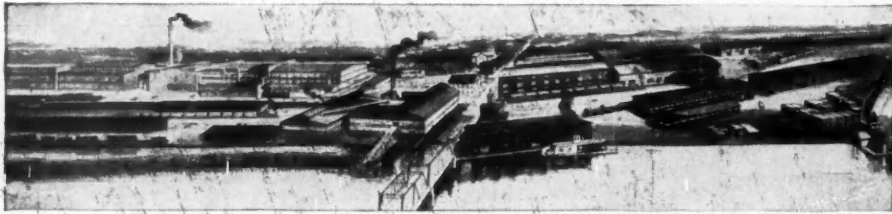


THE WORLD'S GREATEST BUILDING PAPER



HOUSES FOR WORKMEN IN NEW ZEALAND

# The Madisonville Lumber Co., Cincinnati, Ohio



From **FACTORY**  
**DIRECT**  
to **YOU**



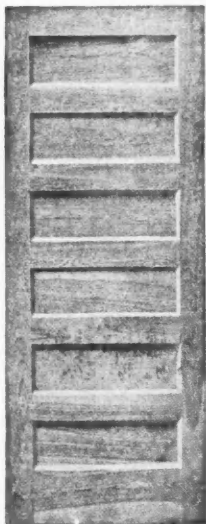
**SCAMOZZI ITALIAN**  
8" Column, 6½" Neck \$0.70  
10" Column, 8½" Neck \$0.95



No. 12      No. 28

Doors, Sash, Interior  
Trim, Stair Work,  
Mouldings. In

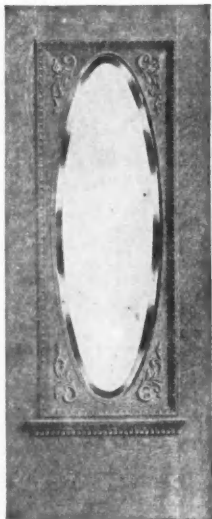
**Birch**  
**Oak**  
**Southern**  
**Mahogany**  
**Yellow Pine**  
AND  
**White Pine**



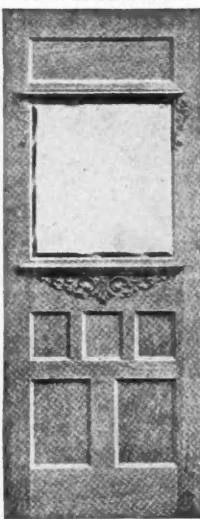
No. 377  
All sizes in stock in Oak  
and Birch.  
Birch, [x].....\$2.75  
Oak, [x]..... 3.40  
F. O. B. Cincinnati



No. 381  
All sizes in stock in Oak,  
Birch and Southern  
Mahogany.  
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Oak [x]..... 3.80  
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No. 1180  
All sizes in stock in Oak  
and Birch.



No. 385  
All sizes in stock in Oak  
and Birch.

**All of our doors are guaranteed. Try 'Em**

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**OUR**  
**CATALOG**

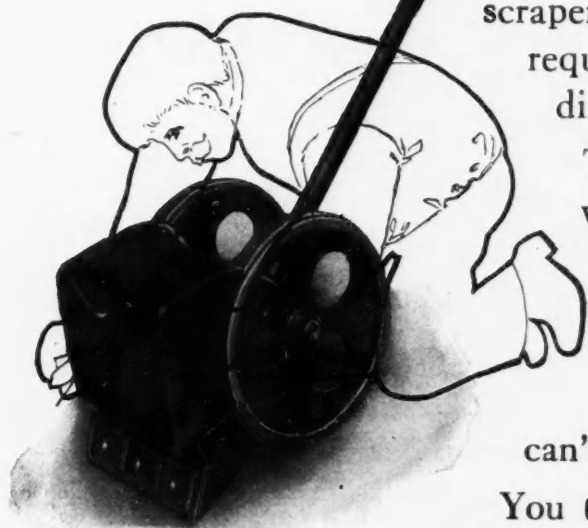
or send us  
your list of  
**"WANTS"**

**QUALITY**  
**FIRST**  
AND  
**PRICES**  
TO  
**SUIT**

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**Columns**  
**Composition**  
**Caps**  
AND  
**Ornaments**  
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**Window Glass**  
**Mirrors**  
**Paints, Oils**  
**Varnish**  
**Putty, Etc.**  
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**Roofing Paper**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

# We Lead Others Follow



When we say the  
**LITTLE SHAVER**

floor scraper is the simplest, we mean not only in construction, but simple as a hand scraper, as no handle pressure is required, the weight being directly on the knife.

The **SANDER ATTACHMENT** which goes with each machine can be easily attached, and by removing the heavy weight making a sander that can't be beat.

You **don't** want to buy a floor scraper that's complicated and that can easily get out of order.

The **LITTLE SHAVER** is the simplest, and the simplest always does the best work.

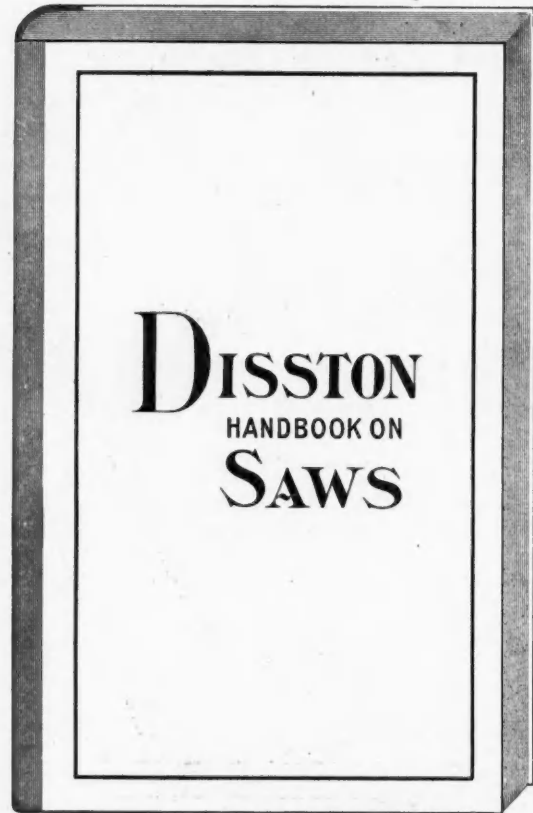
If the **LITTLE SHAVER** can scrape saloon bar tops, it is worthy your inquiries. Let us hear from you.

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**Contractors Supply & Equipment Co.**

Old Colony Building : : : CHICAGO

*Yours  
for the  
Asking*



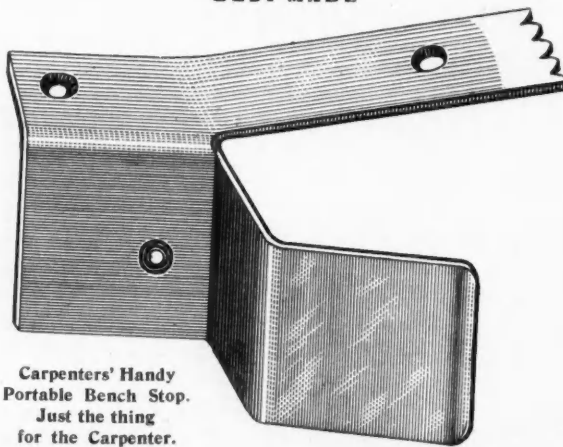
CONTAINS 208 PAGES OF USEFUL AND PRACTICAL INFORMATION—ARTICLES ON THE MAKING OF DISSTON SAWS, TOOLS AND FILES, GIVING THE PROGRESSIVE STEPS IN THEIR MANUFACTURE, A LARGE NUMBER OF ILLUSTRATIONS OF SECTIONS OF THE WORKS; TOGETHER WITH TREATISES ON THE CARE AND USE OF SAWS; ETC.

**HENRY DISSTON & SONS, INC.,**  
Keystone Saw, Tool, Steel and File Works  
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Brick Hammers,  
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Cork Floats,  
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Carpenters' Handy Portable Bench Stop. Just the thing for the Carpenter.

Steel Sidewalk Edgers and Bronze Groovers, All Sizes.

Finishing and Browning Trowels, all sizes and gauges.

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Made of the best quality tool steel,  $\frac{1}{2}$  in. Octagon, 30 in. long. Will pull any size nail. Just the thing for the mechanic.

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**MARSHALLTOWN TROWEL CO.**

Marshalltown, Iowa

U. S. A.

**THE**

**FOX**

**Money  
and  
Labor  
Savers**



**WE LEAD ON FLOOR SCRAPERS**

**The New**

**Perfect in Every Detail**

**The  
FOX  
No. 1**

The old reliable Floor Scraper that has always taken the lead over competitors. Does more work than any machine on the market and does it perfectly.

Will give satisfaction and save you time and money.

**This Machine is Right  
The Price is Right**

**The Fox Cabinet Scraper**  
Only \$1.25 For Sale By Your Dealer



REGISTERED

**The Handiest and Most Perfect Wood Scrapping Tool on the Market**  
Cuts 3 1/2 in. wide. Never Leaves Waves  
The body slides on the wood, insuring a cut of uniform depth. Blade is fastened with a handy clamp and can be adjusted or reversed in a second's time. Works equally well in horizontal or perpendicular position. **Never Leaves Waves.** Unequaled for floor, cabinet or bench work where the finest of finish is desired. Every carpenter needs this tool.

One man with this machine can do the work of two on hands and knees.

Body of machine slides on floor, which eliminates waves and jumping.

Built to do the work and does it.

The most perfect and easiest working Floor Scraper ever built.

Price of Fox Junior only \$15.00  
F. O. B. Factory

**Fox Junior  
Floor  
Scraper**

**—ONLY—  
\$15.00**



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**Don't Fail to Write Us  
Before Ordering  
Floor Scrapers**

**WE CAN SAVE  
YOU MONEY**

**Ask Your Dealer for Our Tools, or Write Us Direct**

**FOX MFG. CO.**  
**187 Second Street, Milwaukee, Wis.**



## The American Floor Surfacing Machine

Does the Work of 20 Men

**BETTER**

**QUICKER**

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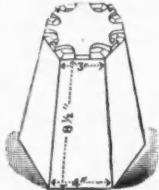
The **only** machine whose work is specified by architects and meets the requirements of contractors and owners, giving a level, smooth, sand-papered finish, that harmonizes with the balance of the interior wood work.

It has surfaced and polished millions of square feet on every kind of floors, from common pine to the finest parquet, 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.

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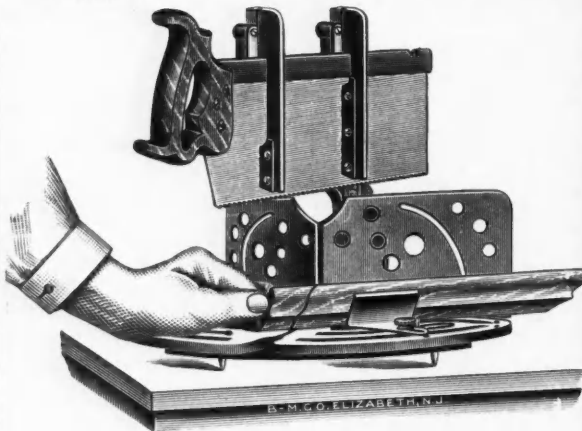
**The American Floor Surfacing Machine Company  
TOLEDO, OHIO**

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Send for Booklet which shows how a Compound Mitre, any width, can be cut with a back saw 4 inches wide

**Sent on Ten Days Trial**



**Dorns Revolving Mitre Box**

Manufactured by

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**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.

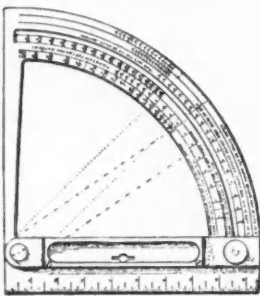
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**American Carpenter and Builder**

185 Jackson Boulevard, CHICAGO

## A NEW TOOL FOR CARPENTERS

PRICE \$3.50. A. O. Calhoon, 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. Calhoon 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. Calhoon: 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.**

# THE JUDGES' DECISION

## ACKERMANN'S RAPID FLOOR SCRAPER THE BEST

READ  
THE RESULT  
OF THE FLOOR  
SCRAPER  
CONTEST

ACKERMANN  
CALLS ALL BLUFFS



This Brush is an Exclusive, Patented, feature. NO OTHER MACHINE HAS OR CAN USE IT.

Patent Allowed Nov. 1907

"In the matter of simplicity of construction, including the sharpening of knives, and angles of knife adjustment for operation, we the Judges, decide unanimously in favor of

### ACKERMANN'S RAPID FLOOR SCRAPER"

#### HOW THE CONTEST CAME ABOUT

In the January issue of the "American Carpenter and Builder" appeared an open offer, signed by the inventor and manufacturer of a rival floor scraper, stating he had deposited \$100 in a bank at Milwaukee, which he would pay to ANY PERSON proving his machine and outfit not to be the best.

Through his attorney Mr. John B. Ackermann, inventor and manufacturer of Ackermann's Rapid Floor Scraper, notified the Milwaukee inventor's Milwaukee manufacturer that he contested his claim and wished to prove it not true.

This resulted in a contest being arranged in which the Milwaukee manufacturer named the time, place and kind of floor and the judge acting for him, who was the contractor and builder constructing the job where the contest was held and whose firm owned and had used the Milwaukee machine for 60 days, whereas, the other two judges had never seen either machine until within a few hours of the time of contest and were not personally known to Mr. Ackermann. The judges' decision was as follows:

#### FULL TEXT OF THE JUDGES' DECISION

##### TO WHOM IT MAY CONCERN:

We, the undersigned, acting as judges in a contest between the Floor Scraping Machines known as Ackermann's Rapid Floor Scraper, (J. B. Ackermann, Grand Rapids, Mich., Inventor and Manufacturer,) and the Acme Floor Scraper (Joseph Miotke, Milwaukee, Wis., Inventor and Manufacturer), which was held on the 13th day of February, 1908, in the City of Evanston, Illinois, at the new flat building owned by Parke Bros., on Washington St., near Ridge Blvd., do hereby certify our decision to be as follows on the merits of the two machines, the contest being based upon the following challenge issued over the signature of the said Joseph Miotke and published in the January edition of the "American Carpenter and Builder", a trade magazine published at Chicago. The terms of the said challenge having been accepted by the said J. B. Ackermann through the serving of written notice by him upon the said Joseph Miotke.

#### CHALLENGE

##### TO WHOM IT MAY CONCERN:

This is to certify that I have deposited in the Marshall & Ilsey Bank of Milwaukee, One Hundred Dollars (\$100), which amount I will pay to ANY PERSON proving the fact that the ACME FLOOR SCRAPER and ACME BLADE SHARPENER do not constitute the best equipment for floor scraping.

My previous advertisements state IT IS THE BEST, so now it is worth your time to investigate and prove that IT ISN'T.

(Signed) JOS. MIOTKE.

Now, we, the Judges, certify the following to be our conscientious and unbiased decision in the said contest and demonstration: First:—That in the matter of which machine did the best work on a plain sawed oak floor, covering a floor space of 10 by 11 feet, it is the unanimous opinion of the three Judges that there is no choice between the two machines as to quality of the work done.

Second:—In the matter of simplicity of construction of the two machines, including the sharpening of knives and angles of knife adjustment for operating, we the Judges, decided unanimously in favor of Ackermann's Rapid Floor Scraper on the above points.

Third:—As to which machine would be the easiest to operate when placed in the hands of an inexperienced operator, we the Judges, being Mr. John N. Doerr, formerly General Manager and Treasurer of The Pearson Lumber Company, acting as the Judge selected by Mr. J. B. Ackermann, and Mr. A. J. Rollert, President of the Original Manufacturing Company Cabinet Work at Evanston, Illinois, acting as the third Judge selected by the other two Judges; Mr. C. A. Moraw, of Cadenhead & Moraw Company, Building Contractors, Chicago, acting as Judge selected by Mr. Joseph Miotke, render our decision as follows:

That there is no preference in the operation of the two machines when placed in the hands of an inexperienced operator. Judges Rollert and Doerr agreeing to this decision on the above question and Judge Moraw (acting for Mr. Miotke) dissenting, claiming a preference for his machine.

JOHN N. DOERR. (Seal)  
A. J. ROLLERT. (Seal) Judges.  
C. A. MORAW. (Seal)

#### ACKERMANN'S SPECIAL GUARANTEE OFFER

I 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 I claim for it you can purchase it, if not I will have the machine returned at my 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, I 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. I refer to the State Bank of Michigan, Grand Rapids, Mich., as to my guarantee and responsibility.

**J. B. ACKERMANN, Sole Mfr. 97-99 Pearl St, GRAND RAPIDS, MICH.**

# TOLES' RAPID ACTING VISE FOR WOODWORKERS

**A Guaranteed Time Saver**



Piece-Workers say they save the price of their vise in a month's time

**YOUR TIME IS MONEY—SAVE IT!**

It takes 24 turns of the ordinary wood screw, 1/4-inch pitch, to open a vise 12 inches, and 24 turns more to close it. We advise any mechanic while he is resting, to time the other fellow while he is doing this, and also figure in the time it takes to adjust the bolt at the bottom of the vise to keep the jaws parallel. **THE TOLES RAPID-ACTING VISE** obtains adjustment *without* the use of RACKS, PAWLS, TRIGGERS, WEDGES, LEVERS, FRICTIONS, WORM GEARS, ETC., therefore they do not slip, clog up, wear out or break.

**SPECIAL** Send us your dealer's name and we will mail you **FREE** a fine catalog showing FORTY DIFFERENT STYLES of **TOLES VISES**.

**W. C. TOLES COMPANY**  
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There are no other braces made which match them in merit and beauty of finish. Made in great variety of sizes and grades.



Our name appears on all genuine goods. Look for it before you buy. Send for Catalog D showing our full line.

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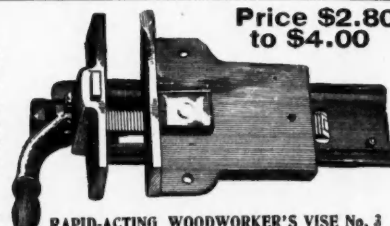


Wood Bar Clamp Fixtures Per Set 50c

**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

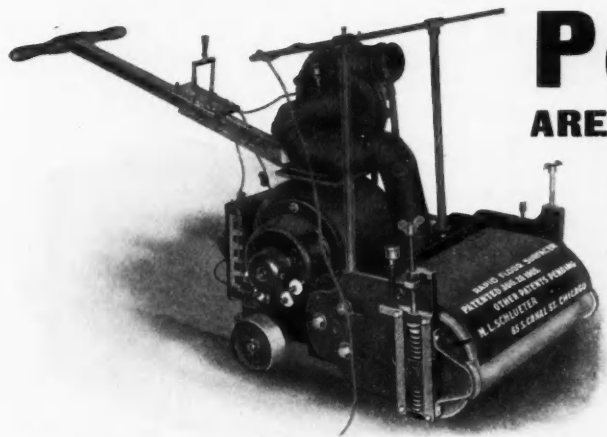
**BLAKE QUICK ACTING VISE**

For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best  
Send for Catalogue of all kinds of Vises.  
**PRENTISS VISE COMPANY, MAKERS**  
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**PARKER VISES**

MADE ESPECIALLY FOR WOOD WORKERS  
FOR SALE BY DEALERS  
SEND FOR CATALOG  
**CHAS. PARKER CO.**  
MERIDEN, CONN.





# Perfect Results

ARE EASILY OBTAINED BY LEASING THE

## SCHLUETER RAPID FLOOR SURFACER

This machine is built on the only correct principle. It is guaranteed to be **THE BEST** machine with which to produce an even, smooth surface on any kind of 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" and Type "C" Machine**  
18 in. and 12 in. Surfacing Roller

The contractor leasing a **Schlüter Rapid Floor Surfacer** 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 Schlüter machine will easily earn a net profit of not less than \$10 a day when in operation.

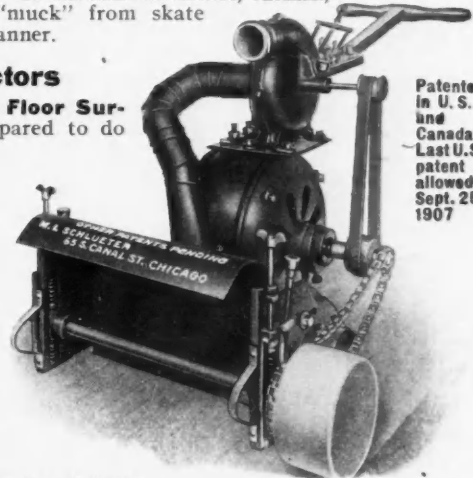
### Sand Paper the Only Perfect Way

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 \$2.00 to \$3.00.

### What One Contractor Says

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. Schlüter 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 Schlüter 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** 61 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.

## 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.

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ACTUAL SIZE No.1687  
20c for sample by mail

\$1.75 for sample by express

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108 Duane Street, New York City

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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.

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- Constitute a Set



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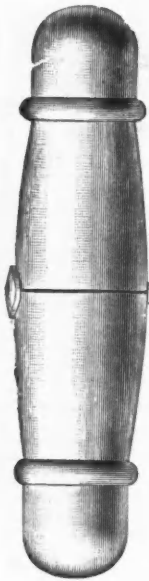
Leather Handles to prevent hand from slipping

Our Tools Bear an International Reputation

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**Here is a Gimlet**

Equal in quality and usefulness to any Brace Bit

HANDLE OF SELECTED COCOBOLO WOOD

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

Price Postpaid **15 cents** each

**H. H. MAYHEW COMPANY**

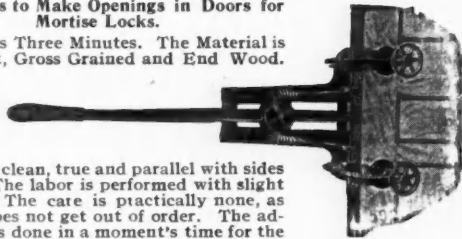
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WILL SEND ON APPROVAL

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 1/4 inches thick. Thin doors are handled as easily as thick doors.

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

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The Lufkin Rule Co.

Saginaw, Mich., U.S.A. New York London

For Sale Everywhere.

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They have been in practical use for 10 years. There's hardly a carpenter in America who hasn't one or more in constant use.

They appeal to all classes of mechanics who have screws to drive or holes to drill, and make friends wherever they go. They are fully guaranteed. Ask your dealer to see them. There are 18 styles.

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## “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.**

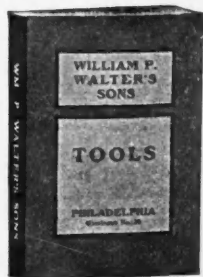
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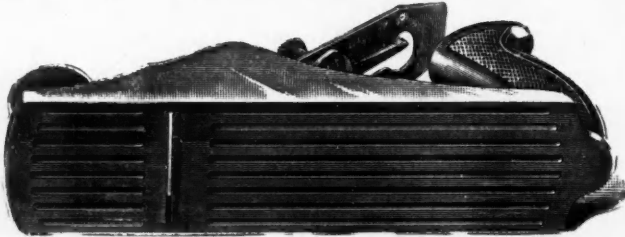
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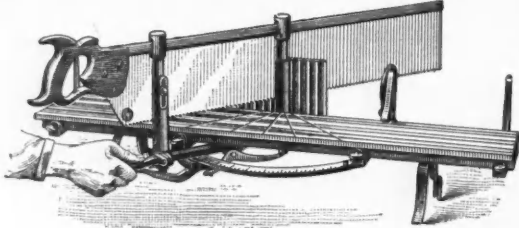
if plane is returned at our expense as per circular. Circulars and a Carpenters' pencil free if this Ad. is sent us within a month, another pencil for 10 carpenters' addresses, still another if you will hand our circulars to seven or more plane users. If you will sell our planes where not sold, we will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



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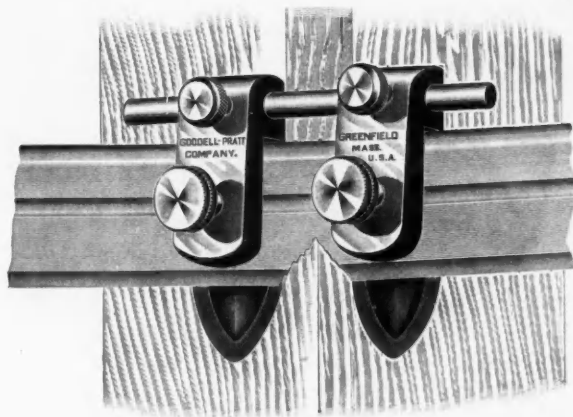
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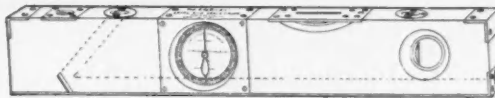


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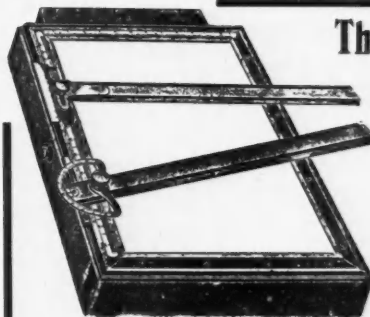


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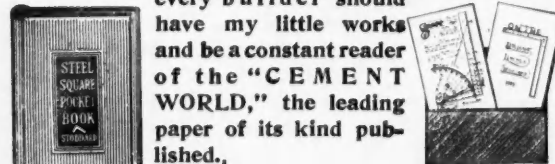
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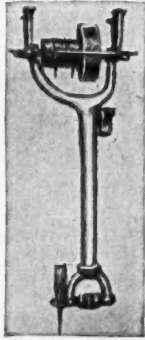


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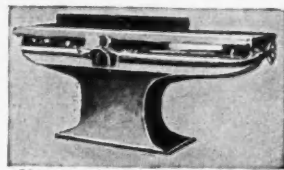
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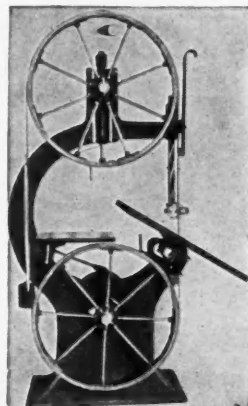
You will be surprised at  
the small investment re-  
quired to make yourself  
independent.



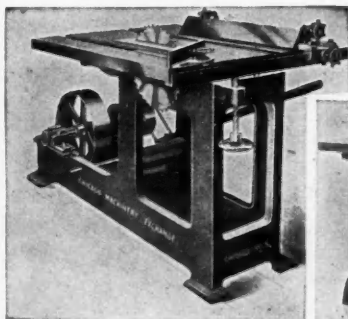
Chicago No. 7  
Improved Swing Saw



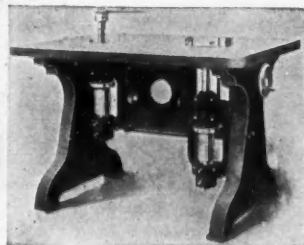
Chicago Nos. 16 and 17 Jointer  
8", 12", 16"



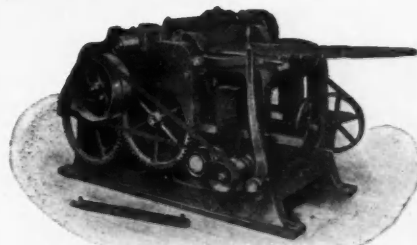
Chicago No. 1 Band Saw 36 inch.



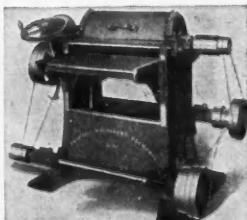
Chicago No. 5  
Combination Rip and Cut-Off Saw



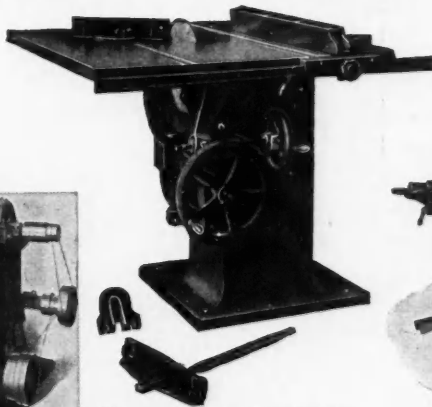
Chicago No. 19 Shaper



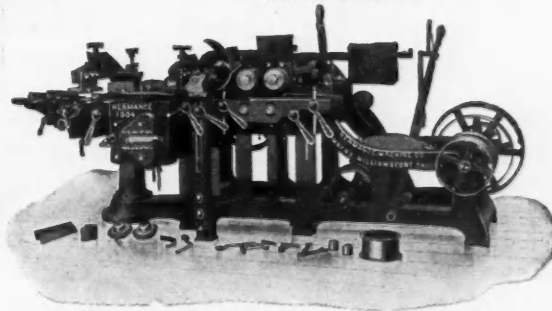
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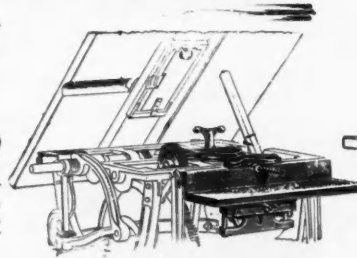
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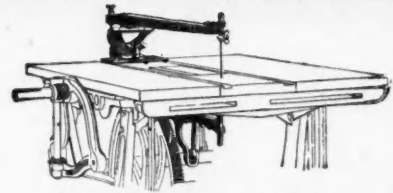
*Machines sent on trial. Send for Catalog "A."*

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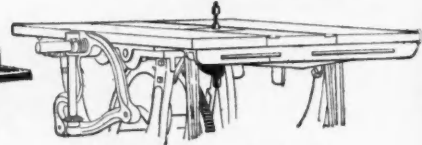
218 Water St., Seneca Falls, N. Y., U. S. A.



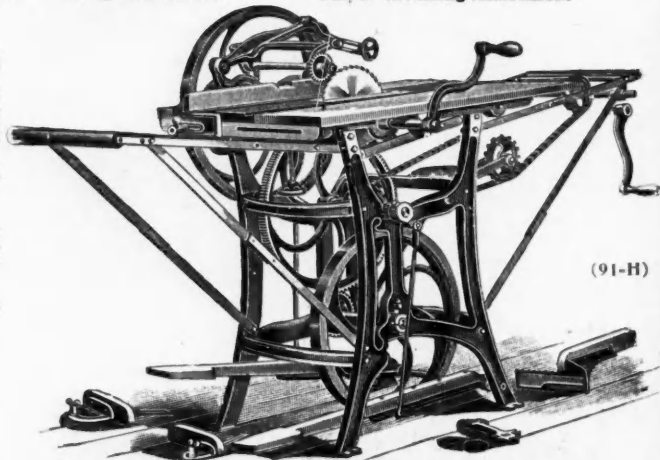
"Union" Boring Attachment.



"Union" Scroll-Saw Attachment.

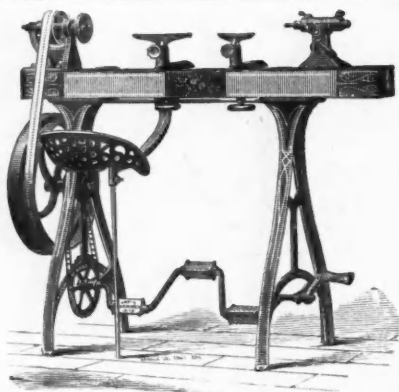


"Union" Moulding Attachment



(91-H)

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



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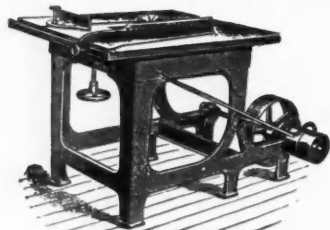
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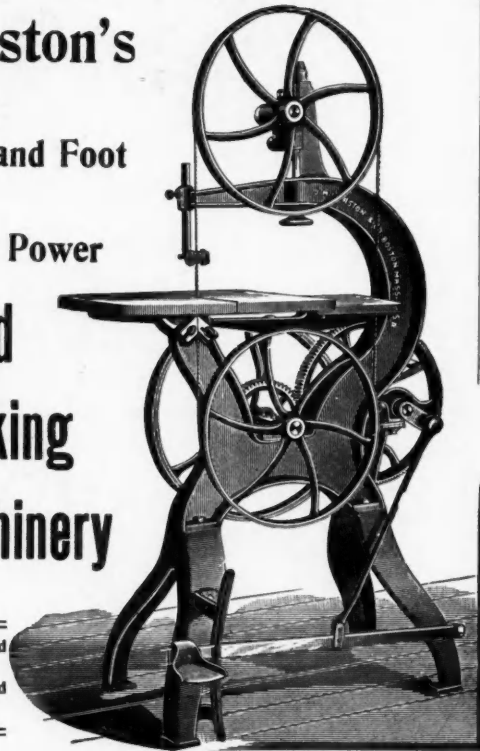
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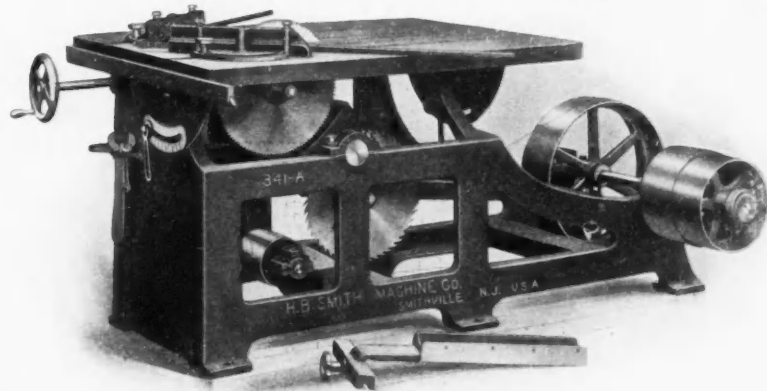


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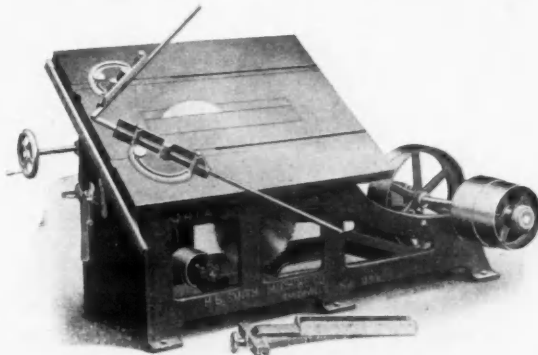
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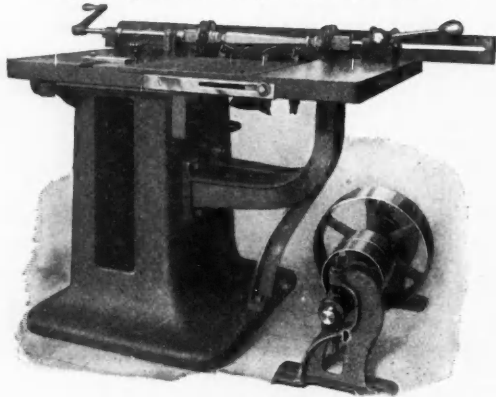
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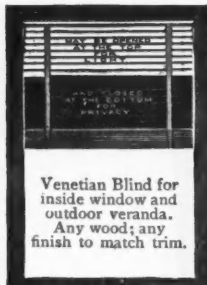
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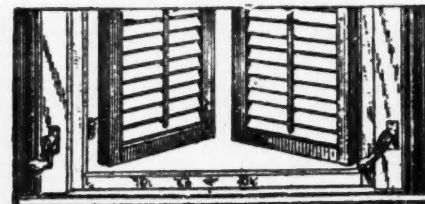
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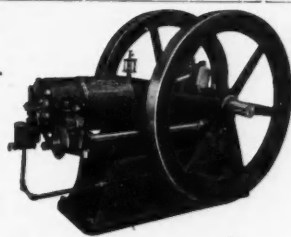
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Aside from excellence of material and workmanship, the greatest difference between the best Carpenter's Steel Square and the old iron square of the blacksmith, consists of the scales and markings on the improved tool. Our square, as recently improved,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

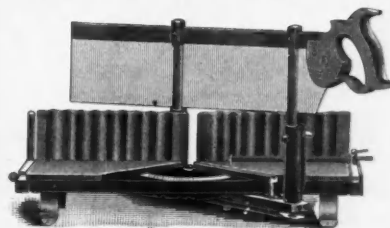
Our Steel Square Book, describing the new tool, is a veritable **PRACTICAL TREATISE ON THE STEEL SQUARE** and we will send a copy, without charge, to anyone who in writing us will mention the American Carpenter and Builder.

**SARGENT & COMPANY**

1149 Leonard Street

NEW YORK

## GOODELL MITRE BOX Made of STEEL - Cannot Break



First in Quality  
and  
Improvements

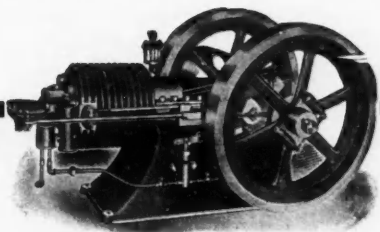
Automatic stops  
for holding up  
saw.

Currugated backs.  
Graduated.

Gauge for duplicate  
cuts and many  
other features.

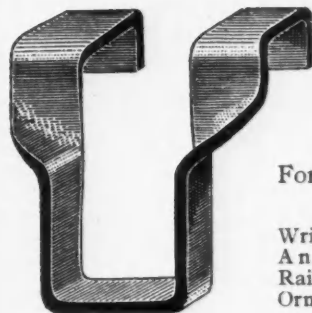
Send for Circular  
"C"

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



## 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**



## 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.



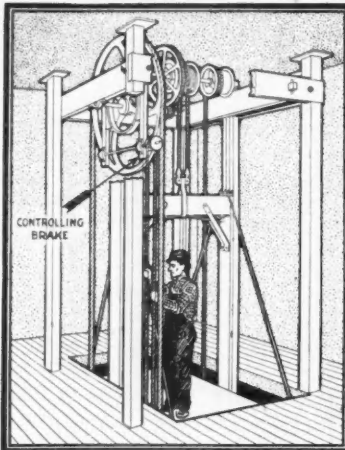
# PERFECTION ELEVATORS

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 Control

Elevator Safety is assured by this Improved Screw-Brake

IT IS—swift, positive, powerful in action—simple in construction—the admiration of all experienced mechanics—an exclusive feature

of every Eaton & Prince hand-power elevator.

Eaton & Prince hand-power elevators are carried regularly in stock in Chicago in both corner-lift and center-lift patterns in various sizes.

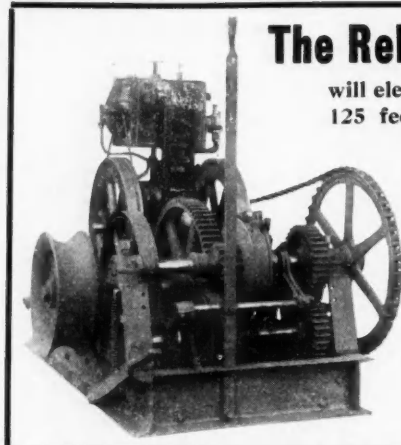
*We are thereby enabled to ship promptly upon receipt of order.*

E. & P. elevators combine economy and simplicity with superior service, safety and satisfaction.

Illustrated plans, details, sizes and prices in Folder No. 99 will permit you to intelligently order on the spot—send for it to



**EATON & PRINCE COMPANY**  
CHICAGO



## The Reliance Hoist

will elevate 1,000 lbs.  
125 feet per minute

PRICE

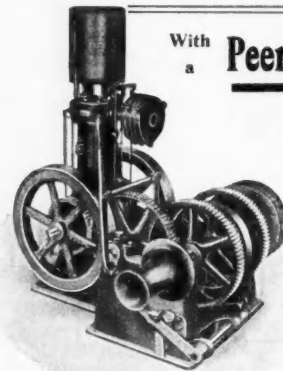
**\$150.00**

Without Power

Power furnished when desired.

Write for descriptive circular.

Secord & Weatherwax  
Jackson, Mich.



## With a Peerless Hoisting Outfit

You can hoist your material cheaper and quicker than with any other

**Peerless Motor Co.**  
1217 Clinton St.  
Lansing, Mich.

Write for Catalog



**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



**MYERS**  
Glass Valve

Myers Stayon Flexible Door Hangers



Double-acting, Lift, Tank and Spray

**PUMPS**  
Store Ladders, Etc.

Hay Tools of all kinds  
Write for circulars and prices.

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.

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Ashland, Ohio.

Noiseless Cushion Tire



**LADDERS**



Our Line of Ornamental Butts and Hinges will

# Save One-Half Your Time

in hanging a door. Live contractors are using them exclusively wherever they have been introduced. Will have nothing else. Only one side to mortise. All sizes from 1½ in. to 4 in. Any finish desired. Small sizes fine for cabinet work. Send for catalogue and give dealer's name.

**National Manufacturing Co.**  
Sterling, Ill.

Style No. 400.

### Don't Get Behind The Times

SEND FOR OUR ILLUSTRATED CATALOG



and Net Price  
List on Builders'  
Hardware free to  
Contractors and  
Material men.

No. 5142  
Per Doz. \$4.00

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354 Blue Island Avenue : : CHICAGO, ILL.



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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.**  
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## 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

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### Agents Wanted TO SELL

## "EUREKA DOOR KNOB BELL."



Made of Bronze Metal

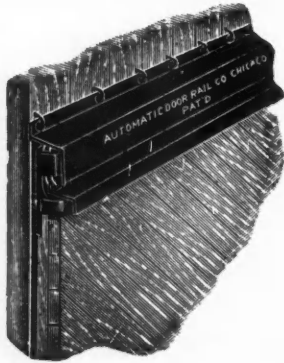
Gives a Clear Loud Ring

Easily put on—all you need is a screw-driver—sells at sight

**PRICE \$1.50 POSTPAID**

Carpenters! Make big money during dull season. Write for terms and territory—TODAY

**F. B. BLACK CO.** 1211 Union Avenue  
KANSAS CITY, MO.



## ALL IN A NUT SHELL

THE SLIDING door problem has been solved at last, and the carpenter, contractor and user has an opportunity to use an Automatic Storm and Bird Proof Rail.

A new feature indeed, and the neatest article ever offered the public for that purpose. It is fully guaranteed. It saves time and money.

Send for our catalog, it's free for the asking. Agents Wanted.

**AUTOMATIC DOOR RAIL CO.**

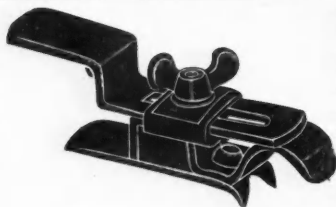
**Hillsdale : : : : Michigan**



We guarantee **SAMSON SPOT CORD** to be free from bad splicing and rough braiding. You don't have to waste any by cutting out rough places.

WRITE FOR CATALOGUE, TESTS, AND SAMPLES.

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



### WAGNER SHINGLE GAUGE

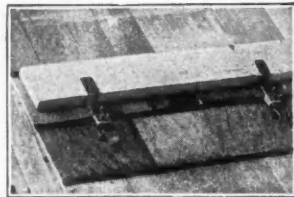
Is a device to quickly gauge and hold a straight edge in laying shingles.

Satisfaction Guaranteed

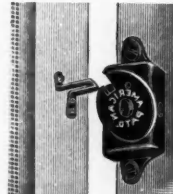
No nail holes in roof by its use.

Ask your dealer or write for circular.

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



## The Wonderful America 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 temple—all in envelope. Price 15c each, \$1.50 per dozen. Sold by hardware dealers, jobbers and **AMERICAN HARDWARE MFG. CO.** : Dept. 79, Ottawa, Ill.

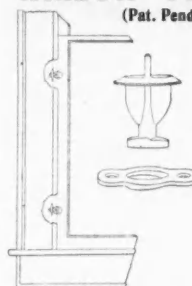
## WHY DON'T YOU Build Incubators and Brooders PLANS FREE



YOU can start a profitable side line manufacturing Incubators and Brooders from our **Free Plans**. Easy and simple to follow. We supply all parts such as Lamps, Regulators, Tanks, Doors, Legs, etc., not convenient for you to make, at a very small cost. There's a big demand. Some manufacturers turned down thousands of orders last year. Why not pick up some of this extra money? A postal brings full information; our big catalogue and **plans free**. **H. M. SHEER CO., 210 Hampshire St., Quincy, Ill.**

## BOARDMAN WINDOW-STOP FASTENERS ADJUSTERS

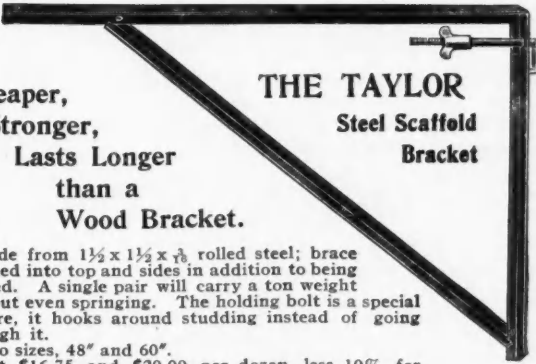
ARE Quickly Installed Prevent Rattling Window can be instantly removed without tools



(Pat. Pending) ARE Easily Adjusted When installed any woman or child can operate Write for further information

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






**Cheaper,  
Stronger,  
Lasts Longer  
than a  
Wood Bracket.**

**THE TAYLOR  
Steel Scaffold  
Bracket**

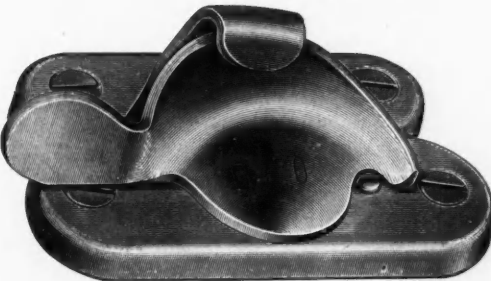
Made from  $1\frac{1}{2} \times 1\frac{1}{2} \times \frac{3}{8}$  rolled steel; brace notched into top and sides in addition to being riveted. A single pair will carry a ton weight without even springing. The holding bolt is a special feature, it hooks around studding instead of going through it.  
Two sizes, 48" and 60".  
List \$16.75 and \$20.00 per dozen, less 10% for prompt cash.  
**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.



**ALLITH**  
 CHICAGO, U.S.A.

ALWAYS ON THE TRACK  
**RELIABLE DOOR HANGER**

— **RELIABLE** —

## ROUND TRACK DOOR HANGERS

Impossible to Derail  
 Easy Running, Great Strength

— **FOR** —

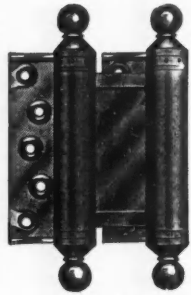
**BARN, WAREHOUSE and FIRE DOORS**

Send for Catalog "A"

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

# CHICAGO SPRING BUTTS

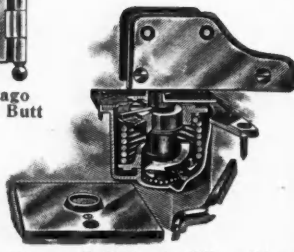
A PRODUCT OF RECOGNIZED SUPERIORITY



Triple-End Spring Butt



Chicago Spring Butt



Chicago Ball-Bearing Floor Hinge

## Chicago Spring Butt Company

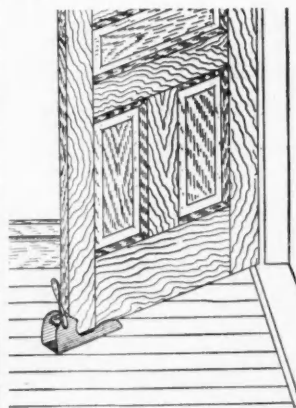
CHICAGO CATALOGUE ON REQUEST NEW YORK

# Mr. Carpenter! \$750.00 Free

\$800.00 in Cash  
\$250.00 in Premiums  
FIRST PRIZE—\$100.00

Send for Particulars

**PULLMAN MFG. COMPANY**  
ROCHESTER, N. Y., U. S. A.



THIS cut shows a door holder, which has been patented by Elmer Hodgson of Bonesteel, South Dakota.

Mr. Hodgson is a practical carpenter himself, and believes, that he has invented a simple little tool that will be useful to carpenters in putting in mortise locks, or holding a door against drafts. The tool holds a door very solid without injury to the door or floor.

For full Particulars Address  
**ELMER HODGSON,**  
Bonesteel, S. D.

# We Want You

to know us; to get our catalogs and see what we have to offer in goods and prices. Get a catalog and look it over. It will put you under no obligation and you will not be bothered by a lot of advertising matter that is no good to you

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Number 371

**WOODWORKERS' TOOLS**—Contains tools for the cabinet maker, car builder, carpenter, carriage builder, cooper, draftsman, furniture maker, lather, manual training school, millwright, pattern maker, ship builder, wagon maker, and for carvers, engravers, turners and all workers in wood. The only complete catalog ever issued of this line.

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**BUILDERS' HARDWARE**—Contractors' Edition. 198 pages of the finest hardware in the world. Shows everything necessary to equip any building. Sent free to contractors, architects or owners of proposed buildings.

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**REFRIGERATORS, HOUSEHOLD**—An abridged catalog which explains the reasons for the superior ice-keeping qualities of our "A" Refrigerators.

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**DUMB WAITERS AND HAND ELEVATORS**—Giving details required to enable us to quote you intelligently. Sent free.

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**CONTRACTORS' TOOLS**—Showing tools for the bricklayer, cement contractor, mason contractor sewer builder, lather plasterer, slater, stonecutter, stone mason. Is the most complete work for contractors ever issued.

**ORR & LOCKETT HARDWARE CO.**  
Estab. 1872 CHICAGO

MORRILL'S NO 1 BENCH STOP.



**Any Mechanic** who has used either our Nos. 1 or 2 Bench Stops will tell you that there are **None Better Made.**

Order from your Retailer, and if he can't supply you, **WRITE TO US.**

**CHAS. MORRILL,** 283 Broadway, New York

## The NEW MARSH-LANGDON and IMPROVED MITER BOXES

All have corrugated Metal Bed Plates—same are ground true and cannot warp and split like thin Wooden Plates. Made in 4 sizes and 40 numbers. Ask your dealer to show you one, and if he does not carry them in stock, ask him to order one for you, for you want the best. Write for circulars and prices.

Manufactured only by  
**H. C. MARSH**  
606 Race Street  
Rockford, Illinois



# Great Prize Contest

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**This is the Second Remarkable Offer by the  
American Carpenter and Builder**



**Two Beautiful Homes**

===== TO BE GIVEN AWAY =====

**ABSOLUTELY FREE**

---

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**Read Full Particulars on Following Three Pages**

## Description of the Homes to be Given Away

THOSE who are familiar with the policy of the AMERICAN CARPENTER AND BUILDER know that we always do things a little better than any one else has ever attempted to do them. We have been planning this Great Prize Contest for several months and have considered many different homes to be offered as prizes. When we give away anything we believe in making the gift the very best possible, and accordingly we have had a special house designed by Mr. G. W. Ashby, giving not only the best possible exterior appearance, but also the most convenient, attractive and home-like interior.

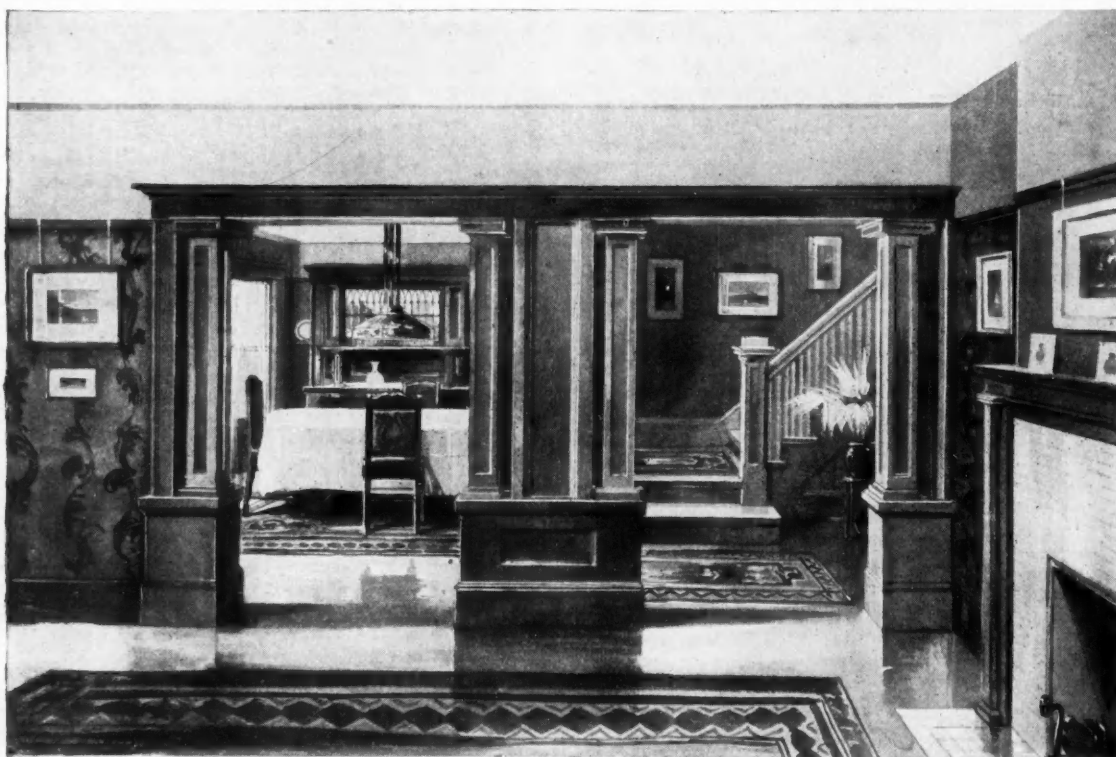
There are two of these homes. At first we thought of giving only one, but the more we considered the question we concluded it would be better to include two, as we did not want to disappoint any one. The second home is not quite as large as the first one, but any man can be justly proud of either. Photographs and descriptions do not do them justice, but we will tell you all about them as best we can.

