

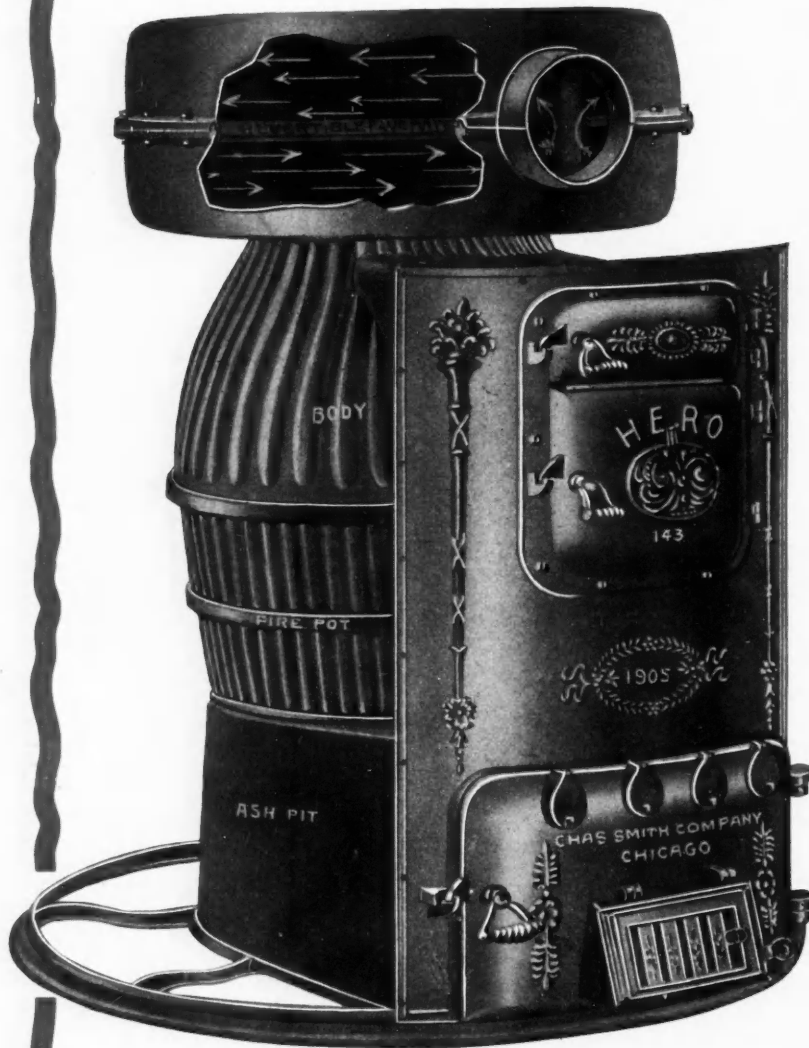
# AMERICAN CARPENTER AND BUILDER



UNCLE RURAL GOES OUT TO CHRISTMAS DINNER. SEE PAGE 623

# The Improved Hero Furnace

100 SERIES



Is an ALL CAST furnace with the DEEPEST ASH PIT made.

The GRATE BARS have no COG WHEELS or BOLTS.

You don't have to shake a clean bar to clean a dirty one.

The DEEP CORRUGATIONS of fire pot and dome DOUBLE the RADIATING SURFACE.

It has LARGE DOUBLE-FEED DOORS.

It is a **Gas Tight** **Durable** Furnace

It is ECONOMICAL with any kind of fuel.

Easy to MANAGE; easy to FEED; easy to CLEAN.

You can't buy a better furnace.

Send us plans or pencil sketch and we will tell you what it will cost to heat your building by the most approved method

**Chas. Smith Company, Manufacturers**  
40 Dearborn Street, Chicago

Our WATER ATTACHMENTS can be used in any furnace. Send for SPECIAL CATALOG

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER.

**Advertisers**

Advertisements to insure insertion must reach this office not later than the 20th of the month preceding publication. Circulation considered we have the cheapest trade journal in the world for advertisers. Rates furnished on application.



**AMERICAN CARPENTER and BUILDER**

**Subscribers**

In order to avoid missing any issues of our magazine, subscriptions should be renewed promptly, as no copies will be sent after expiration. In requesting change of address, kindly give us your former address.

**Do You Want a Typewriter or Chest of Tools?**

WE ARE LOOKING FOR THE OWNER OF THIS BRAND NEW REMINGTON STANDARD TYPEWRITER, AND A COMPLETE \$65.00 CHEST OF TOOLS

**Rewards**

To be given to subscribers who secure the largest numbers of yearly subscriptions to the AMERICAN CARPENTER AND BUILDER between December 1, 1905, and March 1, 1906:

<b>Grand Rewards</b>	
For the largest number, Remington Standard Typewriter, No. 7.....	\$100.00
For the second largest number, Chest of Carpenter's Tools	65.00
For the third largest number, Dearborn 54-inch Roll-Top Office Desk.....	50.00
For the fourth largest number, Set of Drawing Instruments.....	13.50
For the fifth and sixth largest numbers, Cash, each \$10.00, total....	20.00
For the next five largest numbers, Cash, each \$5.00, total....	25.00
For the next fifteen largest numbers, Cash, each \$1.00, total....	15.00
26 prizes, \$288.50.	\$288.50