We want you to notice particularly the substantial and rich appearance of the home as it appears on the preceding

venient and home-like and one of which any man could feel justly proud.

The entrance on the side gives the whole front of the house over to a large living room, 13 by 17 feet. In a room this size no one need to feel that they are shut into a small corner of the house, and there is every opportunity for making the room the most attractive place for the family. The wide openings from this room into the hall and dining room give a most pleasing effect which will not be overlooked by the experienced eye.

It will be noted that the entrance is into a vestibule sufficiently large not to be cramped, and from this into a roomy hall, 14 feet long by 8 feet wide. Off from this hall is a hat and coat closet which has the unusual feature of an outside window. There is an approach to the hall from the kitchen without going through the dining room, another feature not usually found in a house of this size. The dining room is square, 13 feet each way, with a bay window, and has a china closet that will be a delight to the wife.



Interior View of Home No. 1—Looking from Living Room

page. We have carefully avoided all "ginger bread" effects, using only enough ornamentation to give the home a rich embellishment.

The four Corinthian columns on the front porch add much to the substantial appearance of the home, which has bay windows on both sides and a large, roomy porch which can be occupied without interfering with passage to and from the front door. The rear entrance also has an artistic porch, and the railing for this, as well as all other important minor details, has not been overlooked.

The home has two chimneys, the one in front having an outside exposure which adds materially to the artistic effect. The leaded glass windows in both the lower hall, and also on the second story, make very pretty features. There are many other little points about the exterior which will appeal to the eye of any contractor or builder, such as the outside cellar-way in the rear and the little balcony in front.

The interior arrangement of this beautiful home deserves careful study. The floor plans show how much careful thought has been given to making the arrangement con-

In the photograph of the interior we show a rich view from the living room into the dining room and hall. It must be admitted that the effect is charming. With comparatively little furnishing, the home is a most beautiful one.

The kitchen is of good size with windows on two sides, and the arrangements for the sink and range are such that the wife does not have to stand near a hot stove in order to wash the dishes, but is near the window and door to the rear porch. Off from the kitchen is a large pantry with table and shelves, and a large window without even a porch roof to hide the light.

The open stairway leading from the front hall to the upper floor has roomy landings, on one of which there is a bay window, and leads to a spacious hall on the second floor, in which there is a large clothes closet.

The front bed room is an elegant room, 13 by 17 feet, with three windows, and a door leading to the upper balcony. This room also has a very large closet, 3 feet 6 by 7 feet 6, lighted with a leaded glass window. The sleeping room on the side has a bay window, while the one in the

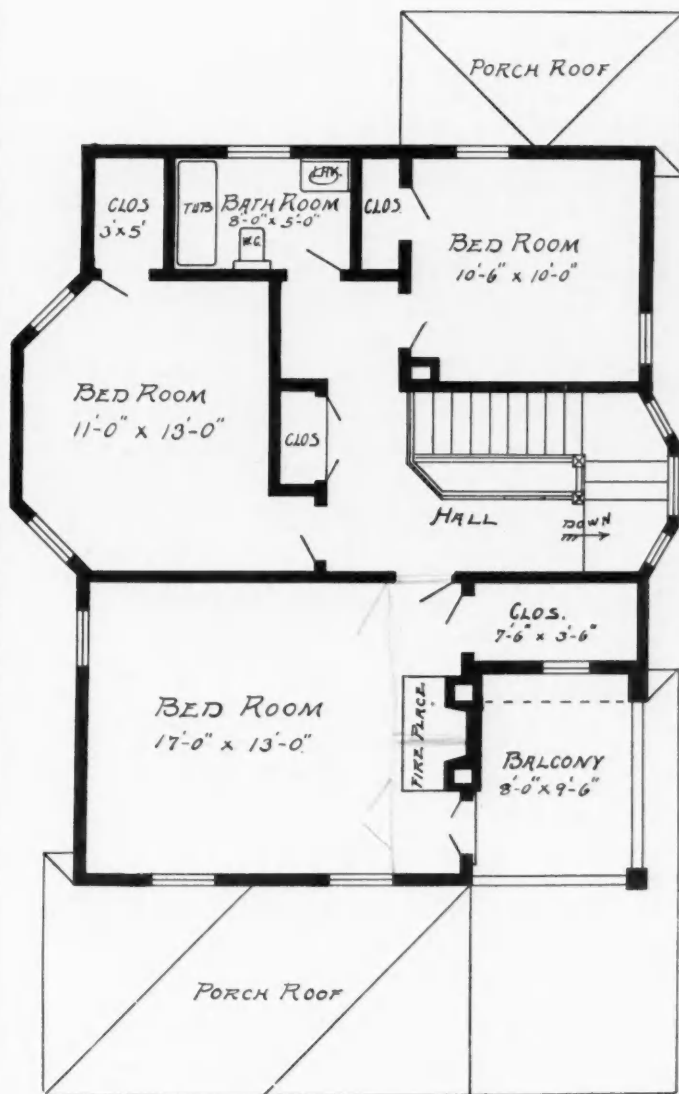
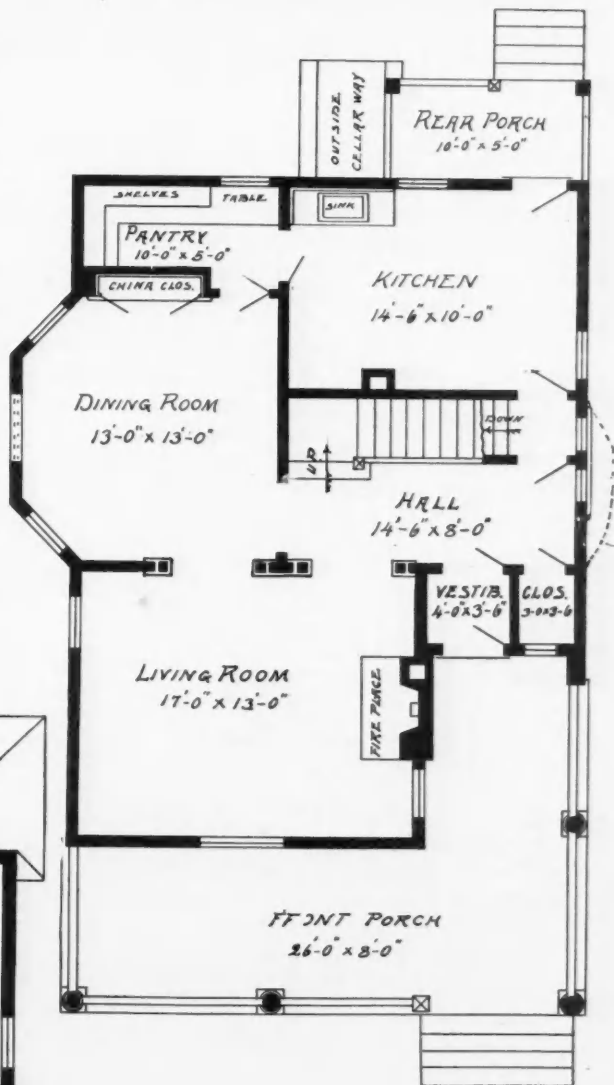
rear has also plenty of light, having windows on both sides of the room. Each of these bed rooms has a large clothes closet. There is a fine large bath room in the rear with a big window, a good sized bath tub and all modern conveniences.

One important feature of this home which should not be overlooked is the two open fireplaces, with fine mantels, on both the first and second floors. Some of the finest homes have only one mantel, but the AMERICAN CARPENTER AND BUILDER decided that this home should be made equal, if not better, than any other of similar size in the country.

### An Astonishing Gift

Don't overlook the fact that this beautiful home is to be given away absolutely free by the AMERICAN CARPENTER AND BUILDER. We will not only furnish all the lumber and mill-work necessary to build the home, but we will furnish the heating system, the plumbing fixtures, the hardware, the mantels and the paint.

The mill-work includes the four beautiful Colonial columns in the front, and in addition to this we will furnish both mantels for the living room and the front bed room. Included with the furnace will be all necessary radiators and piping for heating the house comfortably in the coldest weather in any climate. The plumbing will include the bath tub and all bath room fixtures, and all necessary piping. The hardware for all doors and windows will be included, and paint and varnish for both interior and exterior. We believe you will agree with us that this is the most liberal offer ever made by any publication, or by



any firm or individual. There is no reason why you cannot secure this beautiful home absolutely free, as we stand ready to carry out our agreement to the letter. You undoubtedly know the standing of the AMERICAN CARPENTER AND BUILDER, but if you are not fully familiar with it, we take pleasure in referring you to the American Trust and Savings Bank, of Chicago, one of the largest financial institutions in the country.

### Design May Be Changed

We realize that it is almost impossible to design a house which will please everybody, and while we have tried to make a design which to our minds is the most attractive and practical, it may be that some of our friends will feel that it is not just what they want. We wish to impress upon your mind the fact that we will be glad to make any changes whatever in both interior and exterior, so long as the ultimate cost is not changed.

### Home No. 2

We regret that there is not room here to describe the second home which is to be given away in this great prize contest. We will just say that it does not differ materially in its arrangement from home No. 1, and will make a beautiful residence for the man who secures it. We will be glad to send full particulars regarding this home to anyone who will write us. Be sure and read the following page, giving the details of this remarkable contest.

# Two Beautiful Homes Free

## HOW YOU CAN SECURE ONE OF THEM

This is the greatest offer ever made or ever even thought of. An opportunity to secure a beautiful home absolutely free. 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. So it is not so much what you will earn on each subscription, although that ought to make a nice bit of spending money, but the cash prizes and the home, these are something worth while and worth working for. 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. There may be lots of people start in all right, but there are very few who stick right to it to the end, with continual ambition and determination not to be distanced by any competitor. You are that kind of a man. If you fully believe this yourself, that is all that is necessary. Go in to win and you will win. And we will do all we can to help you win.

## 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.

## YOU CAN BUILD THE HOME YOURSELF

There are just two things we can't give you in connection with these homes: First, we can't give you the lot upon which to build it, but we have a plan for helping you out on that also, and will tell you about it later; second, we can't build the home for you; however, this is something which you would undoubtedly prefer to do yourself.

If you had the lumber, the mill-work, the hardware, the plumbing, the mantels, the heating system, the paint, all given you, you wouldn't hesitate long about doing the building yourself, would you? Particularly, if you were shown how you could easily earn the price of the lot.

All this we are planning to do. We will show you how you can easily earn enough money to buy the lot, and then we will give you all the materials herein specified to build you a \$3,000 home. All there will be left for you to do is to build it—and that is just what you are exceptionally well fitted to do.

There is just where you have the best of the man who

is not a carpenter by trade. *You* can build the home yourself—he has to hire some one to build it for him. *You* know just how every thing about it should be done—he has to hire some one to see that the work which he is paying for is done right.

There is a whole lot of satisfaction, too, in building your own home. The man you hire to do the work, and even the man who is paid to oversee it, will not give it the attention that you can give it yourself when it is your own home which you are building. There are lots of little details which you would take pride in looking after and seeing that they were finished up just the way you want them. Every door will be made to work just a little bit better, every window will fit just a little bit nicer, the finishing, and painting, and varnishing will be given a little more time and will accordingly look a little more pleasing.

There is no denying the fact that the man who not only owns his own home, but also builds his own home, is just so much happier and prouder than the man who has to hire someone else to do the building. What a comfort it is to look about you in after years and recall the labor of your own hands that was put in at some particular point, and admire the result of the extra care that was taken.

Yes, this is certainly the greatest opportunity of your life. We furnish all the materials; we show you how you can earn enough money to buy a nice lot; you build your own home with your own hands. Would it be possible to secure a home easier, quicker, or under more ideal conditions?

CUT THIS OUT AND MAIL TO-DAY

**CONTEST DEPARTMENT**  
**AMERICAN CARPENTER AND BUILDER**  
185 Jackson Boulevard, Chicago

Date \_\_\_\_\_

I desire to enter your GREAT PRIZE CONTEST. Send full particulars and equipment at once.

Name \_\_\_\_\_

Street or County \_\_\_\_\_

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

Reference \_\_\_\_\_

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# AMERICAN CARPENTER AND BUILDER

## American Carpenter and Builder

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

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

Published monthly by

## American Carpenter and Builder Company

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CHARLES W. RADFORD, Vice-President.  
O. F. BYXBEE, Secretary and General Manager.

VOL. IV MARCH, 1908 No. 6

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.

TAKE things always by the smooth handle.

IT'S THE man who keeps his troubles to himself that loses them soonest.

THERE are too many people who expect applause before the procession starts.

ONE of the worst things about having any money is how restless you are to spend it so you won't have any.

IF A ROOF is worth putting on at all it is worth the best that can be had; the same also with a

furnace job. One is to protect the house, the other to make it comfortable.

HOW strange it is that the unpleasant things in life seem the most eager to respond to the encores.

### Our Great Prize Contest

LAST month's winners in our Great Prize Contest were J. M. Heinonen, Negaunee, Mich., \$50; L. W. Minninger, Lowell, Ind., \$25. These two men won the monthly cash prizes offered for the largest numbers of subscribers secured during the month of January. We will be unable to announce the February prize winners until next month, as this issue of the AMERICAN CARPENTER AND BUILDER is printed several days before the close of the month.

Those who are not familiar with our remarkable offer of two beautiful homes to those who secure the most subscribers before July 1, 1908, should read the description of the offer on page 724 of this issue and start in at once. There is not the slightest reason for feeling that it is too late, as those who start early will only exhaust their localities the sooner. Any one who starts this month will have an equal chance for securing one of the homes. We furnish the materials and you build the home.

It is a fact worthy of notice that the winners of the monthly cash prizes for January both reside in small towns. Negaunee, according to the last census, has a population of 6,797, and Lowell has only 1,275. This demonstrates that the smaller towns offer just as great opportunities as the cities, as there are usually fewer contestants.

These monthly cash prizes are repeated every month. You can win one of the March prizes if you try.

Don't forget that you get a cash commission on every subscriber secured beside.

### Three Years of Service

WITH this issue we close the third year of our publication, and it is with pleasure that we think of the many friends with whom we have become so intimately acquainted through the columns of our magazine. We have endeavored to conscientiously fulfill our promise to give you from month to month the best and most practical reading matter which is

of interest to the carpenter and builder. In this we have been helped very materially by the kindly suggestions sent us by our readers and we wish to say right here that these suggestions sent in by you are the basis for many of the articles which appear. No matter how willing and anxious we may be to give you just what you want, it is almost impossible unless you tell us what you want, and we can frankly say you have done your part.

For the coming year we are better equipped than ever to give you a magazine without an equal. We have profited by our experience in the past three years and it will revert back to the magazine and you will benefit by having a better and more practical publication than ever before.



### Art Pays

**I**T IS a curious thing that so many practical builders are still blind to the practical side of art. It is the best kind of a business proposition. Raw material mixed with art means money—lots of it. By this we do not mean flamboyant decoration, which is ordered—and paid for—by the square yard, and is taken externally. Far be it from us to encourage such.

"How," says the Senator, "can I look proudest?  
Build me a house that will holler the loudest!  
Build it new fangled,  
Scalloped and angled;  
Fine like a wedding cake garnished with pills.  
Gents, do your duty;  
Trot out your beauty.  
Give me my money's worth—I'll pay the bills!"

No; building art must be structural; and it means just two things—simplicity and appropriateness.

We have it on good authority that businesslike America squanders more than \$100,000,000 a year on pill-garnished architecture! As practical builders this should give us pause. If all of that good money is to go for art and beauty, let's have it art and beauty. Arches of ponderous outline covered with shingles, frail little cottage piazzas supported with great stone pillars and crowned with jig-sawed machicolated battlements and impossible windowless turrets, "false fronts" and false windows and Grecian temple facades that darken the windows of honest folk—let's have no more of them. Away with the cast-iron dogs and the star and crescent beds of bright colored plants that pit the green lawns with æsthetic small pox.

Let us get back to naturalness and beauty. It will pay as a business proposition.



### Stay on the Job

**I**F THERE is any one thing the average carpenter foreman is likely to go shy on and fail to realize to its fullest extent the importance of, it is that of his constant presence about whatever job he may have in charge. If a set of rules should be made for foremen none more proper could stand at the head of the list than this one, "Stay on the job."

You may not think that your presence about the place is essential at all times, and may feel that you have good men who can get on with a minimum of supervision and all that, but still, while your continued presence may not be essential it is important. It is not merely that you are on hand any time any of your men may want to consult you, but that your presence is a stimulating influence which it may be a little difficult to set forth in detail specifically, but it is real and perceptible just the same. This fact is beginning to come home forcibly to large contractors who make it a point to keep close tab on their work so that they may know what each job is costing them and how the work in one place compares with that of another.

It is almost invariably the case that when you find a foreman who puts his men to work and then goes wandering off maybe to gossip, maybe to inspect some other work somewhere else, and is only on the job now and then through the day, the work makes slower progress and costs more in the end than if the foreman can be found on the job, busy looking after things any hour in the day at which you might call.

Moreover, the foreman who is on the job practically every hour of the day turns out more satisfactory work, too, because if he is there and attending to his business he sees where this or that might be improved or made to look better. The naturally enterprising men who look after these small details say that in the end his job has the appearance of a satisfactorily finished piece of work, while frequently the job of the man who gives but indifferent attention to it is mighty sure to be an indifferent job when it is finished.

Being on the job doesn't mean coming in half an hour late in the morning and leaving earlier in the evening. You may have certain privileges because you are foreman and not be compelled to obey the rules governing the men, yet for that very reason it is all the more important that you should be more punctual even than the men. There is but seldom complaint of tardiness among the men when the foreman is on hand before work time in the morning. The tardy men will be found where the foreman himself is both tardy in the morning and leaves early in the evening. It is probable that in time the present system of keeping close tab on the little details of the work being done will stimulate the foreman to better attention and more enterprise in this way, but the foreman with the right kind of pride, and the one that will get there in the best shape, is the one who goes ahead in advance of this and stays on the job so well that, when the time is kept and the returns all in, it will be found that he is an exceptionally good man and that the amount paid him as wages or salary is insignificant as compared to the saving he effects on the job and the redeeming quality of better finish that he gets into it all by his presence. Bear this in mind and do not wait to be jogged up, but come early and stay on the job.



# Short Talks with our Subscribers



## Important Notice

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 March 25 to avoid missing the April number. Use P. O. or Express Money Order if possible, but bills or 2-cent stamps may be sent at four risk.



**W**ITH this issue the AMERICAN CARPENTER AND BUILDER completes its third year. These three years have been marked by continual progress. The comparison of this number with those of the spring months of 1905 will show what marked improvements have been made, although even the earliest issues were received with unbounded enthusiasm and praise by our large family of subscribers.

Next month we will publish our Third Anniversary Number. Our subscribers are familiar with the two previous anniversary issues and know that they can confidently expect something exceptionally fine. Last April we surprised our readers with a magazine which was way beyond their highest hopes, but we expect to do even better this time. Our editors have been planning for months to make this number more attractive and of greater value to our subscribers than any previous special issue, and their plans are now so far advanced that they are able to promise some very gratifying surprises for our large circle of readers.

### Time to Renew Charter Subscriptions

Our big list of Charter Members must not overlook the fact that their subscriptions expire with this issue. In order to insure receipt of this big Third Anniversary Number, the renewal of their subscriptions should be in our hands not later than March 20th. On this date we will revise our list, and only those subscribers who are paid in advance will remain on our regular subscription list.

### Editorial Force Increased

We have added during the past year several new writers, and have recently made arrangements with other capable men who will contribute to the practical contents of the magazine. Our editors are constantly in search for the best material with the finest illustrations, always keeping in mind the needs and wishes of our subscribers. The appreciation of their efforts in the past along this line has encouraged them to make greater endeavors for even better things in the future. It is safe to predict that the twelve issues of the coming year will be of far greater value than any previous twelve numbers in the past, notwithstanding the fact that our subscribers have united in the greatest praise of our magazine from month to month.

### Binders for Volume III

Many of our subscribers have become accustomed to securing permanent binders for their magazines each year, so that they can be kept together in good order. For Volume I we furnished a very satisfactory binder at 50 cents. This price, however, after we had

paid the postage, was found to be below cost, and in our endeavors last year to secure binders for our subscribers without increasing the price, we caused considerable disappointment, although they were the very best we could secure for the money.

This year we have decided to return to the binder which we used for Volume I, but will be obliged to increase the price to 75 cents. A portion of this increase in price is caused by the greater thickness of the twelve magazines in this last volume, as they are nearly twice as thick as those in Volume I. The binder will be of the same material as the one we first used, and there will be ample width in the back to accommodate the full year's issues.

### Business Stationery for Our Subscribers

We have just completed arrangements for another new departure in the interests of our subscribers. This will be found described in more detail on pages 674 and 675. We are prepared to furnish business stationery for contractors and others in the smaller cities and towns who find it inconvenient to have their wants supplied at home. In the list given on the two pages mentioned above will be found all that is usually needed to carry on the business of a carpenter and contractor, and includes letter heads, envelopes, bill heads, statements and business cards. These will be furnished in any quantities desired (not less than 500, however) at most reasonable prices for the very highest class of work.

### We Cannot Furnish Samples

At the prices named we will be unable to furnish samples, but a good idea of the different forms of stationery may be had from the headings shown on pages 674 and 675. Unless otherwise ordered we will print the cards and headings just as they appear on these pages, substituting your name and the name of your town where indicated. We will also use the same house as appears on the letter heads and bill heads.

The sizes of the different forms are as follows:

Letter heads—8½ by 11 inches.

Envelopes—6½ by 3⅝ inches.

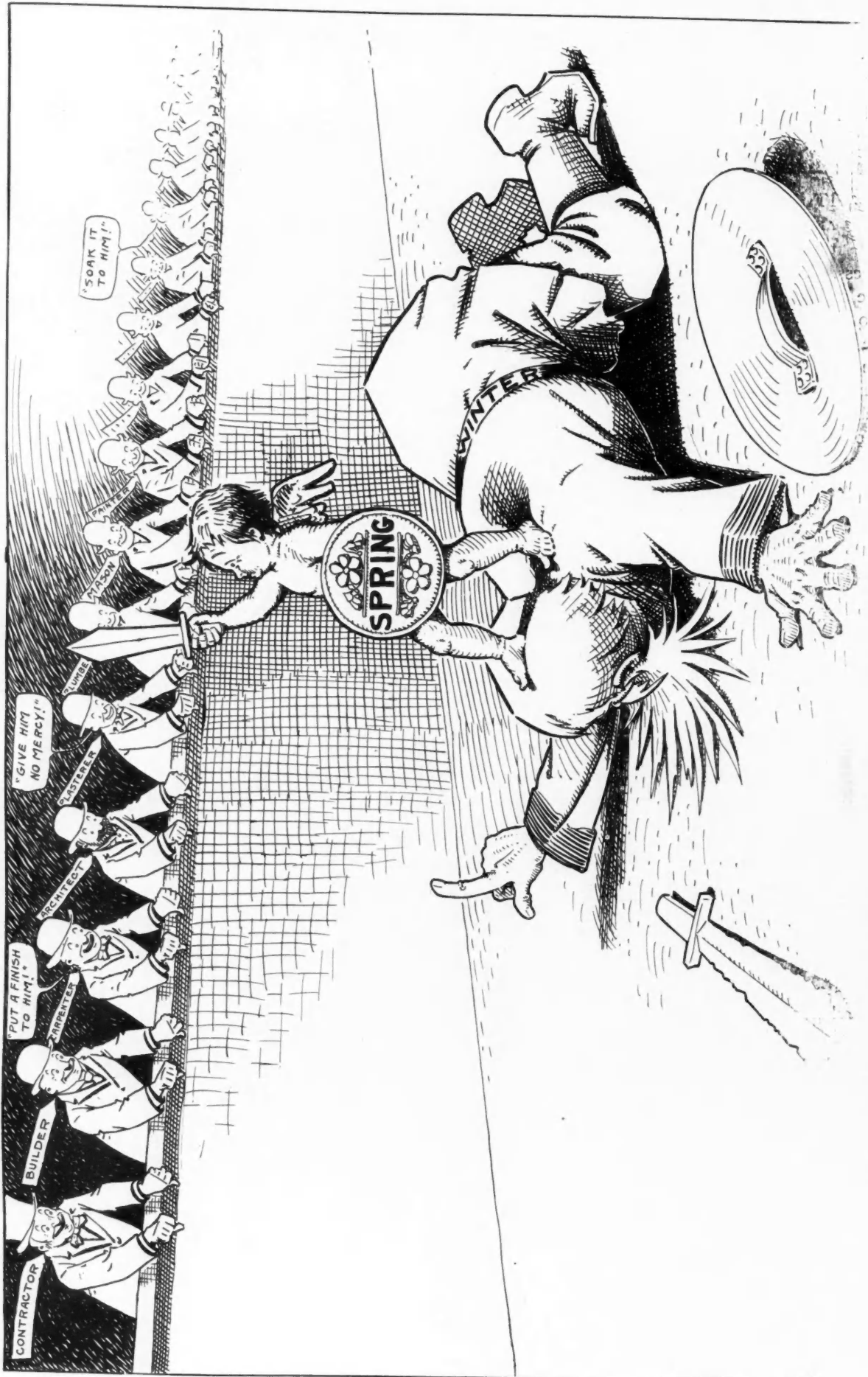
Bill heads—8½ by 7 inches.

Statements—5½ by 6½ inches.

Business cards—4¼ by 2¼ inches.

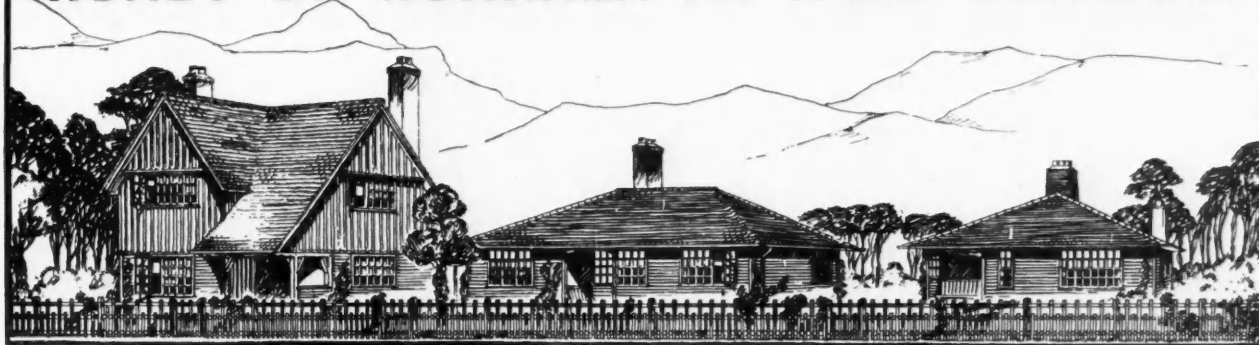
The letter heads are nicely ruled and an excellent quality of paper is used for all the different forms.

Read over the list and prices carefully, then send us your order, and we will see that it is executed and shipped promptly.



Thumbs Down! "Put a Speedy Finish to Him!" Is the Sentiment of the Building Trade

## HOMES OF WORKMEN IN NEW ZEALAND



By S. V. Bracher

A CITY missionary from over seas, visiting Wellington, the capital of New Zealand, asked his hosts to show him the slums. They took him to what they called slums, but he exclaimed, "Surely these are the dwellings of the middle classes!"

Now the gentleman's name showed that his ancestors were Irish, and he may himself have kissed the

consisted of a group of a dozen cottages, all of one story, all detached from each other, and almost surrounded, as a group, by great open spaces. New Zealanders do not wait for their social sores to get very bad. They cry out before they are much hurt. And the paternal and half-socialist government tries to give them a remedy.



Worker's Cottage at Christchurch, New Zealand. Rent \$9.80 Monthly

Blarney stone, but when all proper allowances are made, his remark will serve to epitomize the fact that in New Zealand the standard of living for all classes is high.

In the same city the newspapers from time to time fill a few columns on the subject of overcrowding. A flagrant example was quoted lately by a politician. It

Three and a half years ago, Mr. Edward Tregear, Secretary of the Labor Department, issued a memorandum entitled "High Wages and Their Exploitation." He stated that the benefits of the higher wages and shorter hours secured to the working man by the Industrial Conciliation and Arbitration Act, were rapidly becoming neutralized by the rise in rents. "In



**Worker's Cottage at Dunedin, New Zealand. Rent \$10.40 Monthly**

Wellington," he wrote, "the rents have not only increased during the last ten years, but they have acquired an utter disproportion to earnings." He gave figures to show that one-third of the working man's income was going to the landlord. The New Zealand worker used to reckon it the proper thing to work one day of the week for his landlord and the other five for himself. In some countries, matters would have been left to adjust themselves, and the workers might have been forced to adopt a lower standard of living. That

could not happen in New Zealand, without some effort to prevent it. Mr. Tregear urged the Government to acquire suburban lands and build houses for the citizens. The late Mr. Seddon, who was then Premier and Minister of Labor, took the advice, put the Workers' Dwellings Act through Parliament and started building. The operations which he began are being extended by his successors. Some of the results are shown in the illustrations submitted with this article.

The cottages built by the Government are fairly



**Worker's Cottage at Christchurch, New Zealand. Rent \$9.80 Monthly**

typical of the homes of the respectable working classes in a country where almost all the working classes are respectable. Architects in general practice were employed to make the designs. The erection was done by contract, and the style and materials of each neighborhood were adopted. There is, however, a good deal of variety in the buildings. The fourteen houses in one little settlement are of four quite different designs. At another place you may see seven or eight in a group, and no two of them alike. There is nothing to distinguish the government owned cottages from any others in their vicinity.

Almost all the dwelling houses in New Zealand are built of wood. In the North Island they are placed

will have four rooms, with bath rooms and hot water services. When people express surprise that such comfortable and pretentious houses can be let at such low rentals, the departmental answer is that the Government only takes 5 per cent on its outlay, while private landlords expect a good deal more—and the departmental answer is about right. The rentals of the houses built by the Government are nominally about half of the rentals obtained by private landlords, but the tenants of the state have to insure their houses and pay the local rates, whereas in the other case the rent covers everything.

In one case the twenty-five dwellings in a new settlement were not readily applied for. The site was a



Worker's Cottage at Christchurch, New Zealand. Rent \$10.60 Monthly

on short piles, and the walls inside are rough-lined with  $\frac{3}{4}$  inch or  $\frac{1}{2}$  inch boards, covered with scrim and paper. In parts of the South Island, where the winters are colder, the houses are built on concrete bases and are plastered inside. These differences of treatment apply to the ceilings as well as the walls. Everywhere the roofs are of galvanized iron, but tiles are now coming into use on the more expensive houses.

"Workers' Dwellings" have been erected by the Government in the suburbs of the four principal cities. Each of them has five rooms with all necessary conveniences, including a bath room and hot water service. The rent ranges from \$2.22 to \$2.64 a week. It is now proposed to build some smaller houses, less ornamental outside, to let at \$1.46 a week. These

few miles from Wellington, and the city workers considered that when insurance, local rates and railway fares were added, the rent was too high. When there is competition for the dwellings, a "ballot," or more correctly speaking, a drawing of lots, is held. A "worker," who alone is eligible as the tenant of one of these houses, is defined in the act as a male or female person who is employed in work of any kind or in manual labor, and who at the time of application is not in receipt of more than £200 (\$960) a year. Artisans' wages generally run a little higher in the United States than in New Zealand, according to official figures published in the New Zealand Department of Labor. The tenant of a worker's dwelling may lease it on a fifty-year term, or he may acquire the freehold: (a) By cash payment after twenty-five years;

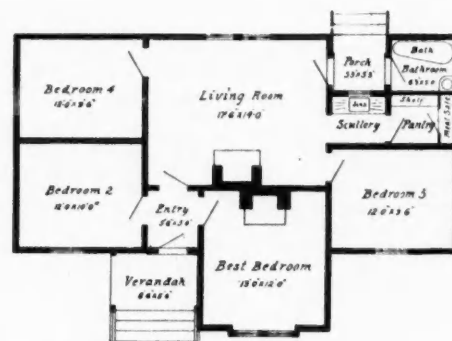
(b) by payment of instalments, or (c) by insuring his life in the State Insurance Office, and applying the money to the purchase of the house. He has to live in the house and cannot sell it or negotiate his lease without official consent. He has to keep house and garden in good order, but the Government attends to exterior and structural repairs.

It must be confessed that the operations carried on under the Workers' Dwellings Act have not solved the

considerable reduction, and the same thing is true of some other things entering into buildings, particularly of the larger size. On the contrary, lumber will doubtless remain the same, and brick likewise. Stone, too, may be expected to command the same prices. Glass, on the other hand, may be cut to some extent. Plumbing may be higher on account of an increase in the cost of materials of late. This is a very important factor, particularly in large buildings. Labor will



Worker's Cottage at Christchurch, New Zealand



rent problem. There is, as yet, no general decrease of rents in the cities and suburbs. Up to the end of last March, seventy-one houses had been built, and it would not be reasonable to expect that such a small number in a community of nearly a million souls would appreciably affect the property market. But the Government is still going on building, and how far they will go before the outcry against state socialism makes them pause nobody can say.



### Cost of Building Material

Many local owners of real estate are anxious to know whether or not there will be any reduction in the cost of construction the coming year. The indications at present are that prices along a number of lines will be materially lower, but what per cent this will figure is still a problem. Contractors talked with during the past few days are disposed to think there will be a shading of prices, but they are still at sea as to knowing whether or not this expectation, if realized, will stimulate building. The money situation enters into this matter, of course. With a continuation of present tightness in money circles there will be nothing done out of the ordinary, but if the financial skies grow brighter, as they are expected to, there will be another story to tell.

One or two builders and contractors talked to during the past two or three days were inclined to the opinion that the cost of construction might be cut to the extent of 5 per cent, another placed it a little higher, while another could see no prospective change worth talking about. And so it goes.

In structural iron and steel there may be a very

scarcely be cheaper, yet there is a certain disposition, but not yet well manifested, to endeavor to obtain a larger percentage of work from craftsmen, not by increasing the number of hours or decreasing wages, but simply by giving the preference to high-grade employes, who can and will turn out more than the average amount of work. It is figured by those inclined to this notion that there will be a sufficient demand for labor, skilled in the building line, that contractors will be enabled to pick and choose in selecting men.



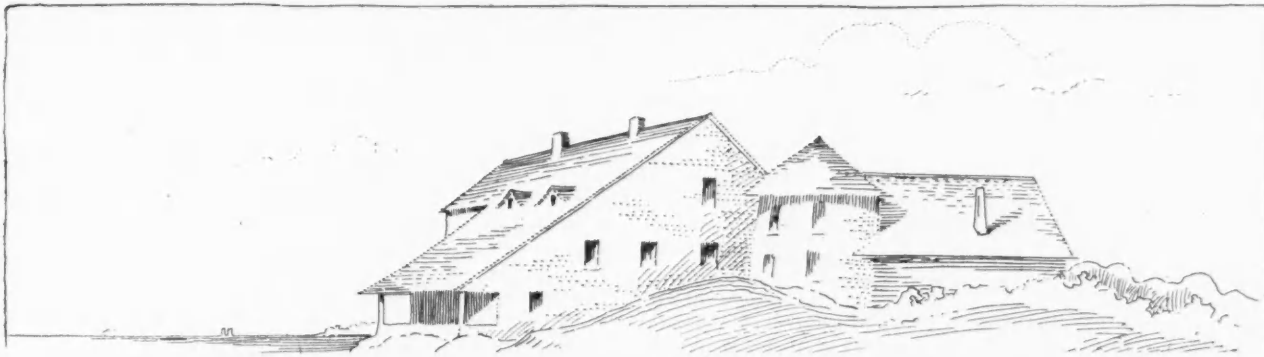
### Insulated Screwdriver

Working around electric wires with an ordinary screwdriver has been the cause of numerous injuries to the operators. Contact with the live wire, of course, results in a short circuit. How easily such accidents can be averted is shown by a Connecticut man, who has invented and patented an insulated screwdriver. Instead of constructing the handle of wood, it is made of non-conducting material. The latter also encases the metal shank to within a few inches of the end. This allows ample surface for the operator to grasp and operate the screwdriver without fear of being electrically shocked by contact with a live wire.



### Roof Shingles

Shingles are usually 16 inches long, and a bundle of them is 20 inches wide and contains 24 courses in the thickness at each end. A bundle of shingles will lay a course 80 feet long. When shingles are exposed 4 inches to the weather 1,000 will cover 107 square feet; 5 inches, 132 square feet; 6 inches, 160 square feet.



## Houses and Good Building Sites

HOW TO SECURE ATTRACTIVE RESIDENCES WITH LANDSCAPE ADJUNCTS—THE TRUE NATIVE HOME-STEAD AND ITS ORIGIN

By C. Bryant Schaefer

**A** NEW house in course of erection occasions surmises as to its probable condition a few years hence. While it is new it is thought much of, is compared with other work, is often described and photographed.

Only time brings out the strong points of a building and proves many of its problems. But then it has passed from attention and arouses little comment. Nevertheless its materials may have seasoned and become tougher with age or its impracticabilities may have developed.

At first the newness, the slick and trim appearance,

has worn off will be a novelty and a great aid in appreciating the enduring qualities that are so desirable.

Probably redwood shingles for the roofs and good paint for the siding are the principal adjuncts of durability. The former takes on an agreeable weather stained tint that combines well with other natural objects.

The old North coast people used to apply a tar coat to their timber houses that made them almost as lasting as masonry. It was from their ship building experience that they derived their ideas.

Of course a person wants to take the future of a new



Boston Suburb. "On a formal lot."

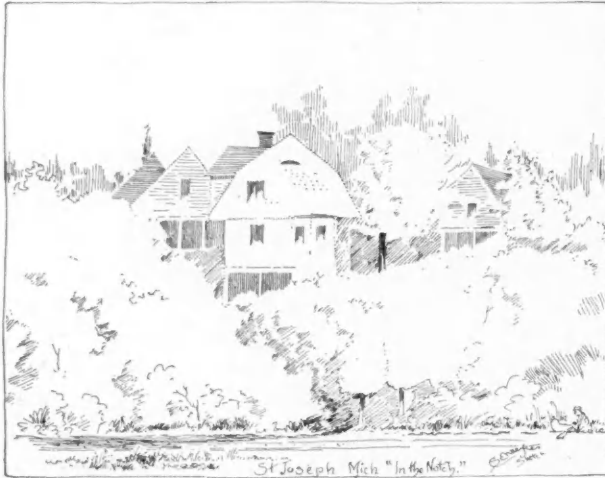
seems easily marred. After that it becomes a little weather stained and pursues a long course of adjustment to its environment. The more prim and formal the new building looks the more obtrusive it will be in comparison with its surroundings. Age cheapens it. To avoid this the careful owner endeavors to plan his structure to harmonize with its environment.

Some sketches of houses from which the newness

building into consideration as much as possible. It is sometimes quite difficult to accomplish slight improvements with the aging of a house. While in process of erection every possible activity is attracted.

The stir that attends a building enterprise awakens its neighborhood. Many people are drawn into the sphere of its influence. Some are ambitious for similar undertakings, others are filled with curiosity.

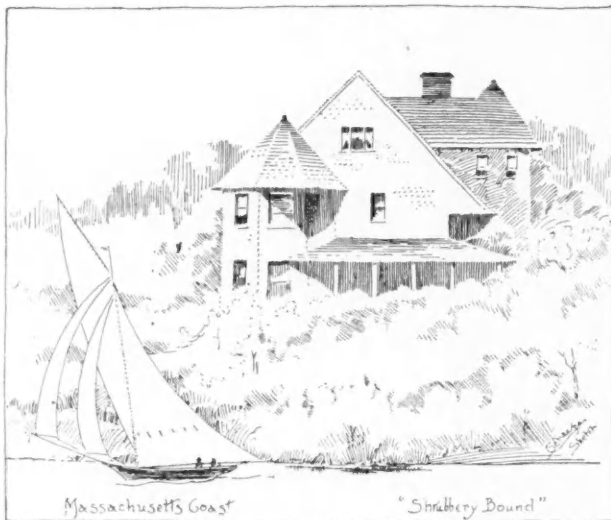
Idlers and convalescents draw near it. Their busy natures are revived. They all enjoy the contagion of its bustle as a group gathered around a fireside enjoy its warmth. While people feel this stimulation a great deal can be accomplished.



How different it is with the completed house. There are no changes going on to attract attention. The curious are satisfied. There is nothing new to watch for. Few have business there. Life proceeds in a humdrum way. The occupants probably themselves go elsewhere in search of life and business. The building adjusts itself to its neighborhood and its limited uses as best it may.

How much better it is for the sleepy old places to keep up the activity that was theirs in the first place. A new coat of paint when needed, or an occasional improvement and convenience that will put it abreast of the times. It keeps in touch with the life of progress in this way.

To be sure, one does not need to adopt all the in-



ventions that are foisted upon the building market. Many of them, however, are satisfactory to people who enjoy novelties.

Now the point is that a residence should become younger and filled with its own business as it advances

in age. That is what the owner aims to secure in requiring various building provisions. Then the house may become rain-stained and vine-clad and garnished with shrubbery. Great trees may branch out, shade it and protect it from the storms. The surrounding growth combines the building with the landscape and it presents an appearance of appropriateness and permanency.

This is a desirable condition economically and artistically. It is therefore the ideal aimed at in modern houses. Not the decaying quaintness that is admired on canvas, but the utilization of natural advantages.

There is often difficulty in securing landscape features for new houses. In the country the march of improvement is often driven to excess. The ground is razed of all growth and often unnecessarily leveled. Then the effort to establish a natural building site is something like trying to hang a hat upon a bare wall.

There are few turnpikes in the country where the remotest possibilities for city building lots are not taken into consideration. The ground is cleaned of



every shrub and tree as though all the world were aching for confinement between narrow walls on 25-foot lots. It is landscape robbery.

Years are required to replace mature trees, and years are more valuable than some new variety that may be substituted. But every village patterns its progress after the manner of great cities. The country should not adopt barren ways because it happens to be a concern of municipal life. It is because builders are deprived of their natural sites that many of their cottages lack cozy attractiveness.

But the roadmaster says it is the proper thing to secure a grand avenue by planting shade trees all of the same variety, and he sets out rows of little saplings with their handful of twigs and thin little bunch of leaves in place of full grown groups.

The factory row of houses is no longer tolerated among builders if a diversity is possible. It is equally wise for the occupants to have individuality in the setting of their homes. A highway that is sameness strung out for blocks and miles is a desert to the soul of those who occupy it daily. Even the transient who extols that method does not tarry long.



Where the natural growth of a building site is aided and pruned, a good location for a house may be easily and speedily secured. Foreign plants can then be introduced to even better advantage. This gives something to consider in connection with a building.

There are some builders who urge the removal of every branch which obstructs the street view of their job. Their mind is full of their own work. They should remember that others consider the whole scheme of which theirs is a part. Obtrusiveness at the expense of other adjuncts arouses an unfavorable impression.

Many old fashioned buildings are combined with

toric times. It is well represented in the illustration of the old homestead.

In the yards of some of the old New England farm houses may be found stone bowls that were the predecessors of many an old settler's fireplace. Though doing barnyard service today, they were found here by the pioneers and precede the recollection of the Indians. They were one of the first steps in a long series of kitchen fireplace improvements.

The Armorians of the North Atlantic islands established similar caldrons in ancient Brittany, where they improved on them by building a piece of wall against which to burn their fires. It was called a *reredos*. The next step was the addition of a hood with a



the most fascinating adjuncts. It is impractical to imitate them. They are a product of life and customs. Carpenters and masons can make a resemblance, but not the spirit that utilizes it. It is better to consider how well the old place fits its mode of life and associations, and likewise build for the utility and convenience of those who demand modern housing. If the architect can wield any influence it should be for the consideration of many simple and wholesome features that are often neglected until the moment of their need.

There is one type of American building which has never been defined. It has probably been classed as Old Colonial, and then passed by for its lack of classic detail. The builders of the Colonial came through the Revolution. They obtained their ideas out of a book. The builders of this old American style were of the sea-coasting class who had visited the Atlantic shores since time unknown. They took their building ideas out of their heads as they would say, in other words, by tradition. The type of farm house that resulted may be called the native American style, an indigenous product of the soil derived from prehis-

smoke opening through the top. A temporary roof shelter was also made. In Elizabethan times the fireplace was evolved and the first domestic houses built in connection therewith.

When this course of improvement was continued in America, the chimneys were first erected with cooking fireplaces at the base. The house and extensions were built around it, as will be seen by reference to the sketch.

The mode of procedure was to erect enclosing walls and roof over from the chimney down. A large room was made opposite each fireplace by extending a partition from the chimney to the sides. A single door was made each side of the fireplace. A small bedroom, closets and stairs were built on the cold side of the house or tucked away in odd corners. Additional shelter was built against the house as the development of the estate required. The garret was a store room. All the household joined in work and pleasure. A stint of labor was reserved any who shirked. Not only the building style, but the customs of the people were quite different from the colonial class.

The other sketch from Haverhill represents quite

a different mode of procedure. All the desirable modern improvements are there collected for incorporation in a house, and the whole adapted to the landscape. The pond, the shrubbery, the apple orchard and



A New England Hill Top. "The Apex" G. E. Skelton

the grassy slope are exceptionally natural. The house presents a terraced roof from which to enjoy the view, while the main roof corresponds to the hill side.

Another design, somewhat similar, but located upon a rocky slope of the North coast, is also shown. Here there are few features outside the roof on account of the stormy location.

The cottage in a dense growth of shrubbery is on the same coast. In its adaptation to the more sheltered location, it looks cozy and attractive.

The building perched upon the hill top was also sketched from the water. Here the roofs are designed to form a continuation and finial for the apex of the land.

The example from a Boston suburb shows how much can be accomplished in a limited field. Projections have been chosen where they are most effective. The little roofs extended beyond the main build-



"LOW WALLS, HIGH ROOFS" G. E. Skelton

ing or continued down over the outside room, adapting the walls to the surface of the ground.

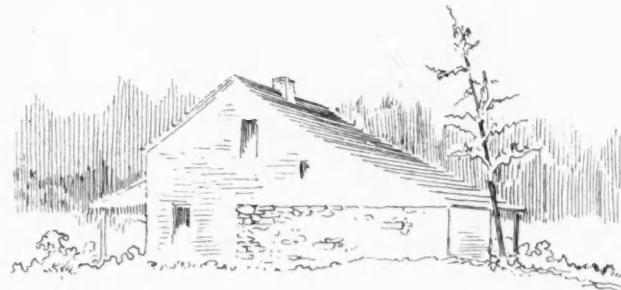
So many builders aim to be artistic that a few suggestions will prove a great help.

The usual moderate priced house looks too abrupt. This stiff effect should be overcome structurally. Some parts of the building should be spread out at the base.

The old time builder established a regulation mode of finishing bay windows, ells and porches. These were entirely different looking features and were made to apply in all cases. Instead of this, they should be modified just enough to merge them into the main structure. They will then look a part of the building instead of appearing to be just slung on by mistake.

Contractors sometimes feel driven to trifling measures of economy that only produce a bald and cheap looking house. A few inches of molding, a few feet of rough lumber, a few hours of cutting and fitting, a little time using the steel square, are saved or shirked. Porches are kept within angles, projecting eaves are pared off and small corners avoided. A little curve or two is considered impossible. The result is a stiff, bandbox, sweatshop looking piece of architecture. When a little art is demanded a variety of trimming stuff is introduced that results in the loud and flippant looking exterior. Instead, the structural features should be expanded and ornamentation introduced according to structural demands. Rather than lop off unusual parts, they should be allowed to form distinguishing features.

Waste space and its chronic elimination is another obstacle to artistic development. Every one shys at a foot or two of spare room in corners, under the



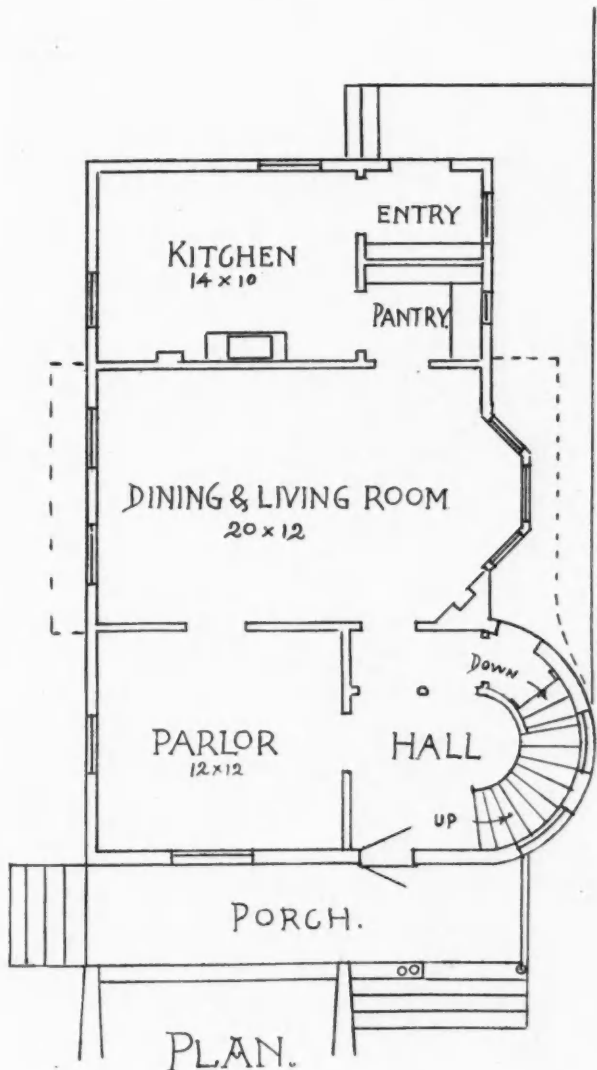
"IN THE CLEARING" G. E. Skelton

roofs and in out of the way places. The insipid, flat featured house is then sure to result.

The superfluous room in a house is necessary to its future expansion. The daily activities of the occupants must have a chance to multiply. It is just as necessary for grown persons to extend their habits as for a child to increase in stature. The model house in its exactness becomes irksome. It fits like a glove. People feel confined. They become dwarfed in their customs or proceed to override architectural provisions. The buildings go out of date, as it is called, and the more perfect they are in invention and devices, the faster they are bound to become obsolete. The enduring building is planned suitable for all ages and conditions. But in modern building it has become a part of the expense account to make allowance for reconstruction.

One effect has also been to drive people from the cities into the country, which is very well indeed, but force of habit asserts itself and they proceed to introduce city modes upon the pastures of the land. Narrowness and condensation are their characteristic aims. Builders in the country are bound to meet them. Remember that fields, parks, space, air and light are the necessities for enduring work and investment.

The sketch of a house close to Lake Michigan shows a building high above the passing road. The house



sits in a crotch of two slopes, which gives it an air of fixity.

Not all of the sketches represent street fronts; and, by the absence of detail, it will be noticed that the cottage on the hill was taken at twilight, the road sketch in the evening. Indeed, these drawings from nature represent the impression conveyed to the ordinary spectator better than photographs. In presenting a design for a new house, another principle is represented. It is the picturesque grouping of several prominent features.

Referring to the plan, it will be seen that back stairs, kitchen, bedroom and isolation of the working department have been dispensed with. They not only increase the expense unnecessarily in small houses, but also engender undesirable habits. The little parlor makes a pretty place for social duties. The large hall lends an air of roominess and may accommodate a library or an office. The long living room secures the handiness of other members of the household when assistance is needed. The kitchen work would not lapse into the dull drudgery, which is inevitable as isolated in many house plans. The handy outside doors upon porch and terrace make it easy to enjoy pleasant weather.



## Masonry Work In Frosty Weather

HOW BUILDING OPERATIONS WITH STONE AND CEMENT ARE CARRIED ON IN ZERO WEATHER IN THE COLDER PARTS OF THIS CONTINENT

By T. B. Kidner

FROM time to time questions from correspondents and articles from the pen of F. W. Hagloch and other experts, have appeared in this journal, dealing with the precautions to be taken in building operations involving the use of cement during frosty weather. While not presuming to speak as an expert on this very important matter, the writer deems that it may be of interest to many of the readers of the AMERICAN CARPENTER AND BUILDER who dwell in warmer latitudes to have some account of the way in which masonry operations are carried on in very low

ranges, from whence it is quarried; or as glacial surface boulders deposited over the land during the ice age.

The building of these granite piers is usually carried on during the winter months, several reasons rendering that season most convenient. In the first place, the melting of the winter snows causes high rivers and freshets well into the summer months, and after a brief period of low water, the autumn rains again cause a rise of water, rendering work in the river beds extremely difficult and uncertain. In the



General View Showing New Granite Pier Alongside Old Cribwork Pier

temperatures in the more frigid parts of this continent of North America.

The province of New Brunswick, Canada, has, owing to its physical conformation, a great number of bridges, large and small, crossing its numerous rivers and streams. Formerly these bridges were all of wood, supported on rough "cribwork" piers (logs bolted and spiked together and filled in with heavy stone ballast), many of the larger bridges being veritable triumphs of the carpenter's art.