**Territorial Prizes**

In addition to participating in the above distribution of Special Rewards, Territorial Prizes will be awarded as follows:

For the largest number of subscriptions from the North Atlantic States, First prize.....	\$25.00
Second prize.....	10.00
For the largest number from the South Atlantic States, First prize.....	25.00
Second prize.....	10.00
For the largest number from the Northern Central States, First prize.....	25.00
Second prize.....	10.00
For the largest number from the Southern Central States, First prize.....	25.00
Second prize.....	10.00
For the largest number from the Western States, First prize.....	25.00
Second prize.....	10.00
For the largest number from Canada, etc., First prize.....	25.00
Second prize.....	10.00
12 prizes, \$210.00.	\$210.00

**Special Prize for Five Subscriptions**

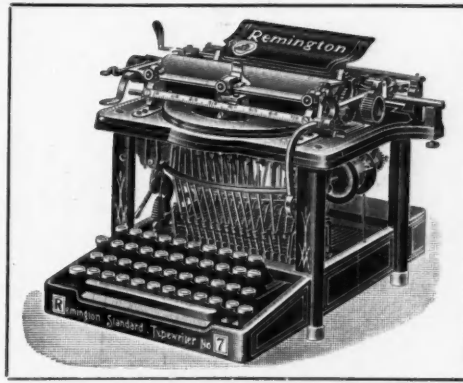
In addition to participating in both of the above, each contestant securing five subscriptions will be entitled to a choice of prizes enumerated on pages 603 and 604.

**Special Prize for Three Subscriptions**

Where a contestant is unable to secure five subscriptions, but does secure three subscriptions, he will be entitled to a choice of prizes enumerated on page 605.

**Cash Commissions**

In addition to participating in the Grand Rewards and in the Special Prizes, each contestant is entitled to a liberal cash commission on every subscription secured.



**Conditions**

These offers are made to AMERICAN CARPENTER AND BUILDER subscribers only.

The prizes are divided into four classes: "Grand Rewards," "Territorial Prizes," "Specials," and "Commissions" (see first column). Each contestant sending three or more subscriptions will participate in all four of these classes. Send us your new subscriptions and the payment for each subscription as soon as you get it. As soon as a subscriber has sent in five new subscriptions the "Special" prize should be ordered. The "Special" prize for three new subscriptions is only intended for those who are unable to secure five or more subscriptions.

**How to Enter**

Any subscriber or reader of the AMERICAN CARPENTER AND BUILDER may become a competitor for these valuable prizes and rewards by filling out and signing the coupon below, and sending us one new subscription.

**Territorial Prizes**

These prizes are entirely additional to all other rewards and prizes. The list of states included in each division is given on page 606.

**Commissions**

Every contestant will be well paid. In addition to participating in the "Rewards," "Territorial Prizes," and "Specials," a commission of 25 per cent (50 cents) will be paid on every subscription secured. In addition to this liberal commission, those who participate and are most successful will have a share in all three of the other classes of rewards for special merit.

**How to Send Money**

There are four ways in which money may be sent by mail at our risk—by Postoffice Money Order, Express Money Order, Bank Draft, or Registered Letter. Stamps may be sent in payment for subscriptions, but one or two cent stamps must be used. The expense of sending money must be borne by the person sending same. Money must be sent with all subscriptions—we cannot open subscription accounts with any one. We will be pleased to furnish sample copies and subscription blanks—as many as you can use—free.

Contest closes March 1, 1906.

**They Are Yours Absolutely Free**

WE believe that our "great family" of 25,500 subscribers are most interested in our wonderful success, and will want to see this success continue. We want them to share in the profits of the AMERICAN CARPENTER AND BUILDER, and will reward them liberally for adding new names to the "great family."

This excellent Remington Standard Typewriter will be given to the subscriber who secures the largest number of new readers before March 1, 1906, a Chest of Tools to the one who secures the second largest, and twenty-four other valuable rewards to the twenty-four who secure the next largest numbers.

In addition, there are many other special prizes for those who secure three or five subscriptions.

In fact, a liberal commission will be paid for every subscription secured.

Secure one subscription for one year at \$2.00, fill in the coupon at the bottom of this page, and send it to us with \$1.50, retaining 50 cents as your commission, and you will be entered as a contestant for these valuable rewards and prizes. You will receive by return mail a sample copy and blanks for use in the contest.

Address, Contest Editor,  
AMERICAN CARPENTER AND BUILDER,  
196 Fifth Avenue, Chicago.

Date \_\_\_\_\_

Contest Editor,  
AMERICAN CARPENTER AND BUILDER,  
196 Fifth Avenue, Chicago.

DEAR SIR:  
Enclosed find \$1.50 for the subscription of

Name of New Subscriber \_\_\_\_\_

Address of New Subscriber \_\_\_\_\_

Please enroll my name as a contestant in your Subscription Contest, and send subscription blanks at once.

This Coupon must be used to insure your participation in the contest.