The general adoption of steel for construction work has, however, led to changes in this respect and these old wooden structures are being largely supplanted by modern steel girder bridges carried on granite piers. The latter material is found practically all over the province; either in the form of rocks in the higher

second place, the diversion and stoppage of the bridge traffic causes no inconvenience in the winter, the ice forming a perfectly safe and ready means of crossing for vehicles and foot passengers. At the same time the engine house, hoisting gear and other necessary apparatus can be safely placed on the ice near the job and all materials easily and cheaply hauled to the site on sledges from the river banks.

The foundations for the piers are usually prepared by driving piles all over the site during the period of low water in the summer. These piles are sawed off level within a foot of the river bed and the spaces between them filled in with hydraulic cement. If the river is a shallow one, a cofferdam is built round the piles and the interior pumped out for the masons to work in. If, on the contrary, the river is too deep

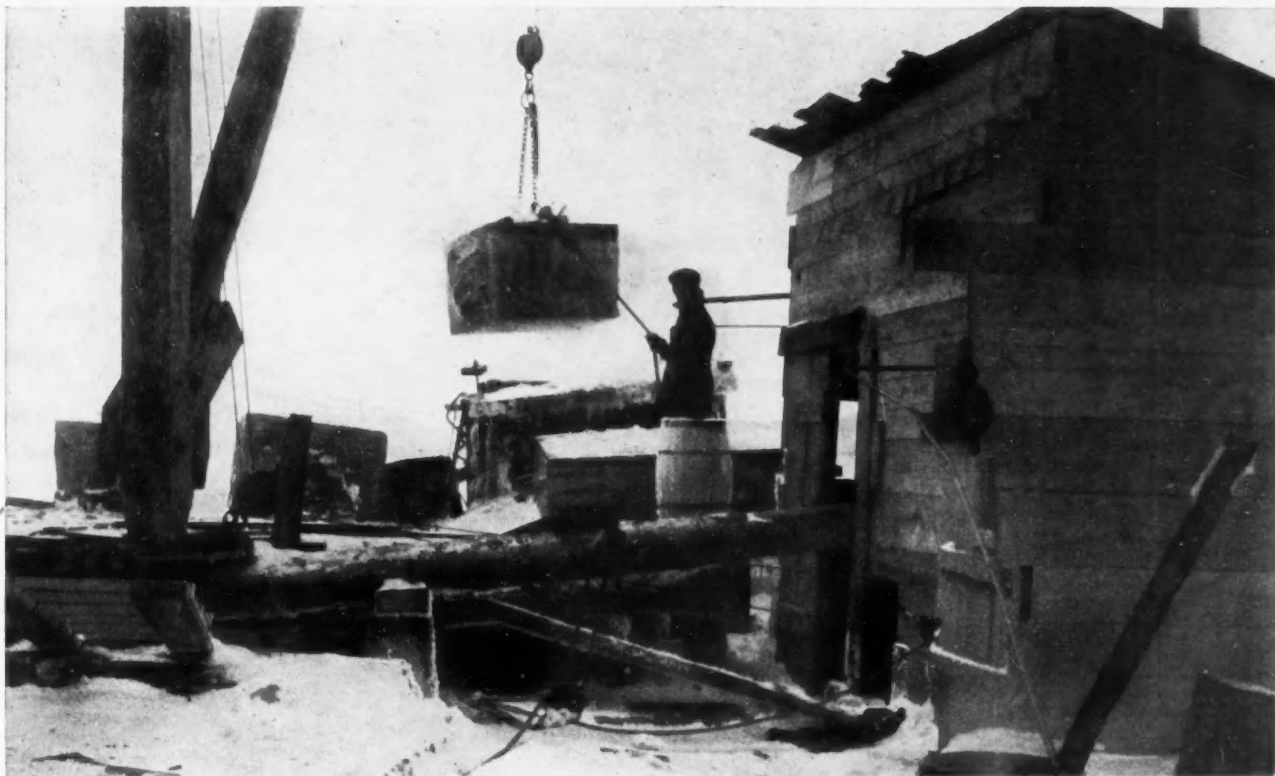


Sheet Iron Kiln for Heating the Sand and Cement for the Mortar

for that plan to be carried out, a huge water-tight box or caisson is constructed of heavy birch timber and sunk gradually onto the tops of the piling by laying courses of stone in the bottom of it. The caisson is usually sunk just before the ice forms in the river and as soon as the ice is sufficiently strong to bear loaded teams, the work of carrying up the superstruc-

ture of masonry begins and is carried out much as follows:

First, a heavy box about 8 feet square and 5 feet deep is constructed of 4 inch planking, well bolted and secured; the joints being thoroughly caulked with oakum to render the box watertight. This box or tank is placed on the ice near the site on a rough plat-



Lowering a Granite Block into Tank of Boiling Water

form of deals and partly filled with water. Near it is erected a rough shed for the boiler; the latter to serve the double purpose of supplying motive power to the hoisting engine and for heating the water in the adjacent tank by means of a jet of steam forced into it. The hot water is used for mixing the mortar, and, more important still, for immersing each block of granite so as to heat it thoroughly before it is set in position in the pier. Each separate block is lowered into the tank of boiling water and left there until the heat has penetrated it for some distance. Were this not done, the mortar would instantly be frozen solid

action of setting begins and proceeds very rapidly.

Some idea of the severity of the cold in which these operations are carried on may be given by the fact that the thermometer outside the writer's window registers at the moment of writing (1 p. m., Feb. 4th) 13 degrees below zero, and at 8 a. m. of the same day it stood at 35 degrees below zero. Yet, within sight from the same window, two large granite piers are going up without let or hindrance. Repeated tests of mortar which has set under these conditions have shown that its strength is not adversely affected, and it would seem that, as mentioned above, the cement is actually



Laying the Top Course of Pier

on touching the cold stone and the chemical action of the setting of the cement prevented.

But not only are the blocks of stone heated, and the mortar mixed with hot water, but the sand and cement of which the mortar is composed are also thoroughly heated beforehand. This is done by means of a specially constructed oven or kiln, built of strong sheet iron. The sand and cement are first carefully measured in their due proportions according to the bridge engineer's specifications, and well mixed while dry. The resulting mixture is then heaped over the outside of the oven, in which a fierce fire of hardwood is kept burning, and thoroughly heated throughout the mass. Mixed with boiling water and applied to the surface of a thoroughly heated stone, the cement's chemical

set before the heat has left the stone and mortar. In point of fact, although the method of procedure here outlined has been carried on for many years past, no failures on account of the freezing of the mortar have been observed by the government engineers, under whose supervision all these piers are built.

Of course, such work is not exactly pleasant for the masons and their helpers, but the pay is good and the contractors do their best to keep off the biting breezes by means of board "wind-breaks" on the colder sides of the structure. It is also noteworthy that there is scarcely any sickness amongst the men; the clear, pure air, with a bright blue sky and glorious sunshine four days out of five, being healthy and invigorating and not nearly as unpleasant as one would imagine.

## Fourth Convention National Cement Users

OFFICERS ELECTED FOR COMING YEAR—PAPERS READ AND REPORTS SUBMITTED—INCREASED INTEREST AND GREAT ADVANCE MADE BY INDUSTRY

THE fourth annual convention of the National Association of Cement Users was held in Buffalo, N. Y., January 20-25, 1908. The exhibitions made by the concrete machinery men, cement manufacturers, reinforcing manufacturers and trade papers were the best and most complete ever shown in one hall. As an educator in the uses and practicality of cement in every form it was of the greatest value to Buffalo, as that city had in the past looked with disfavor on cement as a building material. The people of Buffalo were astonished at the wonderful strides made by the industry and the exhibition, together with the literature distributed, will prove to be of great value to that city. The officers for the coming year are:

President, Richard L. Humphrey, Philadelphia; first vice president, Merrill Watson, East Orange, N. J.; second vice president, M. S. Daniels, Suffern, N. Y.; third vice president, S. B. Newberry, Sandusky, O.; fourth vice president, George C. Walters, Atlanta, Ga.; treasurer, H. C. Turner, No. 11 Broadway, New York,

Section vice presidents: Cement products and machinery, A. T. Bradley, Rochester, N. Y.; streets, sidewalks and floors, W. S. Schouler, Newark, N. J.; reinforced concrete, Sanford E. Thompson, Newton Highlands, Mass.; art and architecture, C. D. Watson, Pittsburg, Pa.; testing of cement and cement products, E. S. Larned, Boston, Mass.; laws, ordinances and insurance, W. H. Ham, Youngstown, O.

### Report of the Committee on Sidewalks, Streets and Floors

Mr. President and Gentlemen: In preparing specifications for sidewalks for adoption by our association it has been the aim of your committee to bring before you such specifications as when followed will result in good and serviceable walks.

In the United States there is such diversity of materials for the principal aggregates that it would seem almost impossible to specify the amount of cement and have a uniform strength, unless the amount of cement specified varied. If it was only choosing a suitable brand of cement there would be but little difficulty, as most of our cement mills make only high-grade quality of cement.

Both sand and gravel are often of a poor quality, and it is often difficult to get the sizes of gravel suitable for sidewalk concrete. Gravel, of which the average size is one-fourth of an inch, requires at least one-fourth more cement than when the sizes are an average of one-half of an inch.

The committee have recognized this as a fact, and given the amount of cement for the minimum size as the safe amount to be used in all sizes.

As to the amount of water to be used, there is a difference of opinion even among civil engineers as well as cement users, but for two-coat work, as is the case of sidewalks, the amount of water used should be such an amount as will insure a solid mass when the walk is finished and hardened.

A perfect union of both top and bottom coats can only be accomplished by tamping the two coats together, and tamping can only be done successfully when just water enough is used to allow the air in bottom and top coats to escape as the walk is tamped. Some may claim that it is too slow work to stop and tamp.

The experience of the chairman of your committee has been that, everything else equal, especially quality and durability, as many square feet can be laid in a day by using the amount of water specified in the specifications as by using more. The delays of waiting for the water to soak or dry out more than offset the advantage of quick spreading and striking off the top coat.

It has been the lot of your chairman to re-lay, take up, and replace many walks. Tamped walks, where good, clean, sharp sand and gravel was used, have been found to re-lay and not show any defects, even after the walk had been in use seventeen years; but, where an excess of water has been used, the walks have been broken by frost, and often the top coats would separate from the bottom coat. The apparent reason seemed to be that the top was not united to the bottom coat and both the bottom and top coats often would not be firmly tamped and worked together, and good durable work cannot be the result where work is slighted in such a manner.

Your committee has inserted specifications for the position of shade trees, knowing that in many of our growing villages and cities it would be for the good of sidewalks to pay some attention to the liability of the troublesome root throwing of sidewalks.

The thickness of walks has been given the minimum amount of concrete to be used, so as to insure good, serviceable walks.

The whole matter of adopting the specifications is left to the convention to discuss and act its pleasure at its meeting in Buffalo, Jan. 20-25, 1908.

GEORGE L. STANLEY,

Vice Pres. Section Sidewalks, Streets and Floors.

### Cement Sidewalks Specifications

*Foundations.* The ground base should be made as solid and permanent as possible. Where excavations or fills are made, all wood or other materials which will decompose should be removed and replaced with earth or other filling like the rest of the foundation.

Fills of clay or other material which will settle after

heavy rains or deep freezing should be tamped solid in layers not more than six inches in thickness, so as to insure a solid embankment which will remain firm after the walk is laid.

Embankments should not be less than  $2\frac{1}{2}$  feet wider than the walk which is to be built. When porous material, such as coal ashes, granulated slag or gravel, is used, under drains of agricultural tile should be laid to the curb drains or gutters so as to prevent water accumulating and freezing under the walk and breaking the blocks.

The position of shade trees should not be less than 4 feet from the walk. Carolina poplar, elm or shade trees whose roots run near the surface of the ground should not be less than 10 feet from the walk.

Lines and grades should be given by a civil engineer; the stakes to be not over 25 feet apart and far enough from the walk line so that an inspector may see that the walk is laid to line grade.

The mold strips should be firmly blocked under the ends and the center of the strips and carefully straight-edged, care being taken that the strips are parallel with the engineer's line and the height of the grade stakes. The walks should be laid with a drop of one-fourth of an inch to the foot toward the curb gutter.

The thickness of the walk should be determined by the location, the amount of travel and danger of being broken by heavy bodies falling on it, or frost.

Business front walks should not be less than 4 inches thick and can be 6 inches with profit. The top coat of business walks should not be less than  $1\frac{1}{4}$  inches thick.

In residence districts the top coat should not be less than 1 inch wearing thickness, and the thickness for different widths of walks should be as follows:

Six feet wide, the minimum at the centers should be  $4\frac{1}{2}$  inches thick. At the edges, 4 inches thick.

Five feet wide, the minimum at the centers should be  $3\frac{3}{4}$  inches thick. At the edges,  $3\frac{1}{2}$  inches thick.

Four and one-half feet wide, the minimum at the centers should be  $3\frac{3}{4}$  inches thick. At the edges,  $3\frac{1}{2}$  inches thick.

Four feet wide, the minimum at the centers should be  $3\frac{1}{2}$  inches thick. At the edges, 3 inches thick.

All other widths, the minimum at the centers should be  $3\frac{1}{2}$  inches thick. At the edges, 3 inches thick.

Size of blocks may be determined by the width and thickness of the walk. Business front walks should contain not over:

- 12 square feet when the walk is 4 inches thick.
  - 16 square feet when the walk is 5 inches thick.
  - 20 square feet when the walk is  $5\frac{1}{2}$  inches thick.
  - 25 square feet when the walk is 6 inches thick.
- Residence districts, where the walks are:

6 feet wide, 5 inches thick at the center, the blocks should be not over 6 feet or less than 4 feet long.

6 feet wide,  $4\frac{1}{2}$  inches thick at the center, the block should be not over 5 feet or less than 4 feet long.

5 feet wide,  $4\frac{1}{2}$  inches thick at the center, the blocks

should be not over 5 feet or less than 4 feet long.

5 feet wide, 4 inches thick at the center, the blocks should be not over 5 feet long, or less than 4 feet long.

$4\frac{1}{2}$  feet wide, 4 inches thick at the center, the blocks should be not over  $4\frac{1}{2}$  feet or less than 3 feet long.

4 feet wide, 4 inches thick at the center, the blocks should be not over 4 feet or less than 3 feet long.

4 feet wide,  $3\frac{1}{2}$  inches thick at the center, the blocks should be not over 4 feet or less than 3 feet long.

Other widths less than the above 4 inches thick at the center, the blocks should be not over 4 feet or less than  $2\frac{1}{2}$  feet long.

Other widths less than the above,  $3\frac{1}{2}$  inches thick at the center, the blocks should be not over  $3\frac{1}{2}$  feet or less than  $2\frac{1}{2}$  feet long.

#### Specifications for the Concrete

Bottom coat gravel. The largest size to be not over 1 inch and all under  $\frac{1}{8}$  inch to be considered sand. Proportions to be one part high-grade Portland cement to four parts clean hard gravel, and sand enough to fill the voids, which makes the proportions, as most gravel will measure, after being filled with sand, one part cement to five of the whole aggregate sand and gravel.

Bottom coat crushed stone. The size of broken stone should not be larger than  $\frac{3}{4}$  inch and vary in size to  $\frac{1}{4}$  inch and free from fine screenings and dust or soft stone. Proportions to be one part high-grade Portland cement, two parts clean and sharp sand and four parts broken stone, or what is termed by consulting engineers and concrete experts as one cement to four of stone, and sand enough to fill the voids.

Mixing of both gravel and broken stone should be done by placing stone in the mixing box or on the platform first, then spread the sand evenly over the stone and in like manner the cement over the sand. Then cut through from top to bottom in thin slices, which will insure an even mix. Then turn with hoe or shovel twice before adding water, which should be done with a sprinkler and hoed over as sprinkled. The batch should be turned at least once after the water is applied. The amount of water used in the bottom coat should be only enough to make it, when firmly tamped, solid and not quaky.

Top coat. Proportions: Three parts high-grade Portland cement and five parts clean, sharp sand mixed dry and screened through a No. 4 sieve. In the top coat the amount of water used should be just enough so that the surface of the walk can be tamped, struck off, floated and finished within twenty minutes after it is spread on the bottom coat, and when finished it should be solid and not quaky.

An edger not less than 1 inch radius should be used on the out edges of the walk.

Separation of the blocks should be done with a spud not over 6 inches wide and  $\frac{1}{4}$  of an inch thick, and to insure complete separation the groove should cut through into the ground base. Fill the groove with dry sand before the top coat is spread and the top coat



should be cut through to the sand after floating and troweling and a jointer run in the groove, then again draw a trowel through the groove so as to insure a complete separation of the blocks.

The protection of newly finished walks from storms can be accomplished by covering with roofing paper or canvas. Canvas should never be laid on the walk, but stretched over on a slant so as to run the water off.

Grading after the walks are ready for use should be on the curb side of the walk  $1\frac{1}{2}$  inches lower than the walk and not less than  $\frac{1}{4}$  inch to the foot fall toward the curb or gutters. On the property side of the walk the ground should be graded back at least 2 feet and not lower than the walk, which will insure the frost throwing the walk alike on both sides.



### Convention Notes

The Miracle Pressed Stone Company, Minneapolis, Minn., were on hand with a splendid exhibit and a fine bunch of salesmen. They don't do things by halves at any time.

The Hayden Automatic Block Machine Company, Columbus, O., were showing both their block machine and improved mixer.

The Anchor Concrete Stone Company, Rock Rapids, Ia., had a fine exhibit, not only showing their machine in operation, but also numerous photographs of buildings constructed with blocks made on their machine.

Mr. Knickerbocker had personal charge of the exhibit of The Knickerbocker Company, Jackson, Mich., and expressed his satisfaction on the results of the convention. All he had left after the show was his personal baggage, having completely sold out.

The Ashland Steel Range and Manufacturing Company, Ashland, O., had a complete equipment showing all parts of the U. S. Standard cement block machine. Their mixer was also shown to good advantage.

The Ballou Manufacturing Company, Belding, Mich., were showing three kinds of mixers, one of them having a two hundred yard capacity in ten hours.

The Cement Tile Machinery Company, Waterloo, Ia., were showing a Schenk tile machine in full operation, together with several mixers.

The Century Cement Machine Company, Rochester, N. Y., had one of the largest and most complete exhibits at the convention. They were showing a Hercules concrete block machine in full operation, a Century brick machine and the Hercules concrete mixer. A. T. Bradley, Robert Seibert, H. R. Morton, S. Finley and O. D. Tiffany were doing the honors.

The Eureka Machine Company, Lansing, Mich., had four mixers at work demonstrating to an interested crowd. The fine points were explained by Fred Fisher, Geo. A. Cooley, James J. Cox, H. Cramer and W. V. Johnson.

The P. B. Miles Manufacturing Company, Jackson, Mich., had a concrete block wall built around their

booth made on the Miles machine. It made it easier for D. P. Vining, J. N. Morehouse, W. J. Corbett and Vining Bros. to close sales as the exhibit of "finished goods" was the strongest argument possible.

Somers Bros., Urbana, Ill., were showing their pressure block machine in full operation and were turning the blocks out at a rate of four per minute. Talk about your house a day. Frank A. Somers, E. H. Somers, John Gray, D. C. Leaw, J. C. Leaw and J. R. Hoke are the responsible parties.

The Ideal Concrete Machinery Company, South Bend, Ind., exhibited not only the practical but also the artistic in concrete. On a large streamer coming from the top rafter was a list of countries where Ideal machines are in use. It covers pretty much everything. Explaining the points about their machines and molds were Mentor Wetzstein, Geo. B. Pulfer, J. Augustine Smith, R. F. Havlick, N. F. Kennedy and O. F. Wampler.

The Garden City Sand Company, Chicago, Ill., had an interesting and instructive booth. With the numerous colored samples of "Stonekote" and the able explanations given by S. W. Curtiss and C. H. Rose made it a profitable exhibit to all concerned.

A. C. Horn Company, New York City, were not in the soap business, although they did hand out a good many cakes. You will find that the soap will be used up before the waterproofing compound will wear off that one side.

W. C. Burrell, of the Burrell Manufacturing Company, Bradley, Ill., was a busy man, between showing the workings of his machines and taking orders at his desk he was hard to get at.

The Barrett Manufacturing Company, New York City, had their famous roofing on exhibition and the company did well in its selection of representatives, who were L. P. Sibley, Wm. L. Babcock, C. B. Jameson and L. P. Libby.

The Francisco Block Machine Company, Columbus, O., was represented by J. B. Francisco, who worked constantly, showing the workings of their machine to a large and interested crowd.

The Trussed Concrete Steel Company, Detroit, Mich., had an attractive exhibit and were ably represented by L. A. Pratt, F. C. Ayres, W. P. Costello and Mr. Mayo.

R. Z. Snell Manufacturing Company, South Bend, Ind., had a prominent corner space, and by the time R. Z. Snell, E. Elliott, J. Abbott and S. Lentz got through explaining their mixer nothing but an order could result.

The Besser Manufacturing Company, Alpena, Mich., were ably represented, and Mr. Besser informed us it was the best convention from a business standpoint they had ever attended. Mr. J. H. Besser was ably assisted by W. J. Besser, Henry Besser, Ben Cole, Wm. Michaels, L. N. Kelly and Jas. Smith.

(Continued on Page 708.)



# STEEL SQUARE.

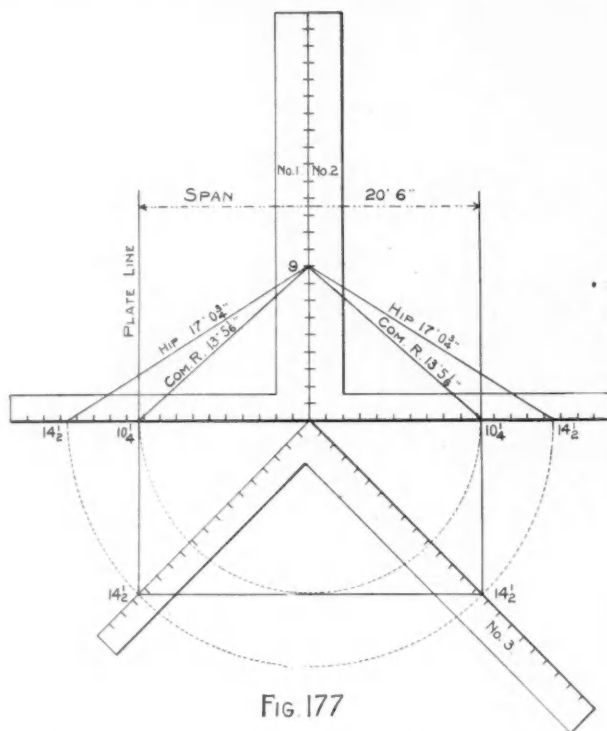
ALFRED W. WOODS

## How to Use the Steel Square

EXEMPLIFYING IRREGULAR SHAPED ROOFS IN COMPARISON WITH REGULAR WORK, SHOWING THEIR RELATION TO ONE ANOTHER—ALSO A GRAPHICAL METHOD OF BACKING THE HIP

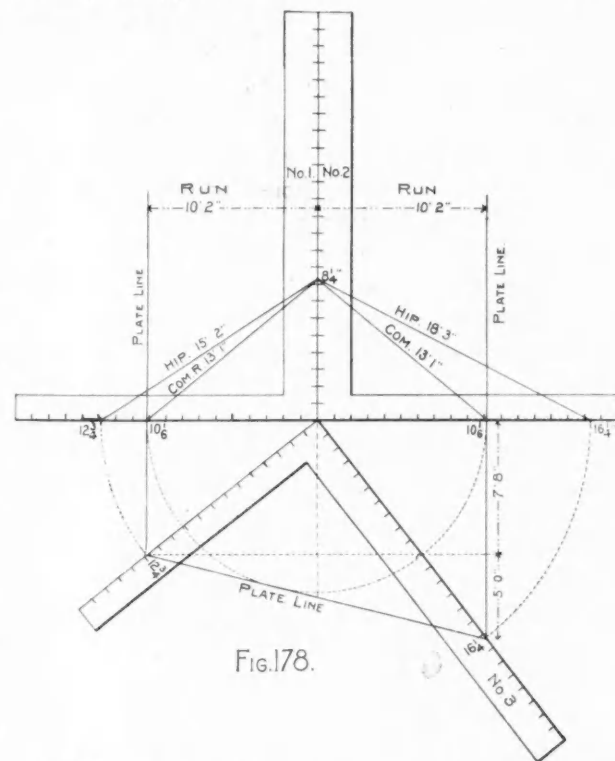
WHEN we began preparing the illustrations for our last article, it was with the intention of showing and saying all that we had to say on uneven pitched roofs, but before we got fairly started on our subject, we found that it was stretching out beyond our first intention, so we just cut it in two

resting at the juncture of the runs of the hip and therefore act as a pivotal point for the heel of the third square, whose blade and tongue represent the runs of the hip. In this case, it being a square cornered building, the angle formed by the third square with that of the tongues of the other squares, will be of like proportions, as will be seen by the plate lines intersecting like figures on both the blade and tongue of the third square. Therefore  $14\frac{1}{2}$  inches represents that the run of the hip is  $14$  feet  $6$  inches. As a further proof of this illustration, set a compass with  $10\frac{1}{4}$  inches radius (the run of the common rafter) strike a semi-circle and it will catch the plate lines as shown. A  $14\frac{1}{2}$  inch radius catches the corners of the plate and this length transferred to the tongues of the two upper squares and a line from these figures to 9 on the blade will represent the hip and is found to be  $17$  feet  $\frac{3}{4}$  inches.



and this is the other half. We could go on and show a lot more illustrations, but what is the use, since they all lead to the same thing and one is as good as another, as far as the results are concerned. When the principles involved are once mastered, the different applications of the steel square in solving the angles in roof framing become legion and the master is monarch of all he surveys.

In Fig. 177 are shown three squares placed in such a way as to represent the run and rise of the common rafter and corresponding hip. Here the span is represented as being 20 feet 6 inches. By letting inches on the squares represent feet, the run of the common rafters will be at  $10\frac{1}{4}$  inches, as shown on the tongues of the squares Nos. 1 and 2. Now suppose the rise is 9 feet, the length of the common rafter will be  $13$  feet  $5$   $1$ / $6$  inches. The heels of these two squares are



In Fig. 178 is shown the same principle as given in the previous figure, applied to a building that is out of square. The simplest way to solve a problem of this kind, is to place the heel of square No. 3 on a center line and at a point that will allow the blade

and tongue to intersect with the corners, as shown. In this example, the run of the common rafter being 10 feet 2 inches, the plate lines will intersect at  $12\frac{3}{4}$  inches and  $16\frac{1}{4}$  inches for the short and long side

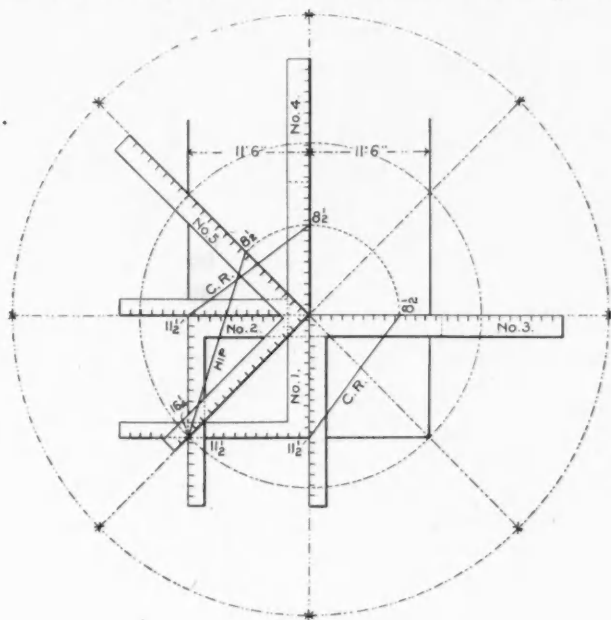


FIG. 179

respectively. These lengths transferred to the tongues of the squares Nos. 1 and 2 represent the figures on those members to use. The rise in this example being 8 feet 3 inches, we take  $8\frac{1}{4}$  inches on the blade, and by drawing lines from this point to  $12\frac{3}{4}$  inches and  $16\frac{1}{4}$  inches on the squares 1 and 2, will represent the length of the respective hips. The question now arises. How

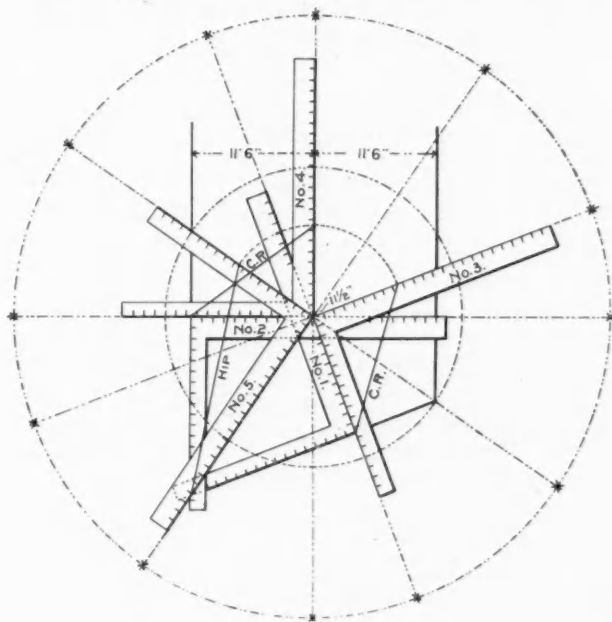


FIG. 180.

far from the corners of the plate is it to the seat of the common rafter? This is necessary to know, because these lengths and that of the common rafter will give the side cut of the jacks. The cut will be found on the side of the square that represents the length of

the rafter. In the absence of a diagram, these lengths may be found as follows:

Since one side of the building is 5 feet longer than the other, take one-half of 5 feet or 2 feet 6 inches from 10 feet 2 inches (the run of the common rafter) leaves 7 feet 8 inches for that on the short side and 2 feet 6 inches added to 10 feet 2 inches, or 12 feet 8 inches, will be the length on the long side, which is the same as 7 feet 8 inches plus 5 feet, equals 12 feet 8 inches. For the side cut of the hip for the short side, take the run of the hip for the long side ( $16\frac{1}{4}$  inches) and the length of the hip for the short side and cut on the side of the square representing the length; vice versa for the long side.

Here is another diagram. It is for a square cornered building. See Fig. 179. The run of the common rafter is 11 feet 6 inches. In this example, the movement of the steel square is shown five times. Eleven and one-half inches is taken on both blade and tongue of the squares Nos. 1 and 2 and placed to intersect

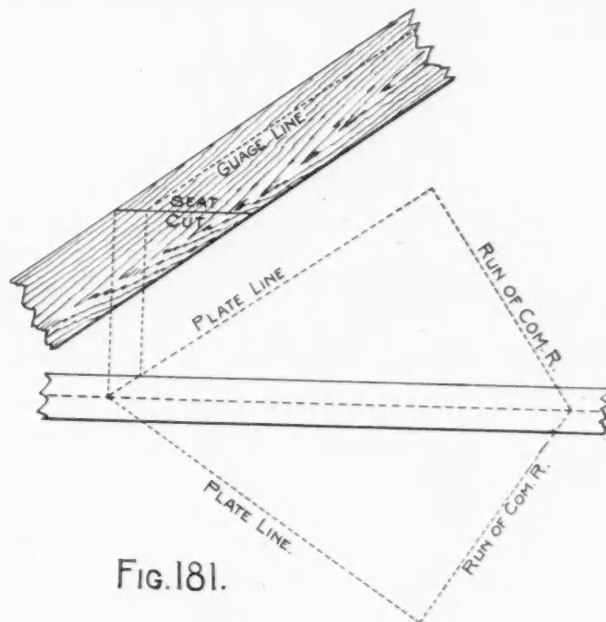


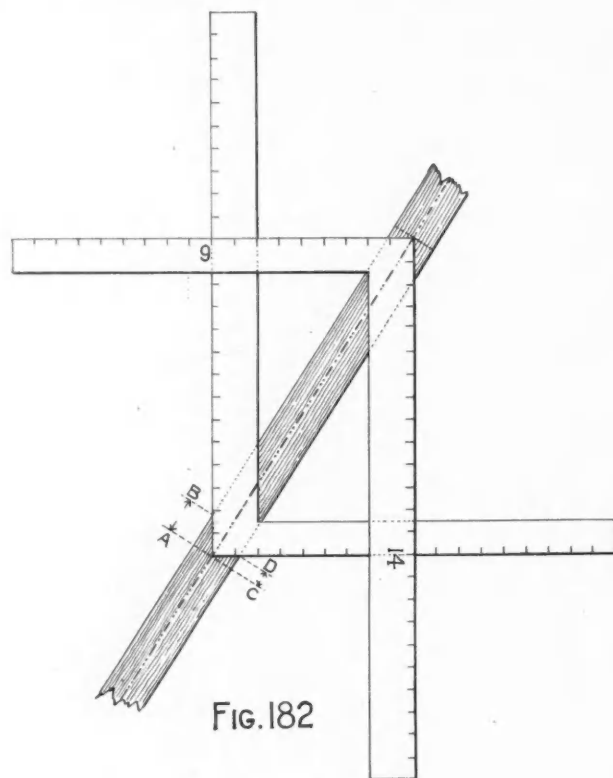
FIG. 181.

each other at these figures to represent the plan. To these are applied the squares Nos. 3 and 4 to represent the run and rise of the common rafter and No. 5 is applied with the tongue to the diagonal of the square formed by the first two to represent the run and rise of the hip. The rise being 8 feet 6 inches, we take  $8\frac{1}{2}$  inches on the blades of Nos. 3, 4 and 5 and the lengths of the rafters can be found per scale of the lines representing the rafters.

NOTE.—This is a regular plan—*i. e.*, where the building has right angled corners and the roof on all sides of like pitch, the divisions from the central point are of equal parts, as will be seen by the divisions of the circle, formed by Nos. 3, 4 and 5.

Now we will apply this formula to the building that is out of square, as shown in Fig. 180. What we said in the previous figure in placing of the squares, also applies to this example, except in this case, the build-

ing being out of square, necessitates a different set of figures to be used on the tongues of Nos. 1 and 2 from that on the blade, which remains at  $11\frac{1}{2}$  inches because the run is 11 feet 6 inches. The figures on the tongues may be easily found by letting  $11\frac{1}{2}$  inches on the blades act as a pivotal point at the center and open up till the tongues form the required angle of the plates. The run of the hip is lengthened accordingly and being longer than the tongue, it is necessary to reverse the square—*i. e.*, by letting the blade represent the long run, as shown by No. 5 and the



figures intersected on the tongue by the plate line, will represent the short run, as is proved by the semi-circle. This being an irregular plan, see the difference in the division of the large circle.

In connection with this example, it might be well to show a graphical method for the backing of the hip. It applies to any angle cornered building.

Suppose we wish to find the backing lines on the hip for the acute corner, as shown in the last figure. Lay off a diagram of the plan, as formed by the squares 1 and 2, as shown in Fig. 181. Diagonally across this lay off the full thickness of the hip and square across its back at points where the hip lines intersect the plate, and the distance apart of these lines, as at A and B, will be the amount to set off along the seat cut line from the edge of the rafter to obtain the gauge line. In this case, the gauge lines are of like depth on each side.

Fig. 182 shows the same principle applied to unequal pitches for a square cornered building. In this the run on one side is 9 feet and on the other it is 14 feet. The gauge lines will be found as above

by setting off A B on one side and C D on the other. This applies to any pitch given the roof and is therefore a general rule.



### News Notes

Mr. J. P. Gage, of the Gage Tool Company, of Vineland, N. J., makers of the self-setting planes, while stooping over a rapidly revolving rod in a screw machine, had his long beard and mustache caught on the turning rod, and torn from his chin and mostly from one cheek and upper lip, the right cheek entirely escaping. Strange to say, the flesh or skin was not torn from his face, owing probably to the fineness of the hair, as Mr. Gage, who is over sixty years old, never had a shave, always wearing a flowing beard, which was easily caught by the revolving rod. This is the first time Mrs. Gage ever saw her husband's bare chin. Mr. Gage is one of the Chicago pioneers, and is the son of John Gage, who built the first flour mill in Chicago in 1836. Many years ago he discovered a process for the treatment and tempering of steel through which he secured cutting results that made his plane irons famous.



### Convention Notes

(Continued from Page 705.)

The Multiplex Concrete Machine Company, Toledo, O., were there with a good force, and they were all kept busy. A. F. Seibel, W. R. Sawson, R. E. Futs, Eli Endsley, J. F. Neubauer and G. A. Coalrosel were the active working force.

The Peerless Brick Machine Company, Minneapolis, Minn., had one of the best and most carefully prepared exhibits at the show. L. V. Thayer was a tireless worker, the fact is he had to be, for he had everybody around and he entertained them all, from the mayor to the walking delegate.

Sid L. Wiltse was presenting the goods of the Cement Machinery Company, Jackson, Mich. He stayed pretty close to his booth, which means business.

The Runyan Concrete Manufacturing Company, Canal Dover, O., were represented by a fine lot of fellows and a good exhibit. C. M. Runyan knows his machine and can make others see the good points, and the way he was backed up by H. W. Streb, C. B. Leins and A. N. Kinnebar made it a strong combination.

The Blau Collapsible Steel Centering Company, Pittsburg, Pa., was the center of interest with their huge forms for making concrete sewers and conduits. Jacob B. Blau was the man who could tell you all about it too.

Sanford and Painter Company, Toledo, O., were well represented by a large exhibit and a convincing bunch of salesmen, Jas. S. Cox, P. M. Abbott, D. V. Carter, Wm. A. Smith, J. E. Stevenson and L. C. Humphrey did the work.

# A Damp-proof Concrete Block Wall

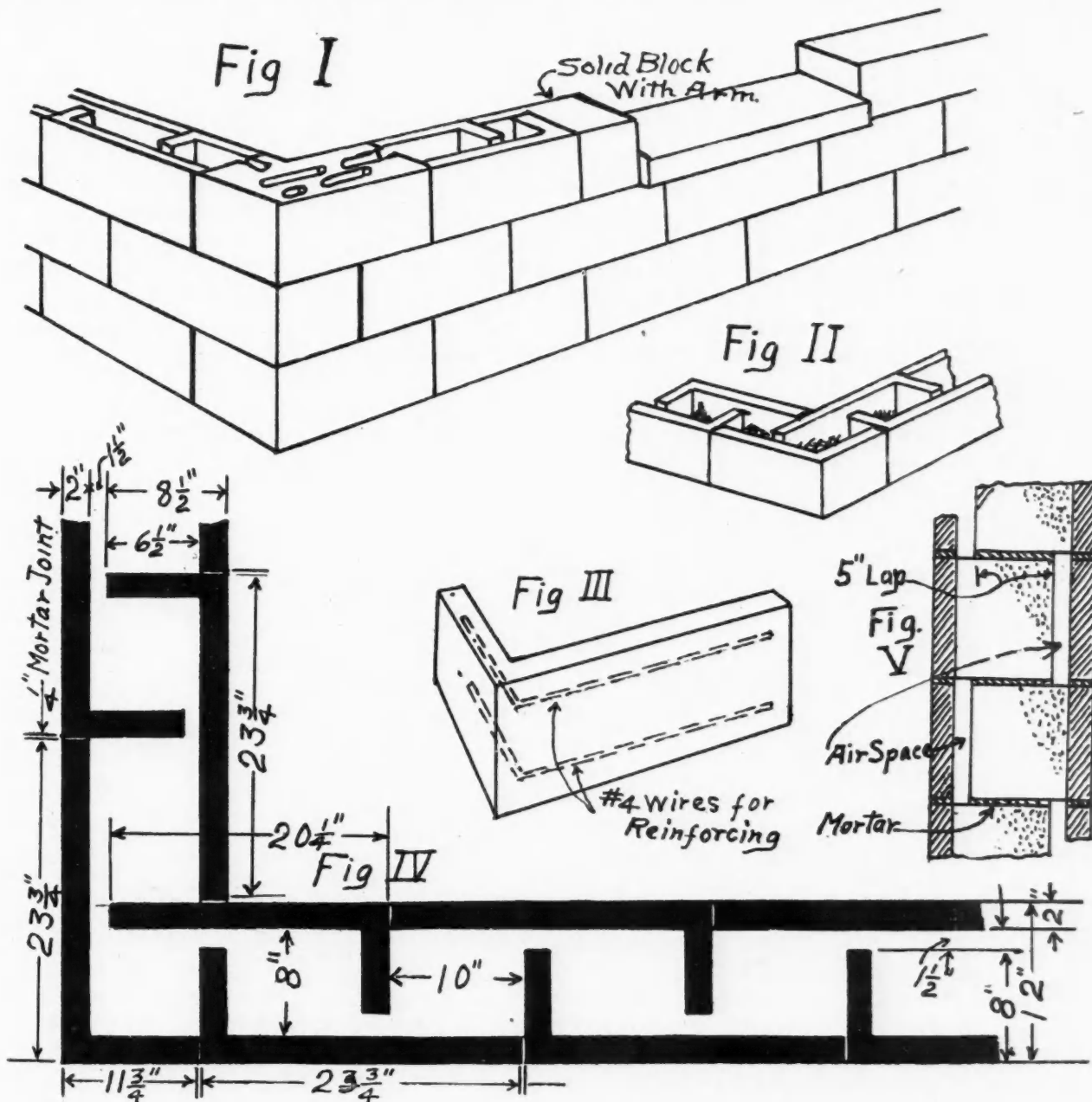
SHOWING A SYSTEM WHICH CAN BE ADOPTED BY ANYONE—DRAWINGS SHOW VARIOUS SECTIONS OF THE WALL

By Fred W. Hagloch

IN JANUARY, 1904, my attention was called to a concrete wall made of blocks the shape of the letter L by F. A. Sicklesteel, North Branch, Mich., who, I believe, is the inventor, but have seen nothing in the patent records to show that it was patented. It therefore becomes public property and I have made several experiments which have been very satisfactory.

The blocks must have legs of certain lengths, all lengths based on a certain unit which I have calculated for all sizes.

The advantages of this block are: Absolutely dry walls; the saving of 40 per cent of material over the average hollow block wall; saving of space in hauling and storage; and its disadvantages are: wall openings



The success of this block depends upon a proper machine or mold to produce it and I have used a mold that makes from one to twelve blocks at one operation, but hope to see some energetic block machine company put out a more rapid producer.

for doors and windows, which I overcome with solid blocks with legs to suit, and tendency to crack at the angle. This I overcome by reinforcing as shown in Fig. 3.

Some years ago I reported a damp test in which

this block proved damp proof and a western concern began the manufacturing of a machine to make same; but their block is not based on the unit system, hence complications when laying them in the wall.

I will furnish gratis the proper unit system to any who may desire it upon receiving their size of blocks.

In the drawing Fig. I shows its use with corner blocks. Fig. II a corner made of the L block. Fig. III shows how the reinforcing is placed. Fig. IV, a working drawing of the block which will enable its use in connection with double air-spaced blocks, and Fig. V is a vertical section of Fig. IV wall.

I find it is more readily adapted to blocks 16 inches long than any other size, and it is superior to any block in varying the width of wall from eight to sixteen inches in width, as same is accomplished by regulating the length of the short leg of block, while but one size is needed for eight and nine inch walls and the same block as shown can be used in from eleven to fourteen inch walls, as with it a light fourteen inch wall requires no more material than a heavy eleven inch wall.

A block with five inch short leg can be used for nine inch wall in the first story wall of a building and eight inch wall in the second story wall, etc.

## Securing Dry Cellars

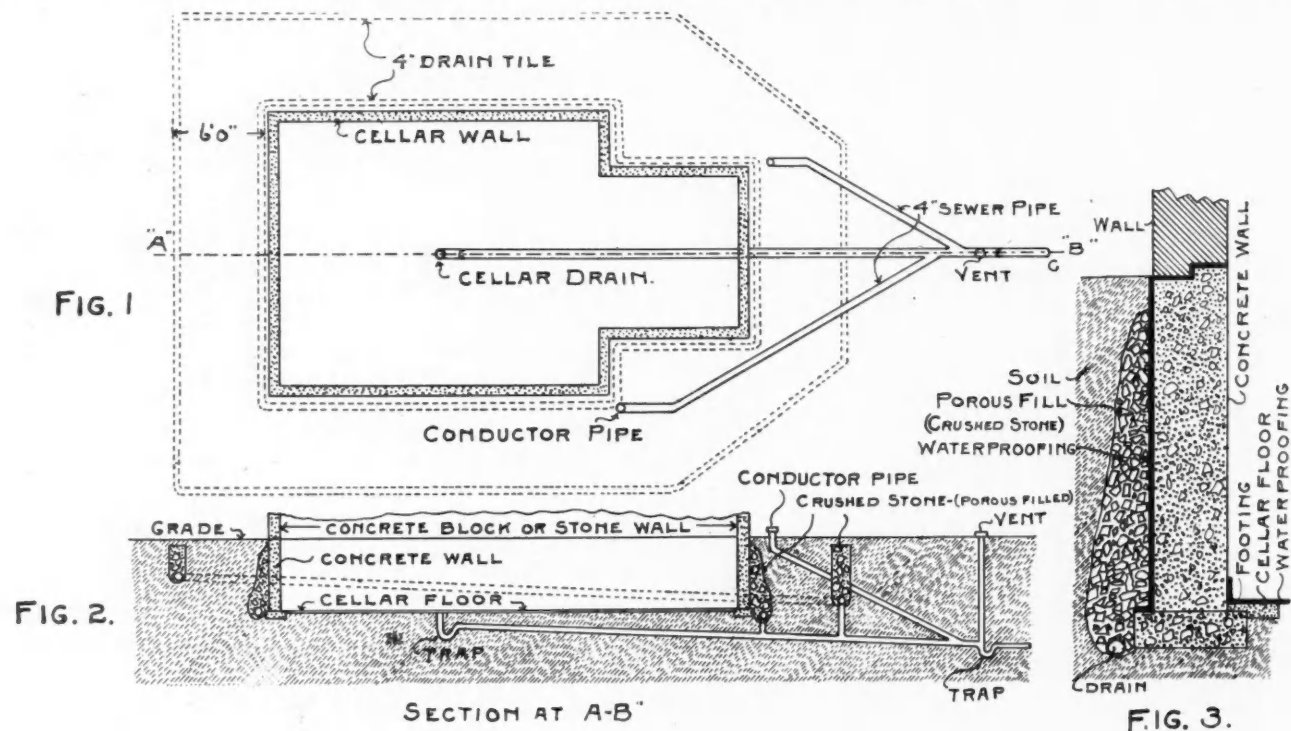
BEST METHOD TO INSURE A PERFECTLY DRY CELLAR—WHAT MATERIAL TO USE AND PROPER ARRANGEMENT OF THE DRAIN TILE

By Fred W. Hagloch

IN LOCALITIES where a porous or sandy soil exists to the depth of six or more feet, cellars are usually dry without the use of any preventative to dampness, but where compact soil exists usually about 80 per cent of all present cellars are more or less subject to dampness, as few have been waterproofed; that concrete, like brick and stone, is a con-

Health being more essential than beauty, I advise building along healthful lines, and a dry cellar is the most important part of a healthful residence.

In the illustration it must be remembered that the piping shown is for drainage only, and no provisions are shown for sewerage plumbing, which will require separate piping and should never be connected to the



ductor of dampness is known, but that it is more readily adapted to waterproofing only those experienced in waterproofing walls below the grade line have appreciated.

That a large amount of sickness is caused by damp cellars our physicians have long ago realized, but as waterproofing does not add to the appearance while adding to the cost it is usually omitted, though medical bills more than make up this additional cost in a few years.

drainage sewer nearer to the building than beyond the last trap shown in the illustration.

In Fig. 3 is shown a monolithic concrete wall below grade, it being the cheapest and strongest, and when waterproofed on the outside and on the top with the off-set shown with any positive waterproofing it will insure dry walls, but causes water to remain on the outside, which is also injurious to health, and nothing but proper drainage will overcome this evil. Perhaps the best method is that shown in Fig. 3, consisting of

loosely placed crushed rock against the wall, with a four or six inch porous drain tile, whose joints are not cemented, placed in the bottom of the trench. The drain tile must have no less than one foot fall or drop in twenty feet, which is shown by Fig. 2. The size of the drain tile depends upon the length of wall, and four inch is sufficient for buildings less than sixty feet long.

In localities where clay soil or hardpan is found it is necessary to place another drain six feet from the building wall, which is placed in a trench of sufficient depth to be free from frost; this drain is also covered with crushed stone or brick bats, allowing space to cover with soil of sufficient depth to insure proper nourishment for the lawn.

The two drains carry away the water, thus freeing the premises of all dampness.

One party became such a strong convert to my idea of drainage that he believes waterproofing unnecessary, and two years ago erected a dwelling, using a thirteen-inch brick wall without waterproofing, but with the two drains shown in Figs. 1 and 2, which proved sufficient for local dampness, but not for rain storm periods of several days' duration.

I believe the waterproofing to be the most essential, but that the drains are also necessary can not be doubted, for it not only provides a healthful soil around the building but is a protection for the waterproofing. There are numerous materials that can be used for the porous fill, crushed sand stone or brick bats being perhaps the best, but gravel or coarse cinders are acceptable.

In no instance shall any part of the drain nearest wall be above the cellar floor level, but it may be much lower, the outside or lawn drain depth being governed by frost depth.

The cellar and conductor drains should be made of socket sewer pipe well cemented at the joints and have a trap at every opening on the inside of the building and one trap after all connecting drains have been entered into the outlet, and this trap must have a vent pipe as shown in Fig. 2 to prevent the formation of obnoxious gases. Some contend that the conductor pipe, having an iron pipe from the grade to the eaves of the roof, makes the best vent possible, but I have found that drains connected with street sewers often carry gases from the street sewers when the traps are not water-sealed, in which event the vent shown would be an outlet for such gases.

The above covering the drainage of the walls and surroundings we must now consider the cellar floor, which is as important as the walls, but can be fully described without drawings.

My experience with cellar floors in all kinds of soil (including the porous sand beds of northern Ohio, the clay and gravel of Pennsylvania, the varied soils of our western states, and the hardpan of the Missouri valley) has taught me that waterproof floors are es-

sential everywhere, and that cement, together with a reliable waterproofing, is the only proper material; this I usually construct of three inches of concrete, made of one part cement, two sand and four gravel, well tamped and of sufficient slope to the drain pipe to insure immediate drainage of any water that may be poured upon any part of the floor; after four or five days cover with a heavy coat of R. I. W. or Dehydratine paint or hot coal tar, and follow with an eighth to quarter inch coat of one part cement to two parts sharp sand, and trowel smooth. When tile floors are desired, place the tile while applying the top coat of the above described method.

In localities subject to springs or constant damp soil it is best to have six or eight inches of well rammed crushed stone footing under the concrete floor and several lines of drain tile spaced about eight feet apart with proper slope for drainage, and connected with the outside drains so as to insure proper drainage.

To insure completely dry cellars the waterproof paint and the top coat of cement is continued up the inside wall to a height of six or eight inches, as shown in Fig. 3.

Recently, a physician who enjoys a large practice chanced to see a drainage system as above described and it caused him to remark: "That not only insures dry basements but prevents the contamination of the air entering the building, making it an ideal hospital building."

In justice to the several successful waterproofing compounds not mentioned I desire to say that my practical experience has been confined to R. I. W. and Dehydratine, but have seen splendid results of others that were used by other parties.



### One Way to Balk Creditors

"Alterations to suit tenant" was a part of the sign in one of the down-town buildings, telling that a loft over the store was to let. One day lately a prospective tenant applied and expressed himself as pleased with the location and quarters, as well as the terms. As to alterations he had only one thing to suggest, namely that the stair steps be fixed to the top floor with a pair of stout hinges, and cords be attached so that they might be raised and lowered, in a way best illustrated perhaps by the attachments of a fire escape. Anxious to get a tenant, and seeing no particular objection to this arrangement, the landlord complied. His tenant, a quiet man, was wont to go to his quarters early in the forenoon and at once draw the steps up to the ceiling. A few only of his many visitors, those, in fact, who gave a peculiar whistle, were accommodated by the lowering of the steps. The others were ignored. The landlord, fearful lest some unlawful transactions might be going on in his building, called upon the tenant for an explanation. "Oh," was the reply, "my friends have the whistle. The other fellows are creditors." The hinges are still working.



## Overhauling Machines

VALUABLE AND SEASONABLE SUGGESTIONS FOR THE PLANING MILL MAN—PROPER METHOD OF BABBITTING AND ADJUSTING

IT HAS long been the practice among the larger planing mills and factories to devote a week or two about the end of the year to overhauling machines and putting the factory in order and making whatever changes are thought necessary before starting into the new year's work. This is not the only time they put in new machines or do repairing, but repairing and overhauling has become such a feature of the mid-winter season, that about this time of the year one's thoughts naturally turn to the subject, just as they do to other matters which obtain during the mid-winter season.

### Do Some Mid-Winter Repairing

In the smaller planing mills there is not so much thought given to this idea of having a general overhauling of machines once a year, probably because there are not so many machines involved, and what repairs and things of that kind are necessary can be attended to whenever their need becomes urgent. It would not be a bad idea, however, for the operators of the small planing mills and the carpenters who run only a few machines to devote some time during the dull months of the winter to overhauling machines and putting the place in order generally. It is a good thing for the machines themselves, it saves worry and delay during the rushing times of spring and summer and serves to keep the machines in better order and doing better work generally, so it really pays to make a feature of this overhauling, even though they may not appear to be in immediate need of it.

A spell of overhauling machines does not convey explicitly any definite idea to some people, but has rather a vague significance that makes one feel at times that it involves certain intricate complexities that one hesitates to tackle. The fact of the matter is that the overhauling is simple, or rather it is made up of a series of simple details, and really there are not so many of them when once you get at them. And there is nothing about any of it that any intelligent man need fear to undertake if he only has time and goes about it in the right manner.

### Cleaning as a Clue to Needs

Take the turning lathe for example, and about the only features that may develop are those of alignment,

adjustment, balancing, and babbitting of journals. There must go along with this, or precede it rather, a thorough cleaning up, and strange as it may seem there is nothing much better than starting in to thoroughly clean up the machine to suggest what repairs or adjustments may be necessary to put it in better order. When one brushes the dust away, and then with coal oil and waste or cloth starts in to rub off every bit of accumulated dirt and grease from all the different parts of a machine, including nuts, bolts and set-screws, one naturally in this process finds every loose set-screw, every broken bolt and nearly everything else that is misplaced or out of order, so that by the time one has thoroughly cleaned a machine, the needs of the machine in the way of repairs have suggested themselves. Consequently, what might be termed the first step to take when one concludes to have a session of overhauling, is to clean up the machines, not in a half hearted or perfunctory sort of a way, but thoroughly and in every detail.

### Babbitting and Adjusting as Main Factors

Of course, now and then, various things peculiar to different machines and their wear suggest themselves as needing attention, but generally speaking the adjustment of bearings and the babbitting of boxes makes up an important part of the overhauling of machinery in any plant, big or little, and in any and all kinds of machines from a rip saw to a four side moulder. We all know what babbitting means too, and yet there are some who hesitate about it, and others who make rather poor or indifferent jobs of it when they undertake it, practically all of which is due primarily to the lack of study of details of babbitting, or ignorance of shop kinks and various little things that in the aggregate amount to important factors in work of this kind. So a few hints and points on babbitting are especially in order for those who are not up to all the little tricks of the trade, even though it may involve rehashing things perfectly familiar to older heads in the business.

Everybody who knows anything about babbitting at all, knows that one must clear the old metal out of the journal box, daub about the ends and sides with mud or something of the kind to prevent the molten metal from leaking out when it is poured, and then must melt a ladle of babbitt metal over a fire and pour



it into the journal box until it is filled. It all looks simple, and it is a simple and easy performance too, but there is a difference, lots of difference, that is made up of little details; so let us study it a while in detail.

#### **On Preparing to Babbitt**

The first thing is the preparation of the box which is to be babbitted and of the journal of the mandrel about which the babbitt is to be poured. The old metal should all be taken out of the box and the box thoroughly cleaned. Some do this by taking it to a forge or to fire somewhere and burning the oil and grease off at the fire, and at the same time warming up the box preparatory to babbitting. That is a good plan too, but sometimes it is not practical, so let us assume an instance of babbitting a saw mandrel or something that cannot be taken to a fire for the sake of illustration, for the same logic is good everywhere. Then clean off the boxes at both ends thoroughly, also take the saw off the mandrel and thoroughly clean the journals, and if it has been cutting in sharp ridges or worn, or the face of the journal is rough in any manner, take a file and piece of emery paper and carefully smooth it up.

#### **Taking Off the Chill**

Then having accumulated around you, as a preparatory measure, all the appliances and metal necessary in babbitting, heat a piece of iron in some convenient fire and lay it in the box, two pieces, one for each box, or one long piece that will reach across, and let it lie until the chill is taken off of the metal of the boxes. It won't hurt if they are warm enough to be rather hot to the touch. On this point, while it is advantageous so far as the pouring of the metal is concerned, to have both the journal box and the shaft hot, it is really not essential to have them more than warm. They must be warmed up however enough to take the chill off, and this can be done without much danger of springing the journals. Meantime the journals of the mandrels should be warmed or partly warmed, or else after the boxes are warm let it lie in them a while until it partakes of enough warmth to take the chill off.

Clean out the boxes good again, clean off the journals of the shaft, and then if you want to do a real neat job without wanting to do too much scraping and finishing on the box after it is poured, wrap the journals of the mandrels with a piece of writing paper. Or if you are not prepared to do this, it helps some to coat the surface of the shaft with chalk, which can be done by rubbing it all over with a crayon or lump of chalk.

#### **The Object of Wrapping Journals**

The object of wrapping the journals of a mandrel with a piece of paper, is primarily to make it a little larger for babbitting purposes, so when the metal in the boxes is cooled the mandrel will turn freely in it and not be pinched by the contracting caused by cooling off. We are all taught that metal expands when

heated and upon cooling off contracts again. But at times it seems difficult for a fairly good mechanic to understand how it is that a journal box or the metal in the journal box can contract in cooling, so that it will pinch the shaft and make it run hard. It is a fact, however, that it will do this, and it is a fact that one can readily understand it, if he but look at it in the right way. The metal in the box only makes up a half of a circle or ring. Now, if we make a complete ring out of it, any of us can readily understand that it could and would shrink in cooling off after having been poured and many of us have demonstrated this fact by heating and shrinking a bar or band on either an iron shaft or wooden hub or both. It is plain too, when we look at it from this light and consider that in the babbitt metal in a journal box there is half a circle or ring that shrinks just the same as if the other half were there to make a complete cylinder.

#### **How to Do the Best Job of Babbitting**

As the babbitt metal shrinks in cooling off after having been poured around the journal, it is important for the sake of light and cool running that the journal be made large enough at the time of pouring to take care of this shrinking, or else that the inside of the babbitted box be scraped or dressed out after it has been poured so that the mandrel will work freely in it. It is quite a common practice in some of the large mills or factories to have a set of dummy mandrels just long enough for babbitting purposes, made just a little larger than the standard sizes in shafting, so that the journal boxes can be babbitted on these mandrels and the work done out in the shop, after which the journals are put in their places and the shafting, if it has not been worn much, fits very well. For really good work, however, it is much better to babbitt the boxes right on the journal of the mandrel that runs in it, not only because it enables you to get an exact conformity to the contour and size of the mandrel journal, but also for the sake of getting positive alignment between two or more journals on the mandrel. Each journal must, if babbitted separately, be adjusted afterward anyway, not merely to fit the mandrel, but also to align with the other journals on the same mandrel whether there be two or more. For this same reason it is important to prepare and babbitt all the journals on any given shaft at the same time. Take a saw mandrel with two boxes for example, say the yoke mandrel, and the only way to do the job right is to fit up and pour both boxes at once, or at least without disturbing one while the other is being poured.

Having prepared the boxes and the journals by heating, cleaning, etc., cut strips of either cardboard or leather about a quarter of an inch wide, two for each journal, and put in the boxes so as to come around the journal and rest on the metal lips at each end, so as to hold the mandrel up from the bottom enough to get a sufficient volume of metal underneath. This also

serves to prevent the metal while hot from coming in contact with the moist clay generally used for daubing around the ends of the journal to prevent the leaking out while pouring. Then daub carefully around each end with moist clay and also make a dam or ridge of it along the side so as to prevent waste in pouring. Some use stiff mud or clay, some use soap and some one thing and some another, but good clay is most generally used and is practically always available.

#### The Secret of Success

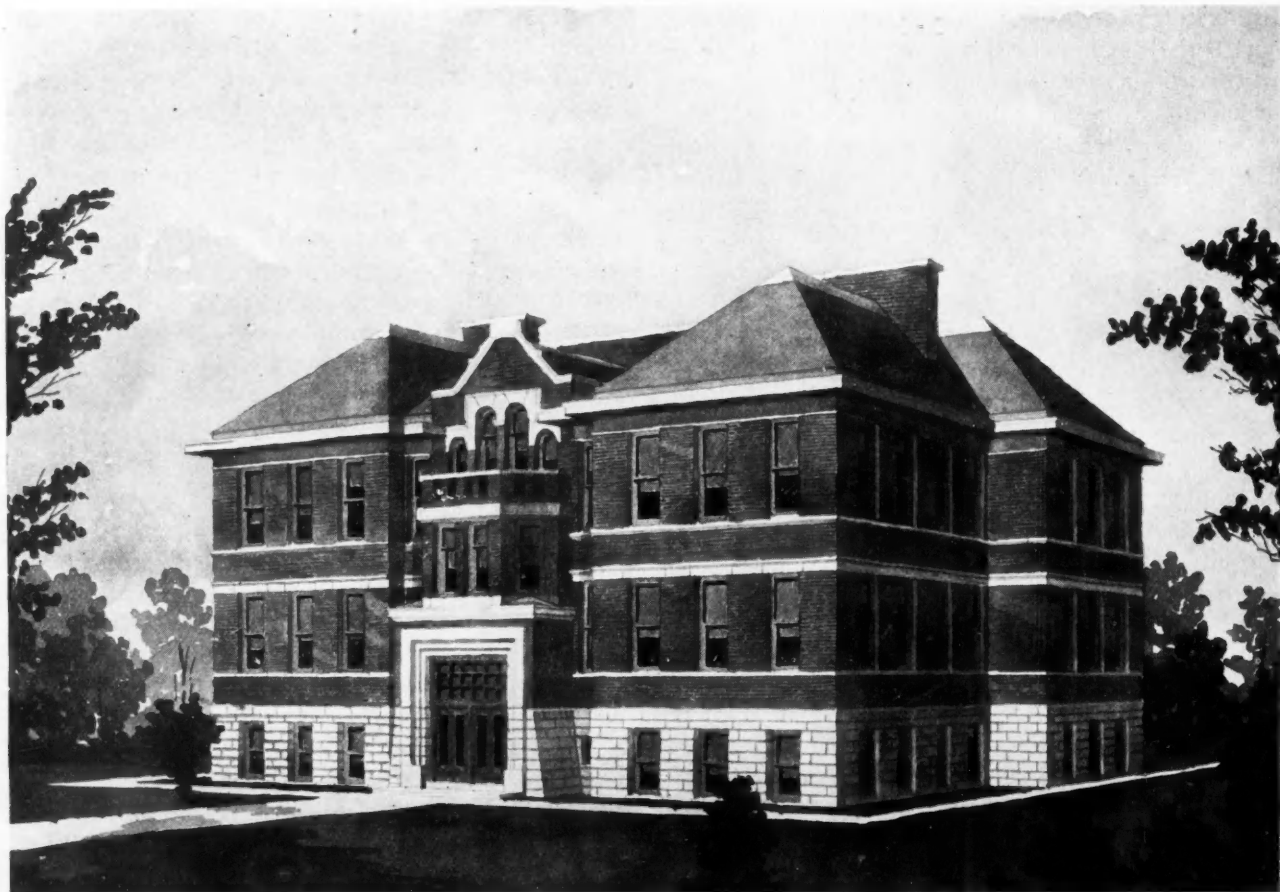
Before completing the preparations for putting the metal into the boxes, have the metal heating on a convenient fire so that you will not have to wait too long after completing preparations to do the pouring. It may be said right here too that what is known as the secret of babbitting, if there is any feature about it that might be distinguished by the term secret, is in getting the metal thoroughly hot. If it is just barely fluid, it chills and hardens so rapidly when it is poured that it doesn't fill in well and there are unquestionably more failures and poor jobs of babbitting which result from not having the metal sufficiently hot than from any other one cause. This injunction to have the metal hot, however, must be taken with qualifications, other-

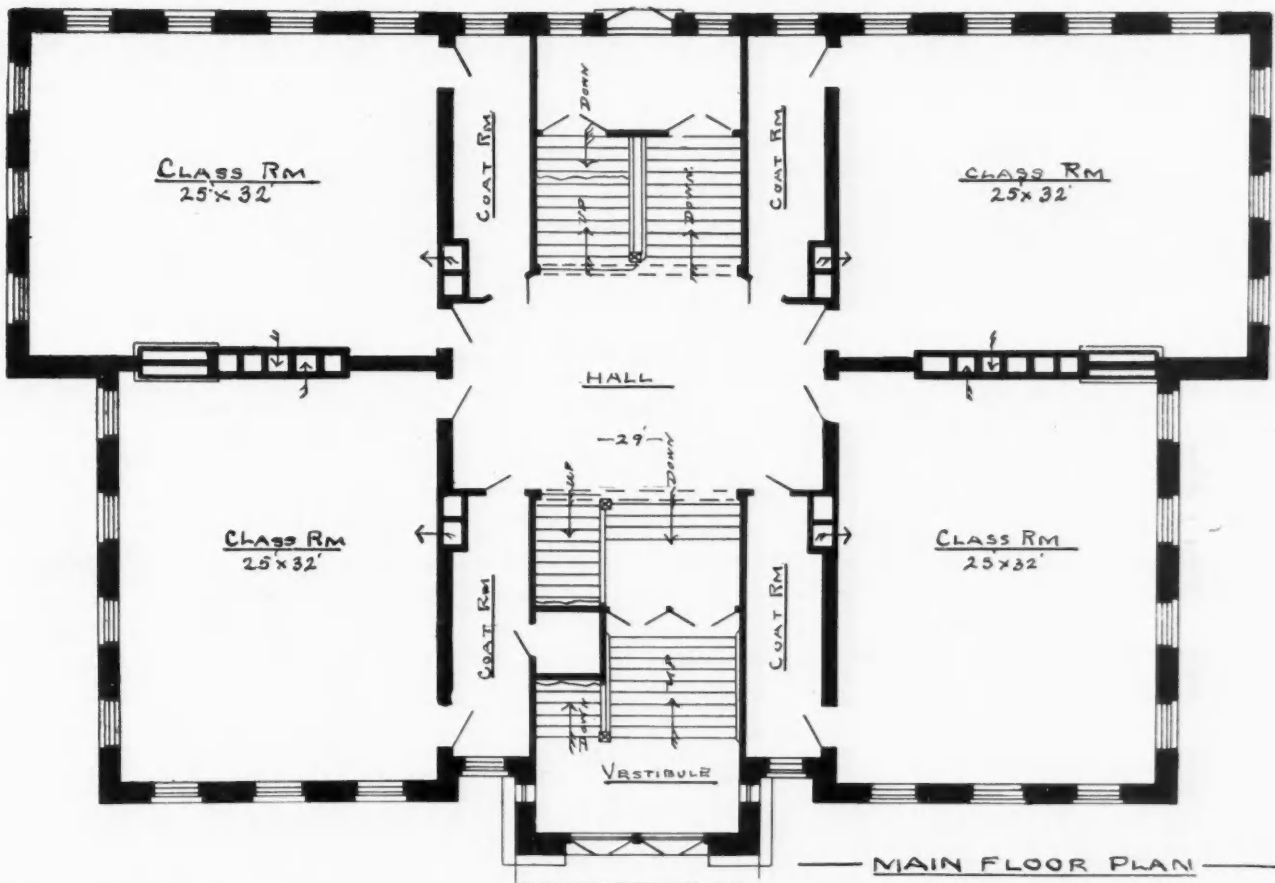
wise there is some danger of spoiling the metal. Metal can easily be burned and spoiled by heating it too rapidly, but if heated slowly and the heat gradually brought up, it can be made red hot without injury. In other words it is not the heat that injures the metal, that is, heat anywhere within reasonable limits, but heating too rapidly, so that the metal hasn't time to absorb and distribute the heat, is what causes burning. The general instruction on babbitting is to gradually heat the metal until it will blaze a splinter or shaving of fine wood. This is rather indefinite, but it helps a little, and in addition it may be taken as a safe rule that you cannot heat the metal hot enough for successful babbitting on what is termed an open fire, that is, a fire without some forced draft. A fire in a stove or in a grate, or made down on the ground or hearth does not serve well as a means for heating babbitt metal. You should have a forge of some kind, a blacksmith's forge is the best thing, or a gasoline or alcohol fire something like that which is used by plumbers so that you can get the metal so thoroughly hot, that it will flow freely and so that it will not chill too quickly when poured. In short, take this as the injunction, get the metal hot, thoroughly hot, but heat it slowly.

## An Eight-Room School House

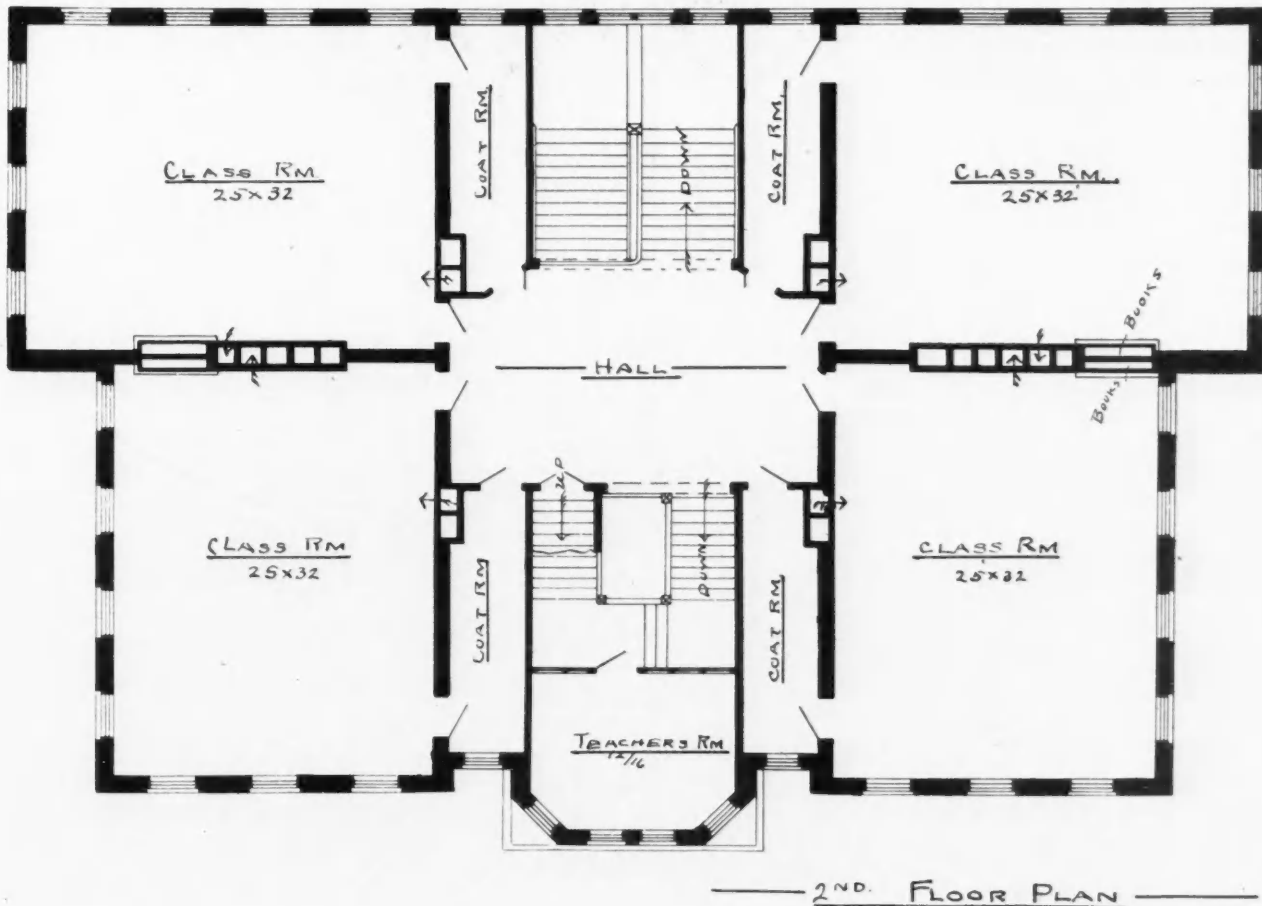
PLANS AND ELEVATIONS SHOWING CONSTRUCTION AND INTERIOR ARRANGEMENT — NEW PERSPECTIVE USED WITH FORMER FLOOR PLANS

**W**E ARE showing herewith the perspective and floor plans of an eight-room school house designed by G. W. Ashby. One interesting feature of this design is that the same floor plans were used for a different perspective, which was shown in the January, 1908, issue. It shows how the exterior





can be changed without in any way affecting the arrangement of the rooms. Both designs are very practical and embody the most modern ideas in school house construction.



# RESIDENCES



## Practical House Designs

COMPLETS PLANS AND ELEVATIONS SHOWN—DESIRABLE FEATURES POINTED OUT—ARRANGEMENT ALONG MOST DESIRABLE LINES

**T**HE house shown herewith is from plans prepared by Woods & Corder, of Lincoln, Neb., for a farm house which is being erected near Sterling in that state.

The plans show it to be a well arranged and compact house, yet the rooms are of comfortable size. There are five rooms on the first floor besides the

principal rooms. The kitchen is large and well arranged with pantry and cupboard. The back stairs start from the kitchen, using the same space for the stairs to the basement, which extends under the whole house. A door at grade answers for either a back door or an outer entrance to the basement. The reception hall is separated from the parlor by a columned archway,



bath and hall. One of these rooms is planned for a bed room, which is very convenient for the head of the house, or for elderly people who do not care to climb stairs. Off of this bed room opens a large bath, which is also accessible from the kitchen, and with the opening into the hall, giving free access to the front door without having to pass through the prin-

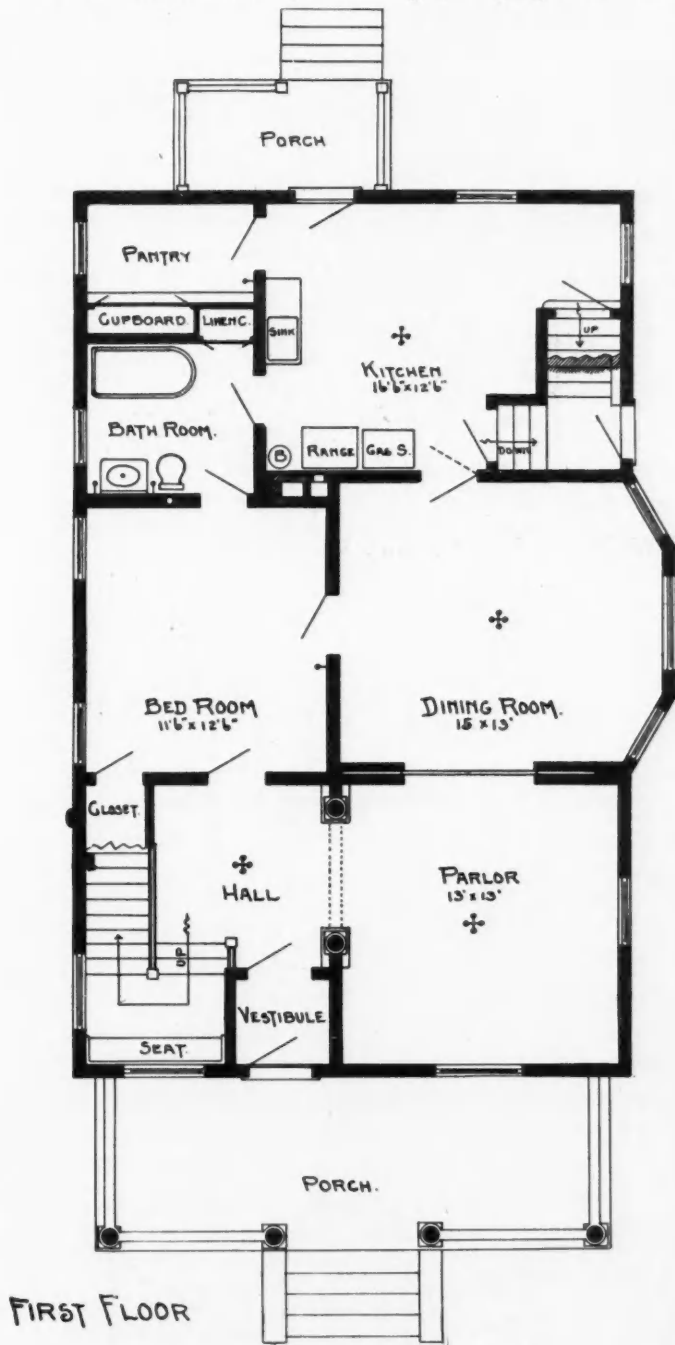
giving the two rooms a semi-privateness, yet they are practically one room.

The second floor contains five bed rooms and a large storage room, and all are well provided with closets. There is no plumbing on this floor other than two wash basins where shown. The interior finish is of oak for the principal rooms on the first

floor and the remainder of the rooms on first and second are finished in yellow pine. The attic is left in one large room.

The exterior is simple in design; no gingerbread or

cement, the last coat containing 25 per cent hydrated lime. All the molds and trim were run on the building except the small molds at the top and bottom of pilasters, the small molds on porch piers and the returns of frieze. All the windows were cast and planted. The floor beams were all 2 by 10 and hardwood floors were put in throughout the house except in the vestibule, which was tiled. The trim is in whitewood and the doors birch. The trim is painted white and the doors are stained mahogany. The interior arrangement is very practical and no space is wasted. The first floor is divided into parlor, library, dining room and kitchen. The library can also be

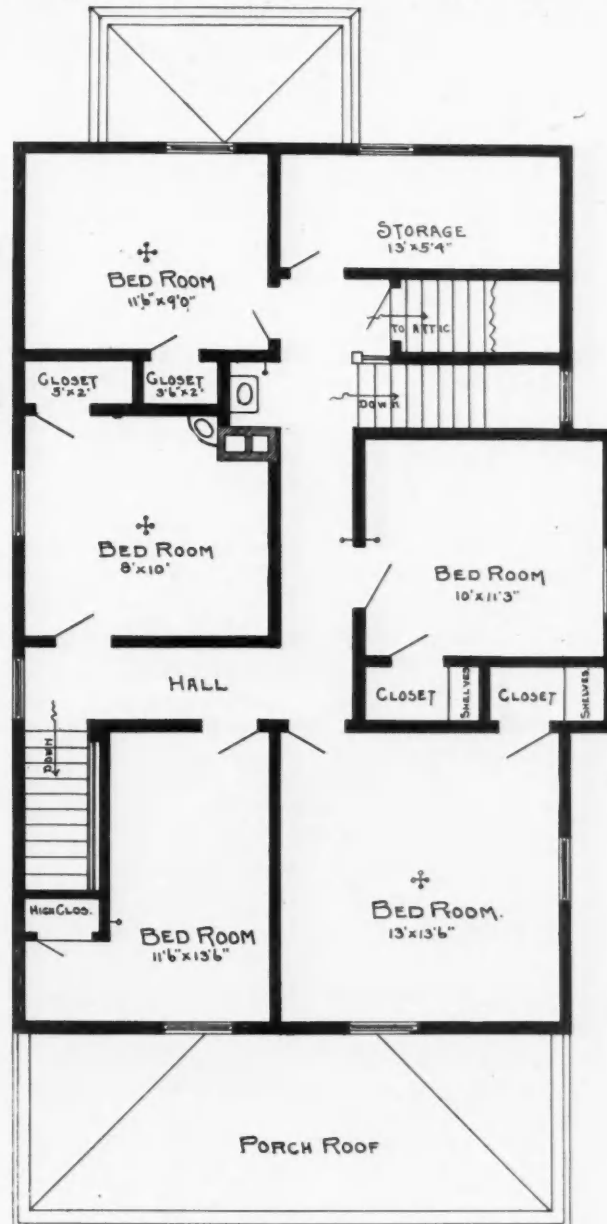


FIRST FLOOR

saw-tooth work to keep in repair. Even the corner boards are dispensed with, leaving the beauty of the house to depend entirely upon symmetrical proportions for the architectural effect.

**Concrete Block House**

We are showing on page 718 a house designed by I. P. Baylis and built by Frank Powers, Westbury Station, L. I. The footings for the foundation are 12 by 24 inch concrete blocks, the cellar is made of 10 by 16 inch concrete blocks, while the balance of the building is built of 8 by 16 inch blocks. All the blocks were made 4 to 1. Ten per cent hydrated lime was used. The outside of the building had three coats of

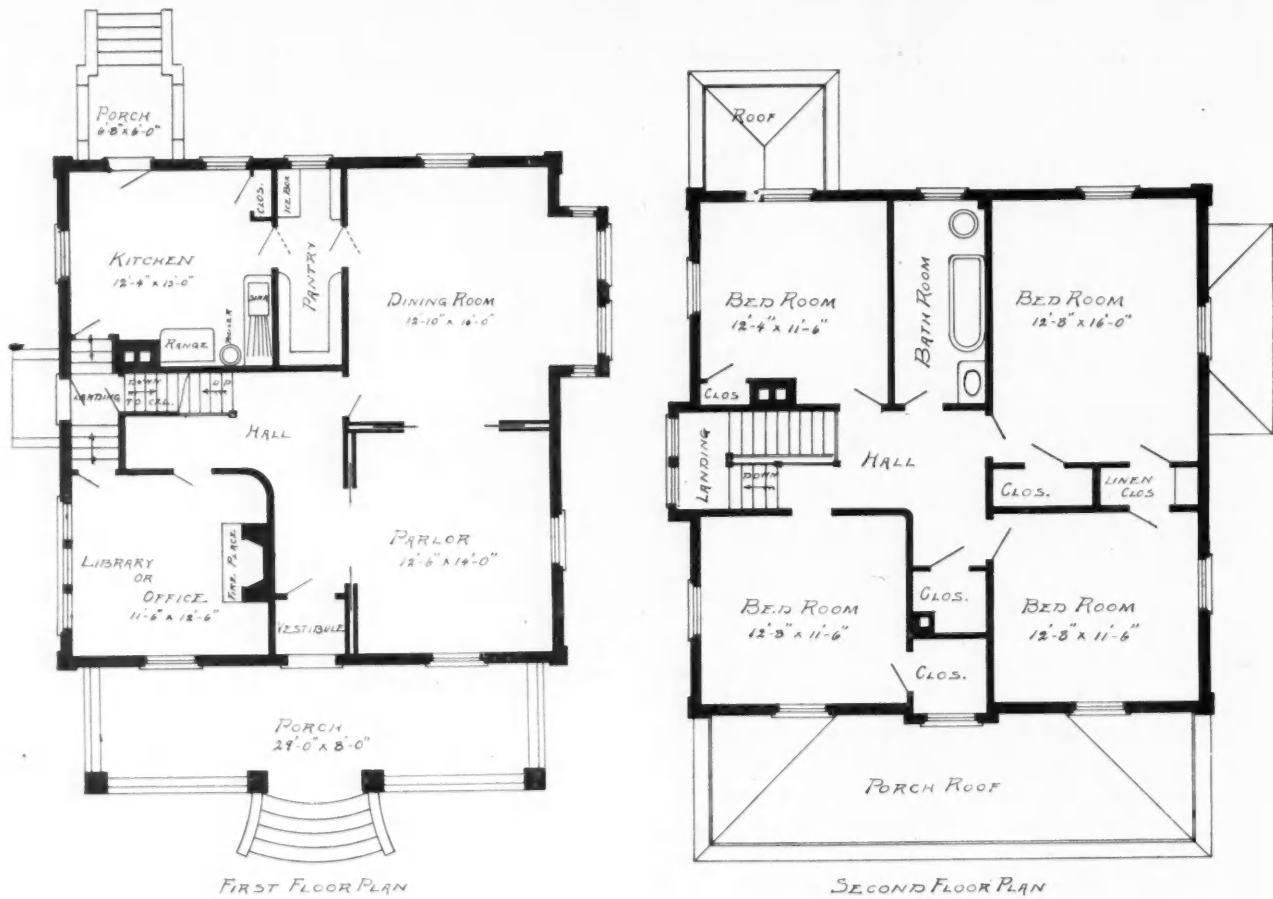


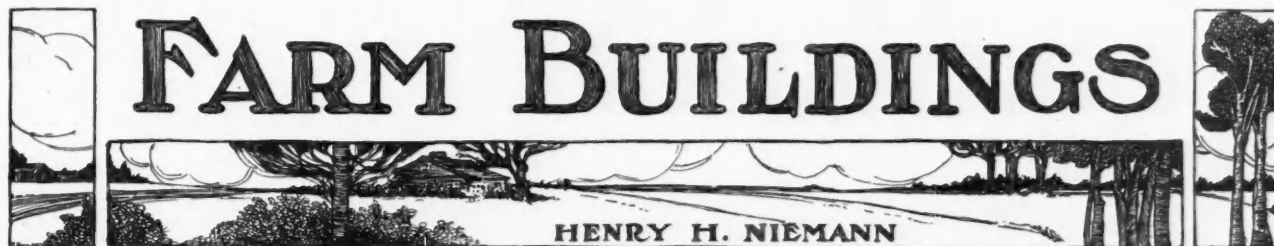
SECOND FLOOR.

used as an office, being practically shut off from the balance of the house to insure privacy. Sliding doors divide the parlor from the hall and dining room. The second floor is divided into four good sized bed rooms and a bath room. Complete cost of the house, including plumbing and heating apparatus, was \$6,500.



Frank Powers, Westbury Station, L. I., Owner and Builder



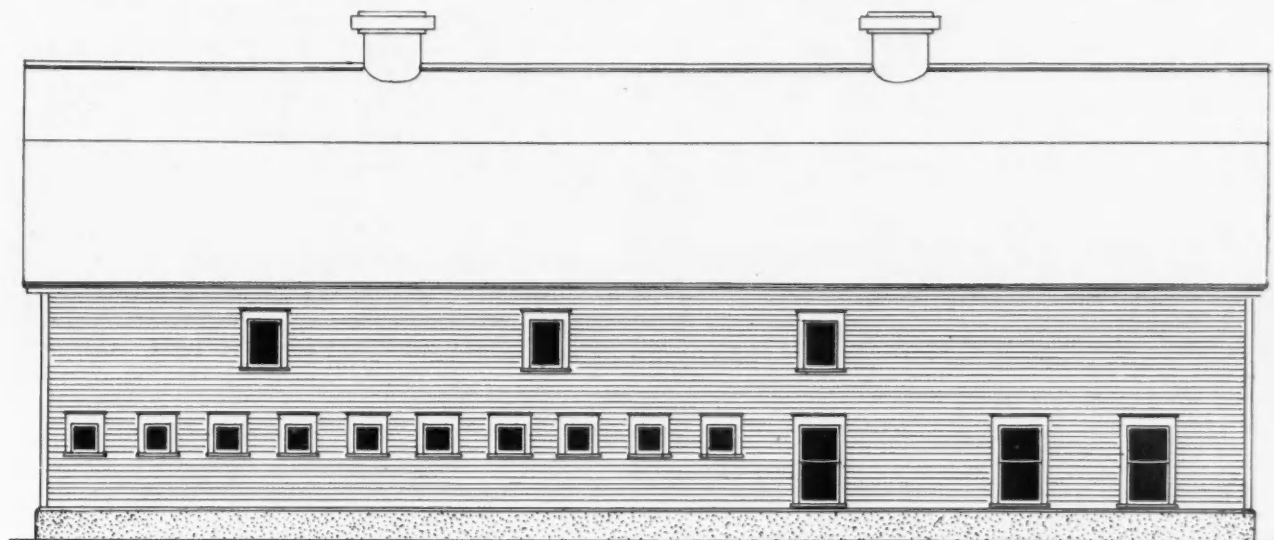


## A Combination Barn

BEING A GOOD PRACTICAL BARN FOR A MEDIUM SIZED FARM — PLANS AND ELEVATIONS GIVING COMPLETE IDEA OF APPEARANCE AND ARRANGEMENT

**W**E ARE this month showing a practical barn which has proved to be very popular. The first floor contains a large vehicle room, which has a carriage wash. The horse and cattle sections are also located on this floor, but are entirely separated

room with spouts leading down to it. The hay room is over the horse and cow stalls. Among the novel features in this barn is a cement floor which is covered with a plank floor, a cement gutter and driveway and the partitions between the stalls for horses are thin



SIDE ELEVATION

from each other. The cattle section contains fourteen single cow stalls, two calf stalls and one bull stall. In the horse section there are four single stalls, two box stalls, harness room and a mixing room.

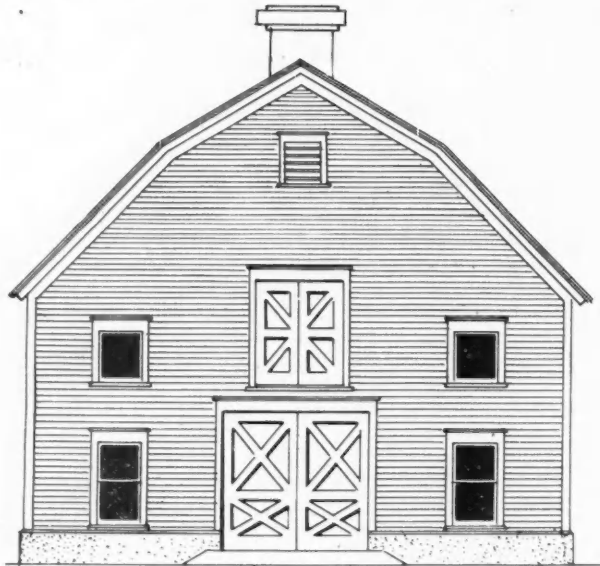
On the second floor there is a storage room over the vehicle room, three feed bins over the mixing

reinforced concrete. This prevents the horses from chewing at the partition. The concrete foundation runs up eight inches above the floors and is curved at the angles; this prevents the woodwork from rotting when washing the floors. The balance of the barn is of frame construction, and the roof is known



as a curb roof. This has the greatest capacity for hay and leaves ample space to operate a hay fork. On the top of the barn are two large glass top galvanized

and then thin planks are put on the interior as well as the exterior. The house when finished is as impervious to cold as the hull of a ship and a great deal warmer than a house built of stone of the same thickness would be.



END ELEVATION

iron ventilators. These have ducts running to the horse and cow barn and make an ideal ventilating system.

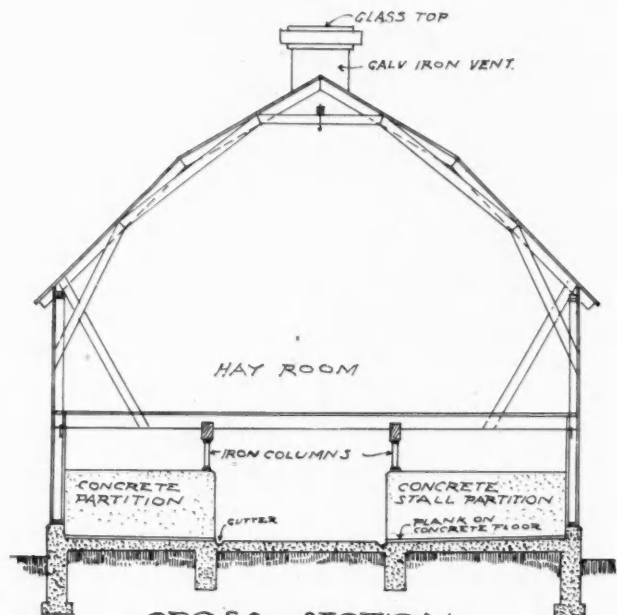
**Russian Woodworker Best**

It has been said that England is the country of iron and steel, Holland of brick, France of stone, Greece and Italy of marble, and Russia of wood, and that being the fact the Russian carpenters are unrivaled in the handling of that material. A great many public buildings and theaters in Russia are built of wood, and a feature of the country is the timber built dwelling of the rich land owner.

The walls of these dwellings are formed of timbers from one foot to eighteen inches in thickness, laid on top of each other and joined at the corners. Wooden bolts three feet in length fasten them together, the crevices are filled with moss soaked in pitch and dried,

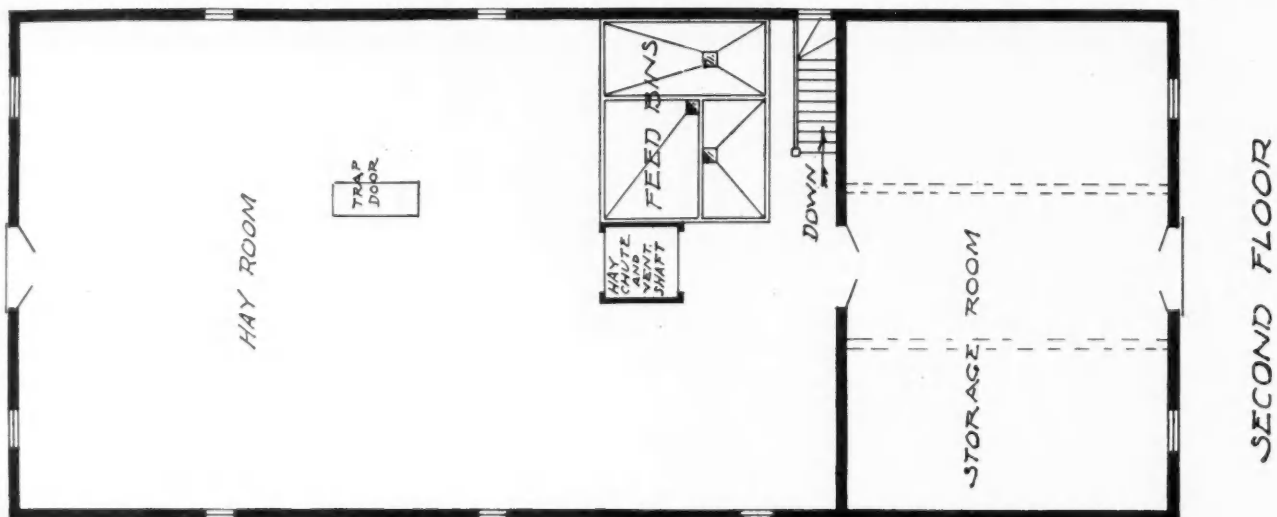
**For Lifting Bricks**

An exceedingly simple device by which a number of bricks and similar objects can be readily and conveniently lifted, has been patented by a Kansas man, In operating the lifter a number of bricks are arranged in a line, the plates at each end of the lifter being separated and placed in contact with the surface of the end bricks. An upward pull upon the handle is necessary to lift the load, causing the end plates, through the medium of the connecting levers, to be forced against the end bricks with pressure approxi-



CROSS SECTION

mately equaling the weight to be lifted. It will be obvious, therefore, that the pressure so exerted against the end bricks will so bind the intermediate bricks as to prevent their displacement while free of a support.





# Manual Training



Ira S. Griffith

## Something The Boys Can Make

COMPLETE WORKING DRAWINGS, AND INSTRUCTIONS FOR MAKING A PLANTSTAND AND A HALL TREE  
—KIND OF WOOD TO USE AND FINISH FOR SAME

THE article described this month will require much less time in the making than most of the articles which have appeared lately in this department. It is comparatively simple in its construction and has but one joint that will require more than ordinary care. The piece is intended for a plant stand. Its height makes it quite suitable for plants such as ivy, which grow down over the sides of the receptacle rather than in an upward direction. It may be used equally well as a pedestal for statuary or vases. The wood should be well seasoned to prevent its warping. Oak, red or white, will work up well, finish nicely and stand rough usage about as well as any other kind of wood. Chestnut finishes nicely, but as it is soft it is hardly suitable.

For the cross pieces which form the base, secure two pieces of such a size that each may be squared to one and three-quarters by one and three-quarters by twenty inches. The post or upright will be finished to the same thickness and width with a length of thirty inches.

If the wood is thoroughly seasoned so that it will be straight and out of wind when finished, these pieces might be got mill-planed to width and thickness. Otherwise, they should be got in the rough sufficiently large—in this case, two inches by two inches—to allow for straightening.

The brace will require four pieces mill-planed to a thickness of one and one-eighth, with a width of four inches and a length of six inches. For the top, two pieces of three-quarter inch stock, such that one can be squared to twelve inches each way and the other to nine inches each way.

Begin work by removing the mill-marks from the two parts which are to form the top, using smooth plane and scraper steel. (1) Plane a joint edge. (2)

Mark the width with the panel gauge, the ordinary gauge will not be long enough. (3) Work to the gauge line. (4) Square one end to joint-edge and to working face. (5) Measure the length from this end. (6) Square knife lines across the face at this point and plane—or saw, then plane to the knife line. If this stock was not got with its surfaces mill-planed, the first surface must be leveled as well as planed smooth.

A sufficient test for trueness when the surfaces are as broad as these, is obtained by placing a straight-edge upon it in four directions and looking towards the light to see whether or not any light can be seen between the surface of the board and the under edge of the straight-edge. These four directions are lengthwise, crosswise, and along the two diagonals, that is, from corner to corner. When the surface is true or level no light can be seen with any of these tests.

The under side of the twelve inch top piece should be chiseled out at the center so that it may receive the head of the lag screw which passes through the lower piece into the upright. Fig. 5.

The sides of this-opening should be cut down plumb and the opening should be made but slightly larger than the head of the screw.

The piece below the top may have a one-quarter inch bevel on its under side, Fig. 1. Through its center there should be bored a one-quarter inch hole. Since this piece is an oblong its center is most easily found by drawing the two diagonals—or at least enough to determine the point at which they will cross.

One inch from each edge, at the corners, there should be bored and countersunk from the under side of this nine inch piece holes for screws that shall pass through it up into the under side of the top. As they are not easily seen, flat head bright screws may be used.



The upright may next be made. If in the rough, it must be straightened and squared. This is done in the usual way with one exception. In testing the first surface, the narrowness of the piece necessitates some test other than along the diagonals to determine whether or not the surface has wind or twist. This is done by placing two sticks, called winding sticks, as in Fig. 2, and sighting over their tops. These pieces are planed straight and their edges are parallel. If the surface is out of wind the top edges of the sticks can be made to sight as one; if not, one end of one stick will seem high with reference to the other stick, no matter what the position of the eye. This will show where the piece of stock must be planed.

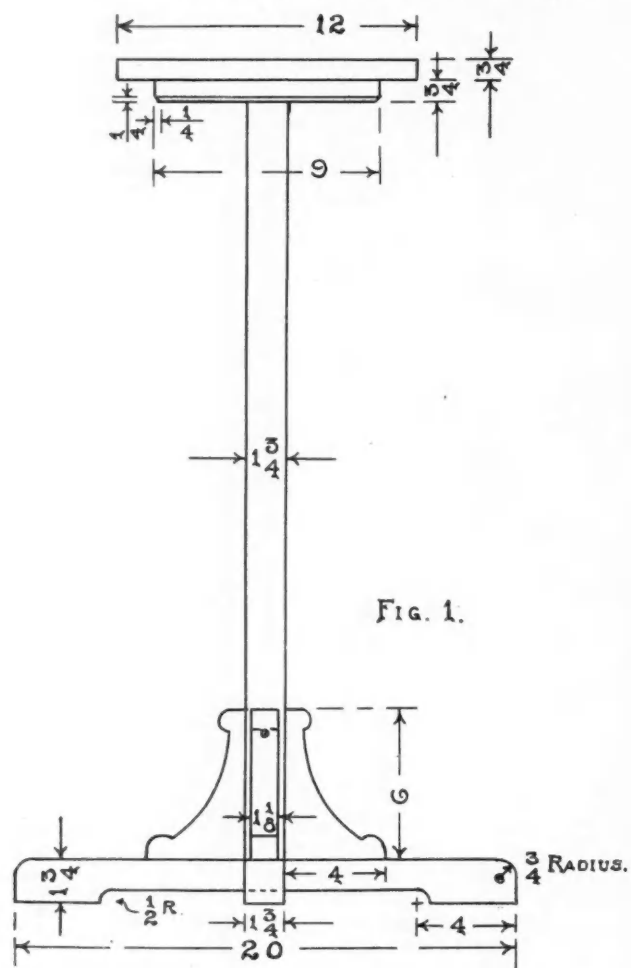


FIG. 1.

The test for straightness across and along the surface must be applied also. The above test is for wind only.

There should be bored into each end of this upright, when it has been completely squared up, a hole three-sixteenths of an inch in diameter and one and three-quarters inches deep. This hole will take in the body of a one-quarter by three inch lag screw without the threads. If any other size screw is used the size of the hole must be changed to correspond.

Square the two pieces for the base to one and three-quarters by one and three-quarters by twenty inches.

Place these pieces side by side in the vise with their ends evened and one set of face marks against the

vise jaws. From each end measure four inches and bore one inch holes. Place the spurs of the bit in the crack between the two pieces; this will form a half circle on each piece. Set the gauge to one-half inch and connect these half circles on each side of each piece.

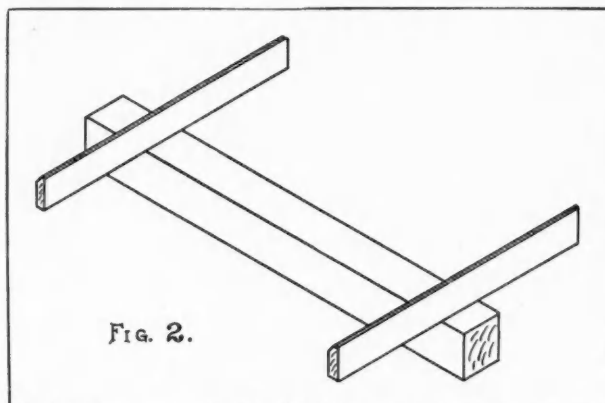


FIG. 2.

With compass or turning saw, saw along the lines far enough to allow the rip saw to enter, then finish sawing with this. Saw from one side of the piece a while, then reverse and saw from the other side, repeating the change frequently as the sawing proceeds.

On the sides, at the ends, Fig. 3, describe arcs of circles, using a three-quarter inch radius. Round off the ends, using chisel and plane or spokeshave.

Next lay out the joint. This joint is called a half-lap or halved cross, and if the directions are carefully followed, no trouble ought to be experienced in securing a proper fit. (1) Locate the middle and square a light knife line across both pieces at this point. To make sure the middle has been found correctly, turn one of the pieces end for end and place it along side of the other. If the middle lines still correspond when the ends are evened, the lines are properly located. If they do not, the middle lies at a point midway between the two lines, and a line should be drawn across the two pieces at this new point. (2) Measure to each side of these middle lines half the width of the pieces and make points with the knife blade. Before squaring lines across, however, place each piece upon the other to see that these points are exactly located. (3) Square the lines across the top and down the

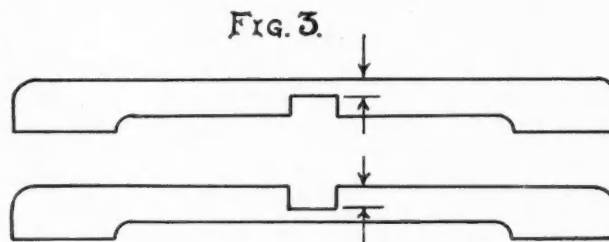
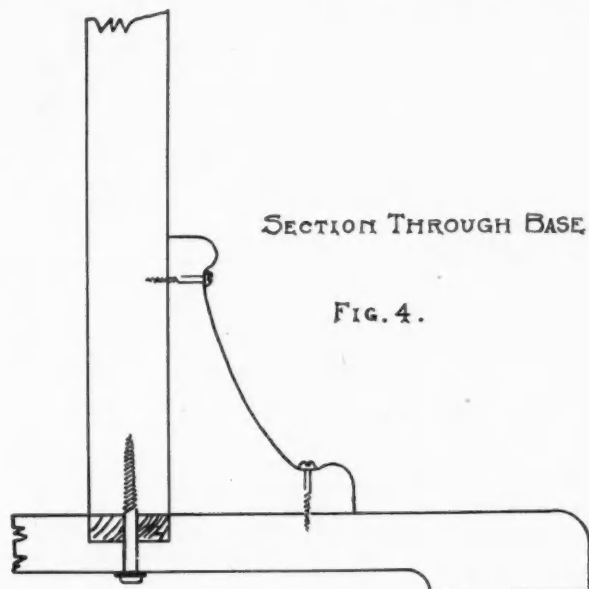


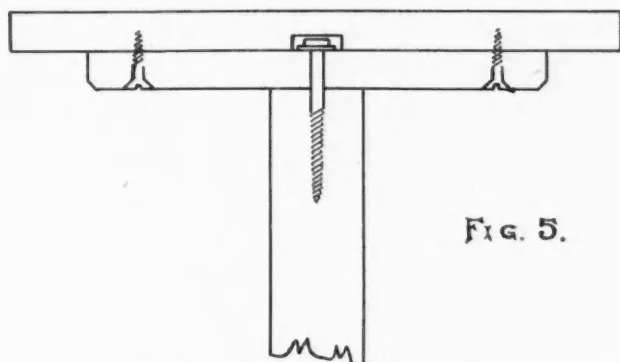
FIG. 3.

sides of one piece, but across the bottom and up the sides of the other. (4) Set the gauge for one-half the thickness of the pieces at the joint and gauge on each side of each piece, between the knife lines. Keep the gauge block against the top surfaces of each piece. A little thought will make clear the importance of this

direction. If the gauge spur could be set at exactly half the thickness and the two pieces were of exactly the same thickness the gauging might be done from top or bottom surfaces. This condition seldom exists. Suppose, then, the spur should happen to be set to mark out a depth of more than one-half the thickness



of the piece, the surface of one piece would sink below that of the other when the parts were put together. But, even though the spur were so set, if the block should be held so as to mark the depth on one piece and the thickness of the part remaining on the other, that is, if the gauging should be done from the top surfaces of each, these surfaces would be flush though the depth of opening in one was more than in the other. (5) Saw accurately to the knife lines, keeping the kerf entirely upon the waste wood. (6) Chisel carefully to the gauge lines; work from each side of the piece when nearing the lines. (7) Fit the parts together. This requires care. If the fit is forced, the pressure on the sides of the groove will cause one member to be bowed up and the other down, so that



the piece would rest on but two of its four feet. On the other hand the parts must not be so loosely fitted that they shall leave unseemly openings at the joint. It ought to be so that the parts may be put together with just a slight pressure of the hands.

The four braces may next be laid out and sawed.