Subscriber's Name \_\_\_\_\_

Address \_\_\_\_\_

This Subscription to be counted in the distribution of all prizes.

SEE OTHER SIDE

## Description of Grand Rewards to Subscribers

(SEE PAGE 601)

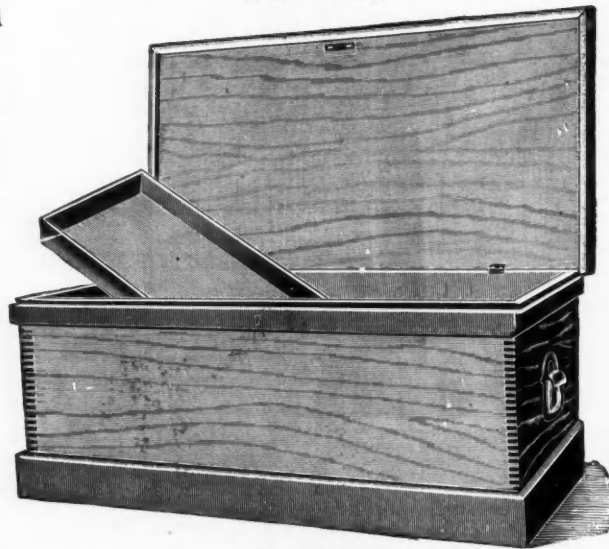
### Remington Standard Typewriter No. 7

In selecting Grand Rewards and Special Prizes to be given to its great family of subscribers, as described on page 601, the AMERICAN CARPENTER AND BUILDER has endeavored to secure none but the very best. The Remington Typewriter is so well known that our readers do not need to be told of its excellent points. We are so well convinced of its superiority that we have twenty-five of these machines in daily use in our correspondence department. The subscriber who secures this Grand Reward absolutely free will have not only one of the most useful articles ever produced, but will have something to be extremely proud of. It will be sent all express charges prepaid. Value \$100.00.

### Complete Chest of Tools

Following the same idea regarding the best of everything, we have arranged with the Orr & Lockett Hardware Co. to furnish us with one of their Tool Chests of the largest size, to be packed full of every conceivable tool that the carpenter or builder could use, everything to be of the very best. This Chest is 32 inches long, 18 inches wide, 16 inches deep, and has sliding trays. We show on this page the empty chest. When filled it will contain the following:

Orr & Lockett Tool Chest.  
Bedrock Smooth Plane, 2-inch Cutter.  
14-inch Bedrock Jack Plane, 2-inch Cutter.  
22-inch Bedrock Jointer Plane, 2 $\frac{3}{4}$ -inch Cutter.  
Bailey Iron Block Plane.  
Bailey Rabbet and Fillester Plane.  
26-inch Bishop Cross Cut Saw.  
26-inch Bishop Rip Saw.  
12-inch Bishop Back Saw.  
1 Set No. 12 Bishop's Nest of Saws.  
Jones Cable Coping Saw.  
3x6 Orr & Lockett Cabinet Scraper.  
Morrill's Special Saw Set.  
1 Set Buck Bros. Socket Chisels, Bevelled Edges,  $\frac{1}{4}$ -inch,  $\frac{1}{2}$ -inch,  $\frac{3}{4}$ -inch, 1-inch, 1 $\frac{1}{2}$ , 1 $\frac{3}{4}$ -inch.  
1 $\frac{1}{2}$ -inch Buck Bros. Tang Butt Chisel.  
Straight Claw Hammer.  
5 $\frac{1}{2}$ -inch Cut Barton Hand Axe.  
Millers Falls Ratchet Brace, 10-inch Sweep.  
Yankee Automatic Drill, with 8 Drills.  
1 Set Russell Jennings Auger Bits, in case, 32 $\frac{1}{2}$  Quarters,  $\frac{1}{4}$ -inch to 1-inch—13 bits.  
Large Steers Expansive Bit, to cut  $\frac{7}{8}$ -in. to 3-in.  
1 Set Syracuse Twist Bits for Wood, from 3-32-inch to 12-32-inch.  
Clarks Countersink.  
Yankee Automatic Screw Driver.  
6-inch Champion Screw Driver.  
Orr & Lockett Screw Driver Bit.  
30-inch Stratton Brass Bound Mahogany Level.  
4-foot White Enamel Zigzag Rule.  
Flipside Folding Square.  
8-inch Stanley Try Square.  
8-inch Eureka T-Bevel.  
Stanley's Universal Spoke Shave.  
Wilkinson Folding Handle Drawing Knife.



**Tool Chest**

To be filled with a complete set of carpenter's tools, over 100 pieces of the very highest quality.

Pair 8-inch Single Leg Cook's Dividers.  
Assortment Knurled Handle Nail Sets.  
Mortise and Marking Gauge.  
Stanley Butt Gauge.  
Lignum Vitae Mallet.  
Russwin Monkey Wrench.  
Pair 7-inch Carpenter's Pinchers.  
Wells Special Steel Oilers.  
"Oils-Here" Oil Stone, with one 8-inch Combination India Oil Stone.  
1 Dozen Orr & Lockett Carpenter's Pencils.  
1 Dozen 5-inch Black Diamond Saw Files.

This complete set consists of more than 100 pieces, and combined with the Tool Chest has an actual value of more than \$65.00. It would require four pages to illustrate the different articles.

NOTE.—The carpenter securing this valuable reward may make any changes in the contents desired, providing the changes do not increase the cost.

### Dearborn Roll-Top Office Desk

The beautiful desk shown in the illustration is made by the Dearborn Desk Co., who are constantly shipping desks in large quantities all over the country. It is 54 inches wide, 33 $\frac{1}{2}$  inches deep, 53 $\frac{1}{2}$  inches high, and weighs 300 pounds. These



**Roll-Top Office Desk**

dimensions alone show that it is an exceptionally fine and heavy piece of office furniture. It is made of beautifully figured oak, polish finish, three-ply writing bed and panels, well grained oak front wood filing boxes, two upright spaces reserved for books, two extension slides, drawer in center, four drawers right and left which lock and unlock automatically by action of curtain; all drawers have carved handles and work easily. This desk is equipped with a patent smooth outer surface, dust-proof roll curtain, showing an unusually attractive grained effect, and also has heavy chilled-steel ball-

USE THIS SIDE IF YOU CANNOT SECURE YOUR FIRST SUBSCRIPTION AT ONCE

Date \_\_\_\_\_

Contest Editor,

AMERICAN CARPENTER AND BUILDER,  
196 Fifth Avenue, Chicago.

DEAR SIR:

Please enroll me as a contestant in your liberal Subscription Contest. Send sample copy, full information, and subscription blanks at once.

Name \_\_\_\_\_

Address \_\_\_\_\_

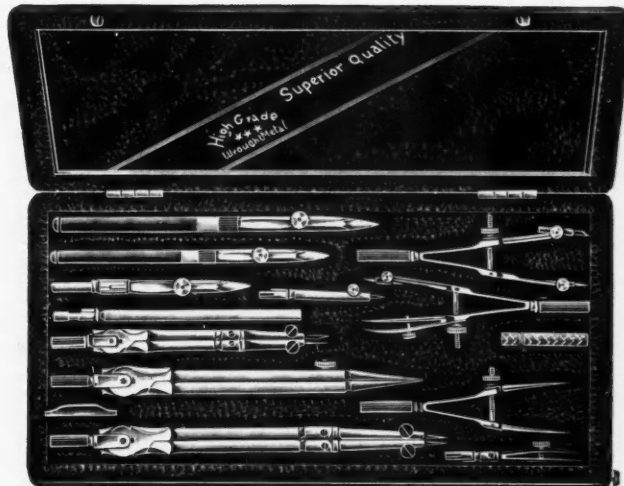
This Coupon must be used to insure your participation in the contest.

bearing casters. Absolute satisfaction is guaranteed by the manufacturers. Value \$50.00.

and Pen Points, Spring Bow Pen, Spring Bow Pencil, Spring Bow Divider, two Spring Back Ruling Pens, 4½ and 5 inches, Box of Leads and Key. Value \$13.50.

**German Silver Drawing Instruments**

The set of Drawing Instruments offered as a fourth Grand Reward is one of the best and most complete made. They are of high grade, superior quality and the set includes 13 pieces: 5½-inch Compass, Attached Needle Point, with Pencil and Pen Points, Lengthening Bar, 5-inch Divider with Hair Line Spacing Attachment, 3½-inch Compass, Attached Needle Point with Pencil



**SPECIAL NOTICE**

The illustrations and descriptions above cover only four of 38 Grand Rewards and Territorial prizes to be given absolutely free to subscribers. Read all of page 601 carefully, and then prove yourself one of the most interested members of our great family, by using the coupon at once.

**Special Prizes for Each Five Subscriptions**

ONE OF THESE USEFUL AND VALUABLE PRIZES WILL BE GIVEN ABSOLUTELY FREE TO EACH CONTESTANT FOR EVERY FIVE SUBSCRIPTIONS SECURED—SEE PAGE 601.

**I**N addition to participating in the distribution of the "Grand Rewards" and "Territorial Prizes," and also in addition to the liberal cash commission paid for each subscription, the contestant is entitled to select one of the following "Special Prizes" every time he secures five subscriptions:

**1. "Bed Rock" Smooth Plane No. 603**

This plane is of a design which allows of the combination of the utmost solidity and rigidity, with a wider range of adjustments than heretofore placed on iron planes.



**Bedrock Smooth Plane, No. 603**

The advantages of this design are made possible by the extreme nicety of their manufacture. Among the novel points in this plane are: A frog with a machined face; a frog so designed that the entire bottom of the frog rests solidly on a seat formed in the plane body; a frog so designed that its sides conform to guides formed in the plane body, which guides lend accuracy of adjustment to the frog as well as prevent any possibility of its wobbling; a reliable adjustment for the width of throat opening. This plane is 8 inches in length, with 1¼-inch cutter.

**2. "Bed Rock" Jack Plane, No. 605**

All that has been said in describing the Smooth Plane applies also to the Jack Plane. It is 14 inches in length, with 2-inch cutter.