It is a good plan to so place the pattern or templet that the grain of the wood may run diagonally to the sides. A paper pattern will do. The sides are respectively four and six inches and must be square one with the other and with the face sides. The curve is to be drawn free hand upon the templet. A turning saw will be needed to cut the curves and a cabinet scraper, well sharpened, for smoothing them. The saw should be made to cut close to the line so that the smoothing may not be made any more laborious than is necessary. These braces are to be fastened to the upright and the base with round head blued screws. Holes three-sixteenths of an inch in diameter should be bored as indicated in Fig. 4.

Thoroughly scrape and sandpaper the different parts and stain and fill before putting them together. Directions for staining and filling are always placed upon the bottles or cans in which the finishes come.

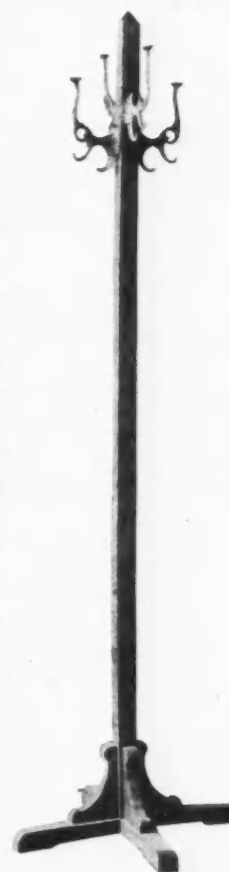
In assembling, the parts of the base may be fitted and the upright fastened to it by means of the lag screw. The braces may next be fastened. The piece which is placed under the top is to be fastened to the post with a lag screw. Three or four stout nails should also be driven through it into the post to prevent its turning should it shrink so as to partially loosen the hold of the screw. The top is next fastened to this piece by four or more screws, as shown in Fig. 5.

A picture of a second piece of furniture is shown. This can be used as a hall tree and will be found very convenient for use on the first floor of the home as a place to hang wraps. It makes an excellent addition to the bedroom furniture also.

The base is made in the same manner and is of the same size as that of the pedestal. The upright is of the same thickness and width but with a length of sixty-eight inches. A forty-five degree slope at the top adds seven-eighths of an inch more to this length.

The slope at the top is made by squaring a light pencil line entirely around the four sides at a point sixty-eight inches from the bottom, laying off on two opposite sides angles of forty-five degrees. Saw and plane these slopes—the end will then be like the gabled roof of a house. Connect the middle of the ridge with each of the four corners by pencil lines.

The hooks may be placed as fancy dictates. The picture shows one way.



# 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.

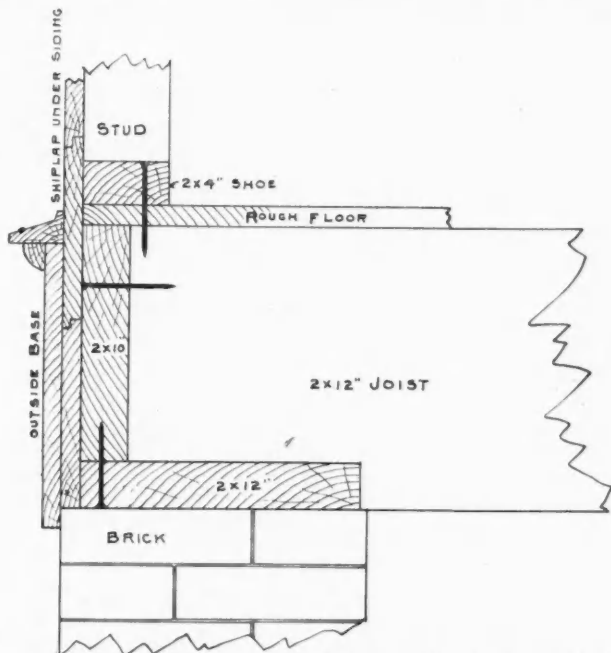
**American Carpenter and Builder**  
185 Jackson Boulevard, Chicago

# Correspondence



## Rat-Proof Sill Construction

To the Editor: Oroville, Wash.  
 In the January number of the AMERICAN CARPENTER AND BUILDER, my attention was called to Mr. J. H. Godfrey's article on rat-proof sills. I used the same kind of sills for several years, until I had trouble with a foundation on account of lumber shrinkage. You will notice Mr. Godfrey's



sill, as constructed, has the whole weight of the walls to support on the two inch edge of his 2 by 10 inch, which is spiked to the side of his sill. Now suppose the joist shrink more than the 2 by 10 inch, the building will be resting on a two inch bearing on the foundation wall instead of on a twelve inch as I am using. You will notice that I do not put the top piece on until I have laid the under rough diagonal floor, then I put on my shoe on top of the rough floor and spike it down to every joist. This shoe is just the width of the studding and makes good nailing for the bottom edge of the base after the plaster is on. I am not writing this in a spirit of criticism of Mr. Godfrey's method, but as a regular subscriber, and am showing what I consider the better method of building a box sill on a foundation wall. E. McCAMMON.

## A Correction

In the last number, a former article on pitches with an illustration by the wirtler was republished at the request of one of the readers.

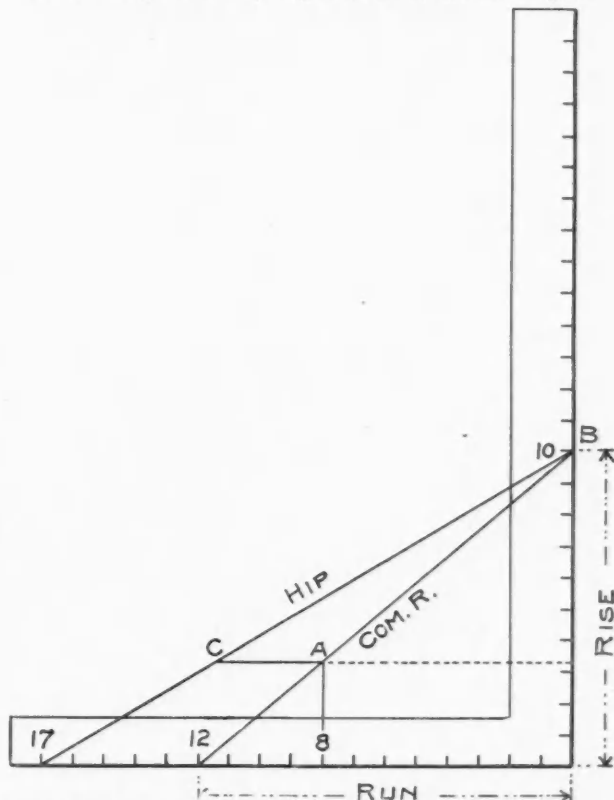
We wish to call attention to the fact that there is a slight error in the illustration. The same was discovered and attention called to it in a subsequent number. It was our intention to correct the error before publication again, but

being called for unexpectedly it got into print before we knew it.

The error is in the length of the hip. The lengths given in the illustration are correct up to the thirteenth inch rise, where it takes on another hundredth part of an inch and increases till up to the twenty-fourth inch rise, when the overrun is practically one-thirty-second part of an inch. This is not much, of course, but it is too much to be allowed to go without attention being called to same. A. W. WOODS.

## Tail of Hip Rafter

To the Editor:  
 I have a problem in my head which I cannot figure out, and I am going to ask you to tell me.  
 Suppose you wish to cut a hip rafter to correspond with the common rafter. You see the rafter has an 8 inch projection. Now how long must the tail be on the hip rafter to correspond with the tail on the common rafter?  
 Will you explain to me, or give a rule to use for all pitches?



I wish to know how to do it, so I can lay out all rafters on saw-horses and have them fit properly. EDWARD JAHN.

Answer: We will suppose the rise is 10 inches to the foot. Then a line from 12 to 10 will represent the common rafter and from 17 to 10 will represent the corresponding hip. Now the length of the tails can very easily be found from the accompanying diagram. Since the tail of the common rafter

projects 8 inches, square up from 8 inches on the tongue to the common rafter as at A, then, parallel to the hip as at C, and the respective lengths of the tails will be A-B and C-B. Their lengths can be taken direct from these lines or by sliding the square up till the tongue rests on the line C A, then the figures intersected by the rafter lines on blade and tongue will be the proportions to use to apply the square direct to the rafter without further calculation.

A. W. Woods.

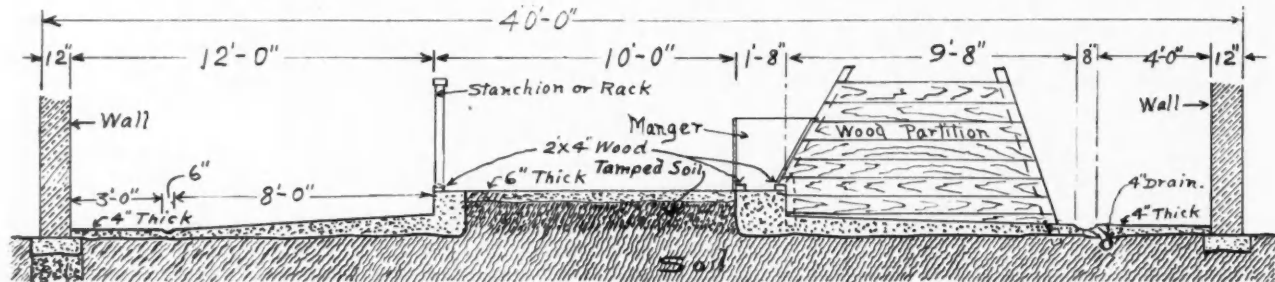
**A Cement Barn Floor**

To the Editor: Edinburg, N. D.

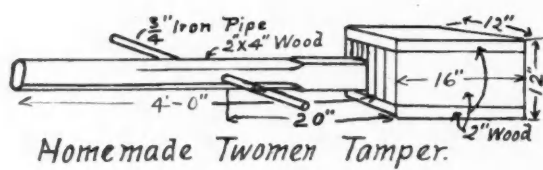
Please inform me by return mail the best way to build a cement floor in a barn 26 feet by 38 feet, horses on one side and cows on the other, and the best foundation to use. Give

strength the first formula and save much in cost. Add sufficient water to make a stiff grout and tamp well into place so that the top will be one-half to one-quarter inch lower than the top of floor; before this has set apply the top coat, which should consist of one part cement and two parts sharp sand, and trowel smooth. After this has set for one hour, tamp with stiff scrub brush or wire foundry brush. This will produce a non-slipping surface. These floors will be uninjured by the sharpest shod horses after four weeks.

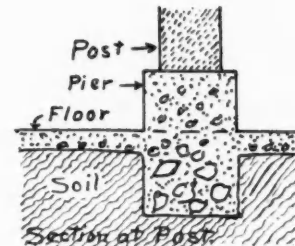
In large barns, the drain tile shown is necessary, and an outlet from every other stall to this drain is sufficient, but in small barns the gutter alone is sufficient. This gutter I make eight inches wide for horse floors and six inches wide for cattle, both gutters being two and one-half inches deep. For the mangers, 2 by 4 inch scantlings are bolted to the floor with half-inch bolts eight inches long, embedded five



Cross Section of Barn Floor - Showing typical concrete construction of floor.



Homemade Twomen Tamper.



me a formula for mixing the concrete for the cement floor. How should I set my posts which support the second floor?

JOHN B. STEPHANSON.

Answer: For the several barn floors that I have constructed I have practically but one method which has proved satisfactory in every instance. The cross-section shown is that of a floor built on sandy soil, therefore no drainage or foundation was necessary. If the soil is clay or spongy, then eight inches of coarse gravel, stone or cinders should be well tamped and leveled before placing the concrete, but if soil is porous, then tamp soil as shown under center driveway of cross-section with home-made tamper, sketch of which is shown; this tamper is almost indispensable in walk and floor work. When a foundation for floor is necessary, drainage to conduct the water gathering in the foundation is also required; therefore, the foundation must have large stone in the bottom to afford ample air space and the excavation must have a slope to one or more points. These low points have tile drains leading the water from the building. This will insure dry floors and prevent cracking from frost.

Four inches of concrete for horse and cattle floors is ample, and five inches for driveway will do, though some are made six inches thick. The proportion of concrete depends on the kind of sand and aggregates. One of the following will prove desirable: Cement one, sand two, gravel three, makes very sound work. Cement one, fine sharp sand one, coarse sharp sand two, gravel or crushed stone four parts, will equal in

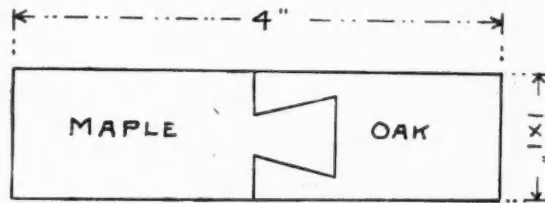
inches into the concrete. Manger partitions, as shown, are boarded on both sides and filled between with tamped concrete four feet high, so that when the wood partition has served its purpose a solid concrete wall will remain. Use 4 by 4 timbers for framing stall partitions.

FRED W. HAGLOCH.

**The Dove-Tail Block Puzzle**

To the Editor: Marion, Wis.

I will submit a problem which has no catch in it. For the sake of illustration, will say, take two pieces of timber, 1 by 1 by 2 or 3 inches long; one of maple, the other of oak. This



will make a neat puzzle for any mechanic to have when carefully made with perfect joints and glued, so as not to be pulled apart by examining. I have drafted one side of puzzle as it appears in the cut, being a direct view of one of the four

sides. The question is how to make this splice, no steaming or springing to be done. Most mechanics, to whom I have shown the puzzle, think two of the dove-tails are the thickness of a shaving. This is not the case. If it were, it would require springing to place. There are no other joints, except the one shown in the illustration, as they are the same on each side.

I would like to hear some of the readers answer this problem. I am a charter member of the AMERICAN CARPENTER AND BUILDER, and must say that I greatly appreciate it.

J. B. HOFMAN.



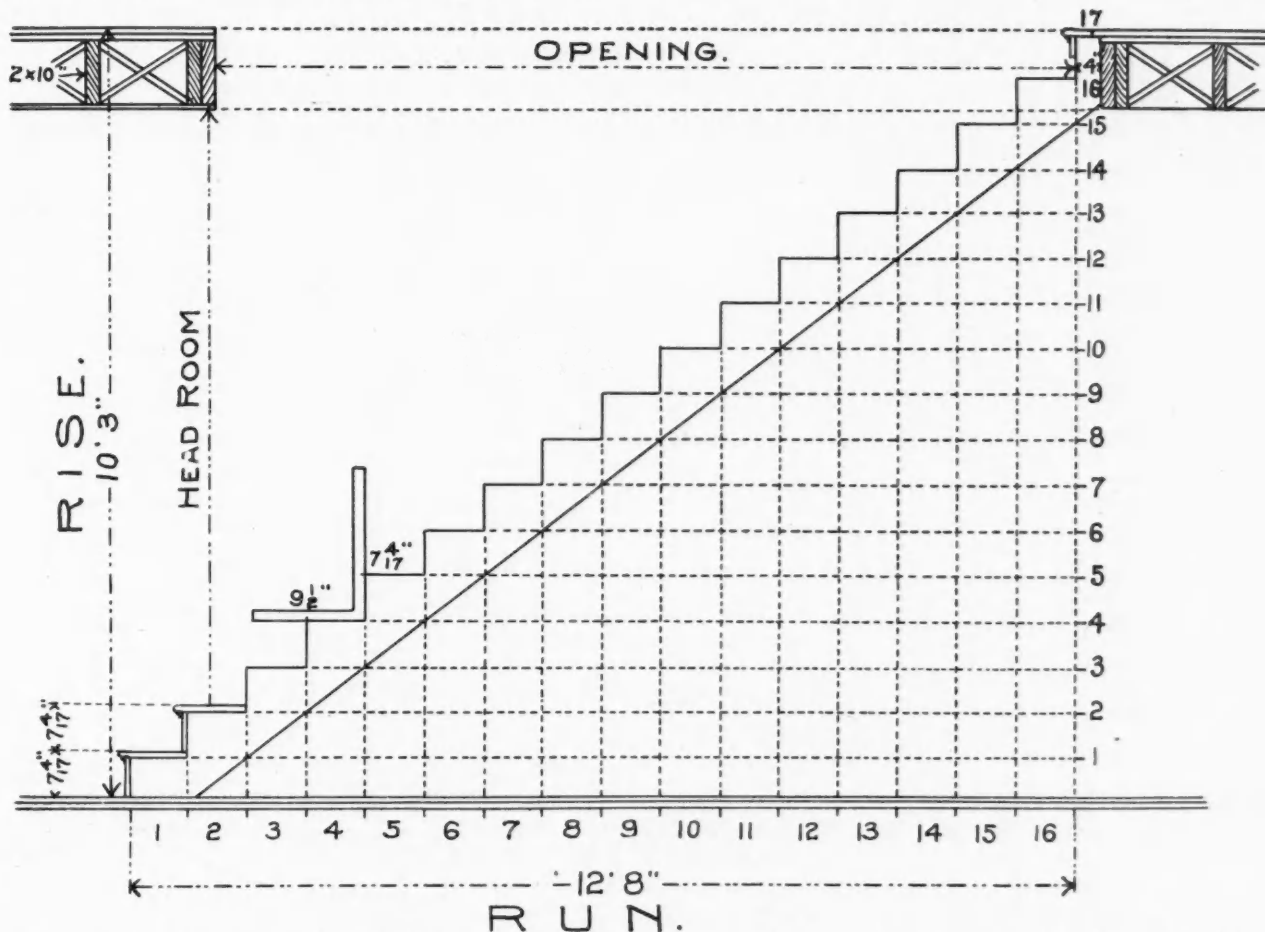
### How to Lay Out the Stairs

To the Editor: Salt Lake, Utah.  
Will you please publish a simple method of how to lay out a common flight of stairs, giving head room and the horizontal stretch required for the stairs.

"ONE WHO WANTS TO KNOW."

Answer: Stair building is a branch of carpentry that is well-nigh in a class to itself. In the larger cities there are men who make a specialty of stair building, from the plain,

interior of the house, say nothing of the added expense that must necessarily follow in the construction of circular stair work. Of course, there are times where winding stairs conform to certain space better than with square turns, but even then, in most cases, it would be better to allow the room for a good easy stair with square turns and make the rooms and hallways conform to it. How often have we seen, and in fact it is a common mistake, to see crowded stairways, unevenness in the width of treads and the height of risers, low head room, etc., all because of a lack of proper calculation in laying out the frame work. Oftentimes, the work is allowed to progress to a point that it is hard to make changes to allow for ample space. Especially is this true in making the allowance for proper head room—the house practically finished, even to the plastering. The finished stairs are usually left until the last, and then it is found that there is not sufficient head room. In many cases it is allowed to go, to be forever regretted. We have known cases where it was absolutely necessary to make a change, and usually an expensive one, because it often meant the taking out of partitions, the cutting of principal joist, which necessarily weakens the structure, because others could not be substituted in



straight run to the more complicated platform and winding stairs. It is the latter class of work that taxes the ingenuity of the workmen to work out the railings, newels, etc., so as to rest in the proper planes with the pitch given the stairs. To successfully do this, requires one well up in detail drafting and a practical knowledge in geometry to lay out the turns and easements on the rough timbers, so as to be able to work them out in the finished product. However, we take it that it was not the intention of the questioner to enter into the winding stair problems, and we are glad to steer clear of such work, because the old-fashioned winding stairs, with its ever winding rail, is no longer considered, from an architectural standpoint, to lend to the beauty of the

as substantial a way without removing floors and plaster, and naturally a patched job at the best.

The question asked is how to lay out the necessary room for a comfortable and convenient stair.

Answer: Lay out the stairs first, allowing ample space, and plan the rooms accordingly. The accompanying illustration shows a straight run of stairs, and is the simplest of any to build. Here the starting point to the level of the floor above is 10 feet 3 inches or 123 inches, and as there are 17 risers, would be 7 4-17 inches to each rise. Now, as there are one less treads than there are risers, we multiply 16, in this case, by the desired width of the tread (9 1/2 inches) and we have 152 inches, or 12 feet 8 inches in the run of the

stairs. The next thing to consider is the proper length of the opening to leave in the second floor, so as to give ample head room, not only for the more than average tall person, but a generous allowance should be made for the free passage of furniture, the carrying of a trunk on the shoulder of a careless drayman, who cares not for jamming into the plastering, so much as he does for the dimes for his services. So it is better to give them plenty of room and save the unsightly marks and dents. The head room should be at least a little higher than usually given to the room doors, say 7 feet 6 inches or 8 feet. It is better to allow plenty of room in the framing, as it is an easy matter to fur out the trimmer if it is afterwards found desirable to reduce the space. The length of the opening can be found by deducting

the accompanying table will be found very handy and useful as a time saver. The first row of figures running down the left hand side, represents the number of risers, while the first row running across the top represents either rise or the width of the tread. Those in the following lines represent either the total rise or run for the number of risers shown in the opposite left hand column.

For example: Suppose we wish to find the number of risers required in a stairway that is 10 feet 5½ inches from floor to floor and we desire to keep the risers as near 7½ inches as possible.

Operation: Take 7½ in the top line and run down the column to the nearest figures to 10 feet 5½ inches. We find it is 10 feet 7½ inches, and that it is opposite 17 in the left

## STAIR TREADS AND RISERS.

NUMBER OF RISERS	RISE OR RUN.																	
	6½	6¾	7	7⅛	7¼	7⅝	7¾	7⅞	8	8¼	8½	9	9½	10	10½	11		
1	1'1	1'1½	1'2	1'2¼	1'2½	1'2¾	1'3	1'3¼	1'3½	1'3¾	1'4	1'4½	1'5	1'6	1'7	1'8	1'9	1'10
2	1'7½	1'8¼	1'9	1'9¾	1'9¾	1'10½	1'10½	1'10¾	1'11¼	1'11½	2'0	2'0¾	2'1½	2'3	2'4½	2'6	2'7½	2'9
3	2'2	2'3	2'4	2'4½	2'5	2'5½	2'6	2'6½	2'7	2'7½	2'8	2'9	2'10	3'0	3'2	3'4	3'6	3'8
4	2'8½	2'9¾	2'11	2'11½	3'0¼	3'0¾	3'1½	3'2½	3'2¾	3'3¾	3'4	3'5¼	3'6½	3'9	3'11½	4'2	4'4½	4'7
5	3'3	3'4½	3'6	3'6¾	3'7½	3'8¼	3'9	3'9¾	3'10½	3'11¼	4'0	4'1½	4'3	4'6	4'9	5'0	5'3	5'6
6	3'9½	3'11¼	4'1	4'1¾	4'2¾	4'3¾	4'4½	4'5¾	4'6¼	4'7½	4'8	4'9¾	4'11½	5'3	5'6½	5'10	6'1½	6'5
7	4'4	4'6	4'8	4'9	4'10	4'11	5'0	5'1	5'2	5'3	5'4	5'6	5'8	6'0	6'4	6'8	7'0	7'4
8	4'10½	5'0¾	5'3	5'4½	5'5¼	5'6¾	5'7½	5'8¾	5'9¾	5'10¾	6'0	6'2¼	6'4½	6'9	7'1½	7'6	7'10½	8'3
9	5'5	5'7½	5'10	5'11¼	6'0½	6'1¾	6'3	6'4¼	6'5½	6'6¾	6'8	6'10½	7'1	7'6	7'11	8'4	8'9	9'2
10	5'11½	6'2¼	6'5	6'6¾	6'7¾	6'9½	6'10½	6'11¾	7'1¼	7'2¾	7'4	7'6¾	7'9½	8'3	8'8½	9'2	9'7½	10'1
11	6'6	6'9	7'0	7'1½	7'3	7'4½	7'6	7'7½	7'9	7'10½	8'0	8'3	8'6	9'0	9'6	10'0	10'6	11'0
12	7'0½	7'3¾	7'7	7'8½	7'10¼	7'11½	8'1½	8'3½	8'4¾	8'6¾	8'8	8'11¼	9'2½	9'9	10'3½	10'10	11'4½	11'1
13	7'7	7'10½	8'2	8'3¾	8'5½	8'7¼	8'9	8'10¾	9'0½	9'2¼	9'4	9'7½	9'11	10'6	11'1	11'8	12'3	12'10
14	8'1½	8'5¼	8'9	8'10¾	9'0¾	9'2½	9'4½	9'6¾	9'8¼	9'10½	10'0	10'3¾	10'7½	11'3	11'10½	12'6	13'1½	13'9
15	8'8	9'0	9'4	9'6	9'8	9'10	10'0	10'2	10'4	10'6	10'8	11'0	11'4	12'0	12'8	13'4	14'0	14'8
16	9'2½	9'6¾	9'11	10'1½	10'3¼	10'5¾	10'7½	10'9¾	10'11¼	11'1½	11'4	11'8¼	12'0½	12'9	13'5½	14'2	14'10½	15'7
17	9'9	10'1½	10'6	10'8¼	10'10½	11'0¾	11'3	11'5¼	11'7½	11'9¾	12'0	12'4½	12'9	13'6	14'3	15'0	15'9	16'6
18	10'3½	10'8¼	11'1	11'3¾	11'5¾	11'8½	11'10½	12'0¾	12'3¼	12'5¾	12'8	13'0¾	13'5½	14'3	15'0½	15'10	16'7½	17'5
19	10'10	11'3	11'8	11'10½	12'1	12'3½	12'6	12'8½	12'11	13'1½	13'4	13'9	14'2	15'0	15'10	16'8	17'6	18'4
20	11'4½	11'9¾	12'3	12'5¾	12'8¼	12'10¾	13'1½	13'4½	13'6¾	13'9¾	14'0	14'5¼	14'10½	15'9	16'7½	17'6	18'4½	19'3
21	11'11	12'4½	12'10	13'0¾	13'3½	13'6¼	13'9	13'11¼	14'2½	14'5¼	14'8	15'1½	15'7	16'6	17'5	18'4	19'3	20'2
22	12'5½	12'11¼	13'5	13'7¾	13'10¼	14'1½	14'4½	14'7¾	14'10¼	15'1½	15'4	15'9¾	16'3½	17'3	18'2½	19'2	20'1½	21'1
23	13'0	13'6	14'0	14'3	14'6	14'9	15'0	15'3	15'6	15'9	16'0	16'6	17'0	18'0	19'0	20'0	21'0	22'0
24	13'6½	14'0¾	14'7	14'10½	15'1¼	15'4¾	15'7½	15'10½	16'1¾	16'4¾	16'8	17'2¼	17'8½	18'9	19'9½	20'10	21'10½	22'11
25	14'1	14'7½	15'2	15'5¼	15'8½	15'11¼	16'3	16'6¼	16'9½	17'0¾	17'4	17'10½	18'5	19'6	20'7	21'8	22'9	23'10
26	14'7½	15'2¼	15'9	16'0¾	16'3¾	16'7½	16'10½	17'1½	17'5¼	17'8½	18'0	18'6¾	19'1½	20'3	21'4½	22'6	23'7½	24'9

the amount of the number of risers from the room height that will leave ample head room. In this example, if we deduct the height of two risers, which is practically 1 foot 2½ inches, from 9 feet ½ inch, it leaves 7 feet 10 inches above the second riser. It is safe then to place the trimmer above, a little further forward, as shown in the illustration. It must be remembered when the well-hole is lathed and plastered it still reduces the height accordingly.

Many workmen prefer to use a pole on which they mark the heights from floor to floor and then divide this into the number of equal spaces, as there are to be risers. The pole can also be used to advantage where the total run is desired to come inside a given pace, as it obviates the necessity of a mathematical problem that usually runs into fractions.

But for general use in calculating the lay out for stairs,

hand column. Therefore, 17 represents the number of risers, but there is 2 inches left over. This must be divided into 17 parts and one of these parts subtracted from each riser, which would be nearly ⅛ inch less than 7½ inches.

Now look in the next column to the left. In this, the risers are 7¾ inches, and for 17 risers, the total is found to be 10 feet 5¾ inches, which is just ⅛ inch short. Thus the risers will be 7¾ inches plus 1-17 of ⅛ inch.

To find the run of the stairs, it must be remembered, that there is always one less tread than there are risers. So we take 16 in the left hand column and trace the figures to the right till we come to the column whose figures at the top represent the desired width of tread. Say it be 9 inches, then it will be found that the run will be 12 feet. If the treads are 9½ inches wide then the run will be 12 feet 8



inches, and so on for any desired width of tread. Usually there is some leeway in the run, that is, it is not confined to a certain space like the rise from floor to floor. Therefore, a few inches in the run of a straight flight of stairs does not usually make any difference, thus leaving it to the builder to at once select the width of tread desired. When this cannot be done, then the allotted space must be arrived at in the same manner as that given in the above for the risers. But after all, it should be remembered that while the measurements can be accurately found by the aid of this table, its greatest utility is as a quick reckoner, as we said before, in laying out the space and proper openings for the finished stair work. In that case it is not necessary to calculate down to the minuteness required in the building of the stairs.

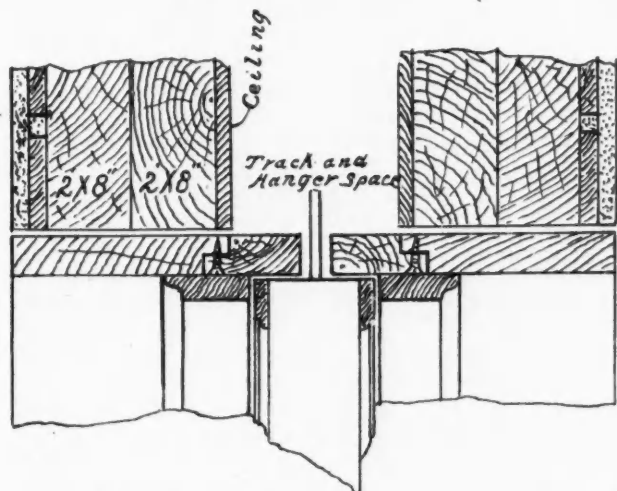
A. W. WOODS.

**Head Jamb for Sliding Doors**

To the Editor:

Exira, Ia.

Inclosed find a draft of the way I put in my head jamb for sliding doors. As shown in the plan each half of the head jamb is made of two pieces with the joint coming under the stop, leaving the jamb showing as if made of one piece, but much better, as the inside pieces of the jamb can be taken off and the track adjusted or taken out, if it ever need be.



In putting the stops on I put the side stops on first and then house the head stops over these.

Then the track can be taken down by only taking off the head stops and inside pieces off head jamb.

Fasten the jambs together with 7/8 inch No. 7 screws, and the stops on with round headed screws and washers, and you will have a job that any carpenter can easily adjust, if that is ever needed.

Some carpenters make their head jambs the same width as the side jambs. This leaves a large hole between the jambs, and besides being unworkmanlike, leaves no place to fasten the bumper.

Others make their head jambs as wide as those shown in sketch, but of one piece, which is all right as long as the building is perfectly plumb, but should the track need to be taken down, lots of the woodwork would be spoiled in doing it.

I hope the above will be of some benefit to some of the readers of the AMERICAN CARPENTER AND BUILDER.

L. A. PETERMAN.

**Shingling Valleys**

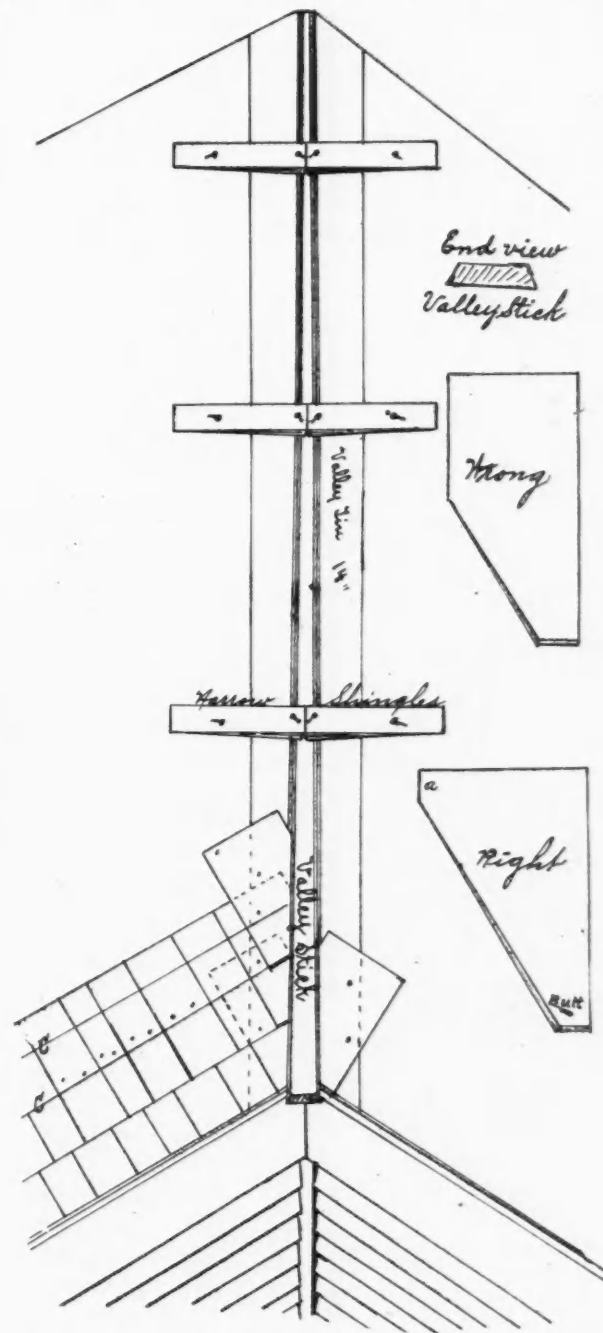
To the Editor:

Fossum, Minn.

I have seen a flaw in the shingling of valleys. A good job

there depends on whether wide shingles are used—the wider the better—and how they are cut.

I will show two different ways to cut valley shingles. I do not mean two different pitches—but a right and a wrong way.



The right way is to cut shingles almost to a point at "a." If cut the wrong way, or wide at "a"—the wider, the worse—it gives the more chance for snow and rain to drive up under, and beyond the valley tin, because each course of shingles laid leaves an opening.

Valley tins ought to be at least fourteen inches wide. I use a straight stick to shingle against. This stick is tapered and beveled, fastened in valley—after tin is nailed fast—by three or four pairs of narrow shingles, with butts against each other, care being taken not to nail through strip and tin. Where there is no gutter or where the tin is laid flat, shingled in, and bent up afterwards, I use the wide part of bevel down, and shingle at one or both sides of the stick as occasion demands. When the roof is shingled, just drive the stick down and out. I always shingle valleys close below gutters.

If a rolled gutter is laid, then turn the wide bevel—not taper

—up, because the gutter will be in the way, not allowing the stick to be driven out; it has to be lifted out. Some wonder how I get valleys so straight and even, a nice tapered water course. It's the stick that does it. I do not have to watch more than one chalk-line mark, just push shingle against the stick and nail.

For the courses, I use chalk-line marks (see C. C.), two rows at once. No straight edge for me. Nails make holes and a leaky roof, chalk marks don't, and by laying two or three rows at a time, you save much traveling along the roof. Nail valley shingles as far from center of valley as possible.

A. O. STIEN.

**Attaching Woodwork to Concrete**

To the Editor:

Equality, Ill.

Having seen nothing in the AMERICAN CARPENTER AND BUILDER relative to the woodwork in connection with concrete buildings, an article on this line may be of interest to some of the trade that are situated as the writer was last spring. I

If joists are laid on blocks their imperfections cause some places to be lower than others, and you are in trouble, as the joists cannot be raised after the blocks are laid above them. G is the floor joist, and H is a piece of 2 by 8 gained down level with top of floor joist, to be used at a door opening onto a porch; however, on a porch the water-table course should be left off, and plain faced blocks used instead. The dotted line, I, is the line of wall under water-table, the water-table projecting two inches over the wall. JJ is the double header to support floor joists at the basement windows. K is an 8 by 8 concrete lintel over basement window.

Fig. 3 shows the style of concrete block used around windows; together with a box window frame and the way it is set to the concrete wall and the way the inside casing is fastened to the frame and also to the concrete wall. There is also a wooden wedge driven in the mortar joint next to the frame, the casing is nailed to this.

The window sills used were 8 by 8 concrete and projected 2 inches outside of the wall. This left a space 2 inches deep under the window, which I filled with a 2 by 8 with the ends slightly beveled, so as to fit tightly between the blocks on either side of window; this makes a good place to nail the apron to.

Now the worst problem I had was to fasten the head casing to the concrete lintels over the windows and doors—I simply drilled holes in the lintels, plugged them with soft wood and nailed to this. Now this sounds easy enough, but drilling the holes is not so easy. I tried several ways, and the best way I found was to take a 1/4 inch twist drill bit, bore in about 2 1/2 inches, and then follow with a 5/8 inch twist drill.

However, I have since studied out a plan which I think will work satisfactorily and be a great deal easier than this: In making the lintels, prepare some 3/4 inch round pins, 2 1/2 inches long, and soak them in water for at least forty-eight hours. Be sure they are of the softest wood obtainable, and non-resinous, so they will swell up freely. Now bed these in the lintels while making. They will shrink and drop out by the time the lintel is cured enough to put in the house. Place about two to each lintel at the ends of the headcasing to be nailed, and by the time you are ready to case the inside you can drive soft, dry wooden plugs in the holes and they will hold O. K. The reason for wanting the plugs soaked well is because otherwise they will swell and break the lintel while it is still green. Hoping this will be of interest to some I am waiting to hear from others who have had more experience in this line than I have.

J. H. GODFREY.

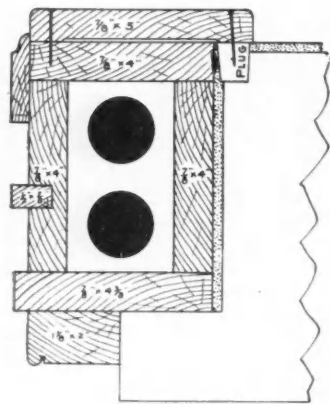


FIG. 3

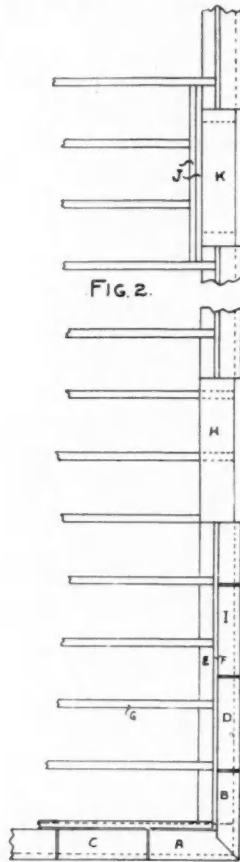


FIG. 1.

had my first experience with a concrete building at that time, and as it was the first concrete building in this locality I of course had to plan as best I could; so if any one has a better way of doing the work noted in this article I would be glad to hear from them through the correspondence column, as an exchange of ideas is the best use to which we can put this column.

By referring to the drawings: Fig. 1 is a mitered 8 by 8 by 24 water-table; B is the same except it is 6 by 8 by 24; C is a common 8 by 8 by 24 water-table, and D a 6 by 8 by 24; E is a 4 by 8 by 14 filler between joists; F is a 1 by 7 string board nailed to end of floor joists, which acts as a spacer to hold joists in position till filler blocks are laid, and serves to aid one in getting the tops of the joists exactly level, as the concrete blocks are not always perfectly true.

**Estimating**

To the Editor:

Streator, Ill.

The time spent in the study of estimating will pay big dividends. It is strange that so little interest is given to this most important part of the builder's business. It is a rare thing to see an article on the subject. A builder who takes contracts should be able to look over a set of plans, take off the material required for every branch of the work, and do it accurately; then having priced the various items, the rest of the work is clerical and requires little knowledge of the building business.

It often happens that the contractor runs onto something the cost of which he is not familiar with. He should at once look into the matter, get all the information he can concerning it, not only of the finished product, but of the raw material, so that he may know what part is labor and what part is material. This point is very important, as the price of the raw material may not change very much, but the labor would; then, by knowing the per cent advance or reduction in labor, as the case may be, he is always ready to make a close estimate on almost any material that goes into the building. Of course, there are some things, controlled by trusts or combinations, in which the cost of the raw material has little or

nothing to do with the price of the finished product. In such a case he simply has to keep posted on the market price of such goods.

There can be no fixed price put on any kind of work, so that every estimator can use it as a standard. Conditions vary so much that this is impossible. The management of the work, the conditions which surround the building, the weather, labor conditions and a lot of other things must be taken into account in order to make a close estimate. So we see that it is necessary for every contractor to have his own standard to work by, which should be based on actual experience. It is very foolish for any one to use the prices of any other contractor, as the conditions which determined his prices may vary a great deal from the conditions under which another has to work.

The matter is simple enough, as there are only two primary factors to be considered, namely, material and labor, and then the third, the conditions under which the first two are used. With these factors as the foundation, the whole structure of estimating may be erected. So I would say to every contractor, build your own structure out of the material you have in stock and increase your stock as fast as possible.

R. D. CONNELL.



**The Winding Stair Rail**

To the Editor:

Windsor, N. S.

In a winding flight of stairs, does the rail turn over in completing the circle?

A. G. B.

Answer: If the question refers to the rail when set in place, we would say it does not, as the top of the rail is always up, no matter how many turns the rail may have in the flight.

A. W. Woods.

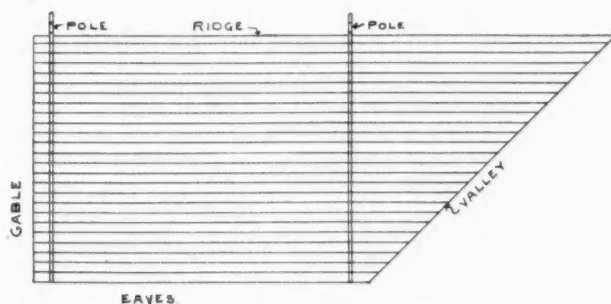


**How to Keep Shingle Courses Parallel**

To the Editor:

Pleasant Green, Mo.

If it is not improper, will you allow me to say a few words to the readers of the AMERICAN CARPENTER AND BUILDER in regard to shingling valleys. Experience has taught me that in shingling valleys any one who measures 4 to 4½ or 5 inches up from their top course each time, will generally



lose ground or fall back on the valley end, and sometimes will have one or two extra courses on that end, unless very careful in measuring. My remedy for this is to take a pole as long as the rafters or a little longer, it will make no difference if not too long for convenience in handling, and step it off with a pair of dividers 4, 4½ or 5 inches, according to how much is wanted to show to weather, as one would in weatherboarding, measuring from the same course every time, until you get out of reach, and then start on a new correction line. One pole is enough for both ends of courses; measure straight up from the lower corner at valley, so the chalk line will range back to valley. This will make the courses straight across the roof and prevent them from becoming diagonal. If top course is one or two inches more than rest of courses, the

ridge cap will cover enough so that it will not be noticeable. The cut of the valley shingle is the same as side cut of jack rafters. Supposing roof has 9 inch pitch, the diagonal will be 15 inches. Select shingles for valley 6 or 8 inches wide; take one with a straight edge and place square with 12 on thin end of straight side of shingle and 15 on butt end, using 12 on tongue and 15 on blade, scribe on blade and saw this one for pattern. The sawing should be done on the bench. The cut ends can be used for hip if there be any.

WALTER C. WEST.

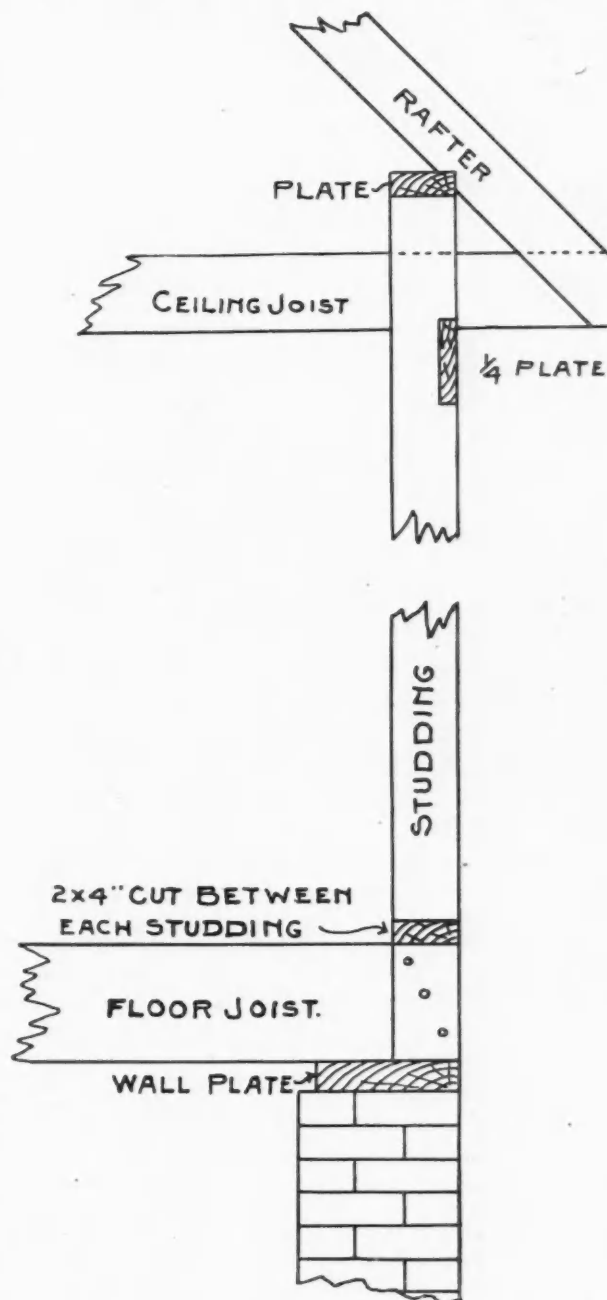


**Another Method of Making Rat-Proof Sills**

To the Editor:

Eldorado, Okla.

I have been reading with great interest the correspondence in the AMERICAN CARPENTER AND BUILDER in regard to the



various methods of constructing different parts of buildings, and think some of the suggestions are very good. However, I will offer one on framing rat-proof sills, which I think offers itself as being a benefit in many ways, especially in

affording greater strength to a building than those previously mentioned, because in my plan of framing, the full strength of both joist and studding are maintained. I also offer my plan of framing a roof and upper joist which adds great strength to a building. Enclosed you will find drawings which will illustrate both sill and roof.

CHARLES F. RICHARDSON.

**How to Join Gambrel Roof Rafters**

To the Editor: New London, Ind.  
I would like to know how to cut the rafters for the enclosed diagram at the ends C and D so as to make them fit

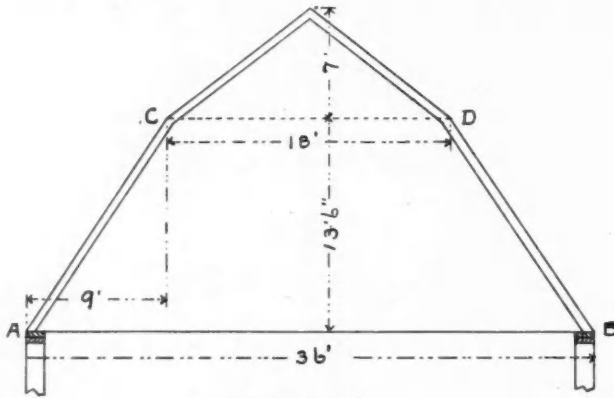
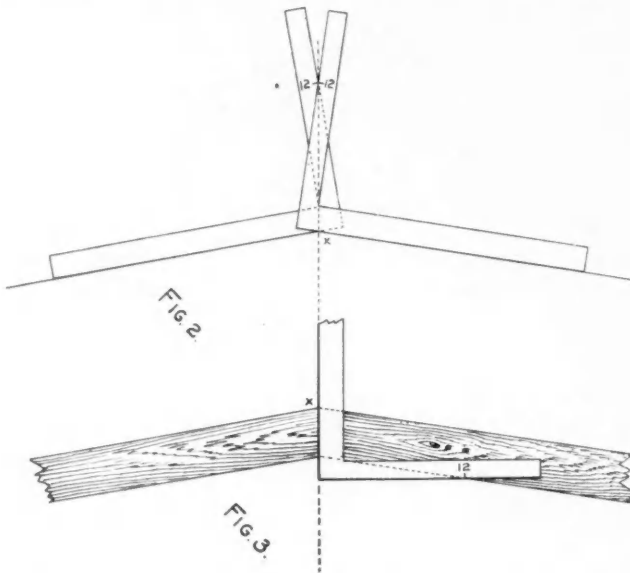


FIG. 1.

when they are nailed together. Please show in the AMERICAN CARPENTER AND BUILDER how to find the cut with the steel square.

JAMES E. WEAVER.

Answer: This cut should be at the bisecting line formed by the angle of the rafters, which may be easily found by laying



off a diagram and bisecting with the compass, or it may be found with the square direct, as shown in Fig. 2, by taking, say 12 on the tongue of each square as a pivot point and with the blades fitted to the angle formed by the rafters. The intersecting point on the blade will be the figures to use on that number. The blade will give the cut, as shown in Fig. 3.

A. W. WOODS.

**Different Rules of Log Measurement**

To the Editor: Center Marshfield, Mass.  
Can you tell me of any correct method of scaling long

board logs which are to be sawed into one inch boards? I have a lot of logs in the woods which I would like to scale before sending them to the mills for sawing. I thought perhaps some of your associates might help me out on this. I know that mill men have a caliper scale which they use by taking the diameter of a log half way from each end, and then by multiplying by the length of the log get the required result in board feet each log will saw. HOWARD C. LEWIS.

Answer: I have before me the hand book gotten out by the Forest Service on log rules, which shows forty-five different methods for measuring logs, each of which differs in some respect from the others. In my section of the country the rule most generally followed is the Scribner-Doyle, which is based on the number of square-edged inch boards of standard width a log will make, and in scaling by this rule measurement is taken at the small end of the log inside of the bark, or if it is a longer log to be cut in two before sawing, the measurement of both ends is taken and the average diameter of the two makes the scale measurement for the butt log. Just what rule is most used in your state, or just what rules the man purchasing your logs may be using, I don't know, and would suggest that the first thing you have an understanding about is what rule of measurement is to be used, then you can figure out where you are "at." It is doubtful, however, whether one can get a rule for his own calculations that will harmonize with general use, as most of them are modified so that the same rule that would apply for your calculations would not answer for different diameters. There is a rule known as the 3/4 rule, said to be used in Maine, Massachusetts and New Hampshire, the formula on which it is based being as follows: Deduct 1/4 the diameter at the small end of the log inside of the bark for saw kerf and slabs, square the remainder, multiply by the length of the log and divide this last product by 12 for the contents of the log in board feet. There is another rule, known as the Orange river rule, used in Texas, based on the following: Multiply the square of the diameter of the small end of the log inside of the bark by the length of the log, and divide the product by 30. The result is the contents in board feet. There are quite a number of other rules, but it would be useless to give them for it is doubtful if any two would harmonize, and you must know what rules or basis of figuring or scaling the purchaser is following to figure out in advance how much your timber will bring.

You will observe, however, that in all of them the figures are based on the measurement taken at the small end of the log inside the bark. By keeping this in mind, and getting a copy of the table of rules followed by the purchaser of your timber you can easily estimate the amount of timber before it is hauled.

Perhaps the rule you have in mind is one known as the New Hampshire rule, which is based on an imaginary cubic foot, equal to about 1.4 of the standard cubic foot. The Statutes of New Hampshire, 1901, give the law on this rule as follows:

"All round timber, the quantity of which is estimated by the thousand, shall be measured according to the following rules: A stick of timber sixteen inches in diameter and twelve inches long shall constitute one cubic foot, and the same ratio shall apply to any other size and quantity. Each cubic foot shall constitute ten feet of a thousand board feet."

In the practical use of this rule it is customary to consider 115 cubic feet equivalent to 1,000 feet board measure, instead of 100 cubic feet, according to the wording of the statute. In this case the diameter is taken at the middle of the log inside the bark. If the diameter is measured at the small end of the log 106 cubic feet are allowed for 1,000 board feet. The New Hampshire rule is also called the Blodgett rule.

J. CROW TAYLOR.

# Practical Trade Appliances

## Slate as a Roofing Material

It is not generally known that slate is one of the oldest forms of roofing material used by man, yet this is the case. Slate for roofing purposes was employed in England, Wales and France as far back as the thirteenth century, and strange to say there are still standing a number of ancient cathedrals, castles, etc., that were slated not less than 350 years ago.

The United States ranks first in the yearly production of roofing slate, the bulk of which comes from Vermont, although slate in limited quantities is quarried in a number of other localities. The slate industries of Vermont are very extensive, hundreds of men are employed and the quarries have been in operation for nearly sixty years. The process of slate making is quite interesting. The quarries are usually wide openings ranging from 150 to 250 feet in depth. The slate rock is taken in large blocks from the solid rock beds in the lower part of the quarries. It is hoisted to the surface, reduced to the proper thickness by a series of splittings, trimmed to a variety of suitable sizes and is then ready for the roof without further process of manufacturing.

Roofing slate is suitable for use on any kind of a pitched or even a flat roof. In the first case the slates are laid substantially in the same manner as wood shingles, but when applied upon flat roofs they are always laid in a composition.

Long usage has demonstrated that a slate roof possesses many advantageous features not common to other forms of roofing. On account of its being practically solid rock, a slate roof is both spark and fireproof, a decided advantage in localities with inadequate fire protection or for buildings situated near railroad tracks. Another point in favor of slate is that moss and decaying vegetable matter cannot grow or adhere to it. From this it is evident that the rain water off a slate roof is naturally purer than that collected from shingle, metal or composition roofs. Slate is not affected by the contraction and expansion usually resulting from alternating heat and cold, and a good slate roof possesses unlimited durability and should last as long as the buildings upon which it is placed.