**Bedrock Jack Plane, No. 605**

**3. Bishop's Rip or Cross Cut Saw, No. 90**

These saws are highly polished and fully warranted in every respect. They are hand made from purest steel, perfect in temper, full taper ground and highly finished blade, carved



**Bishop's Rip or Cross Cut Saw, No. 90**

and polished applewood handle, improved nickel screws, full skew back, teeth hand filed to diamond point, set ready for use. Length, 26 inches.

**4. Disston's Acme Rip or Cross Cut Saw, No. 120**

This saw is made of extra London spring steel, warranted, carved and polished apple handle, skew back. A fast, smooth-cutting saw, particularly adapted for fine cabinet work, sawing mitres, and in all instances where rapid, smooth cutting is desired. Either a rip or cross cut saw will be furnished, 26 inches in length.

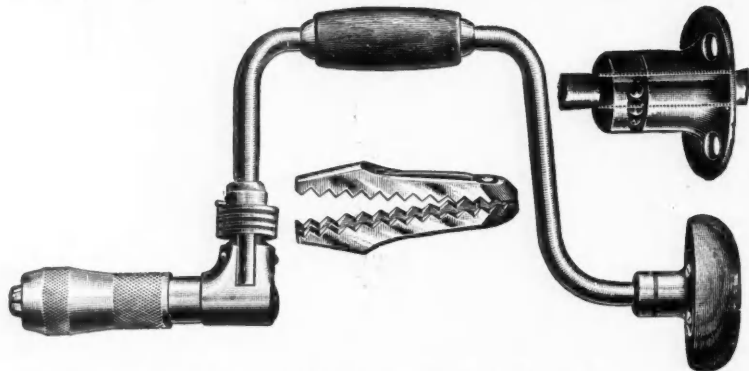
**5. Jennings' Chisel Set, No. 702**

This is a set of 6 No. 02 Beveled Edge Chisels in canvas chisel roll. There is one each ¼, ½, ¾, 1, 1¼ and 1½ inch, with Cocobolo handles. The blades average about 3½ inches long from shoulder, with sockets and handles in proportion.

**6. Barber Improved Ratchet Brace, No. 32**

These braces possess the following points of superiority: The sweep is made from steel, the jaws are forged from steel, the wood handle has brass rings inserted in each end so it cannot split off, and the chuck has a hardened steel anti-friction washer between the two sockets, thus reducing the wear. The head has a bearing of steel balls, running on hardened steel plates, so no wear can take place, as the friction

is reduced to the minimum. The brace is heavily nickel plated and warranted in every particular. No. 32 has a 10-inch sweep.

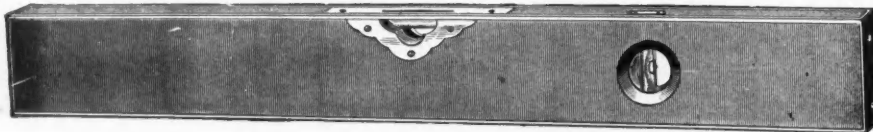


#### O. Nichols Framing Square, No. 1

This square is made with the framing rule on the blade. It saves time, labor and money to the user. The No. 1 square has drafting scales 1-16, 1-12,  $\frac{1}{8}$  inches, with framing rule, brace measure octagon, and 1-100 scale.

#### 7. Stratton Bros.' Mahogany Level, No. 2

This excellent mahogany level is adjustable level and plumb, has two ornamental brass side views, heavy circular end top



plates, solid brass end plates, polished. Can be had in either of three lengths, 26, 28 and 30 inches.

#### 8. Chesterman's Metallic Tape Line, No. 34L

This tape line is exceptionally durable and accurate. It is a linen tape with wires running the full length. This abso-



lutely prevents stretching and insures perfect accuracy. Length, 50 feet.

#### 9. Eclipse Adjustable Folding Square

This square is designed to meet the wants of those desiring a more convenient tool than the ordinary carpenter's square. It can be folded and packed in a small chest, and can be adjusted at right angles ready for instant use



Eclipse Folding Square—Closed

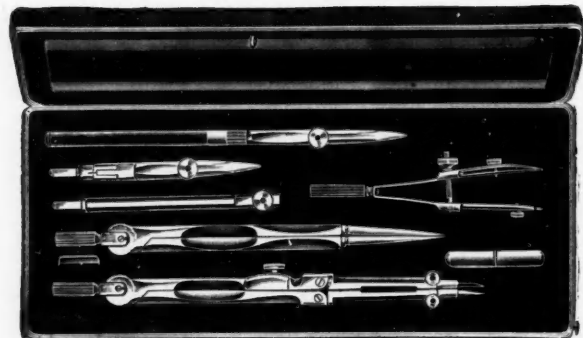
when required. It does away with cutting holes in the top or sides of small chests, can be shipped more readily on cars when traveling from place to place, and is protected from being bent and rusted when left standing or exposed to the weather. The illustration is a miniature reproduction of the square when closed.

#### 11. Carpenters' Shoulder Tool Chest, No. 20

This is a portable tool chest and can be easily carried on the shoulder. It is made of chestnut with locked dovetailed corners; has lock, brass elbows to support lid when open, drop handles and rack for holding saws. No. 20 is the largest size. Its inside dimensions are 32 inches long, by 8 inches wide, by 8 inches deep. A smaller size, 25 inches long, may be had if preferred.

#### 12. Set of Drawing Instruments, No. 2076

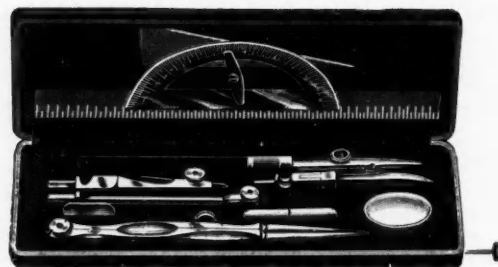
This is an excellent set of German silver instruments. It contains 8 pieces: 5½-inch compass, attached needle point,



with pencil and pen points, lengthening bar, 5-inch divider, spring bow pen, 5-inch ruling pen, box of leads and key.

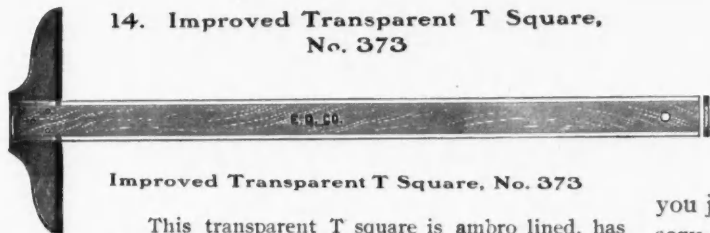
#### 13. Set of Drawing Instruments, No. 2015

This is a set of nickel plated instruments, designed especially



for the young carpenter. It contains 9 pieces: 4½-inch compass, pen and ruling points, lengthening bar, dividers, ruling pen, spring bow pen, box of leads and key.

**14. Improved Transparent T Square, No. 373**



Improved Transparent T Square, No. 373

This transparent T square is ambro lined, has maple blade and black walnut head. It can be had in any length desired: 18, 24, 30, 36, 42 or 48 inches.

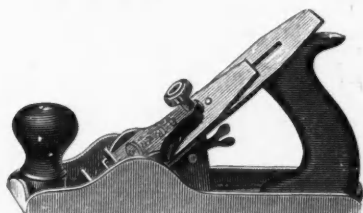
**Special Notice.**—If the subscriber should fail to find in this list an article that he desires, we will be glad to substitute any other tool or article of merchandise of equal cost. Write to the "Contest Editor," stating just what you would like to secure, and he will tell you just how many new subscriptions will be necessary to secure it free. There is no reason why any subscriber should not secure any article he desires.

**Special Prizes for Three Subscriptions**

In order that every subscriber entering this contest shall be fully paid for the work accomplished, we have decided to offer a limited list of Special Prizes to those who may not be able to secure more than three subscriptions. These prizes will be given absolutely free and entirely additional to the cash commission of 50 cents on each subscription.

**1. Stanley Steel Jack Plane, No. 105**

This is an exceptionally fine plane and is one of the carpenter's most handy tools. It is adjusted by a lever and is especially adapted for working on soft woods. It is 14 inches in length and has a 2 1/8 inch cutter. Smaller planes, 9 inches in length with 2 1/8-inch cutter, or 8 inches in length with 1 3/4-inch cutter, may be had if desired.



**2. Hammond's Mechanic's Pride Hammer, No. 175**

This is one of the most expensive hammers made. It is nickel plated, has hickory ebonized handle, and octagon neck. Its weight, exclusive of handle, is one pound. Any other make, size, or style of hammer may be had if preferred.



Hammond's Mechanic's Pride, No. 175

**3. Yankee Automatic Drill, No. 44**

This drill has an adjustable tension. The cap on top has a screw attached to it, by revolving which the spring is made longer or shorter, thereby making it weaker or stronger. The tool is made of brass, nickel plated and finely finished, the material and workmanship throughout being of the best. Eight

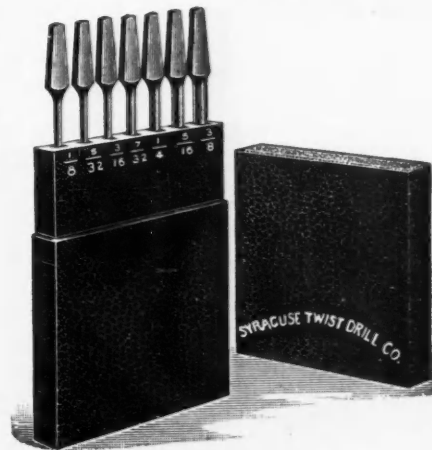


Yankee Automatic Drill, No. 44

drills are furnished with each tool. The chuck is of new and approved design, and will hold drill points absolutely tight and rigid. The entire length of tool, inclusive of drill, as in illustration, is 10 3/4 inches.

**4. Set Syracuse Wood Drills, No. 16**

This set contains nine instead of seven drills, as shown in the illustration. It is put up in a neat, strong box, and contains one each of the following sizes: 3/8, 7/16, 1/2, 5/8, 3/4, 7/8, 1, 1 1/8, and 1 1/4. An attractive prize.