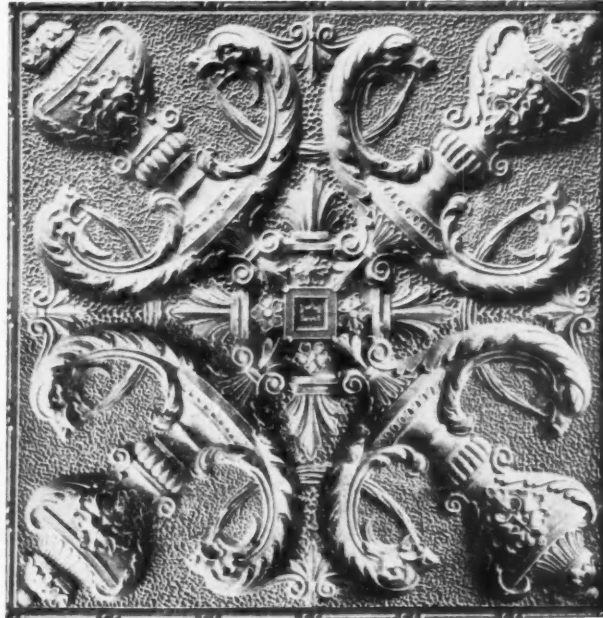
For the past fifty years large quantities of roofing slate have been used in the central states, and the increasing consumption and almost universal acceptance of slate roofs indicate that long actual service has converted the roof owners to the merits of this form of roofing.

Owing to the variance in the freight rates to various points, the difference in the cost of labor, etc., it is not possible to quote figures covering the cost of slate as compared with other roofing. However, considering length of service and yearly cost of maintenance (the only reliable way of measuring the value of an article) it would seem that roofing slate, in the long run, is the most economical roofing material yet produced. Its initial cost does not greatly exceed that of other roofing and when it is borne in mind that a slate roof, properly put on, will outwear the building, and that it does not require painting, recoating or repairs such as are necessary at too frequent intervals on roofs of any other kinds, it will be seen that it is a material well worthy of

investigation by those in need of roofing. Add to its freedom from maintenance expense its other good features herein mentioned and it seems as though slate is the ideal roof covering.

## Artistic Interior Decoration

Artistic design in the interior decoration of a building is an item of the greatest importance to every contractor. This portion of the building, coming before the critical eye of



others, greatly adds to or detracts from the beauty of the structure. Although the use of stamped steel in interior decoration is of comparatively recent origin, there is not a nook or crook in any apartment which cannot be made attractive by metal ceiling or wall coverings. The use of stamped steel not only adds to the beauty of the structure, but, being both fire and waterproof, takes a low rate of insurance, does away with dampness in the building caused by plaster, and is very easily applied.

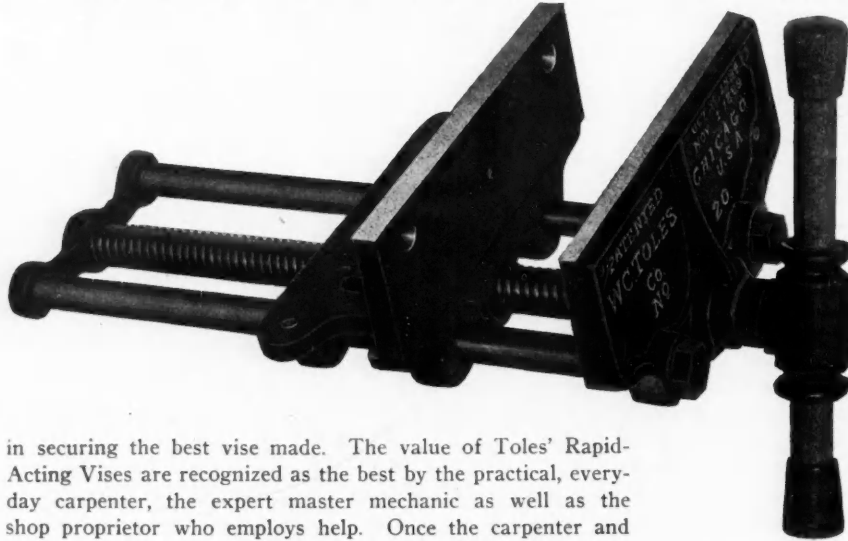
In Eller's ceilings, as shown in the illustration herewith, the modeler's skill has not only been directed to produce patterns to please the eye but to harmonize the classical arts and to make a lasting beauty, for in such there is worth and not monotony. Experienced and able mechanics take up the work where the modeler leaves off and so arrange the dies that each will member properly, thereby producing close fitting joints and reducing the cost of erecting, an essential item of which every contractor should take note.

The Eller Manufacturing Company are particularly anxious to co-operate with carpenters and builders in securing contracts for pressed steel ceilings and side walls. Just send them the plans of your buildings, marking the rooms to be decorated, and they will be glad to send you designs free

of charge and quote you their very best price to contractors. Their handsomely illustrated catalogues will be sent gratis to all interested readers of the AMERICAN CARPENTER AND BUILDER. In writing them address Eller Manufacturing Company, Canton, O.

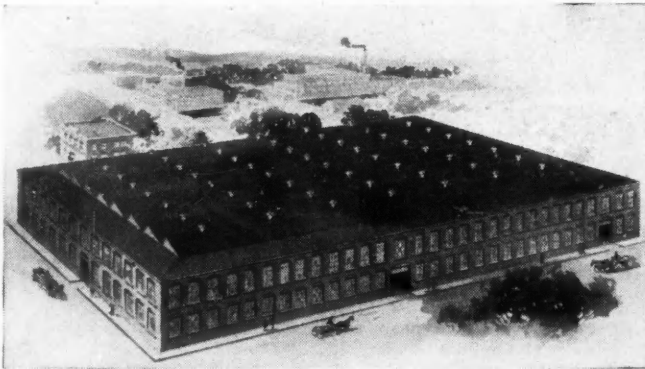
### Look Out for the Minutes

Carpenters, contractors and woodworkers whose tool or bench equipments require vises should be acutely interested



in securing the best vise made. The value of Toles' Rapid-Acting Vises are recognized as the best by the practical, everyday carpenter, the expert master mechanic as well as the shop proprietor who employs help. Once the carpenter and builder understands the reasons why the Toles' Rapid-Acting Vise is such a time saver, makes it certain that he will not buy or use any other vise.

It takes 24 turns of the ordinary wood screw,  $\frac{1}{2}$  inch pitch, to open a vise 12 inches, and 24 turns more to close it, also,



Warwick Mills, Centerville, R. I., using 46 30-inch Burt Ventilators.

Burt Ventilators are installed on saw tooth roofs of The Grinnell Mfg. Corporation, New Bedford, Mass., 33 30-inch; Indiana Union Traction Co., Anderson, Ind., 36 18-inch; Jones & Lamson Machine Co., Springfield, Vt., 80 20-inch; Yale & Towne Mfg. Co., Stamford, Conn., 20 18-inch Burt Ventilators.

have the greatest ventilating power of any. They are made from the very best of material, strongly braced and will give lasting service; made with Metal or Glass Tops as desired, provided with Patent Sliding Sleeve Damper, Storm and Dust Proof, open or shut, and adjustable to any degree of opening. Can be furnished with fusible link connection to close damper automatically in case of fire.

Send for our new eighty-page catalogue, giving fine illustrations of Mills, Factories, Shops, Foundries and Residences where Burt Ventilators are in successful use.

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

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

figure in the time it takes to adjust the bolt at the bottom of the vise to keep the jaws parallel. The Toles' Rapid-Acting Vise obtains adjustment instantly, without the use of racks, pawls, triggers, wedges, levers, frictions, worm gears, etc., therefore they do not slip, clog up, wear out or break. They have been on the market for fifteen years, and the company reports the sales for 1907 were more than double those of any previous year, a large number of their orders being from old customers. As strong evidence supporting the high merit of the Toles' Rapid-Acting Vise is the fact that every purchaser is extremely satisfied. The following letter from a prominent contractor and builder in Chicago is only one of several hundred received by the W. C. Toles Co.

Chicago, Ill., March 1, 1907.  
W. C. Toles Company,  
Irving Park, Chicago, Ill.

Gentlemen: Answering your inquiry, will say, about 10 years ago I bought one of your No. 20 Rapid-Acting Vises. I have used this ever since on my own bench and I do not know what I would do without it. I have used it for making doors, storm sash, picture frames, and all sorts of jobs. Have caught my boys filing their skates in it, and I use it for filing my own saws.

When ordering more vises, yours will be the only one considered.

Yours respectfully,

R. R. MATES, Contractor and Builder.

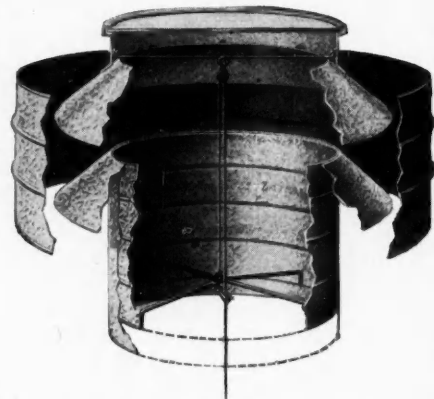
W. C. Toles, the inventor and head of the company manu-

## Workmen Are Never Drowsy

where ventilation and light are good. Therefore more good work is the result.

The saw tooth roof is the best roof for good lighting—and along the ridge of each roof is a row of Burt Ventilators, put there for good ventilation, which is as necessary (if not more so) than daylight.

## Burt Ventilators



Notice Sliding Sleeve Damper. Patented.

# FREE SAMPLES OF HARDWOOD FLOORING

**W**OULD you like to see samples of a brand of hardwood flooring that never shrinks? **W**OULD you like to get quotations on flooring that always matches easily and accurately? Then write us a letter—or a postal—today.

Just say you are interested and we'll send samples of

*"Steel-Polished Perfection"*

In  $\frac{3}{8}$ " or  $\frac{13}{16}$ " Beech, Birch, Maple or Oak.

Write  
the  
Postal  
Today

Write  
the  
Postal  
Today

We'll send you a **FREE BOOKLET** also—a booklet that explains just how "Steel-Polished Perfection" is made and why it is better than all other brands.

"Steel-Polished Perfection" is cured by the **EXCLUSIVE SCHROEDER STEAMING AND DRYING PROCESS** whereby the flooring lumber is first thoroughly steamed under pressure to open up the pores of the wood so that later, in the kilns, the hot dry air has a chance to penetrate the stock and dry it evenly—through and through. It's a very expensive process and no other brand of flooring is dried in this way. That's why "Steel-Polished Perfection" is the only flooring that never shrinks.

If you want to learn all about this richly-polished flooring which is absolutely dry and which has no equal for precision in matching,

**Send for Samples and Prices and the Booklet Today.**

If you are in the market now, tell us your requirements. But send for the samples, anyway, even if you don't expect to have any use for flooring until next summer or next fall.

As one of our customers, Mr. R. S. McIntyre of Atlanta, Ill., says, "Any Contractor who uses 'Steel-Polished Perfection' will save lots of profanity and put dollars in his pocket."

**You want to Save Dollars, don't you?**

**Then write the Postal now.**

**John Schroeder Lumber Co.**

CAPE AND  
COMMERCE STS.

MILWAUKEE  
WIS.



**"Much Less Work"**

You ask what I think of "Steel-Polished Perfection" hardwood flooring. I like it better than any I have ever used. It is as near what the name implies as possible. It requires much less work, after it is laid, to get ready for the polish than any other I have ever used.

MELVILLE ESKRIDGE,  
605 Bolivar St., Owensboro, Ky.

**"Never Known to Shrink"**

I have used "Steel-Polished Perfection" hardwood flooring and several other brands and there is no lumber made that can be compared to it. It is finished better than any man can do it by hand; it is the only flooring that makes a perfect fit when laid, and I have found none of it that shrank and opened at the joints. In fact, it is the Perfection of flooring—the only flooring on the market today.

Yours truly, GEO. B. FREEMAN,  
324 W. 9th St., Mason City, Ia.



## "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**



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S. C. Johnson  
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Racine, Wisconsin**

Gentlemen:—My paint dealer's

name is .....

His address is .....

for which please send me **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.

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**W**HAT'S the use of waiting—send us the coupon **right now**.

That's all you've got to do.

We have got to do a good deal more.

We have got to give you samples of wood finishing preparations so much better than any others, that the trial will lead you to always use them.

If we didn't know that the samples would convince you of the superior quality of Johnson's Wood Finishing Specialties—then we couldn't afford to send them out broadcast.

Just a minute of your time and a two-cent stamp—that's all it costs you.

It costs us, a good deal more. We have got to pay for the samples, the packing and the carriage.

We get good interest on our investment through the rapidly growing trade the samples bring us.

But you get much bigger interest on your investment through the growing trade that satisfied customers bring you.

You see that if you send us the coupon **now**—it will pay all hands—you, your customers, and us. Tear out the coupon, fill it out and mail it to us now. We will send you the package of samples at once—two of Johnson's Wood Dye—any desired shades—and

Johnson's Electric Solvo. You will find the Solvo to be the best thing you have ever used for removing paint, varnish, any old finish from wood, metal and glass. You'll find Johnson's Electric Solvo different from any other remover that you have ever used because it **won't injure anything except the old finish.**



You'll find that Johnson's Wood Dyes are **dyes**—not mere **stains**, and these dyes will not raise the grain of the wood. Johnson's Wood Dyes are distinctly different and decidedly better than stains, because Johnson's Wood Dyes actually penetrate deeply into the grain of the wood, bringing out all its beauty and actually **coloring** it. A varnish and stain combined cannot give good results because the varnish prevents the stain from penetrating the grain of the wood—making a **surface** coating which hides the beauty of the wood, and shows light wherever it is scratched or marred in any way. Pick out the colors you want from the list below and address

**S. C. Johnson & Son  
Station ACB-3, Racine, Wis.**

**"The Wood Finishing Authorities"  
Send The Coupon To Us Now**

and we will send you the samples and our book. Johnson's Wood Dye is prepared in all shades as follows:  
No. 131, Brown Weathered Oak; No. 140, Manilla Oak;  
No. 110, Bog Oak; No. 121, Moss Green; No. 178,  
Brown Flemish Oak; No. 128, Light Mahogany;  
No. 172, Flemish Oak; No. 136, Light Oak;  
No. 123, Dark Oak; No. 125, Mission Oak;  
No. 130, Weathered Oak; No. 129, Dark  
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can be secured by mixing John-  
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to darken use  
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# FREE Book and Wood Panels for You

CUT out the coupon below and send it to us for our handsome 48-page book 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 Finishes.

The book tells all about finishing, refinishing and polishing woods. It's full of practical ideas of great value to painters and wood finishers. The set of wood panels will be mighty handy to show your customers all the modern shades and styles in wood finishing so they can pick out just exactly what they want. And then you will give them just what they want on their wood-work because



you will find that Johnson's Wood Dyes will always match up exactly with the samples.

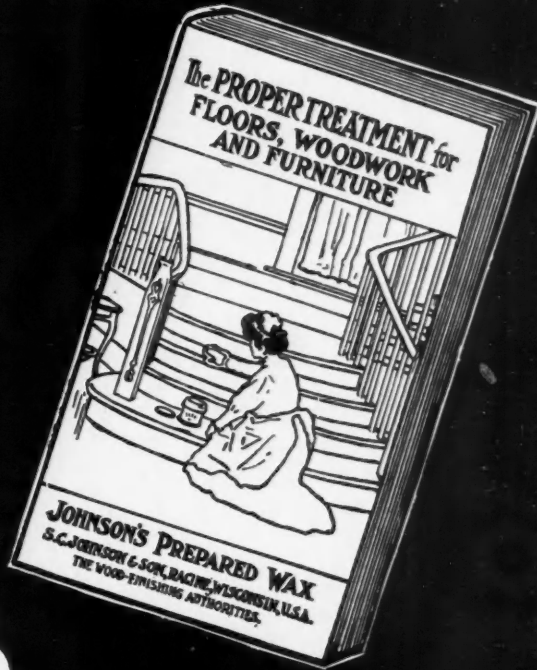
For all woods to be finished Natural, and in Golden Oak, Dark Oak, Antwerp Oak and Green Antwerp Oak, we advise the use of Johnson's Paste Wood Filler and Johnson's Prepared Wax.

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My paint dealer's name is

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City .....

facturing these vises, is a man of sterling business qualifications and makes no statement in his advertising that he does not stand ready to make good. Anyone buying a Toles' Rapid-Acting Vise and finding the same unsatisfactory in any way can return their vise and have their money refunded at any time. Write W. C. Toles Company, Main street, Irving Park, Chicago, if interested in buying a vise.

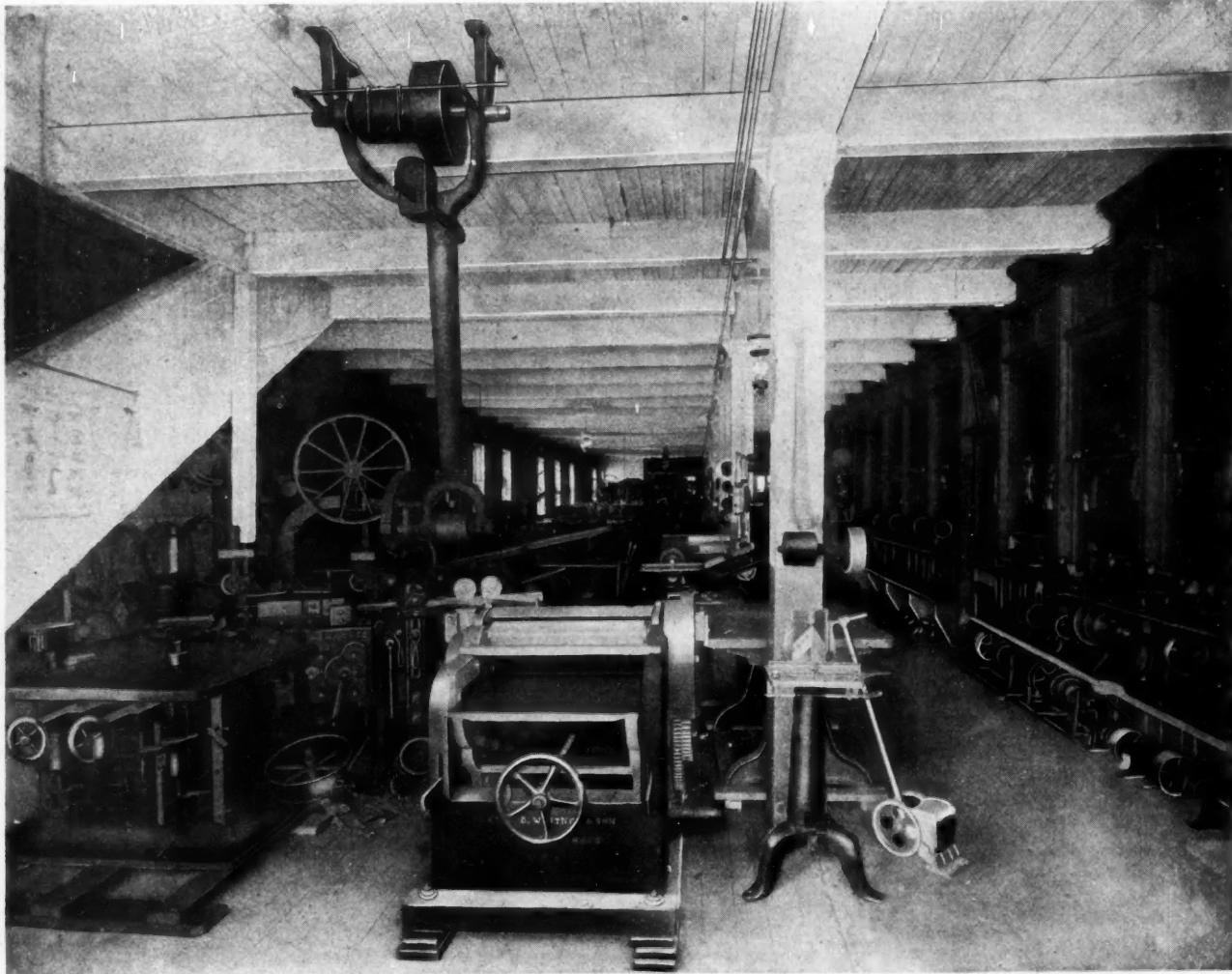
### The Chicago Machinery Exchange

The contractor and builder today faces economic conditions that demand his being equipped to do more or less of his own manufacturing. The makers of woodworking machinery have realized this and there are now on the market several

manufacturers of high-grade woodworking machines and by hard work and fair dealing has built up a large business and advanced the interests of both the manufacturers and consumers.

The Chicago Machinery Exchange now represent about a dozen of the leading independent manufacturers, among them being Baxter D. Whitney & Son, Hermance Machine Company, McDonough Manufacturing Company, C. O. & A. D. Porter and Greaves, Klusman & Co.

The photograph shown here is a view of the second floor of the immense plant and salesrooms of the Chicago Machinery Exchange, which occupies the entire building and basement at 13 to 15 South Canal street, Chicago, and forms



Portion of Second Floor Salesroom, Chicago Machinery Exchange

lines of improved machinery with which the progressive contractor can fit up a shop in which to do the larger part of his own millwork. The cost of such an equipment is now within the reach of nearly all contractors.

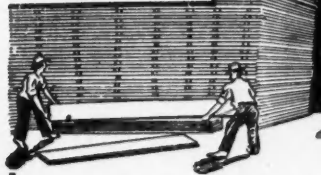
The Chicago Machinery Exchange is the leading house in this country making a specialty of a full line of new and rebuilt machinery for all woodworking purposes, and especially for contractors and builders. This company was started in 1900 in a very small way, by Waldemar Giertsen, now president of the company, J. J. Heintz being vice president. It is largely due to Mr. Giertsen's fine business qualifications, knowledge and honorable business principles that the business has grown so rapidly. When he entered the field the woodworking machinery trust was in control. Mr. Giertsen obtained the agencies of a large number of independent

the largest woodworking machinery exchange in the United States.

In almost every case where new machines are sold, an old machine is taken in part payment. These second-hand machines are put in the machine shop, thoroughly rebuilt and improvements added, making them as good as new. This work is done very conscientiously and Mr. Giertsen will not permit the sale of any rebuilt machine to anyone that is not up to the standard of a new machine. The only difference is in the price.

Contractors and builders will find the Chicago Machinery Exchange ready and willing to furnish valuable free advice as to planning, arranging and the machinery required which is best for a shop equipped to do the class of work the contractor meets. Their experience along this line is very

OUR GRAND 1908 OFFER



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- Balustrades.
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- Building Paper.
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- Nails.
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- Scantling.
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- Timber.
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- Window Frames.
- Window Sash.
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The Chicago House Wrecking Co. Purchased at forced sales, 50,000,000 feet of new lumber. We are making special concessions to those who

buy at once. Our prices today are far lower than prices have been for years. Order now for immediate or future use. Quick action will save you big profits. Remember prices elsewhere which are even now high, are bound to rise. We can quote you 30 to 60 per cent better prices for the same lumber than your local dealer. We guarantee every carload to be exactly as represented. Closest inspection of our lumber stock invited.

Call at our warehouse and yards at Chicago and see the lumber we are offering and you will recognize that it is all we say of it. Make your own selection and see it loaded. It is not necessary to come to Chicago, however, unless you wish to. We can fill your order by mail with just what you want and guarantee you absolute satisfaction. Ours is the largest direct to the consumer lumber headquarters in the world. We sell millions of feet annually. Orders filled from

every part of the United States. No matter where you live you can save money by supplying your building wants here.

We do not figure fancy prices, but quote figures that command your patronage. Whether your order is large or small we can save you money on it. Our tremendous business of millions of dollars annually is your best guarantee of complete satisfaction of every purchase made from us. In our enormous stock of new lumber of every kind we have just what you need for every purpose. Don't buy a stick of material until you get our prices. We offer you everything in the lumber and building supply line needed for residences, farm homes, stores, churches, barns, outbuildings of every kind, sidewalks and fencing. In short any kind of a structure requiring lumber, at from 30 to 60 per cent less than your local dealers or lumber yards ask for it.

## IMPORTANT! Send Us Your Lumber Bill For Our Estimate.

Make up a list of what you need. Send it to us for our price. If you are putting up a building of any kind whatsoever let us figure with you. Our prices talk louder than words. Have your carpenter or contractor send us your list of what is needed if he has charge of your building. Don't pay exorbitant prices to the lumber trust with their long line of lumber yards all over the country. Don't let the local dealer soak you with his heavy profit. Remember: Chicago House Wrecking Company buys millions of feet at a time under circumstances of forced sales which mean sacrificed prices and enables us to sell even as low as cost without loss. You take no

chances in dealing with the Chicago House Wrecking Company. Whether for \$1 or \$10,000 your order will be filled carefully. Our lumber and supplies are guaranteed exactly as represented. If you have no need for a whole carload yourself, get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad trains running through our main warehouses and buildings and can load a car to good advantage to you. You can include in this same car, pipe, plumbing material, roofing, wire, fencing, furniture, hardware and merchandise of every kind. We also furnish you building and barn

plans absolutely free upon request. Write us for any information or advice you want and we will have our staff of architects answer every inquiry promptly. Our free book of plans is sent if you mention this paper. We simplify your building proposition. Our business demands quick action. We must keep our stocks moving. This means prompt shipment—no annoying delays. Let us help you lay out your plans. We will relieve you of every detail. That is what our Special Builder Service is for. Be sure and send us your lumber bill for our estimate. Feel free to write for anything you want to know along the line of building and supplies.

## WE PURCHASE OUR GOODS AT Sheriffs' and Receivers' Sales

**Felt Roofing, per 100 sq. ft. 60c**  
 "Eagle" Brand Prepared Roofing. Composed of 2 and 3 sheets of carefully saturated felt between sheets water-proof insoluble cement; compressed together making a solid flexible sheet with layers of composition thoroughly combined. Practically fire-proof against sparks and cinders. 32 in. wide. 40 ft. long. 108 sq. ft. to roll. 2 ply, per sq., 80c. 3 ply, per sq., 90c. Roofing Cement, caps and nails additional per sq. 35c. "Rubberized Galvo" Roofing. This is the highest grade roof covering manufactured. Absolutely nothing finer. No coating necessary. Practically indestructible. Water-proof, fire and lightning-proof. Brand new. Its base is the strongest and best wood felt obtainable and especially made to meet severe roofing conditions. It is weather-proof, fire-resisting. No tar, asphaltum or paper used in its manufacture. It will last from 20 to 50 yrs. depending upon the ply you purchase and local conditions. It is easy to lay. We furnish nails and caps, as well as sufficient to make laps. Our price per 100 sq. ft. follows: 1 ply.....\$1.35 2 ply.....\$1.65 3 ply.....\$1.75

**DOORS, 40c WINDOWS, 29c**  
 1,000 Good Doors, various sizes, secured by us in connection with our dismantling operations. Most of them with hardware. Prices range from 40c up. Fancy front doors, all modern designs. \$2.95 up. 10,000 windows, 29c up. All sizes. Millwork Bargains. Complete line of everything. Barn sash, 6 sizes, 40c up. Cellar sash, 43c up. Mouldings for every purpose. 1c per ft. Porch columns \$2.60. Stair Newells, \$3.25. Stair Rail, 12 1-2c per ft. Door Trim, 70c. Window Trim, 90c. Base blocks, 4 1-2c each. Quarter Round, 50c per 100 ft. Hardwood Thresholds, 7c. Porch Brackets, 7c. Porch Spindles, 2c. We handle everything in the building supply line. Send Us Your Lumber Bill For Our Estimate.



**Bath Tubs, \$6**  
 300 "New Style" bath tubs, finest galvanized steel finished inside with special white japanned enamel. Nicely finished outside. Heavy wood rim. Length 5 ft. While they last, \$6. 5' x 6', \$8.40. Handsome porcelain tubs with 2-in. roll rim. Seamless. White enameled on inside, finest nickel-plated fittings, each \$14.00. Full line of other tubs up to \$28.00.

**Bath Room Outfits, \$25.** With steel enameled closet bowl, polished hardwood seat and tank, handsome enameled lavatory, all nickel trimmings, complete, ready to install. \$25. Other combinations \$37.50, \$50, \$54, to \$150.

**Plumbing Material all Kinds** at prices that do not represent original cost of production. We buy at Sheriff's and Receiver's Sales only. Cast Iron Enameled Sinks, up from \$1.25. 1-piece enameled iron sinks, back and nickel plated faucets, \$11.

## FREE! Building and Barn Plans—Architect's Advice FREE!

**"A Good Advertisement for Us"**  
 Ainsworth, Ind.—I received my carload of lumber from you and it was O. K. in every respect. It will advertise itself in my locality and I am sure it will bring you several orders from here. —WM. RASCHKA.

**"More Coming"**  
 Nevada, Mo.—Will say I am very much pleased with material, especially the dimensions. Have had several contractors to see the lumber and they were well pleased with it. Will order 8 or 10 cars in the spring. —J. FOWLER.

**"Another Satisfied Man"**  
 Brighton, Ill.—Hope we can deal together again for I am pleased to know that you are an honest Company and do what is right. If I need any more lumber will be sure to deal with you. —ALEX CAIRNS.

**"Everything Satisfactory"**  
 Paw Paw, Ill.—Carload lumber arrived. Everything satisfactory. Our lumber merchants inspected the lumber and admitted for the purpose we wanted, it was a very good bargain. We had 10 big loads. Very glad we sent our order to you as we got better value for our money than expected. —MRS. C. JONES.

Hundreds of Big Money Saving Bargains for Every Builder. Don't Build Your House, Barn, Store, Corn Crib, Church, Etc., without getting Our Big Lumber Offer. Lowest Prices on Millwork Supplies, Roofing, Water Supply Outfits, Paints, Plumbing Supplies, Hardware, Heating Outfits, Furniture, Carpets, Linoleum, Etc.

## Our Big 1908 Steel Roofing Offer. 100 Sq. Ft. \$1.50.

Most economical and durable roof covering known. Easy to lay, requires no tools but a hatchet or a hammer. Will last many years with ordinary care. Ideal for houses, barns, stores, churches and outbuildings. Also used for ceiling and siding. Cheaper and lasts longer than shingles. **Lighting, Water and Fire-Proof.** Will stand the elements best of all. Makes your building cooler in summer and warmer in winter, will not taint rain-water. We are headquarters for roofing. Our prices defy competition. Read our offer: Absolutely perfect, brand new, No. 15 grade, semi-hardened Steel Roofing and siding, per 100 square feet, \$1.50. Each sheet 24 in. wide and 24 in. long. Our prices on corrugated, like illustration, 22 in. wide and 24 in. long, \$1.75. For 25 cents per square additional we furnish sheet 6 and 7 ft. long. Steel Pressed Brick Siding, per sq., \$2.00. Fine Steel Beaded Ceiling, per sq., \$2.00. Can furnish standing Seam or "V" crimped.

**We Pay the Freight** to all points East of Colorado, except Okla., Tex. and Ind. Ter. Quotations to other points on application. This freight prepaid proposition only refers to the Steel Roofing offered in this advertisement. Satisfaction guaranteed or money refunded. We will send this roofing to anyone answering this advertisement C. O. D. with privilege of examination if you send 25 per cent of the amount you order in cash; balance to be paid after material reaches your station. If not found as represented, refuse shipment and we will refund your deposit.

**Paint, 30c Per Gallon**  
 Barn Paint, in bbl. lots, per gal. 30c  
 Cold Water Paint, celebrated Asbestine brand, outside use, fully guaranteed, best assortment colors, 50 lb. lots per lb. 3c  
 "Perfection" Mixed Paints, per gal. 75c  
 "Premier" Brand 3-yr. guarantee, gal. 95c  
**VARNISHES SUPPLIES**



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When do you expect to build or improve?.....

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Town..... County.....

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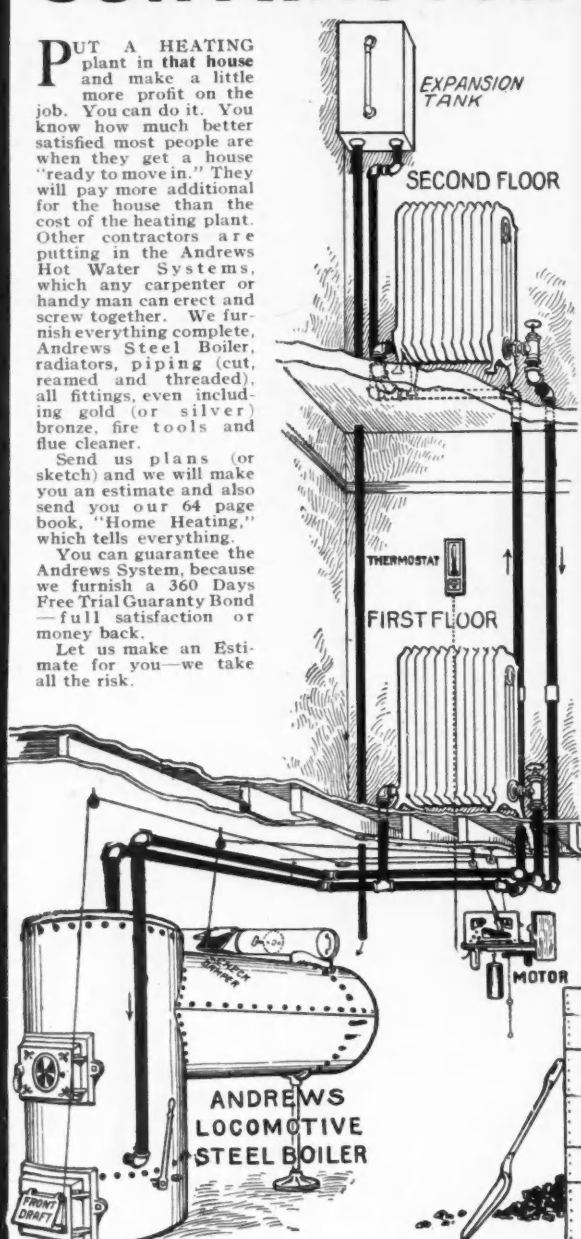
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**P**UT A HEATING plant in that house and make a little more profit on the job. You can do it. You know how much better satisfied most people are when they get a house "ready to move in." They will pay more additional for the house than the cost of the heating plant. Other contractors are putting in the Andrews Hot Water Systems, which any carpenter or handy man can erect and screw together. We furnish everything complete, Andrews Steel Boiler, radiators, piping (cut, reamed and threaded), all fittings, even including gold (or silver) bronze, fire tools and flue cleaner.

Send us plans (or sketch) and we will make you an estimate and also send you our 64 page book, "Home Heating," which tells everything.

You can guarantee the Andrews System, because we furnish a 360 Days Free Trial Guaranty Bond—full satisfaction or money back.

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ANDREWS LOCOMOTIVE STEEL BOILER

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665 Heating Bldg. 607 La Salle Bldg.  
MINNEAPOLIS CHICAGO

Andrews Systems are now at work in over 700 cities and towns

MANUFACTURERS CONTRACTORS CONSULTING ENGINEERS

valuable. You will find their full page advertisement on page 677.

### Successful Draftsmanship

Often a contractor or builder is called upon to submit a plain sketch or a complete business-like looking set of plans, for which he could charge a good price or in return receive a good fat contract, but is unable to do so on account of not having the ability which he would have, if he had taken a course of thorough practical training along this line.



Mr. F. V. Dobe, M. E., and chief draftsman of the Engineer's Equipment Company, 99 Washington street, Chicago, has for many years been giving personal and individual instruction in complete architectural drawing and building design, and is

meeting with remarkable results and success in qualifying the most inexperienced man with ability, in a short time, to make A-1 drawings, designs and all details.

Many a contractor and builder is wasting a lot of time in studying over plans and drawings submitted, in order that he may fully understand the details. A course of instruction under Mr. Dobe will prepare him to look rapidly over drawings and to thoroughly understand them at a glance, thus saving loss of money by mistakes, embarrassment and time.

His instructions are given by mail, but must not be compared with the ordinary correspondence school instructions, as all the work is laid out personally by himself and prepared especially for the student's individual requirements. With his method he is able to satisfy and educate any absolutely inexperienced or experienced man who is willing to better himself.

Mr. Dobe sells no diplomas, but insists on your work being a more practical diploma and a proof of your proficiency. He guarantees by contract to qualify you in a few months' instruction to be able to turn out absolutely perfect plans, designs and complete details, or to hold a first class draftsman's position, as he instructs you until competent.

Mr. Dobe furnishes his students, as a premium for best drawings and to make best drawings with, one of the finest complete drawing outfits, which is herewith illustrated. It contains a full set of German silver instruments, worth \$13.85. He offers this free to students starting this month.

His successful draftsmanship book, size 6 by 9, will be sent to any one interested for 4 cents in stamps to cover cost of mailing.



### Window Stop Fasteners and Adjuster

The Seneca Pattern and Supply Company, Mr. J. D. Boardman, president, are putting on the market a window stop fastener and adjuster which should meet with instantaneous favor, inasmuch as it is a strictly new article, small in size but very large in merit. It can be used in any house, whether in course of construction or already completed, and after it has once been installed anyone, even a child, can operate it.

Architects throughout the country are beginning to notice this little article and specify it, and carpenters and builders



# Are You in the Line Or in the Lead?

Where are you, in the dinner-pail line or in the chair of the leader? The whole world is looking for men who have been trained to lead by doing things with their *heads* as well as their *hands*. But where do the leaders come from? From the line, of course. Ninety men out of every hundred in good positions began in the line just where *you* are today. If you want to get out of the line, **YOU CAN**. It's up to you. The **INTERNATIONAL CORRESPONDENCE SCHOOLS** will show you the way and help you to get there. There is no theory about this. It's a **TRUTH** backed up by thousands of men who are leaders today because they had the desire to do better and asked the I. C. S. how. Let us show **YOU** how. Cut out the coupon below, mark it and mail it today, and in return we will take up your individual case and circumstances and tell you how we can make a leader out of you no matter how scant your time, money, or education may be. There is no charge for this information and no further obligation on your part unless you want to join the great I. C. S. Army of Success. Be wise to your own interests and send in the coupon **today**.

**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  
Architectural Draftsman  
Contractor and Builder  
Building Inspector  
Structural Engineer  
Structural Draftsman  
Plumb. and Heat. Con't'r.  
Supt. of Plumbing

Estimating Clerk  
Foreman Steamfitter  
Plumbing Inspector  
Heat. and Vent. Engineer  
Bridge Engineer  
Civil Engineer  
Surveyor  
Municipal Engineer

R. R. Const. Engineer  
Mining Engineer  
Metallurgist  
Chemist  
Mechanical Engineer  
Mechanical Draftsman  
Stationary Engineer  
Electrical Engineer

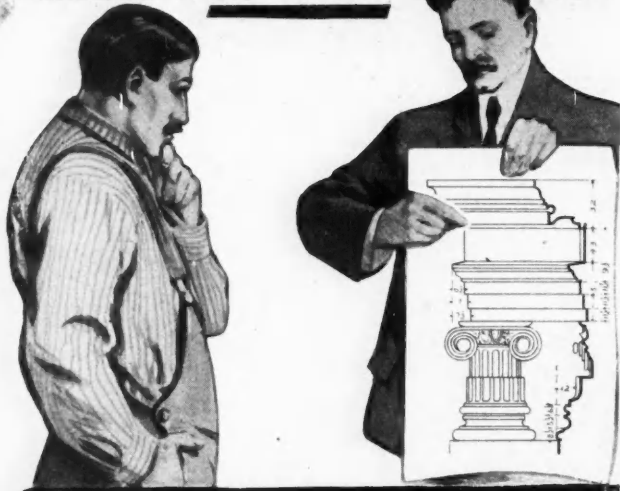
Electrician  
Elec. Light Supt.  
Elec. Railway Supt.  
Telephone Engineer  
Telegraph Engineer  
Foreman Machinist  
Sheet Met. Pat. Draftsm'n  
Textile Mill Supt.

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# CAN YOU ACT



Must the architect continually stand over you and explain every important move—as he does with the other carpenters, builders, and draftsmen? Or can you act for yourself? Can you lay out a column or cornice in the Doric, Corinthian or Ionic styles?

Advance—learn something which the other fellows do not know. You can learn to design mantels, interior and exterior finish, porch columns and cornices in graceful proportions. Capitals, entablatures, friezes, entices, pedestals, pediments, colonnades and arcades no longer need be unfamiliar terms. You can learn to understand Tuscan, Doric, Ionic, and Corinthian styles of architecture. All this knowledge can be obtained without losing any time from your regular work.

## FIVE ORDERS OF ARCHITECTURE

A simple treatise describing in a concise, interesting form the Greek and Roman orders. Illustrated with over 300 sections drawn to scale.

Two volumes, comprising one 522 page text book—page size 7x10 inches, and a handsome portfolio containing fifty eight 11x15 inch detail plates of columns, cornices, mouldings, capitals, etc., drawn to scale, with measurements. In addition, there is a large number of full page photographs of the best examples of Greek and Roman Architecture, and a comprehensive list of definitions and pronunciations of architectural terms and a list of good books on the subject.

Special Price, \$9.80—Regular Price, \$16.00

Sent free for five days' examination, if you mention American Carpenter and Builder, March 08. Pay \$2 within 5 days and \$2 a month until you have paid \$9.80, or notify us to send for it at our expense. Compiled from representative instruction papers of American School of Correspondence. We employ no agents, but depend upon the books to sell themselves, thereby saving you annoyance and agent's commission.

### BRIEF SYNOPSIS OF CONTENTS

Greek and Roman Styles of Architecture—Tuscan Style—Doric Style—Ionic Style—Corinthian Style—Composite Style—Details of Corinthian and Ionic Capital—Proportions of Gables, Arcades, Colonnades, Columns, Capitals, etc.

Greek and Roman Ornamented Mouldings, Capitals, Bases, Cornices, Columns, etc., Section of Mouldings.

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## "EASTLAKE" Metal Shingles



The roofing with a reputation has been used for more than 20 years, and still in good condition. Will last a life time.

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

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Manufacturers of all kind of Roof Trimmings

DETROIT

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who have seen it have been very favorably impressed, and are using them on all their new work, frequently fitting up old houses. Straws show which way the wind blows. Get in line and learn more about this little article.

## The Schlueter Rapid Floor Surfer

It is claimed by experts that the only way to produce an absolutely smooth and even surface on a wood floor is by



the use of sand paper. Any method by which the floor is scraped, whether by hand or machinery, is bound to be uneven and to show variations and knife marks. The method of using sand paper attached to a roller has been known for years. It seems to have remained for Max L. Schlueter, the inventor of the Schlueter Rapid Floor Surfer, to solve all the problems that had to be overcome in perfecting a machine with what is called a yielding roller,

that can be regulated automatically, and to produce a machine light enough in weight to be practical for general use by all contractors and builders. The Schlueter Rapid Floor Surfer is made in two sizes, one with an eighteen inch and the other with a twelve inch surfacing roller. It is so constructed that a roller, to which a sheet of sand paper 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.

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.

The following letter received by Mr. Schlueter speaks for itself as to the merits of his machine:

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 had 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 Surfer to any one, which I know will pay for itself in a very short time. I am, yours truly,

ILI F. JONES, Contractor and Builder.

An illustrated ad of the Schlueter Rapid Floor Surfer appears elsewhere in this issue.

## Planning a Campaign

The Reed Manufacturing Company, of Springfield, O., is planning a great year's campaign with its excellent block machines, the "Springfield," "Champion" and "Hy-Lo." These machines meet every requirement of the block maker. The "Springfield" is the most elaborate. It has a wide range of adaptability which permits making blocks of different thickness, angle blocks and odd shapes, such as chimney blocks, porch piers, gable blocks, etc.

No matter how automatic a block machine may be, if the parts are intricate and liable to become easily out of adjust-

# CAN YOU LAY A WATER-TIGHT ROOF?

A SMOOTH ROOF, SKIN-TIGHT, WITH WATERPROOF SEAMS, CLEAN FLASHINGS, WELL FINISHED EAVES. NO WASTE IN CUTTING. THAT'S A GOOD JOB! LEARN HOW, FREE. WRITE FOR THE HEPPE'S CO.'S NEW BOOK FOR ROOFERS.

Since Heppes No-Tar Roofing has come into such general use in place of shingles, every carpenter and contractor should know all the "ins and outs" of laying it properly. No chance of a botched and bungling job if you get the **Heppes Roofer's Book**. It puts you next to all the knowledge of men who made a business of laying ready roofing. Makes it easy to put down a Heppes Roof that is skin-smooth, water-tight, leak-proof and fire-resisting.

Tells how to cut the roofing to fit corners, angles and odd spaces without waste. How to make Chimney Flashings, Wall Flashings, Valleys, Gutters, etc. Gives diagramed instructions. Tells how to measure roofs. Where to nail. How to cement laps. How to lay Heppes No-Tar Roofing over an old shingle roof. Tells what **ply** roofing is best suited to various kinds of buildings. Answers every question that a practical carpenter wants to know before he cuts into a roll of roofing. This book will make you an expert roofer if you use it as your guide. We send it **FREE**, postpaid, to any reader of this magazine.



Write  
for FREE  
SAMPLES  
of NO-TAR  
ROOFING  
and Ten  
Tests to  
Prove the  
Quality of  
Any Ready  
Roofing.

## Heppes

# No-Tar Roofing

**DEFIES TIME, WATER, SPARKS,  
GINDERS, SUN AND WINTER**

## Big Demand for Heppes No-Tar Roofs

The time has passed when property owners simply ask for "ready roofing." To-day they are calling for "**Heppes**" No-Tar Roofing. They say: "**Write it in the contract!**" They have learned that building paper soaked in tar is **counterfeit**. They are **suspicious** of a roofing that has the **odor of TAR**, for they know that **tar** is only a substitute for the **genuine asphalt**, and a mighty poor one at that.

The **Heppes Roofer's Book** fully explains the difference between tar-soaked building paper and **Heppes No-Tar Roofing**. Tells about the Heppes Asphalt process that forces the waterproofing into every fiber under intense heat and tremendous pressure. Tells about the coatings of flint and mica. Gives you more valuable information on the whole roofing subject than any other book ever printed.

### POINTS ON SECURING ROOFING CONTRACTS

The knowledge on roofing that you get in this book will help you to get all the roofing contracts you can handle. You can **prove** to property owners that **Heppes No-Tar Roofing** is cheaper and lasts longer than shingles, iron or steel. You can show that it is cheaper to lay **Heppes No-Tar** over an old leaky shingle roof than it is to repair it. You can prove that the use of **Heppes No-Tar Roofing** will secure a reduction on fire insurance policies of 25 per cent.

WRITE FOR FREE COPY OF HEPPE'S ROOFERS' BOOK AND  
FREE SAMPLES OF ALL WEIGHTS OF HEPPE'S NO-TAR ROOFING

**THE HEPPE'S COMPANY** 624 So. 45th Ave.  
CHICAGO



**Look things squarely in the face.** No matter how you may wish to impress others, you cannot deceive yourself. **You know** what your failings are—**you know** what you lack in the way of training—**you know** why you do not occupy a better position.

**Talk it over with yourself.** Confront yourself with your future prospects and **your present position.** Isn't it worth a few hours a day to get some good, special training which will put you above your fellow workmen: to break away from the poorly paid work that offers little in the present and nothing better in the future?

The American School of Correspondence, Chicago, is constantly preparing ambitious carpenters, contractors, etc., for advancement by giving them **practical information** which ordinarily could be acquired only after many years of experience. We teach Estimating, Planning, Strength of Materials, Framing, etc., How to Read Drawings, and Make Sketches for Clients—all of which are invaluable to the progressive carpenter, contractor and builder.

The information on **reinforced concrete** will be found especially complete and up-to-date. In the architectural courses the student is taught the theory of the design of trusses, girders, beams, columns, and framing. Building materials, building construction and detail—especially steel construction as applied to work in reinforced concrete—sheet metal work, fire-proofing, wiring, piping, heating and ventilating systems, building superintendence, specifications and contracts, building laws and permits, and general office practice, are **thoroughly** taught.

Mark on the coupon the subject that interests you most, sign your name and address plainly, give your occupation, and mail at once. **Take** the first step to-day.

== SPECIAL ==

To demonstrate the high standard of our instruction, we will mail a copy of our "**FIRST BOOK ON ESTIMATING**" to any reader of American Carpenter and Builder who sends us the names, addresses, and occupations of three persons interested in engineering or building subjects, together with ten cents in stamps to cover cost of mailing.

This book is written by Edward Nichols, Architect, Boston. 64 pages, 7x9 inches in size. Handsomely bound in cloth. Would easily cost \$1.00 in any store—covers Prices, Profits, Percentage, Methods of Estimating, Approximate Estimates, Estimating by the Square, Estimating by Quantities, Rules, Tables, Scale of Wages, Estimating Excavation, Foundations, Stone Work, Brick Work, Carpentry, Framing, Flooring, Inside and Outside Finish, Stairs—Amount of work to be done in a day in the different trades, Cost of Labor per square, Work by the piece, Hardware, Nails, Roofing, Plastering, Painting, Heating—Furnace, Steam, Hot Water; Plumbing, Drainage, Gas Fitting, Electric Wiring for Light and Bells, etc.

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Am. Carp. and Bldr., 3-08

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Please send me **FREE** illustrated 200-page handbook of information. I am interested in the course marked "X."

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| ....Carpenter's Course                | ....Heating, Ventilating and Plumbing |
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| ....Reinforced Concrete               | ....Tinsmithing                       |
| ....Steel Construction                | ....Structural Engineering            |
| ....Complete Architecture             | ....Mechanical Engineering            |
| ....Mechanical Drawing                | ....Civil Engineering                 |
| ....Architectural Drawing             | ....Mathematical Course               |
| ....Architectural Engineering         | ....Electrical Engineering            |
| ....Metal Roofing                     | ....College Preparatory Course        |

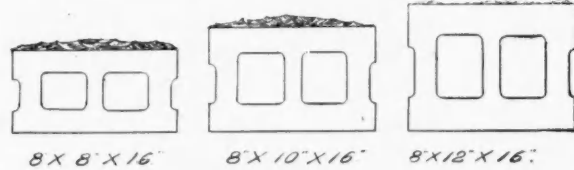
Name.....

Address.....

Occupation.....

ment, it is not a practical machine. We have sought to leave off all such features on the Springfield that would tend to complicate its mechanism. There are no cogs, gears, sprockets, cams or wheels of any kind to get out of order or adjustment.

The operations necessary to adjust the machine to receive the concrete and release it after the block has been tamped



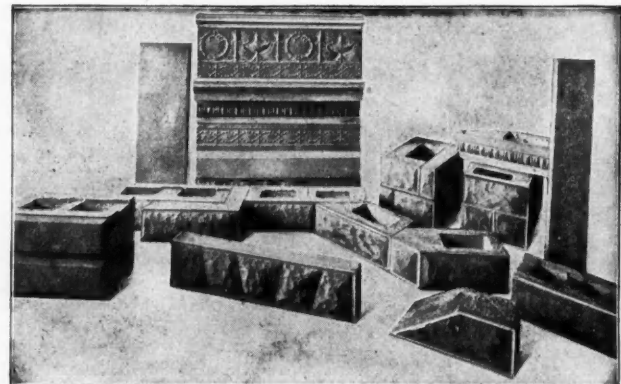
are so few and quickly performed that the question becomes merely a matter of human endurance as to the amount of blocks that can be turned out in ten hours.

Speed is not the most essential thing in the making of concrete blocks, but it is a thing which determines largely what the profit of the block-maker shall be. Address Reed Manufacturing Company, Box 142, Springfield, O.

**The Oldest Down Face Machine**

The Francisco Concrete Block Machine is no doubt the oldest concrete down face machine on the market. The manufacturers of this machine have always advocated and pushed concrete for the construction of the block, claiming that it is the only kind of material that will produce a damp proof wall. They show a concrete apartment building in their new catalogue that has been built seven years as proof. This building is 180 feet long and contains twenty apartments. The coarse wet material they are able to use enables them to produce a block with one-half the cement required in a sand block. Test proves the one part of cement and three of sand is no stronger than one of cement and eight of crushed stone or gravel.

The Francisco Block Machine Company's patent divisional rock face plate is one of the most perfect block machine attachments ever manufactured. It does away with all small sectional blocks which spoil the appearance of a building. They can adjust the divisional center in this plate to any point desired. As an example, if they are using 24 inch blocks and have an enclosure to fill that measures 19 3/4 inches, they would adjust the divisional center to the 19 3/4 inch point on the plate and make the desired size block.



The above group of blocks were made on the Francisco Adjustable Machine. The projecting stone in the cornice, the fancy design on top of it, also the wide caps, are all sixteen inches in width and four feet in length. The remarkable feature of this machine is that you are able to adjust it to any fraction of an inch in width up to twenty inches; in length, up to five feet; in height up to sixteen inches, enabling you to build on the one machine all length and style



## A New Wall Plaster

Morganwall Plaster Makes an Advanced Step in Building Construction—Its Low Cost.

New discoveries in the manufacture and application of construction material have followed each other closely during the past two years. Probably the latest important discovery of great economic value is that now being marketed by H. B. Morgan & Co., of Chicago. It is a new wall plaster called "Morganwall Plaster."



**HENRY B. MORGAN**  
President H. B. Morgan & Co.

This material is a mixture of lime, silicates, oxides and a secret vehicle for mixing which produces a putty form of plaster that is waterproof. It can be made in colors and at very low cost. The greatest economic problem which the new plaster solves is the fact that at one operation the wall is covered with the same result that requires four separate operations where ordinary plaster is used. Morganwall Plaster combines the putty or rough coats, the hard finish coat, siz-



**JOHN KAFFENBERGER**  
Chemist of H. B. Morgan & Co.

ing and, if desired, the tinting or color. The result is that in many cases no decorating is necessary unless design or fresco work is to be used. In this case the wall is ready for the artists without an extra finish being required.