Syracuse Wood Drills, No. 16

**5. German Silver Dividers, No. 2231**

These dividers are made of the best German silver and have steel points and high finish. They have pivot point, with set screws, straightening device, hair-line spacing attachment, 5 inch.

**Four Prizes For Every Contestant**

GREATEST OFFER EVER MADE TO AMERICAN CARPENTER AND BUILDER SUBSCRIBERS—GREAT FAMILY OF READERS TO SHARE PROFITS—READ ALL OF PAGE 601

**E**VERY energetic contestant can hardly fail to secure four separate and distinct prizes if he takes an active interest in the work:

First—A cash commission of 50 cents on every subscription.

Second—A "Special Prize" when he secures either three or five or more subscriptions.

Third—A "Territorial Prize" if he secures the largest or second largest number of subscriptions in the group of states where he is located.

Fourth—One of the leading "Grand Rewards," if he finishes among the first 26.

**It Should Be Remembered**

That the securing of one of these prizes does not

prevent participation in the distribution of the other three. The contestant is paid for every subscription secured, an additional payment for the securing of three or five, and also may secure two additional prizes through participating in the distribution of thirty-eight other rewards for special merit.



### Territorial Divisions

The territorial divisions in which twelve special prizes are to be rewarded, as described on page 601, are as follows:

**North Atlantic States**—Maine, New Hampshire, Ver-

mont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania.

**South Atlantic States**—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

**Northern Central States**—Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

**Southern Central States**—Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Indian Territory, Texas.

**Western States**—Montana, Wyoming, Colorado, New Mexico, Idaho, Utah, Arizona, Washington, Oregon, Nevada, California.

**Miscellaneous**—Alaska, Cuba, Philippine Islands, Canada, and all Foreign Countries.

**\$13.00**  
Delivered  
42 in. Long  
24 in. Deep  
28 in. High  
Roll Curtain  
To Paper  
Cabinet



No. 5 DEARBORN JUNIOR CABINET

**DO YOU KNOW?**  
DEARBORN CABINETS

Will save your stenographer's time, improve quality of work and save YOU money. Made of Select Oak, golden finish.

Guaranteed the most complete Typewriter Cabinets ever sold anywhere near the price. Shipped on approval, to any point east of Rocky Mountains, freight prepaid. Return at our expense if not satisfied. What more can we offer. Remember you take no risk. Could we make such an offer if there was any doubt of goods proving satisfactory?

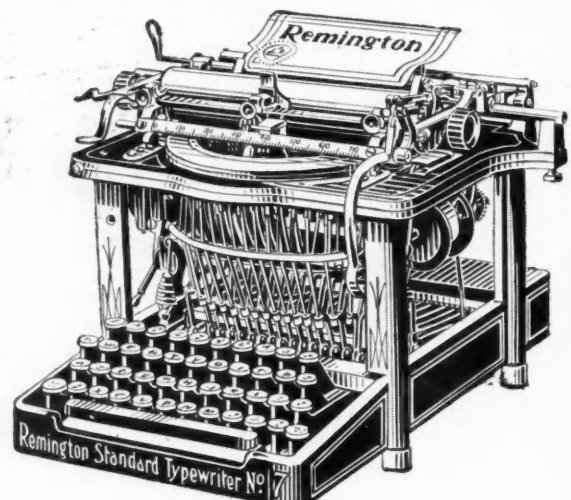
Write today for new Catalog of Office and Typewriter Desks sent free on request.

**DEARBORN DESK CO.**  
Alexander A. Samuel, General Manager.  
512 Fisher Building, CHICAGO, U. S. A.

**\$6.50** Delivered  
Typewriter base  
26 in. High



No. 7 DEARBORN  
Typewriter Table



When the Remington Typewriter offers something new to the public, the public knows without being told that it's something good.

New Models Now Ready

**Remington Typewriter Company**  
154 Wabash Ave. CHICAGO, ILL.

BRANCHES EVERYWHERE

## STEEL CEILINGS AND SIDE WALLS

We have added complete designs in steel ceilings and sidewalls to our already large line of Sheet Metal Building Material, and our special ceiling catalog, when completed, will interest you.

Send us your inquiries accompanied by drawings of rooms and we will send you a carefully prepared drawing with illustrations showing just how the ceiling will look when finished.

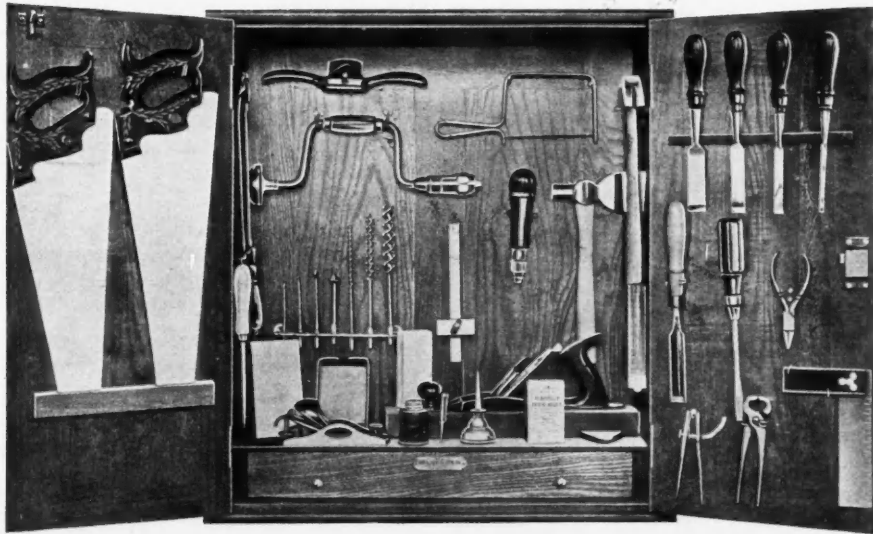
Our designs and prices are attractive and we want an opportunity to quote you.