Full information about this new discovery and free samples will be sent to all who write as per address in ad. opposite.



# MORGANWALL PLASTER DOES IT!

## Does What?

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.

## MORGANWALL PLASTER

COMBINES **ALL IN ONE COAT**

It is Placed on any Wall or Ceiling, Completing the Job at One Operation.

**70% Saved** in labor and material over the usual method of plastering a building by using the new material, **Morganwall Plaster**. This is no idle boast but an absolute fact. The saving in labor alone, through requiring but one operation to plaster a wall, is big.

### Great Economic Value

Common plaster and the usual method requires material separately mixed and takes four operations to finish the walls of a building. After this is done the wall is **not** waterproof and will easily show stains. Read below the claims we stand ready to prove for **Morganwall Plaster**. Its great economic value makes it the coming plaster material.

### Makes a Waterproof—Stainless Wall

By using **Morganwall Plaster** you do away with the crude proposition of **only partially** waterproofing as is the case with all other forms of so called dampproofing materials. **Morganwall Plaster** contains lime, silicates and oxides together with **our vehicle** for thoroughly mixing. The whole produces a plaster that is absolutely waterproof, prevents all liability of discoloring or staining through and is of greater adhesive qualities than cement or plaster. It can be made in any color desired.

**Morganwall Plaster can be applied direct to Concrete, Concrete Blocks, Cement, Cement Brick, Ordinary Brick, Stone, Tile or Terracotta Wall Surfaces.**

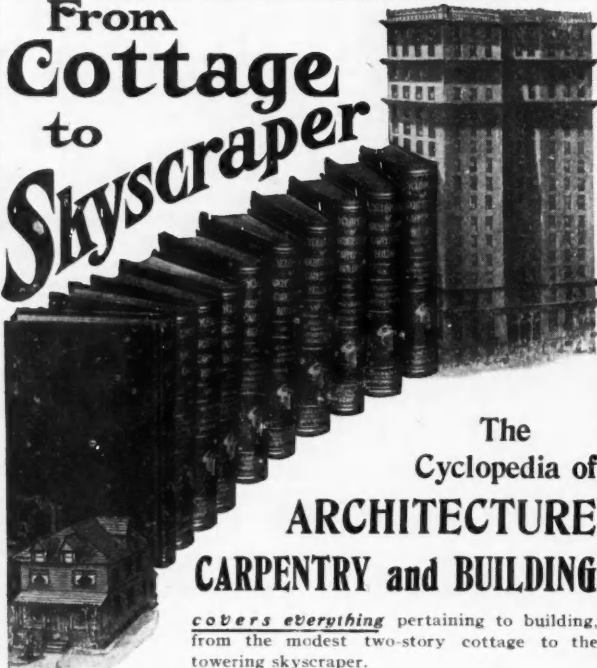
### FREE TESTING SAMPLES

**We don't** ask any contractor, owner or dealer to take our mere word for the claims we make about **MORGANWALL PLASTER**. We will supply free samples for testing, to anyone. Further than this we will back up the material with a good guarantee to anyone buying and using it for the purposes named.

INVESTIGATION COSTS NOTHING **WRITE TODAY** IT MAY MAKE YOU MONEY

**H. B. MORGAN & CO., ...CHICAGO...** 1105-1109 76th Street

**From  
Cottage  
to  
Skyscraper**



**The  
Cyclopaedia of  
ARCHITECTURE  
CARPENTRY and BUILDING**

*covers everything* pertaining to building,  
from the modest two-story cottage to the  
towering skyscraper.

Ten Volumes, page size 7x10 inches, bound in half red Morocco, over 4,000 pages; 3,000 illustrations, full page plates, plans, sections, valuable tables, "short cuts," etc. De Luxe books in every particular.

Reinforced Concrete is being used more and more in building and construction work. It has opened unlimited opportunities to the progressive carpenter, builder and contractor. The cyclopaedia contains the very latest information on this important subject and on every other subject pertaining to building.

**\$19.80 INSTEAD OF \$50.00**

Delivered for 5 days' free examination by prepaid express

We employ no agents to annoy you. The Cyclopaedia is compiled from the representative instruction papers of the American School of Correspondence and is our best advertisement. For these reasons we can afford to make this liberal offer. If you wish to keep the books, pay \$2.00 within five days and \$2.00 a month until you have paid the special \$19.80 price; otherwise notify us to send for them at our expense.

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.

#### AMERICAN SCHOOL OF CORRESPONDENCE CHICAGO

COUPON—Clip and mail to-day.....

Am. Carp. & Bldr 3-08

#### AMERICAN SCHOOL OF CORRESPONDENCE

Please send one set Cyclopaedia Architecture, Carpentry and Building for five days' free examination. If I keep the books, I will send \$2 within 5 days and \$2 a month until I have paid \$19.80; otherwise I will notify you to send for them.

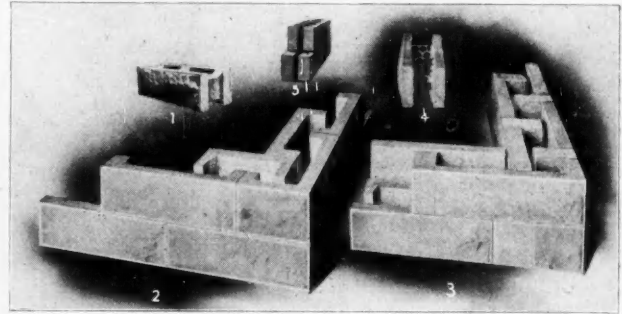
NAME .....

ADDRESS .....

OCCUPATION .....

EMPLOYER .....

blocks with no additional expense outside of face plates. Their new catalogue shows cuts of the finest display of face plates and cornice designs ever placed on the market.



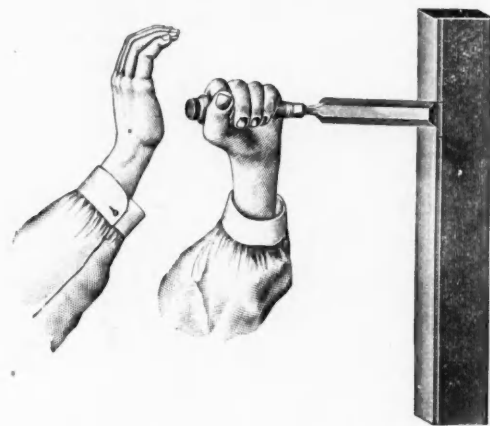
The above illustration shows the different styles of walls that may be built on the Francisco Adjustable Machine. All of the above walls are made on the regular machine with no additional expense for parts with the exception of cores. On their No. 4 machine may be made the 32, 24, 20 and 16 inch blocks, all on the same pallet with the plates included with the machine. It is a big advantage to have a machine that enables you to have your yard equipped with all of the above style wall blocks, also the different length blocks, as the people differ so in their opinion of the most desirable length for a block, also as to the style of wall.

By all means investigate the merits of this machine, even though you may be using some other. Their new catalogue "G" is very complete, showing cuts of face plate buildings and describing their machine. Address Francisco Block Machine Company, Columbus, O.

#### A Protected Handle Chisel

R. H. Shailer, of Forestville, Conn., is placing on the market the "Protected Handle—Solid Shank" chisel. This chisel is constructed on the principle which suggests its name, the shank passing entirely through the handle with a steel cap ingeniously secured to the end in such a way that every blow tends to weld more firmly the shank and cap together.

A smooth, hard surface is provided for imparting a direct blow on the chisel, which is more effective than when strik-



ing the wooden handles. The handle is used only for holding purposes, and the use of this chisel therefore eliminates the annoyances of split and battered handles, and the cost of continually renewing same.

It is also very desirable for doing work similar to that shown in illustration.

By this you will note that the hand comes in contact with a smooth surface instead of the ragged ends of a wooden handle.

This chisel is made from selected steel, correctly tempered,

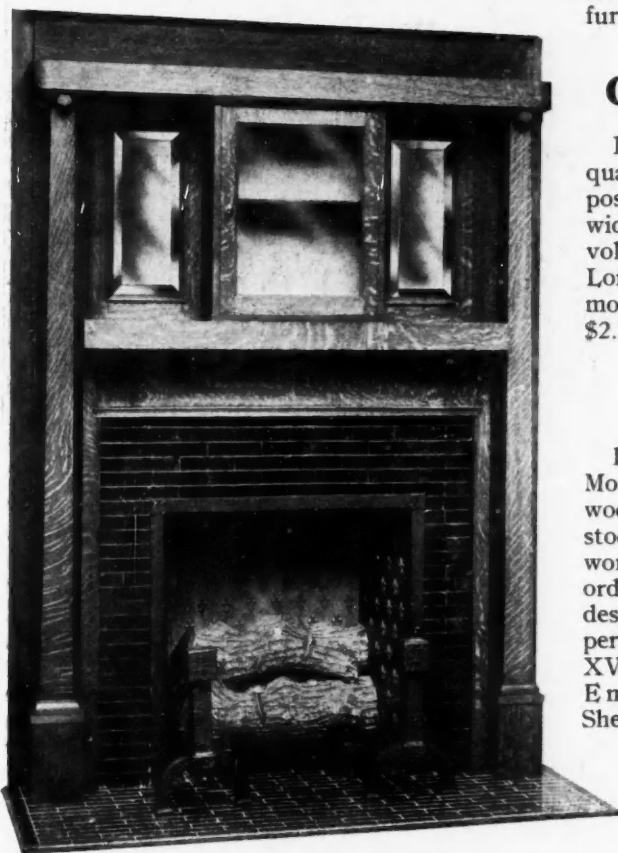
# LORENZEN MANTELS

**\$2.50**

to

**\$250**

**YOUR HOME**—Everybody's home should have a mantel. A mantel is useful as well as artistic and decorative. It saves you furnace heat on chill Spring and Autumn days, and diffuses cheer and comfort more than does any other piece of furniture in the house.



A unique mantel of great merit that looks well in any finish 5 feet wide 9 feet 10 inches high. French beveled plate mirrors 8 x 18 inches. Clear beveled glass 14 x 18 inches in cup board.

## CHARACTER and QUALITY

Lorenzen Mantels have a distinct character and quality both in design and workmanship, not possessed by others. This has made for them world-wide reputation and enormous sales. The great volume of our output is what enables us to sell Lorenzen Mantels at such low prices. We have more than 100 designs and styles selling at from \$2.50 to \$250.00.

## STYLES

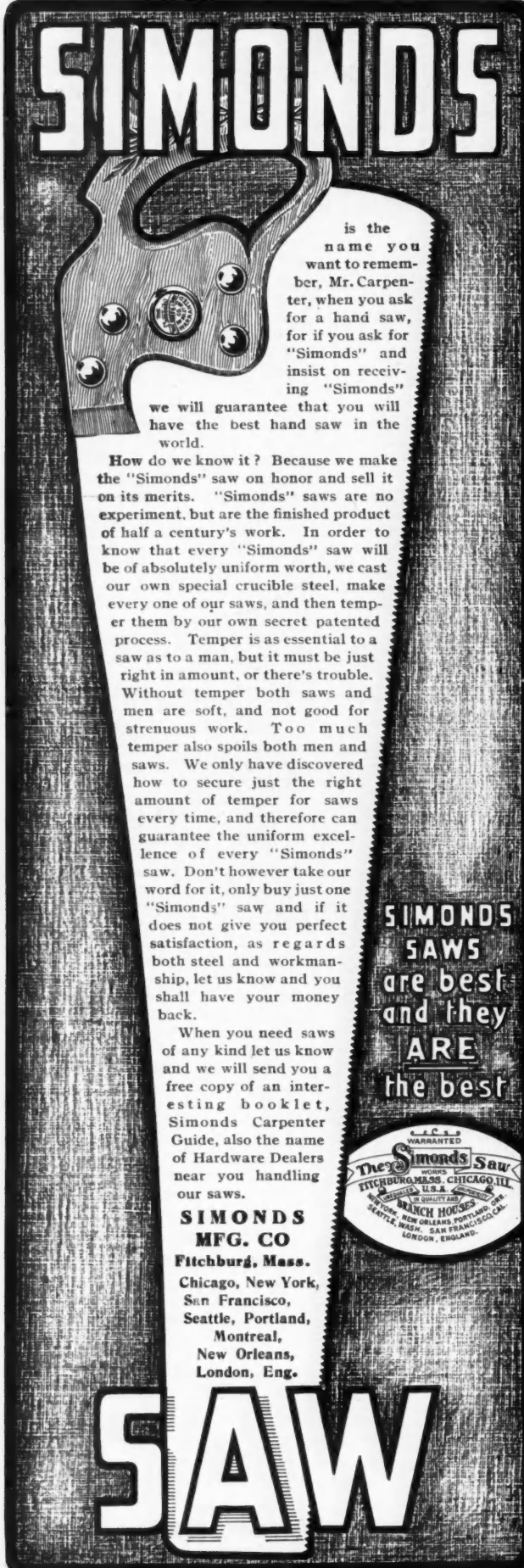
Lorenzen Mantels embrace Colonial, Craftsman, Modern Mission and numerous other styles, and all woods and finishes. Our modern factory, large stock of air-seasoned lumber, and expert, skilled workmen all mean beautiful mantels, far above the ordinary. We are at all times prepared to furnish designs of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

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

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299 N. ASHLAND AVE., CHICAGO

LORENZEN  
PAYS THE  
FREIGHT

# SIMONDS




is the name you want to remember, Mr. Carpenter, when you ask for a hand saw, for if you ask for "Simonds" and insist on receiving "Simonds" we will guarantee that you will have the best hand saw in the world.

How do we know it? Because we make the "Simonds" saw on honor and sell it on its merits. "Simonds" saws are no experiment, but are the finished product of half a century's work. In order to know that every "Simonds" saw will be of absolutely uniform worth, we cast our own special crucible steel, make every one of our saws, and then temper them by our own secret patented process. Temper is as essential to a saw as to a man, but it must be just right in amount, or there's trouble. Without temper both saws and men are soft, and not good for strenuous work. Too much temper also spoils both men and saws. We only have discovered how to secure just the right amount of temper for saws every time, and therefore can guarantee the uniform excellence of every "Simonds" saw. Don't however take our word for it, only buy just one "Simonds" saw and if it does not give you perfect satisfaction, as regards both steel and workmanship, let us know and you shall have your money back.

When you need saws of any kind let us know and we will send you a free copy of an interesting booklet, Simonds Carpenter Guide, also the name of Hardware Dealers near you handling our saws.

**SIMONDS MFG. CO**  
 Fitchburg, Mass.  
 Chicago, New York,  
 San Francisco,  
 Seattle, Portland,  
 Montreal,  
 New Orleans,  
 London, Eng.

**SIMONDS SAWS are best and they ARE the best**



# SAW

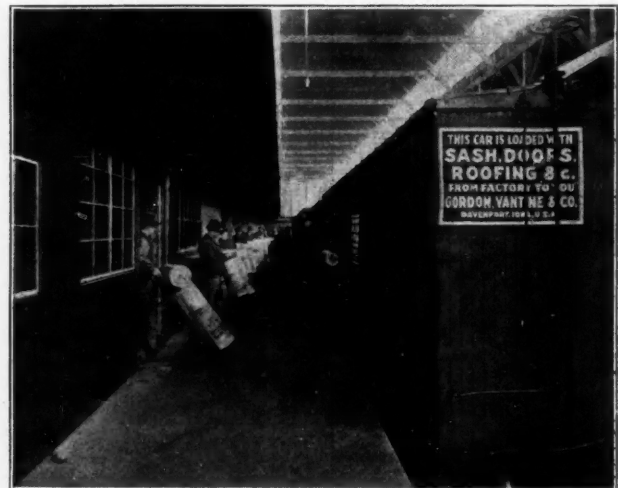
thus insuring a fine cutting edge, and all parts are highly finished.

If your hardware dealer does not keep them, a card addressed to R. H. Shailer, Forestville, Conn., mentioning the AMERICAN CARPENTER AND BUILDER, will bring you further information.

### Gordon, Van Tine & Co. Aid Contractors

Every carpenter and contractor who is pursuing the short-sighted policy of buying from retail dealers at present high prices, should get in touch with Gordon, Van Tine & Co., of 408 Federal street, Davenport, Ia. This concern owns and operates the largest millwork plant in America and sells its entire output at mill prices, which average 50 per cent below retail dealers' prices, all freight included. The company sells by means of a catalogue, in which the net price on each of the 5,000 bargains is given in plain figures, so that the catalogue may be used by a contractor as a basis for making estimates.

Everything that goes into a new building or is used in repair work, except rough lumber, will be found in the new Gordon, Van Tine & Co., catalogue. It is of course impossible to give here anything like a complete list of the different articles. The offerings include sash, doors, blinds, interior



finish of all kinds, door and window frames, stair work, porch work, roofing, building paper, window glass, hot bed sash, door and window screens, ladders, art glass, etc.

As to the quality of the goods, it is only necessary to say that everything is guaranteed up to the standard adopted by the Sash, Door and Blind Manufacturers' Association of the Northwest.

As an illustration of the vast extent of the Gordon, Van Tine & Co. stock, we cite for the consideration of our readers the item of doors. The prices run from 80 cents for a common door up to \$16 for an exceedingly handsome front door, set with polished plate glass and trimmed with genuine wood carvings. The stock includes all the standard styles of doors and a large number of special designs, which have attained great popularity. In material, workmanship and finish, Gordon, Van Tine & Co. doors are up to the highest standard and the same is true of all the products of this concern.

Another important advantage in dealing with Gordon, Van Tine & Co., is in the prompt shipment of goods. When you place an order for millwork with a local mill, there is almost invariably a delay in getting out the stuff. This delay may prevent you from completing the building at the time agreed upon, or force you to put on extra men to rush the work through. The immense stock carried by Gordon, Van Tine & Co. enables them to guarantee prompt shipment. The cars

# FORD'S GALVANIZED RUBBER ROOFING

**Forty Years of Reputation  
In it and Behind it**

The word "GALVANIZED" means something

It covers our special manufacturing process, which is the development of forty years' experience.

**MADE IN OUR OWN FACTORY**

We manufacture every square foot of Ford's Galvanized Rubber Roofing in our mills. We know every ounce of material used. Very few self-styled manufacturers of ready-to-lay roofings make the products they sell entirely. We do.

**THE GUARANTEES WE GIVE**

The guarantees named below are positive and are Based on Actual Time Tests in all climates and under all conditions.

**On 3-Ply**

We give guarantee through dealers direct to consumer or contractor for **15 Years** on Three-ply.

**On 2-Ply**

We give guarantee through dealers direct to consumer or contractor for **10 Years** on Two-ply.

**On 1-Ply**

We give guarantee through dealers direct to consumer or contractor for **5 Years** on One-ply.



BOSCOBEL ELECTRIC PLANT - BOSCOBEL, WIS. BEING ROOFED WITH 3-PLY GALVANIZED RUBBER ROOFING

**Is Easily Laid  
Requires No Special Tools**

**THIS BUILDING**

This picture shows the Boscobel Electric Plant, Boscobel, Wis., being roofed with 3-ply Ford's Galvanized Rubber Roofing.

**FREE** We will send free samples, special roofing information, and names of nearest dealers, free to all who write.

"GOOD AS THE BEST,  
BETTER THAN  
THE REST"

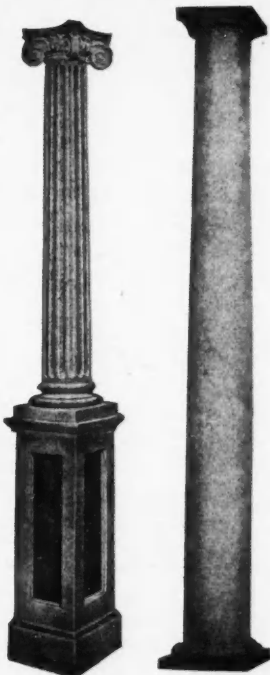


**WARNING** This roofing cannot be bought of "mail order" or "catalog houses," and the public is warned against cheap imitations sold under names closely resembling our brand.

**FORD MAN'FG. CO.**  
ESTABLISHED 1865

**DON'T DELAY—WRITE TODAY**  
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CHICAGO

## SOLID BORED COLONIAL COLUMNS



No. 31      No. 32

**Nothing to Come Apart  
Will Not Check**

Our Columns are manufactured from the solid stick and have three (3) inch hole through the center to keep them from checking.

Manufactured from white cedar, white pine and blue ash, the best and most lasting woods. Guaranteed to give perfect satisfaction.

Primed with one coat lead and oil.

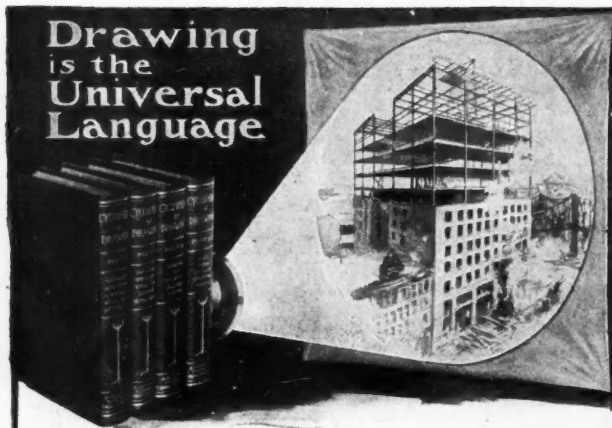
**Staved-up Columns a failure. Glue joints open up in from three to four (3 to 4) years**

Send your order in at once for Solid Bored COLONIAL COLUMNS to



No. 33      No. 34

**BUCKEYE CHURN CO.      ::      Sidney, Ohio**



**Drawing is the Universal Language**

Drawing is the language of the Carpenter, Contractor, Builder, Architect, and Draftsman. It speaks to every man in his own tongue and through his own knowledge. It records the ideas of the man who plans, and guides the hand of the man who executes. It conveys orders more quickly, more clearly, more exactly than speech or writing.

**Cyclopedia of Drawing**

Four volumes, 2,000 pages, 7x10 inches in size, 1,500 illustrations, tables, formulas, etc. Bound in half red morocco. The most complete general reference work on drawing yet published for Carpenters and Builders.

This work offers an unusual opportunity to get a good knowledge of drawing without the aid of a teacher. It is entirely free from technical descriptive matter so hard to understand, and every section is supplemented by many practical test questions, "short cuts," etc. It is equally valuable in the shop, the drafting room, or the home library.

**LESS THAN HALF PRICE**

Sent by prepaid express for Free examination. If satisfied that the books can help you, send \$2.00 within 5 days and \$2.00 a month until the special \$9.80 price is paid; otherwise notify us to send for them at our expense. Regular price is \$24.00.

**Some of the Chapters**

Architectural, Perspective, Mechanical, Isometric and Freehand Drawing; Patterns for Framing; Architectural Design; Floor Plans; Elevations; Detail Drawing; Shades and Shadows; The Tuscan, Doric, Ionic, Corinthian and Composite styles of Roman Architecture; Details and Sections of Classic Mouldings and Ornaments; Working Shop Drawings; Water Color Hints for Draftsmen; Architectural Lettering; Blue Printing; Machine Drawing; Sheet Metal Pattern Drafting; Tinsmithing; Sky-lights; Roofing; Cornice Work; Practical Problems in Mensuration, etc.

Am. Carp. and Bldr 3-08

American School of Correspondence, Chicago

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**AMERICAN SCHOOL OF CORRESPONDENCE**

CHICAGO

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 Address.....  
 Occupation.....  
 Employer.....

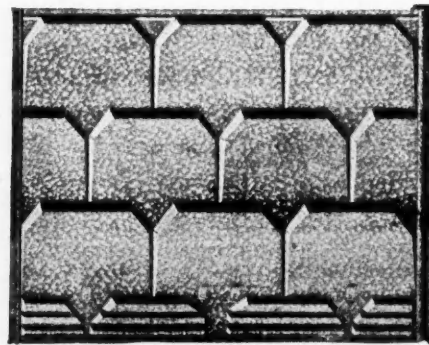
are run right into the warehouse and loaded from a platform 340 feet long. Eight cars can be loaded at one time. The accompanying illustration shows two cars being loaded with roofing. Orders are shipped within twenty-four hours after receipt.

This great concern ships goods to every state in the union and guarantees safe delivery to the buyer's freight station.

Gordon, Van Tine & Co.'s plan of selling direct to the consumer at mill prices is bringing them an enormous business. Wide awake contractors and builders have been quick to see the advantages of going over the heads of the local dealers and buying material direct from Gordon, Van Tine & Co.'s big mill at the same price the dealer pays. They have saved thousands upon thousands of dollars by cutting out the middlemen. They have been served with promptness and efficiency and have always found the quality of Gordon, Van Tine & Co.'s goods highly satisfactory. Their financial standing is very high and contractors are assured of fair treatment and splendid service in dealing with them. Write for the Gordon, Van Tine & Co., free millwork catalogue and get the benefit of their extraordinarily low prices.

**Their Largest Year's Business**

The W. J. Burton Company report their business for the past year has exceeded any other year by a good margin, and



that the prospects show a very large increase on their celebrated Eastlake Metal Shingles shown in this cut, manufactured by them for more than twenty years. These shingles are more durable than wood shingles or slate, and can be laid for one quarter the cost of labor, which makes them considerably cheaper. A very important feature of this shingle is a telescopic side lock, so constructed as to allow for expansion, and their system of joints makes leakage and wear impossible. The Eastlake is made in plates twenty by twenty-eight inches, each embossed with the pattern of nine slate or shingles, and when painted black closely duplicate the appearance of the most expensive black slate, with cut corners.

This firm also manufactures fireproof metal window and door frames, galvanized iron cornices, skylights, eaves troughs, ridge rolls, metal ceilings, steel roofings, and are jobbers, carrying a full line of tinnery and roofers' supplies, including a complete stock of assorted metal and composition roofings. Prices and information will gladly be furnished by them on request. Address The W. J. Burton Company, Detroit, Mich.

**A Level and Grade Finder**

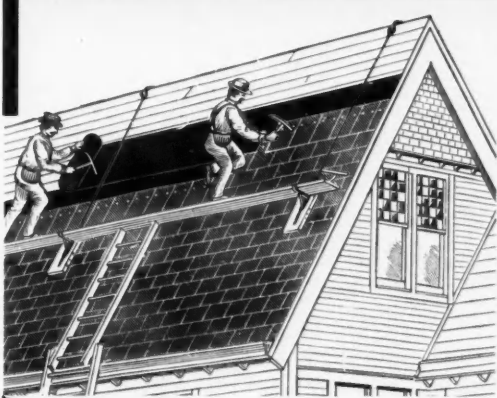
A combined level and grade finder is a very convenient and useful tool for the engineer, architect, supervisor or track foreman on the one hand, and the mason, machinist, contractor, millwright or carpenter on the other. A very strong and reliable instrument of this sort is made by Edward Helb, of Railroad, York county, Pa. It gives at a glance the true slant on any line or grade in degrees, inches and percentage at the same time, thus showing the exact distance out of a true level. It is especially adapted for the use of contractors en-



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 8, 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.

"Creole"  
 "Etowah"  
 "Cherokee"  
 "Kennesaw" } **Georgia Marble**  
**THE GEORGIA MARBLE CO., - - TATE, GA.**

# TAKE UP SLATE ROOFING



**Carpenters and Builders:** Take up slate roofing in **unoccupied territory** everywhere. **It's a money-maker.** Only a few simple, inexpensive tools and small capital necessary. Slating is easy to learn. Very much like laying shingles. Can be carried on in connection with your present line with no extra trouble or expense and will give good returns. A profitable, growing slate roofing business can be established **anywhere.** Besides the new work that comes up every year, there are simply hundreds of worn-out shingle, metal, tin and composition roofs in every locality that **must** soon be replaced.

## Sea Green or Purple Slate Roofs

Outlast Any Building

They **can't** wear out, rust, warp or decay. Are fire and spark proof. Reduce insurance rates. Afford clean cistern water. Don't require constant repairs and attention. Your neighbors are tired of paying good money for short lived roofing—high priced shingles that soon decay—tin and metal roofs that cause frequent and costly paint bills—composition and the "oids" roofing that disintegrate. Furnish

them with handsome, sanitary, fire-proof **Never-Wear-Out Sea Green or Purple Slate Roofs** that last forever. **Carpenters and Builders:** Take up slate roofing this Spring. You will make good money and please your customers. Write to us at once for delivered prices on slate, tools and supplies and **Free** book of instructions. **Don't Delay. Write To-day.**

**AMERICAN SEA GREEN SLATE CO.,**

**Box 36, Granville, N. Y.**

This proposition does not apply to territory now covered by a slate roofer.

# Sea Green and Purple ROOFING SLATE

**Petz Corner Post**

Does away with old-fashioned pillars and posts. Note steel bar which insures rigidity.

Specify **PETZ** PATENT STORE FRONT CONSTRUCTION *Made in Detroit*

Secures lowest rates from Plate Glass Insurance Companies because of its great strength, durability and permanent, practical merit.

Satisfies the merchant because it gives every inch for display and is the neatest, handsomest corner post and transom bar on the market.

Endorsed by leading architects, contractors and glaziers, because glass can be set from the outside, and broken glass replaced without disturbing window trim or removing window enclosure. Our new book "Metal Store Fronts" gives full details. Write for a copy.

**Petz Transom Bar**

Made in any finish: Samples on request.

**DETROIT SHOW CASE CO.,** 491 West Fort St. 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**

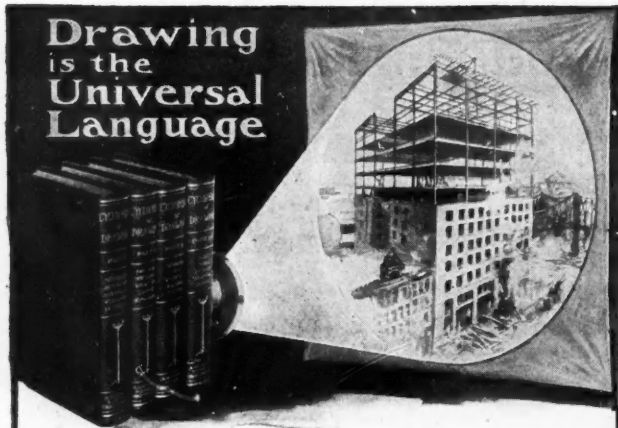
Will they break or check? No Sir! Will they crack or shrink? No Sir!

**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.



**Drawing is the Universal Language**

Drawing is the language of the Carpenter, Contractor, Builder, Architect, and Draftsman. It speaks to every man in his own tongue and through his own knowledge. It records the ideas of the man who plans, and guides the hand of the man who executes. It conveys orders more quickly, more clearly, more exactly than speech or writing.

**Cyclopedia of Drawing**

Four volumes, 2,000 pages, 7 x 10 inches in size, 1,500 illustrations, tables, formulas, etc. Bound in half red morocco. The most complete general reference work on drawing yet published for Carpenters and Builders.

This work offers an unusual opportunity to get a good knowledge of drawing without the aid of a teacher. It is entirely free from technical descriptive matter so hard to understand, and every section is supplemented by many practical test questions, "short cuts," etc. It is equally valuable in the shop, the drafting room, or the home library.

**LESS THAN HALF PRICE**

Sent by prepaid express for Free examination. If satisfied that the books can help you, send \$2.00 within 5 days and \$2.00 a month until the special \$9.80 price is paid; otherwise notify us to send for them at our expense. Regular price is \$24.00.

**Some of the Chapters**

Architectural, Perspective, Mechanical, Isometric and Freehand Drawing; Patterns for Framing; Architectural Design; Floor Plans; Elevations; Detail Drawing; Shades and Shadows; The Tuscan, Doric, Ionic, Corinthian and Composite styles of Roman Architecture; Details and Sections of Classic Mouldings and Ornaments; Working Shop Drawings; Water Color Hints for Draftsmen; Architectural Lettering; Blue Printing; Machine Drawing; Sheet Metal Pattern Drafting; Tinsmithing; Sky-lights; Roofing; Cornice Work; Practical Problems in Mensuration, etc.

Am. Carp. and Bldr 3-08

American School of Correspondence, Chicago

Please send set Cyclopedia of Drawing for free examination. I will send \$2 within five days and \$2 a month until \$9.80 is paid otherwise I will notify you to send for the books.

**AMERICAN SCHOOL OF CORRESPONDENCE**

CHICAGO

COUPON

Name.....  
 Address.....  
 Occupation.....  
 Employer.....



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 8, 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.

"Creole" } **Georgia Marble**  
 "Etowah" }  
 "Cherokee" }  
 "Kennesaw" }

**THE GEORGIA MARBLE CO., - - TATE, GA.**

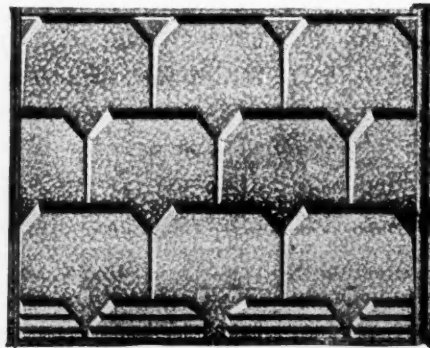
are run right into the warehouse and loaded from a platform 340 feet long. Eight cars can be loaded at one time. The accompanying illustration shows two cars being loaded with roofing. Orders are shipped within twenty-four hours after receipt.

This great concern ships goods to every state in the union and guarantees safe delivery to the buyer's freight station.

Gordon, Van Tine & Co.'s plan of selling direct to the consumer at mill prices is bringing them an enormous business. Wide awake contractors and builders have been quick to see the advantages of going over the heads of the local dealers and buying material direct from Gordon, Van Tine & Co.'s big mill at the same price the dealer pays. They have saved thousands upon thousands of dollars by cutting out the middlemen. They have been served with promptness and efficiency and have always found the quality of Gordon, Van Tine & Co.'s goods highly satisfactory. Their financial standing is very high and contractors are assured of fair treatment and splendid service in dealing with them. Write for the Gordon, Van Tine & Co., free millwork catalogue and get the benefit of their extraordinarily low prices.

**Their Largest Year's Business**

The W. J. Burton Company report their business for the past year has exceeded any other year by a good margin, and



that the prospects show a very large increase on their celebrated Eastlake Metal Shingles shown in this cut, manufactured by them for more than twenty years. These shingles are more durable than wood shingles or slate, and can be laid for one quarter the cost of labor, which makes them considerably cheaper. A very important feature of this shingle is a telescopic side lock, so constructed as to allow for expansion, and their system of joints makes leakage and wear impossible. The Eastlake is made in plates twenty by twenty-eight inches, each embossed with the pattern of nine slate or shingles, and when painted black closely duplicate the appearance of the most expensive black slate, with cut corners.

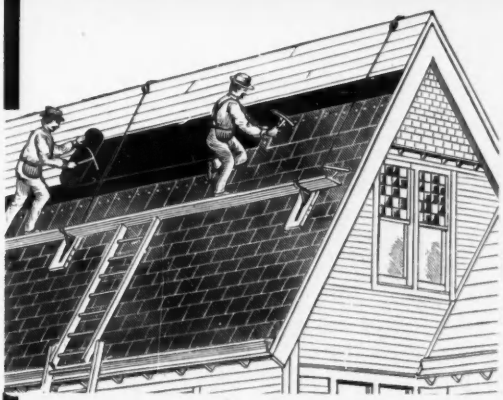
This firm also manufactures fireproof metal window and door frames, galvanized iron cornices, skylights, eaves troughs, ridge rolls, metal ceilings, steel roofings, and are jobbers, carrying a full line of tinner's and roofers' supplies, including a complete stock of assorted metal and composition roofings. Prices and information will gladly be furnished by them on request. Address The W. J. Burton Company, Detroit, Mich.

**A Level and Grade Finder**

A combined level and grade finder is a very convenient and useful tool for the engineer, architect, supervisor or track foreman on the one hand, and the mason, machinist, contractor, millwright or carpenter on the other. A very strong and reliable instrument of this sort is made by Edward Helb, of Railroad, York county, Pa. It gives at a glance the true slant on any line or grade in degrees, inches and percentage at the same time, thus showing the exact distance out of a true level. It is especially adapted for the use of contractors en-



# TAKE UP SLATE ROOFING



**Carpenters and Builders:** Take up slate roofing in **unoccupied territory** everywhere. **It's a money-maker.** Only a few simple, inexpensive tools and small capital necessary. Slating is easy to learn. Very much like laying shingles. Can be carried on in connection with your present line with no extra trouble or expense and will give good returns. A profitable, growing slate roofing business can be established **anywhere.** Besides the new work that comes up every year, there are simply hundreds of worn-out shingle, metal, tin and composition roofs in every locality that **must** soon be replaced.

## Sea Green or Purple Slate Roofs

**Outlast Any Building**

They **can't** wear out, rust, warp or decay. Are fire and spark proof. Reduce insurance rates. Afford clean cistern water. Don't require constant repairs and attention. Your neighbors are tired of paying good money for short lived roofing—high priced shingles that soon decay—tin and metal roofs that cause frequent and costly paint bills—composition and the "oids" roofing that disintegrate. Furnish

them with handsome, sanitary, fire-proof **Never-Ware-Out Sea Green or Purple Slate Roofs** that last forever. **Carpenters and Builders:** Take up slate roofing this Spring. You will make good money and please your customers. Write to us at once for delivered prices on slate, tools and supplies and **Free** book of instructions. **Don't Delay. Write To-day.**

**AMERICAN SEA GREEN SLATE CO.,**

**Box 36, Granville, N. Y.**

This proposition does not apply to territory now covered by a slate roofer.

# Sea Green and Purple ROOFING SLATE

**Petz Corner Post**

Does away with old-fashioned pillars and posts. Note steel bar which insures rigidity.

Specify **PETZ** PATENT STORE FRONT CONSTRUCTION *Made in Detroit*

Secures lowest rates from Plate Glass Insurance Companies because of its great strength, durability and permanent, practical merit.

Satisfies the merchant because it gives every inch for display and is the neatest, handsomest corner post and transom bar on the market.

Endorsed by leading architects, contractors and glaziers, because glass can be set from the outside, and broken glass replaced without disturbing window trim or removing window enclosure. Our new book "Metal Store Fronts" gives full details. Write for a copy.

**Petz Transom Bar**

Made in any finish: Samples on request.

**DETROIT SHOW CASE CO.,** 491 West Fort St. DETROIT, MICH.

**WE CAN SAVE YOU MONEY**

**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.

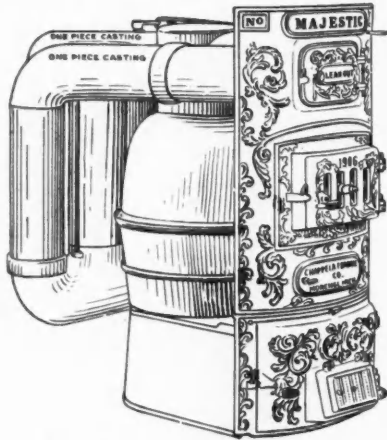
Write for sample and catalogue showing Capitals, Pilasters, Newel Ornaments, Drops, Rosettes, Scrolls, Shields, etc.

**ORNAMENTAL PRODUCTS CO.,** 552 W. Fort St., DETROIT, MICH.

# 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.**

gaged in laying pavements, cement sidewalks and sewers, building bridges, digging ditches and laying drains to grade, determining the fall of water, etc.

Mr. Helb will, on request, send a circular describing the instrument and giving the opinions of a great number who have experience with it regarding its value and usage.

### A New and Modern Foundry

The Majestic Furnace & Foundry Company, Huntington, Ind., have just completed their new modern foundry and manufacturing plant, where they are manufacturing their very popular line of Majestic, all-cast, warm air furnaces, also



**The Old Way**

the Majestic coal and wood chutes, which have so rapidly come into general use since their introduction one year ago.

The Majestic furnaces differ widely from the ordinary line of warm air heaters. They are constructed with two separate sets of grates, enabling the user to burn either coal or wood with equal success. The wood grates are placed on top of the fire pot, which permits the wood to burn in a horizontal position, the same as the old style wood stove. When the wood grates are removed, the coal grates are in a



**The New Way**

position at the bottom of the fire pot, making the most successful coke or coal burner. Radiation is one of the strong features of the Majestic furnace, being made of seamless cast iron tubes which carry the smoke and hot gases the distance of two feet before allowing them to pass up the chimney, thereby abstracting practically all the heat from the fuel that is possible. They also make an exclusive coal burning furnace

# 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

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**CEMENT WORLD, 241 Fifth Ave., Chicago, Ill.**  
 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.**

and the four foot combination wood or coal burner, which is a great favorite with the farmer.

All of their furnaces are equipped with the Majestic radiator, and are made for either galvanized casing or brick setting. They also manufacture a full line of heating pipes and fixtures, and are jobbers of registers and supplies.

The Majestic coal chute which they manufacture has become a modern necessity. It is the only chute that has an automatic device for locking the door open against the siding and keeping it from becoming soiled and damaged above the opening, which is the most important feature in a coal chute. They are making the door frame of malleable iron this year, and the body of very heavy steel or cast iron if desired. They feel safe in saying that the Majestic chute is positively burglar proof. The adjustable hopper is a great convenience when putting in coal from a basket or shovel. The hopper can easily be removed if desired. The door closes flush with the wall, locking itself shut from the outside, and presents a very neat and finished appearance.

Their agency for both furnaces and coal chutes is a very desirable asset to a responsible contractor.

### Pressure vs. Tamping

Extensive investigation at the University of Illinois has shown that there is no difference in the solidity of a good pressed block and a good tamped block, each seeming to be equally dense.

The "Somers" pressure block machine, of Urbana, Ill., as the name implies, uses a pressure of thirty tons to the block, and it does not take an expert to see what the result must necessarily be.

From the standpoint of speed the Somers Brothers make great claims for their machine. They guarantee that three


men can make two blocks a minute, and at the Buffalo Cement Users' convention this claim stood the test in this way. A "doubting Thomas" was going through their exhibit and offered to wager \$10 that that speed could not be reached. The bet was instantly covered, and with the result that there is one "doubting Thomas" the less, as this speed was made with several seconds to spare.

Their catalogue tells all about it. Write them, mentioning this paper, for descriptive matter, and—do it now.


### Hatched His Chickens in the Hay Mow

The H. M. Sheer Company, Quincy, Ill., received a letter the other day which tells a most novel story. The writer of this letter is Mr. John Waser, of Beecher, Ill.:

"I will tell you what I have done with this wonder of mine. A farmer had advised me to buy a machine of another firm. He said the machine cost \$41, and the reason they charged so much money for it, was because it was the leading machine on the market, but I didn't think so. I bought the machine I thought was the best. It was three weeks later, my neighbor burned out, the cause being the incubator lamp exploded. I went to him a few days after and told him I had a machine that would run in the hay mow of a barn, and I would guarantee I would not have to stay with the machine from start to finish, except to go in and attend to the eggs; so he bet me \$10 that I could not do it, and it was done. The machine was set in the hay barn, with hay all around it. Just room enough for me to get in and out again, and the hatch was run successfully with no damage done to hay or barn. He will be one of your new customers this spring. Since that test my machine is very popular in this neighborhood, and you will have quite a few customers in this locality this spring. I expect my brother, Mr. Leo Waser, has sent to you for a




# CARBORUNDUM



## SHARPENING STONES

A skilled mechanic loves a sharp tool—Carborundum Sharpening Stones produce a keen, even, lasting edge—and do it quicker and better than any other sharpening stone on earth.

Carborundum Sharpening Stones are very hard and very sharp—They not only do their work better but they last longer—do not wear off in spots or become smooth and gummy. They are for sale by wide-awake Hardware dealers everywhere.



**LET US SEND YOU THIS  
POCKET STONE**

If you have never used Carborundum Sharpening Stones, let us send you this little "Machiaists' Special" Pocket Stone—in neat case.

By Mail 35 Cents.

### THE CARBORUNDUM COMPANY

Niagara Falls,     :     :     :     :     :     :     New York

**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.

## 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 672, 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.

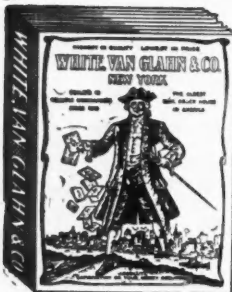
SASH, DOOR AND BLIND FACTORY FOR SALE—Public Sale on April 6th, 1908 to the highest bidder, a large Sash, Door and Blind Factory and Planing Mill on the Black Water River and L. & N. Railroad in Santa Rosa County, Florida. The property has a cash value of at least \$50,000.00 and is in a very desirable location.

THE FISHER REAL ESTATE AGENCY,  
Pensacola, Fla.

### Patents.

C. L. PARKER, Solicitor of Patents, 20 Diets Bldg. Washington, D. C. Handbook for Inventors sent free upon request.

## Before You Spend Another Cent



Write us for a free copy  
of this 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  
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 Drawing Materials  
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 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., No. 3 Barclay Street  
 Oldest Mail Order House in America. NEW YORK CITY  
 Established 1816

## ATTENTION, CONTRACTORS

You cannot afford to be without Grinnell's Estimator and Builder's Pocket Companion. A handbook for Carpenters, Masons and Painters. Anyone of many of its pages is well worth the price of the whole. Send \$1 and be convinced, remembering that if not satisfactory your money will be refunded on receipt of book. Address Grinnell Pub. Co., Medina, N.Y.

machine by this time, or if he hasn't, he will send for one, as he witnessed the test also. Wishing you great success, I remain,

Yours respectfully,

"JOHN WASER, Beecher, Ill."

Mr. Waser built his machine from plans and fixtures purchased from H. M. Sheer Company, Quincy, Ill. Their advertisement offering plans free is elsewhere in this issue. Look it up—it will pay you to send for them.

## A New Plaster Discovery

Of late years considerable advance has been made over the old method of plastering, and advances are still being made. The latest discovery, and one that bids fair to revolutionize the plaster industry, is that made by H. B. Morgan, of Chicago, who has discovered a way of manufacturing lime plaster that makes it absolutely waterproof and does away with the necessity of applying more than one coat to make a complete wall even to the tinting.

Mr. Morgan's discovery is called "Morganwall Plaster." It is a combination of lime, silicates, oxides and a secret mixing vehicle which produces a putty plaster that can be mixed pure white or any desired tint. The new mixture can be applied to any kind of wall without the wall having been waterproofed, as the new plaster is an absolutely waterproof material. It takes the place of waterproofing, two putty plaster coats, the hard finish coat, the sizing and, if desired, the tinting used for decoration. The new material is applied at a single operation and saves about 70 per cent over the usual way of plastering in labor and cost of material. It produces a perfectly waterproof and absolutely stainless wall.

The new product is being manufactured and marketed by H. B. Morgan & Co., 1105-1109 Seventy-sixth street, Chicago. This is the company that placed on the market the now celebrated products called "Morganite" and "Coatine," that are being so extensively used for waterproofing and coating concrete, cement blocks, stone and brick construction. Full information about the new plaster product and free testing samples will be sent to all who request same.

## New Wire Screen Catalogue

The A. J. Phillips Company, of Fenton, Mich., have just issued a new catalogue of their screens. This company manufactures screens for excluding insects from residences, hotels, hospitals, apartment houses, schools and all places requiring summer ventilation. Their screens are made to order neatly, promptly and at reasonable cost. Some idea of the magnitude of this company's plant may be gathered from the fact that it has three and one-half acres of floor space. Their facilities are sufficiently extensive to enable them to produce excellent work very much better than that of the ordinary shop or planing mill and to deliver the goods at your railroad station at very reasonable prices.

They will be glad to quote figures or make estimates if lists and sizes of openings are submitted. The quality of their work can be judged from the sample of materials and finish which they mail to possible patrons. Their new catalogue contains testimonials from a few of their many customers in widely different localities. In many places intending purchasers may see their work that has been in use for years.

## Brass Railings

The Zero Valve & Brass Manufacturing Company are advertising this month on another page that they can supply your brass wants. They can. How many times, Mr. Builder, have you been worried as to just how to finish some piece of work or other, when a brass fitting, such as a bracket or hand rail, would have solved the difficulty immediately?

This firm makes a specialty of brass work that is not handled by your dealer, and their plant is equipped for the

# Do You Scrape Floors?

**WOULD YOU SCRAPE THEM BY HAND IF YOU KNOW OF A BETTER AND MORE ECONOMICAL WAY?**



THE OLD WAY

We can show you the way, and, better than that, can prove it without any expense to you

We do not ask you to deposit any money



THE NEW WAY

WE WILL SEND YOU

**THE "LITTLE GIANT" FLOOR SCRAPER FOR FREE TRIAL, AND PAY FREIGHT BOTH WAYS IF NOT SATISFACTORY**

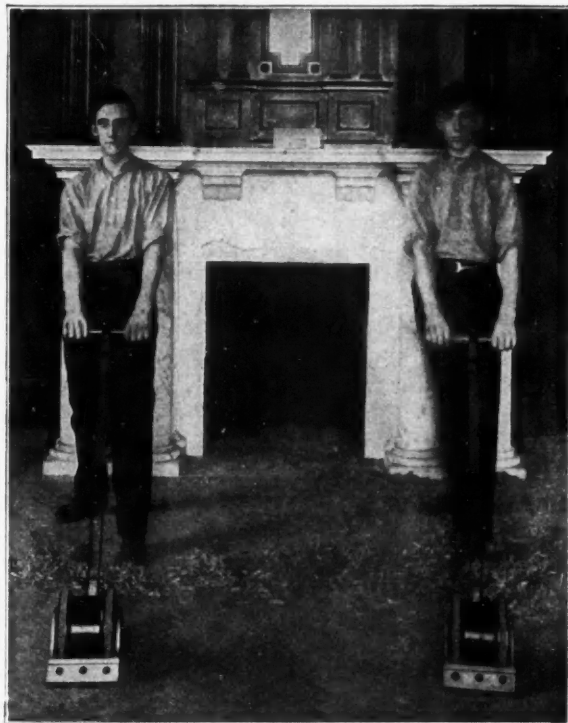
The "LITTLE GIANT" will do the work of at least four men



Scrapes every inch of floor, into corners and along baseboard



A trial is the only way for you to know which is the best floor scraper. Just fill out the coupon and mail today.



Finishing Parquet Floors with the "LITTLE GIANT"

The "LITTLE GIANT" saves time, money and laborious work



No motive power required. Easily operated by one man



We furnish twelve imported silver steel knives with each machine and complete equipment for keeping them sharp.

## 10,000 "LITTLE GIANT"

Floor Scrapers Now in Use

### Hurley Machine Company

General Office and Works:  
153-159 South Jefferson Street  
CHICAGO

Branches: NEW YORK, SAN FRANCISCO, LONDON

**FILL IN NAME AND ADDRESS AND SEND THIS COUPON**

3—A. C. B.  
I am interested in your offer of free trial and special terms on the "LITTLE GIANT." Please send catalog and complete information.

NAME.....

STREET.....

TOWN.....

STATE.....

manufacture of any brass want that will arise in the course of erection of an ordinary building. They have a complete foundry, machine shop and plating plant, and therefore are able to guarantee you the best of workmanship and material.

A rough sketch of your brass want sent to the Zero Valve & Brass Manufacturing Company, 428 Chicago street, Buffalo, N. Y., will bring you a detailed drawing and estimate, and this with no expense to you.

### Important Reorganization

The Hartmann Brothers Manufacturing Company, of Mt. Vernon, N. Y., and the Henry Sanders Company, of Chicago, announce a reorganization and consolidation of the two companies under the name of the Hartmann-Sanders Company, with main office and factory in Chicago.

These two concerns, although operating under different names, have long been closely allied, their interests and methods being identical. The Sanders Company took care of the column business in the central and western states, while Hartmann Brothers supplied the eastern and southern demand.

The consolidation of the two companies is made solely with a view of meeting more expeditiously, economically and satisfactorily the demands of a rapidly growing business. The Hartmann-Sanders Company is but a closer union, in the interests of trade expansion, of men and capital that have been for years working together in a common business with common trade and financial interest.

### Has Solved a Building Problem

Much credit is due Mr. D. F. Detrick for perfecting the greatest of all concrete block machines. His new automatic self-locking, lightning block machine affords builders relief from the high price of lumber, giving them a newer, better and more substantial building material than ever before obtainable. Every one of Mr. Detrick's machines and the accessories which go with it are carefully inspected before they leave the factory, and are fully guaranteed to be the best and highest grade block machines made.

Mr. Detrick is a builder by trade, and any one interested in the cement block making or using will learn considerable to their interest by consulting with him and inspecting his machines before they buy. He issues a neat and attractive little booklet which also includes full instructions for the mixing

of concrete. He will be pleased to send one of these books to any one interested. Address D. F. Detrick, 8 Canal street, Dayton, O.

### Increasing Demand for Cortright Shingles

One of the best endorsements of the claims made by the Cortright Metal Roofing Company that their metal shingles are increasing in favor with the building public is the great number of large and important public buildings that have been covered by them, especially in 1907. In the February issue of the *Cortright Metal Shingle Advocate*, which they publish, appears a splendid double page illustration of the I. O. O. F. Widows' and Orphans' Home, Corsicana, Tex., the latest institution of the kind to be covered by the Cortright roof.

A few years ago architects specified nothing but copper, stone-slate, or earthen tiles for this work. Now they find the Cortright shingles embody not only the best features of these forms of roofing, but in addition many others never before thought of.

A copy of the February *Advocate*, containing very interesting facts regarding metal shingle roofing, can be had for the asking from the Cortright Metal Roofing Company, Philadelphia or Chicago.

### Lower Prices on Bits

The Progressive Manufacturing Company, of Torrington, Conn., manufacturers of Forstner brace and machine bits (patented), have recently revised the list prices on these bits. A very material reduction has been made on the list of the larger bits, in sizes from 1½ to 2 inches inclusive, on account of improved methods of production. Catalogues and price lists mailed free to the trade upon request.

### A Most Complete Outfit

The Besser Manufacturing Company, of Alpena, Mich., had a very attractive exhibit of their machines at the Buffalo show. Their line is a very complete one. Their "Eureka" machine is kept in continuous operation and is the only face-down block machine which withdraws the cores vertically and automatically, thus giving the greatest speed and allowing the use of wet material in the body of the block.

One of the most interesting machines they had on exhibi-



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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.

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tion was their automatic-tamper drain tile machine, which has a capacity of 2,000 tile per day and makes three inch drain tile for \$8 per thousand.

One thing that was entirely new at the convention was their large capacity machine, which produces 12,000 brick, 2,000 veneer or two-piece blocks, and 1,000 hollow blocks per day. They also have a full line of tile molds and sidewalk machines. With their automatic-tamper drain tile machine, but ten seconds is required to make a tile. This machine is not an experiment but is in use in a great many yards all over the country.

The Besser Manufacturing Company state that the Buffalo convention was the most successful one they have attended in the way of orders received.

### Wood Rolling Partitions

The Flexifold Door & Shutter Company, of Worcester, Mass., is advertising in this issue wood rolling partitions for churches, schools and public buildings. They certainly have the best line of rolling partitions on the market. They are all right in every way and shape. It will only be necessary for them to bring their goods to the attention of our readers in order to make them permanent customers. They have a complete line of circulars describing their doors and shutters which they will be glad to send to any one interested.

### New Method of Construction

Benjamin Ives, of 6 Sherman street, Chicago, announces a new method of construction which he fully explains in a handsome catalogue just issued. He will send this catalogue to any of our readers upon receipt of a postal, providing they mention the AMERICAN CARPENTER AND BUILDER.



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Fence posts of many kinds of cheap woods which ordinarily would soon decay if set in the ground can be made to last for twenty years by a simple treatment with creosote. Most of the so-called "inferior" woods are well adapted to the treatment, and this is especially true of cottonwood, aspen, willow, sycamore, low-grade pines, and some of the gums. When properly treated, these woods outlast untreated cedar and oak, which are becoming too scarce and too much in demand for other uses to allow of their meeting the demand for fence posts.

Impregnation with creosote has been greatly cheapened by the introduction of the "open tank," which can be installed at a cost of from \$30 to \$45, or much less if an old boiler is used. A tank with a bottom 12 square feet in area will suffice for treating 40 or 50 6 inch posts a day, or double this number when two runs per day can be made. The absorption of creosote per post is about as follows: Eucalyptus, one-tenth gallon; willow, two-tenths gallon; sassafras, ash, hickory, red oak, water oak, elm, and maple, four-tenths gallon; Douglas fir, quaking aspen, and black walnut, six-tenths gallon; sycamore, cottonwood, and lodgepole pine, seven-tenths gallon. The price of creosote is about 10 cents per gallon in the east and middle west, 16 cents per gallon on the Pacific coast, and 27 cents per gallon in the Rocky mountain states. The cost of treating a post will therefore vary from

4 to 15 cents. Properly treated, it should give service for at least twenty years.

Experiments of the Forest Service show that with preservative treatment the durability of lodgepole pine in Idaho is increased sixteen years. The cost of creosote is there relatively high, yet by treating posts there is a saving, with interest at 6 per cent, of 2 cents per post yearly. More important than the saving, however, is the fact that through preservative treatment other woods are fitted to take the place of cedar, of which the supply is rapidly becoming exhausted. A detailed description of experiments in preserving fence posts, together with practical suggestions for treating them on a commercial scale, are contained in Circular 117 of the Forest Service. This publication can be obtained upon application to the Forester at Washington.

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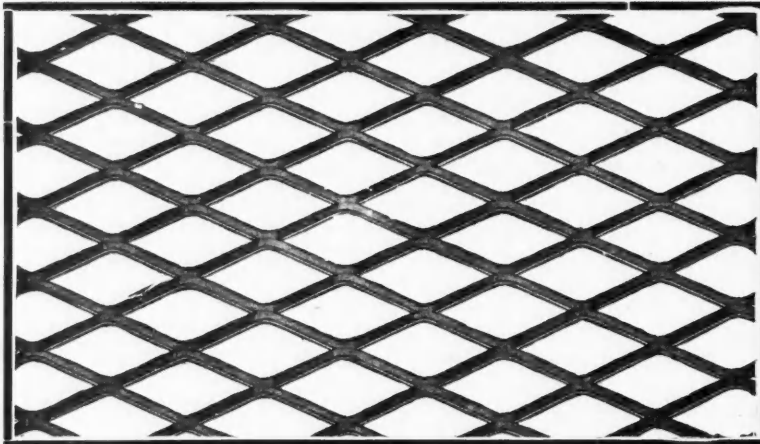
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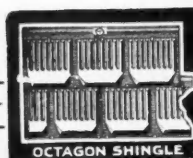
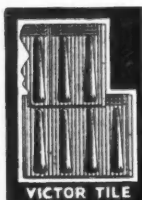
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No. 26 "	30 lbs.	12	9	2½ lbs.	40
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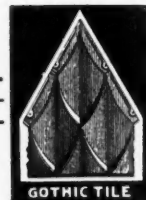
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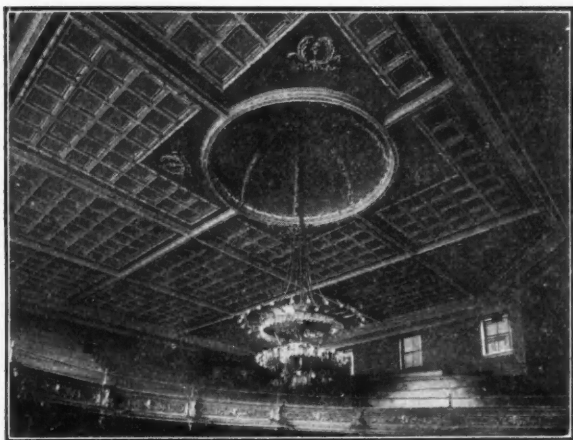


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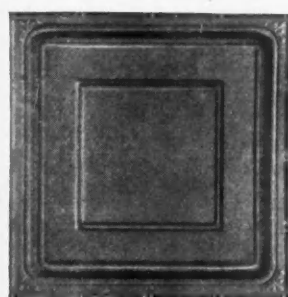


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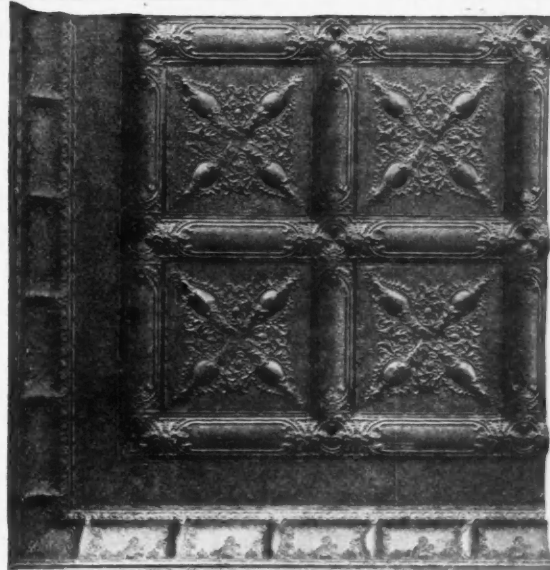


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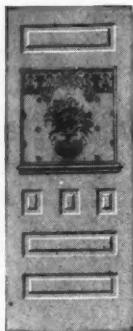
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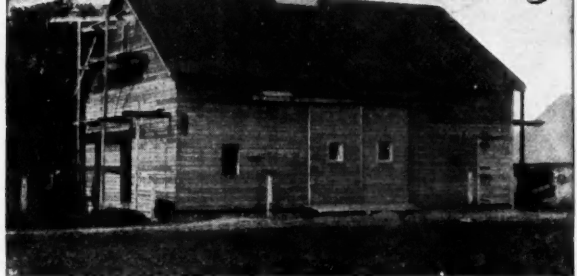
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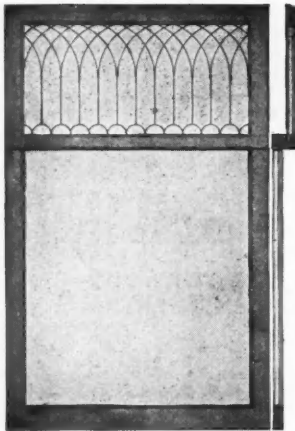
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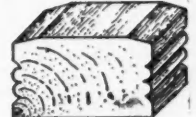
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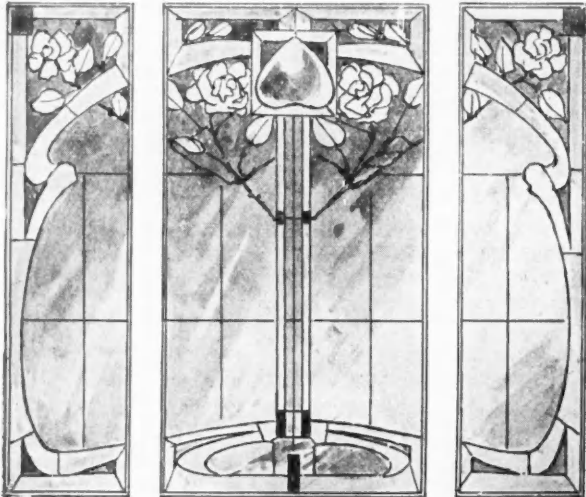
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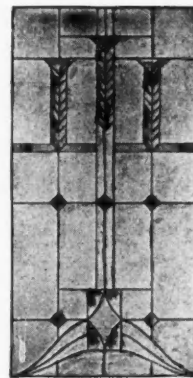
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If you contemplate installing Hot Water it will be to your interest to investigate  
**THE HONEYWELL SYSTEM**

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



The Honeywell "V" Valve  
The Water Circulating Valve

# The HESS Steel Furnace

is sold direct from our factory to builders, at one small profit. Can be set up by any handy man, from the complete plans and instructions we supply with every equipment.

Send us a rough sketch of what you want to heat and let us tell you what the whole equipment will cost, freight prepaid to your station.

Our No. 45 Leader Steel Furnace heats 7 or 8 rooms. Price \$49.00, freight prepaid to any station east of Omaha, or north of the Ohio. Pipes and registers extra.

FREE BOOKLET. SEND FOR ONE.

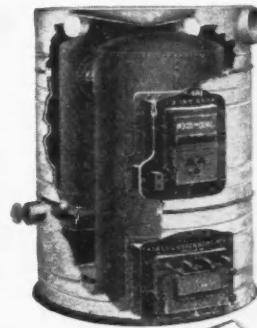
## Hess Warming & Ventilating Co.

920 TACOMA BUILDING,  
 CHICAGO, ILL.

## Let Us Send You FREE!

Our Latest "FRONT RANK" FURNACE Catalogue.

It contains valuable heating information—just the thing you want to help you plan and figure on that new house or building you are putting up. Tell us your needs—we make no charge for furnishing estimates. Write today, and tell us, please, the name of your local furnace man.



Haynes Langenberg Mfg. Co.

4045-4057 Forest Park Boulevard, ST. LOUIS, MO.

## FIRE PROOF WINDOWS

Pivoted or Double Hung Automatic Closing. Skylights, Ventilation and General Sheet Metal Work for Buildings. Write Dept. "F."

## THE J. A. RITZLER CORNICE & ORNAMENTAL CO.

2412 E. 18th St.

KANSAS CITY, MO.

# ROENIUS

== WOOD and COAL ==

# CHUTES

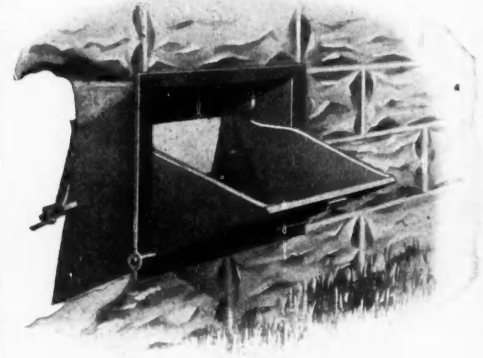


OPEN AND READY FOR USE

**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**



OPEN AND READY FOR USE

## 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

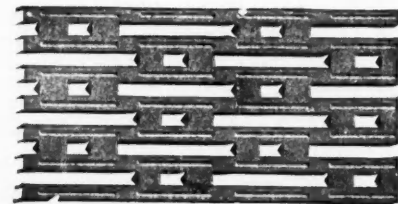
MEANS

## 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

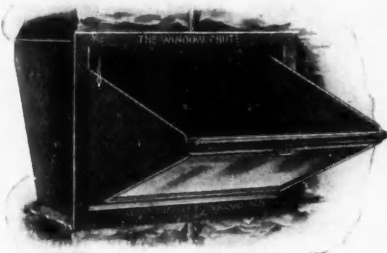
**The AMERICAN**  
**Rolling Mill Co.**

Middletown, Ohio

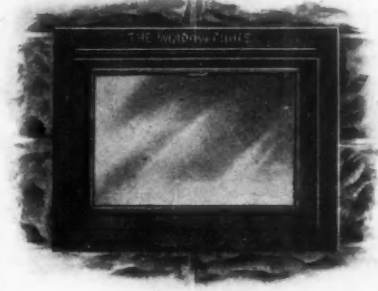
# "THE WINDOW CHUTE"

## A WINDOW AND A COAL CHUTE

≡ ALL IN ONE ≡



A Perfect and Unequalled Coal or Vegetable Chute when open.



A Fine, Unobstructed Basement Window when Closed and Locked.

**Coal Chutes** HAVE BECOME A MODERN CONVENIENCE without which no building is really "Up-to-date."

**The Window Chute** closes and locks automatically from the outside by simply raising steel bottom and pushing it over lugs provided at top. Has Cast-iron Frame and Hopper with continuous heavy Sheet Steel Bottom, which, when chute is open, completely covers and absolutely protects the

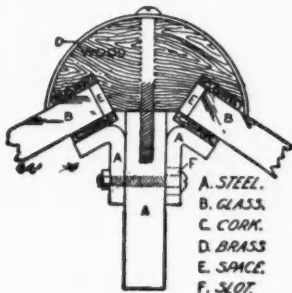
Window Glass below it from breaking. Useful every day in the year for light, or as a Chute. Saves the price of an extra window frame and sash, which would be necessary for light with any other Chute. The Window Chute is the only combination Chute and Window on the market, which feature is fully protected under United States patent law.

**It Is Burglar Proof**, for it cannot be opened except from the inside, by lifting sheet off of locking lugs. The Window Chute is made to last, and for practical utility and service has no equal. No more excuse for unsightly, soiled and blackened walls, battered frames and sash, littered walks and grass plats always found where coal and wood are put through a basement window. Equally suitable for frame, brick, stone or concrete walls, and for new or old buildings.

Standard Sizes	Hopper Opening.	Outside Rim.	Prices	Just Write
	Size "G".....32 " 24 ".....35x27			

E. W. RITTER & CO., 601 Monadnock Block, Chicago  
 EDW. MUEHLENBROCK & CO., 400 N. Main St., St. Louis, Mo.

MANUFACTURED BY **HOLLAND FURNACE CO.** HOLLAND, MICH.



All Steel Cork Bedded Corner Post

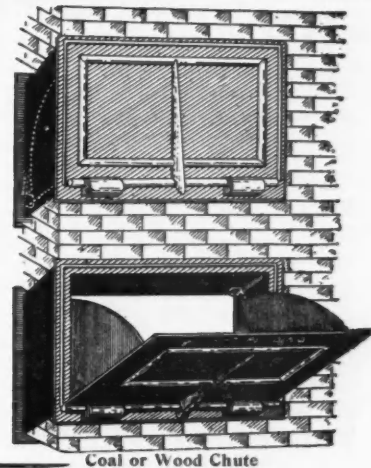
## SHULTZ'S

Patent All Steel, Cork Bedded Corner Posts, Mullions and Transom Bars.

Also my new Acme Steel Post and Bars, in which the Glass is Bedded Between Wood.

They are the handsomest and strongest bars made. The glass is bedded on both sides, either between Spanish cork or wood, preventing any cracking or crushing of glass. No putty. Are absolutely water and dust proof.  
**BURGLAR PROOF COAL CHUTE.** Locks itself automatically when closed up. Can only be opened from inside. Face of Chute flush with wall. Write

**C. H. SHULTZ,** Patentee and Manufacturer **St. Joseph, Mo.**  
 For Cut and Prices on Corner Posts and Coal Chutes.



Coal or Wood Chute



## 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.



## THE COULSON PATENT STORE FRONT CONSTRUCTION

we know to be the best and the 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.

Sole Owners and Manufacturers

Main Office, 96-98 North Third St., - - COLUMBUS, OHIO



## Kawneer System

of Glass Setting  
FOR STORE FRONTS

### 100% Efficient



No. 6 Division Bar.  
Manufactured under the Plym patents May 6, 1906 - December 6, 1906 - July 7, 1907 - others allowed. Send for Catalog.

### Kawneer Mfg. Co.

121 Factory St., Niles, Mich.



### ANNOUNCEMENT

THE HENRY SANDERS COMPANY  
of Chicago, and  
HARTMAN BROS. MFG. COMPANY  
of Mount Vernon, N. Y.  
Manufacturers of  
**KOLL'S PATENT  
LOCK JOINT COLUMNS**  
Have consolidated their  
interest under the name of  
**Hartman-Sanders  
Company**

The main office and factory will be at  
Webster and Elston Avenues, CHICAGO, ILL.  
and the eastern office at  
1123 Broadway, NEW YORK.  
The best columns, for porch, pergola or interior use.  
Send for catalogue M 19 of columns, or M 29 of sun-dials, pedestals, etc.

## UNIVERSAL STORE FRONT CONSTRUCTION

### ALL METAL BAR



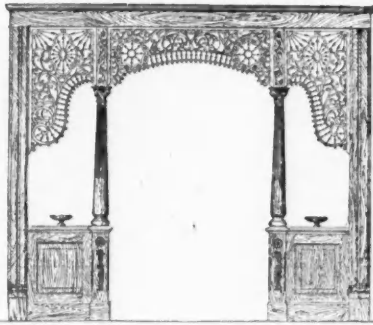
The first bar made to set glass from the outside! Others follow. All corners and angles look alike. Bar comes fitted ready to screw to building. WHEN WINDOWS ARE ENCLOSED GLASS WILL NOT FROST.

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.

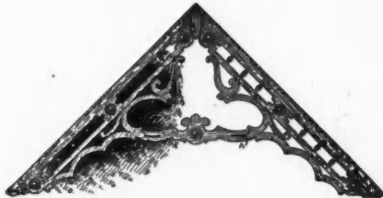
VOLTZ MANUFACTURING COMPANY, St. Joseph, Mo.
1101 and 1103 S. Eighth Street
Two Blocks East of Union Station

Grilles of Every Description



Balusters  
Stair Work  
Brackets  
Spindles  
Columns  
Interior Caps  
Mantels  
Gable  
Ornaments  
Etc.

Adjustable Gable  
Ornaments



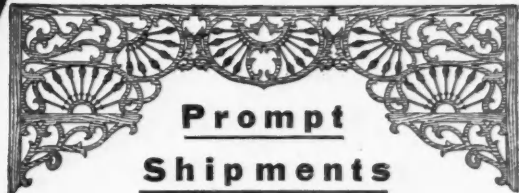
No. 20. Extends 5 feet down gable  
Adjustable to any pitch.

We also manu-  
facture Every-  
thing in the  
CABINET  
LINE

You can rely  
upon us for  
prompt  
Shipments

Chicago Embossed Molding Co. 598 Austin Ave.  
CHICAGO  
Send For Catalogue

Bertelsen  
Grilles



Prompt  
Shipments

Our **New Illustrated Catalog** shows sixty designs in Grilles and Arches. When you see them you will say they are the **Most Artistic Wood Grilles** on the market. Every carpenter and builder should have a copy of this catalog. It is sent free.

Many new patterns carried in stock for any size from five to eight feet.

SPECIAL DESIGNS

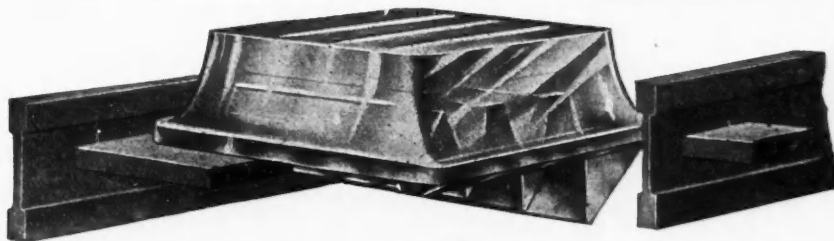
We solicit and make to order any special design in any kind of wood or style of finish. Send Architects' detail drawing or sketch showing size of opening. We will elaborate and submit price for approval.

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alog  
FREE

BERTELSEN ADJUSTABLE GRILLE CO.

306-308 South Clinton St.  
CHICAGO, U.S.A.

Write Today



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

GRILLES



Send for Catalogue No. 14  
Contains many fine designs of  
modern Grilles and Consols.

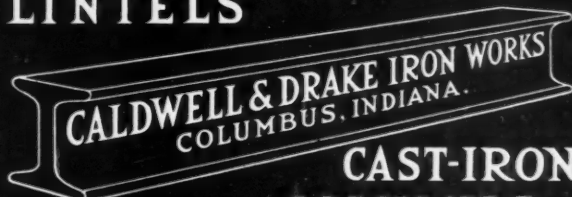
Northwestern Grille Works

CHRISTENSON BROS., Props.

1452 Milwaukee Ave.

CHICAGO

STEEL BEAMS &  
LINTELS



CAST-IRON  
COLUMNS ·  
SIDEWALK LIGHTS

# 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

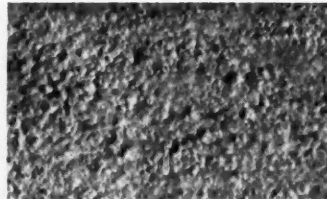
**Minneapolis, - - U. S. A.**

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.



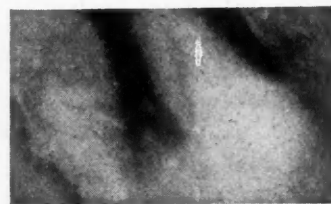
## CEMENT BRICK AND CEMENT BLOCKS

**WILL PRODUCE A PERFECT  
and Indestructible Marble-  
Face Finish in White or any  
Color or Variations Desired**



This cut shows an exact reproduction of a portion of the rough edge of a cement brick made on a cement brick machine.

This cut shows an exact reproduction of a portion of the reverse edge of the same brick, showing mottled marble-face finish produced when brick was moulded by the "Eureka" Formula and Process.



Process for sale in your locality. :- Can be mixed from standard materials easily obtained in your home market without a great expenditure of money. :- Upon request will furnish you samples of these products. Write today.

**D. F. SHOPE Maxwell, Iowa**

**— 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

**SHIPPED ANYWHERE IN THE UNITED STATES**  
**ON FIVE DAYS TRIAL**



THE KNICKERBOCKER CO.  
Jackson, Michigan

EAST TOLEDO, OHIO., Oct. 12, 1907

Gentlemen: Last spring your representative called on us and induced us to put in one of your No. 5 Coltrin Mixers on five days trial. After operating it for a few days we found it did the mixing much more evenly than we could possibly do it by hand and at about one quarter the cost of hand mixing. We made about 120,000 blocks this season and every block shows an even, perfect mix. No more hand mixing for us. The engine runs the mixer with ease, starting readily, and has caused us no trouble whatever. The Coltrin is certainly the mixer for block makers.

Yours truly,  
W. J. & BEN. BOERGER CO.

MANFD. EXCLUSIVELY BY

**THE KNICKERBOCKER COMPANY**

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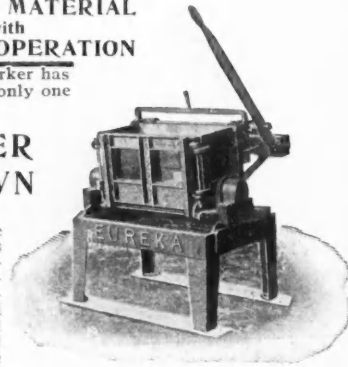
**Jackson, Michigan**

**THE USE OF WET MATERIAL**  
combined with  
**GREAT SPEED OF OPERATION**

is what every cement worker has wanted. It is found in only one machine.

**THE BESSER  
FACE DOWN**

The only block machine which withdraws the cores **Vertically and Automatically**. Every block perfect. None sag. **Adjustable** instantly for all lengths, widths and heights. Designs and shapes unlimited. One size Pallet. Fewer Movements. Less Tamping. Less Cement. **Water-proof Blocks. Bigger Profits.** The first perfect Block Machine. We make perfect block, brick, mixing machines of all kinds, and at all prices. Brick machines with capacity up to 15,000 per day.



Eureka Face Down Machine

We are specialists in  
**Cement Tile Machinery**

which offers 100% profits.

**Our Automatic Tamper Tile Machine**

makes drain tile for \$8.00 per M, which sell for \$15.00 to \$20.00. Capacity 2,000 to 10,000 tile per day. Work easy. Machine simple and everlasting.

**Our Tile Molds,**

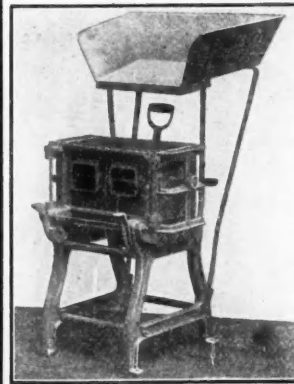
in all sizes up to 48", will pay for themselves in a day. Besser has machines for every purpose. They are in use everywhere and give you all the profits. We prove every claim by our customers.

Send for free literature and 25 cents for big Catalogue and instruction book.

**THE BESSER MFG. CO.**

Alpena, Michigan

Makers of the most Complete Line of Concrete Machinery



**LOOK AT THIS**

- HY-LO 16" Block Machin \$16.50
- HY-LO 24" Block Machine \$25.00
- Champion Block Machine \$30.00
- OHIO 16" Block Machine \$50.00
- OHIO 24" Block Machine \$75.00
- Springfield Block Machine \$95.00
- Champion Brick Machine \$30.00

**Don't Buy** until you get our catalog. It will save you money. Catalog FREE

**A BOOK OF CEMENT HOUSE PLANS:** Ten cents in Silver or Stamps.

**THE REED MFG. CO.**

Box 142, Springfield, Ohio.



NEW 1908  
**LIGHTNING  
Block Machine**

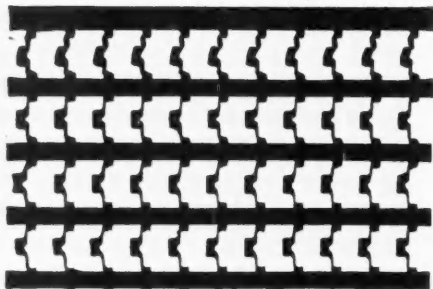
Makes 400 or More Concrete Blocks Per Day  
Automatic Self Locking Doors

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



Write for full information and practical suggestions

**The Three Main Economies of**

**RIB-LATH**

— ARE —

1. In use of plaster
2. Labor of application
3. In the construction due to the practicability of spacing studs 16 inches on center.

**Trussed Concrete Steel Co.**

Specialty Dept.

**Trussed Concrete Bldg.**

**DETROIT, MICHIGAN.**

*"Keep the Quality Up"*

*Get Our Special Low Prices this Month*

**A WAY TO PREVENT DAMP WALLS**

Francis Concrete Block Machine Using Medium Wet (Plastic) Concrete.

"Quality is the watchword." The watchword of manufacturing today is economy. Competition necessitates reduced expenses, and at the same time "Keep the Quality Up."

Berlin System means Quality. But it takes price to clinch your sales. This is the decided advantage of the Francis machine.

**Hollow Building Block Machines.**

**Window Sill Machines.**

**Fence Post Machines.**

**Cement Brick Machines.**

**Get Our Present Low Prices.**

All prices advanced Jan. 15th, 1908.

**FRANCIS MACHINERY COMPANY,**



**Best, Fastest, Simplest and Cheapest. Move the Machine—Not the Block.**

When you want a block that is guaranteed to be absolutely damp-proof,

- That will not sweat,
- That will make a dry wall,
- That is hard and durable,
- That looks like stone,
- That can be made at a lower cost than by any other method.

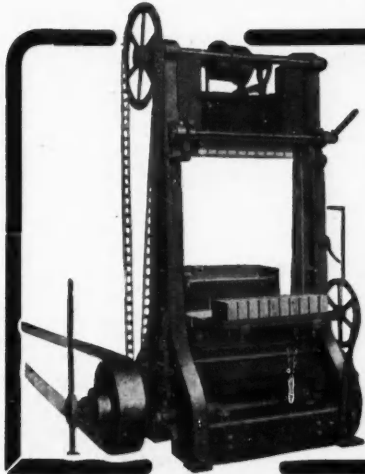
**Use the "Berlin System."**

There is an elegance of appearance about stone made by this system that puts it in a class by itself.

**Wanted, Concrete Block Manufacturers who are not satisfied with their present methods to use the "BERLIN SYSTEM."**

708 Chestnut St., ST. LOUIS, MO., U. S. A.





## 20,000 Cement Brick per Day

### A Complete Power Plant

INCLUDING

**MACHINE - MIXER - POWER - PALLETS - SIFTER  
STEEL RACK - CARS - STEEL TRACKS - ELEVATOR**  
Everything, in Fact, That Makes an Up-to-Date Modern Brick Plant

**Our Price** for a plant of its completeness and capacity **Is the Wonder of All**

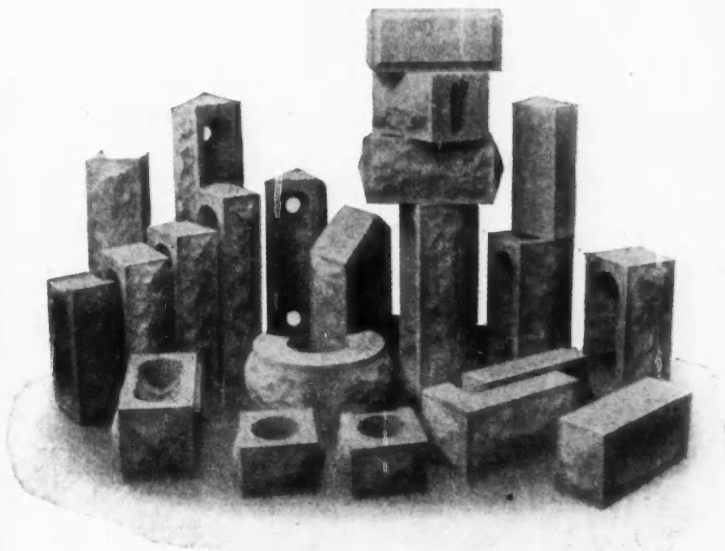
WRITE FOR CATALOG AND FURTHER INFORMATION

**Cement Block and Brick Machinery Company**  
823 Majestic Bldg., DETROIT, MICH.

*Largest Profit Earner Operated*

# The Sanford Block Machine

IS THE FASTEST IN THE FIELD



**EASY** TO OPERATE || **Has Every**  
TO MAINTAIN || **Up-To-Date**  
Feature

An Actual Pressure of from 13,000 to 16,800 pounds on every block made.

Every part of the machine is adjustable. Wooden pallets may be used. It makes ALL sizes and designs of blocks.

It makes 300 to 400 veneered hollow blocks, and 400 to 500 veneered slab blocks, in an 8-hour day.

AN ILLUSTRATED CIRCULAR FREE showing the various sizes and styles of blocks

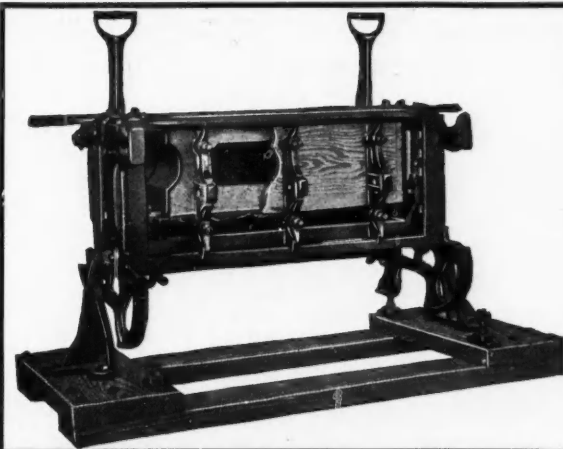
**Sanford & Painter Co.**

JOS. I. COX, Gen'l Mgr.

Suite 937 Nicholas Building

TOLEDO :: :: OHIO

*Ask for Information Regarding Mixers and Cars*



## The Improved "MILES" No. 2

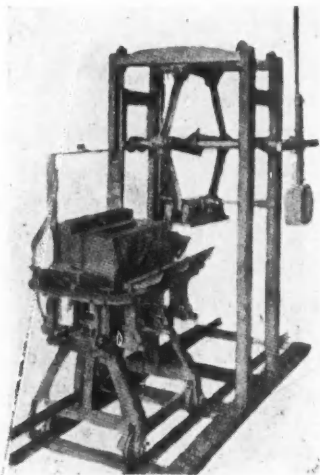
The Machine

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.

# "SOMERS" PRESSURE Block Machines



### Chief Features are

The enormous pressure of 30 tons which creates a **Dense, Compact Block** and

### Or 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

## Three Reasons Why You Should Buy The King Cement Brick Machine

**It Has a Larger Capacity  
Makes a Better Quality of Brick  
And Is a Greater Labor Saver**

—Than Machines which Cost Twice as Much

**OUR PRICE \$40.00**

There are no cracked or defective brick, because they do not have to be turned over to remove them from the machine. 3000 brick a day, 300 per hour, is the average capacity when operated by two men.

It makes rock face and plain face in any color.

You will be satisfied with the King Cement Brick Machine. You can prove its worth for yourself on the machine in your own town.

**15 days free trial is given  
That's fair, isn't it?  
Send for illustrated Catalog**



**W. E. DUNN  
& CO.**

**341 Grand Ave.  
CHICAGO - ILL.**

**Pier, Column and  
Chimney Molds**

Artistic, Rock Face and other designs, all sizes.

10 x 10.....\$3.50  
12 x 12..... 4.00  
16 x 16..... 5.00

Catalog explains them.

## 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

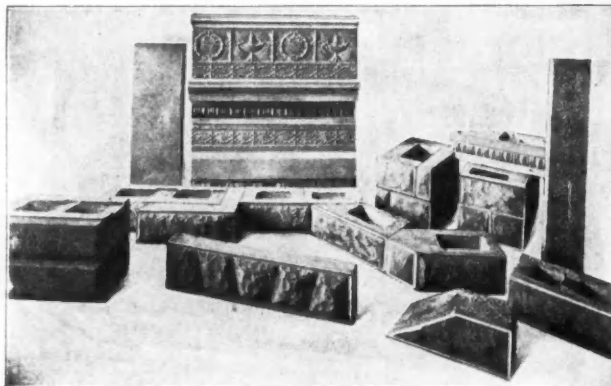


## It's damp proof

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.



Down Face

MADE ON THE FRANCISCO  
Coarse Material

Wet Process

## Send For Late Catalog of the Improved FRANCISCO

The wide cap, the projecting stone, the fancy stone on top of it are all 16 inches in width, 48 inches in length. Our new catalog shows the finest display of face Plates ever placed on the market. We make six different styles of walls, five styles in the two piece construction and the regular style using the cores. Send for catalog "G" showing cuts of walls, face Plates, and describing the Machine, which is adjustable in width to 20 inches, in length to 66 inches, height to 16 inches, with no additional expense for parts.

AGENTS WANTED

**FRANCISCO BLOCK MACHINE CO.**  
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# FACE DOWN—WET MIXTURE THE HERCULES

## The Fastest, Simplest, Strongest Concrete Block Machine Made

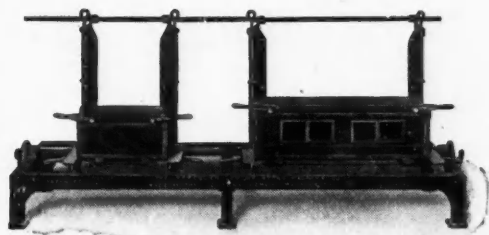
The Hercules is known as the real concrete block maker. With this simply-constructed machine you can make real concrete blocks ranging in size from 2 inches up to 6 feet in length. Besides perfect block, you can make water tables, sills, lintels and steps. The Hercules is built so strongly and so mechanically perfect that it never gets out of order and can always be depended upon at critical times to properly perform its duty.

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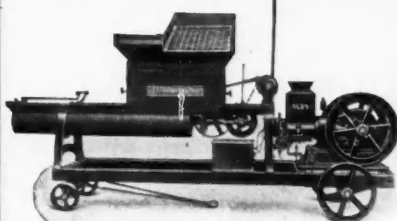
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## Century Cement Machine Co.

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We manufacture Tools for Cement Workers—the very best at modest prices. Send for Tool Catalog—it's free.



## 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

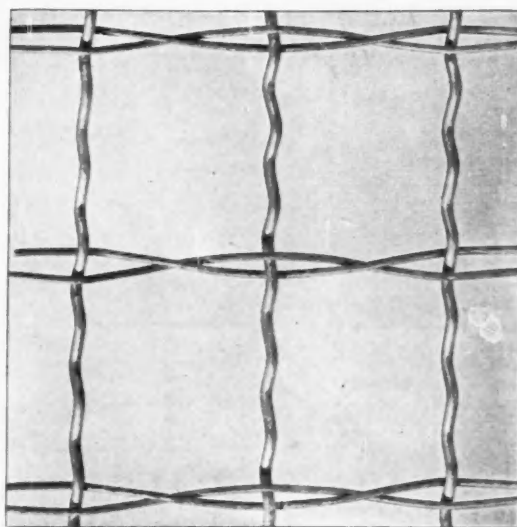
1. For accuracy and perfection in construction.
2. For adaptability to an almost endless variety of blocks.
3. For strength and beauty of blocks.
4. For speed.
5. For moderation in price.

Manufactured by  
**THE ASHLAND STEEL  
RANGE & MFG. CO.**  
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Catalogue A sent free upon application.



See our exhibit at National Cement Users Convention, Buffalo, January 20-25.



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## Concrete Reinforcement

Thoroughly Galvanized, High Carbon, Steel Wire, Great Tensile Strength, is Elastic and conforms to any surface readily. Saves 15% to 20% in labor.

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# THE ONLY MACHINE WITH A SELF-LOCKING MOLD IS

## THE Brandell CONCRETE BLOCK MACHINE

It makes MORE and BETTER blocks  
with LESS LABOR and fewer motions

### 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 percent 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. Send for free catalog.

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ACTUAL CAPACITY 250 BLOCKS PER DAY



Side view of machine  
showing completion and  
delivery of block.

## Standard Concrete Machinery

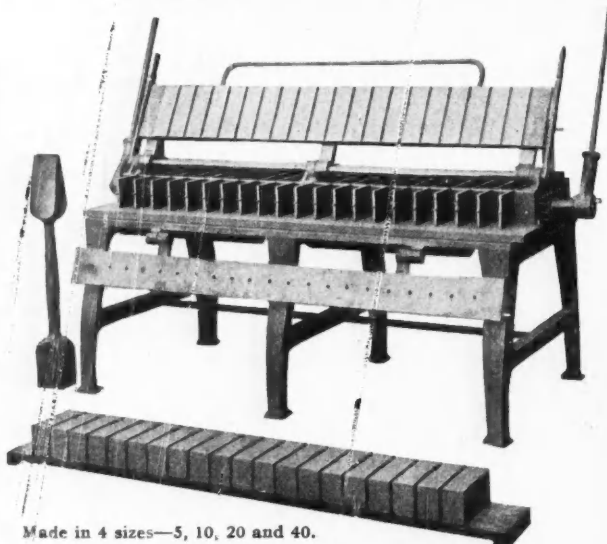
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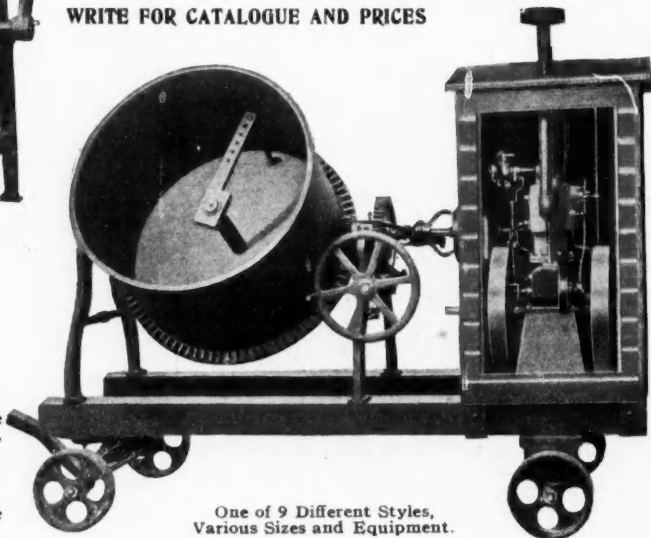
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Various Sizes and Equipment.

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Noxall Competitors and Theories

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By the Pettyjohn System

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**WET PROCESS      FACE DOWN      DAMP CURING**

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The only Block Machine on the market strong enough to withstand the heavy strain of pneumatic tamping.

**BUY A HAYDEN FOR RESULTS**

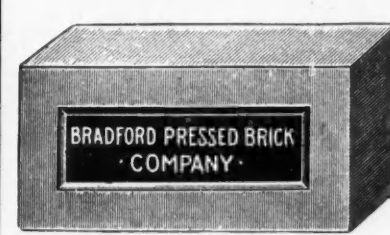
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Positively Unequalled for Richness of Color  
Perfection of Shading and Uniformity of Size

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Standards, Romans, Moulded and Ornamentals  
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Cortright Metal Roofing Co.	759	Miller Manufacturing Co., A. W.	670	Tower & Lyon Co.	672
Coulson & Co., J. W.	770	Miracle Pressed Stone Co.	772	Trussed Concrete Steel Co.	774
Crescent Machine Co., The	680	Montross Metal Shingle Co.	762	Union Wire Fence Loom Co.	777
Cropper, R. I.	761	Morgan Co., H. B.	745	Voltz Manufacturing Co.	770
Dearborn Engraving Co.	759	Morrill, Chas	686	Wagner Manufacturing Co.	684
Detrick, D. F.	774	Mullins Co., The W. H.	762	Walters Sons, Wm. P.	671
Detroit Show Case Co.	751	Mulvey Manufacturing Co., Chas.	683	Waterloo Concrete Roofing Co.	779
Disston & Sons, Inc., Henry	684	Myers & Bro., F. E.	682	Weber Gas Engine Co.	681
Dixon Crucible Co., Jos.	671	National Floor Surfacing Machine Co.	669	Wenz, John F.	758
Dow Wire & Iron Works	761	National Manufacturing Co.	683	White Van Glahn & Co.	756
Dunn & Co., W. E.	776	National Sheet Metal Roofing Co.	759	Woods, A. W.	666
East Bangor Consolidated Slate Co.	761	Nice, Eugene E.	735	Zero Valve & Brass Manufacturing Co.	683
Eaton & Prince Co.	682	Nicholls Manufacturing Co.	672	Zimmermann, Chas. E.	676
Edmundson Concrete Machinery Co.	776	North Bros. Mfg. Co.	671		
Edwards Manufacturing Co., The	763				
Eller Manufacturing Co., The	763				
Engineers Equipment Co.	672				

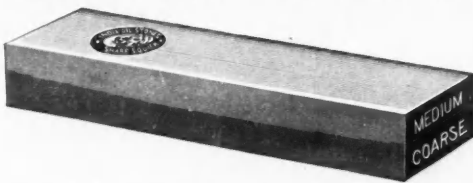
NOTICE TO ADVERTISERS

New copy, changes and corrections for advertisements must reach office of American Carpenter and Builder, 185 Jackson Boulevard, Chicago, not later than March 20 in order to insure insertion in the April number.



✻ ✻ **Combination** ✻ ✻  
**INDIA OILSTONE**

Size  
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 x  
 2  
 x  
 1



2  
 G  
 R  
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 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 tell you where you can get it. 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.**

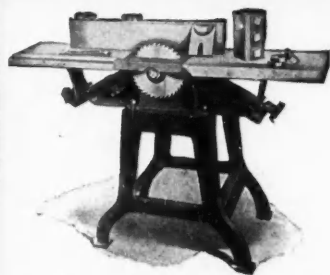
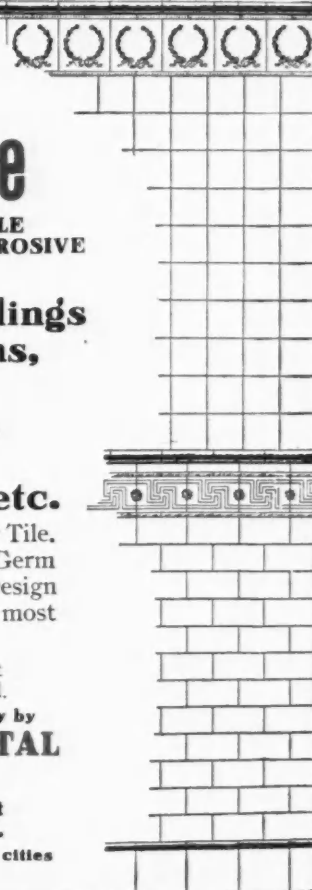
More durable than Clay Tile.  
 No blow can break it. Germ  
 Proof, Water Proof. Design  
 and colors equal to the most  
 artistic ceramics.

Set in Special Cement  
 No Nails Being Used.

Manufactured Exclusively by  
**SANITARY METAL  
 TILE CO.**

**33 Prospect Street  
 BROOKLYN, N. Y.**

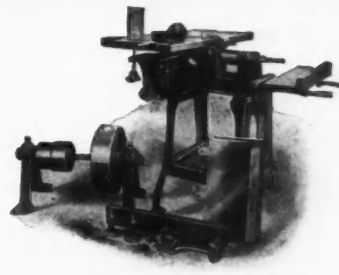
Agencies in all principal cities  
 Write for catalogue



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. : : : : : : :



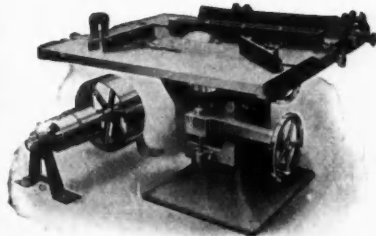
Back View of Combination Jointer

**We also make the famous "DEFIANCE" line of Woodworking Machinery**

*We have exclusive representation in all of the largest Cities in the United States: : : : :*

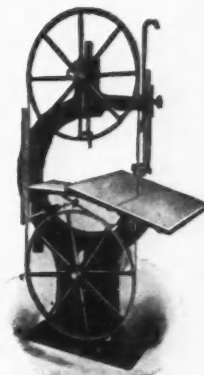
consisting of BAND SAWS, SAW TABLES, JOINTERS, SWING and CUT OFF SAWS, TURNING LATHES, PLANERS, SAW ARBORS and MANDRELS. Also special heads, rip and cut-off gauges.

Write us for free catalogue to-day.  
 When writing mention this paper.



**The Sidney Tool Co.**

SIDNEY, OHIO



# Carpenters! Contractors! Save 50%!

Write for GRAND FREE MILLWORK CATALOG

**GORDON, VAN TINE CO'S  
GRAND FREE CATALOG  
of MILLWORK & BUILDING  
MATERIAL  
50%  
BELOW  
DEALERS'  
PRICES**

Everything You Need  
for Spring Contracts  
at 50% Less Than  
Dealers' Prices—

Delivered Direct from Mill Promptly  
—In Perfect Condition and Guarant-  
eed Up to Official Grade of Sash,  
Door and Blind Manufacturers Asso-  
ciation of the Northwest.

## DO YOU KNOW THAT WE SELL

**4-PANEL Y. P. DOORS AT 80c**  
and offer you the biggest and  
best line in America at prices  
that defy competition?

**8 LT. WINDOWS, GLZ'D AT 57c**  
and that our warehouse is packed  
and jammed with high grade win-  
dows at correspondingly low  
prices?

**EMBOSSED MOULDING 1c PER FT.**  
and carry in stock an immense  
stock of interior finish of finest  
quality at 50% less than your  
dealer asks?

**FLIGHT OF Y. P. STAIRS, \$22.30**  
(Dealer's Price, \$52.70)

Everything complete—16 steps  
and risers—dressed and machine  
smoothed. Get in touch with  
our Stair Department at once.

**HARDWOOD FLOORING, 80c PER  
100 LINEAL FEET**

Do you know that we make a  
thin flooring of Red Oak at only  
a fraction of the cost of thick  
flooring, which makes the finest  
covering for old floors. We carry  
a big stock of all thicknesses of  
hardwood flooring. You ought  
to have our prices.

**WINDOW AND DOOR FRAMES, 59c  
EACH**

and upward. Dealer's charge 50  
per cent more for our quality of  
jambs and frames.

**GABLE ORNAMENTS, 80c EACH**  
adjustable to any pitch of roof,  
4 ft. extension. Four styles.  
Porch Brackets 5½c each.

**WINDOW GLASS AT CUT PRICES**  
All sizes. Carefully packed.  
Safe delivery guaranteed.

**Everything You Need—At  
Prices that Save you 50%**  
Get the GRAND FREE Catalog!

**Moulding and  
Inside Finish  
½ Regular Prices**

Corner  
Blocks 2c

## WHY YOU SHOULD KNOW

You ought to know about the 5,000 Millwork Bargains listed, described, illustrated and offered at mill prices in Gordon Van Tine & Co's Builders' Catalogue. Without this information you are "held up" by the lumber dealer and the planing mill. If you base your figures on your local dealer's prices, one of two things is bound to happen—1st, you lose out on competitive bids, or—2nd, you pay such high prices for material that there's little or no profit in the job. Order everything you need from the Gordon Van Tine Catalog and you won't have to whittle the life out of your estimates. You can underbid "the other fellow" who is paying two prices for material and still make a good round profit. Your customers will be pleased—and you'll be, too. Write for the Catalog today and you will find that on any order placed with us, you will save an average of 50 per cent right straight through the list. **REMEMBER**—We carry the largest, finest stock of sash, doors, millwork, etc., in America; ship promptly and guarantee safe delivery anywhere.

## SAVE 50% on STAIR WORK

Department for Estimates FREE

We furnish all stair material in Plain Red Oak or Yellow Pine. Two-thirds of the cost of stair work can be saved by using our regular designs, which are correct in every detail. Write for FREE ESTIMATE.

**Oak Stair, Com-  
plete \$28.59**  
Dealer's Price \$80.

Including steps,  
risers, starting new-  
el, angle newels,  
balusters, rail, face  
and wall stringers.



## 100,000 WINDOWS AT 50% BELOW DEALERS' PRICES

ALL STYLES AND SIZES, GLAZED AND OPEN.  
READY FOR QUICK SHIPMENT.

## Cut Price Millwork for Porches

An Endless  
Variety  
of Styles

may be built  
from our big  
stock of col-  
umns, balus-  
ters, rails, spin-  
dles, brackets,  
newels, and or-  
naments. Write  
for Free Mill-  
work Catalog  
today.



## 525 Styles Of Doors

50% Below Regular Prices

Largest stock of High Grade Doors  
in America. All doors are  
made of air-seasoned lumber  
with hardwood dowel pins,  
glued with imported glue,  
pressed together by heavy  
steam power press.  
Prices, 60c to \$16.00.

Our big line of Soft  
Pine Doors embraces  
every style in demand.

We save you \$3.00 to  
\$5.00 each on Hard-  
wood Doors. Most  
complete and artistic  
line in the country.

**Veneered Oak Doors,  
\$3.25 and up. Art  
Front Doors of pleas-  
ing design and rich ap-  
pearance, \$1.70 and up.**

SEND FOR COM-  
PLETE CATALOG.

## Hardwood Floor for Room \$7.68

Genuine Red Oak, ¾ in. by 1½ in.—Seasoned, Match-  
ed, ready to lay. Price per 100 lineal feet, random  
lengths, wrapped in paper, quality guaran-  
teed, 80c. Cheaper and better than a good  
carpet. Sanitary—artistic—durable. Mil-  
lions of feet in stock for quick shipment.

Our Estimate on BEAMED CEILINGS will  
prove an Eye-Opener. Write.

## GORDON VAN TINE ROOFING \$1.41 PER SQUARE

Flint coated, fire resisting, water-proof,  
weather-proof. Most durable roofing made.

Prices: 1 Ply, Per Square, . . . \$1.41  
2 " " " . . . 1.96  
3 " " " . . . 2.29

Liberal samples free to carpenters and  
contractors.

## Our Grand Free Catalog Will Double Your Profits on Material

Write for it Today. Is 50% Worth Saving? Remember that Spring Contracts will be figured on a closer margin than ever before. This Catalog will enable you to put in the bid that gets the business and protect your profits at the same time. Write for it Today.

**PLAN BOOKS!!** For 5 2-cent stamps (10c.) to pay postage and handling, we mail free a plan book of cottages, houses, stock buildings, etc. worth its weight in gold.

**GORDON, VAN TINE & CO. 408 FEDERAL ST.  
DAVENPORT, IOWA**