**The Edwards Manufacturing Co.**

"THE SHEET METAL FOLKS"

121-129 Sycamore St.  
CINCINNATI, OHIO.





## A TOOL CABINET FOR CHRISTMAS.

When a man has seen several holiday seasons come and go, Christmas presents naturally divide themselves, in his mind, into five classes—practical presents, beautiful presents, “just-what-I-wanted” presents, useless presents, and just presents.

The articles shown on this page and in our Christmas booklet, “Timely Tips,” are all in one of the first three classes, a statement that is backed up by the fact that the “American Carpenter and Builder” has contracted with us to furnish them as many of the premiums shown on the preceding pages as come within our line.

**TOOL CABINET No. 20A**, shown in the photo above, measures 29x25x8½ inches outside, is made of chestnut or ash, panelled and finely finished, and contains 38 fine tools. Costs complete \$20.00, f. o. b. Chicago. We have other sets down as low as \$5.00.

**CABINET No. 28A**, with 52 tools, \$28.00.

**Tool Chests**, with sets of tools, from \$3.50 to \$50.00. **Benches** from \$5.00 up—good ones, too.



### THE “ORANDEL” ELECTRIC FLASH LIGHT No. A

is perfection where a steady light is not necessary. The light comes from a small dry battery in the case, which may be renewed at any time for 30 cents. See the fine line of night lights and other electric novelties in “Timely Tips.” The “Orandel” Flash No. A, complete, 75 cents. Postage and registering, 16 cents extra.



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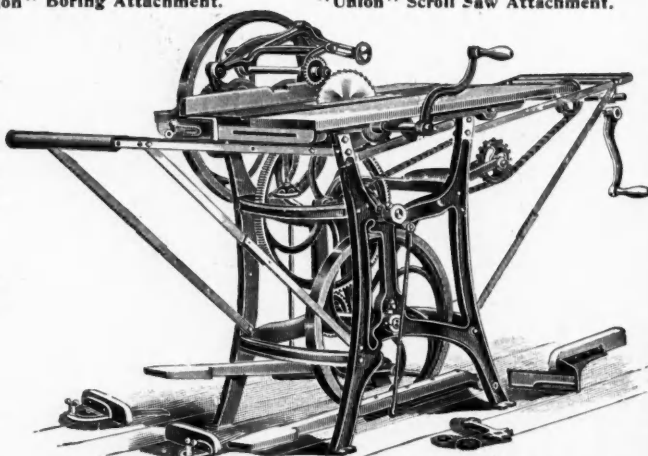
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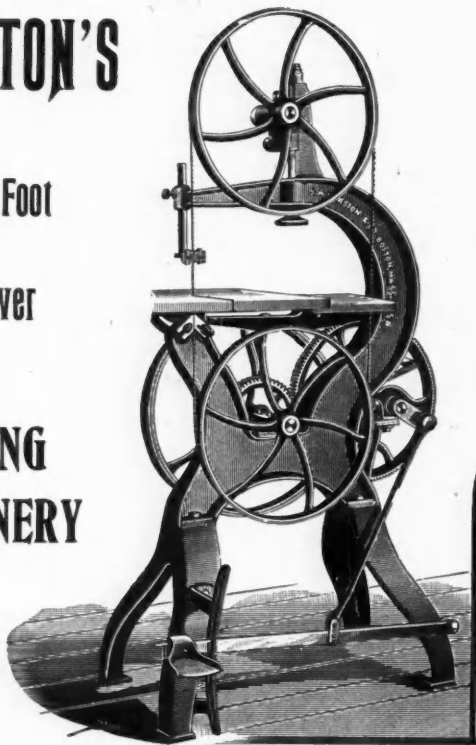
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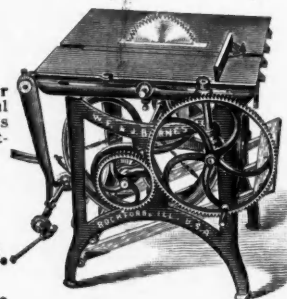
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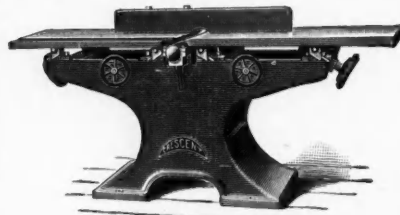
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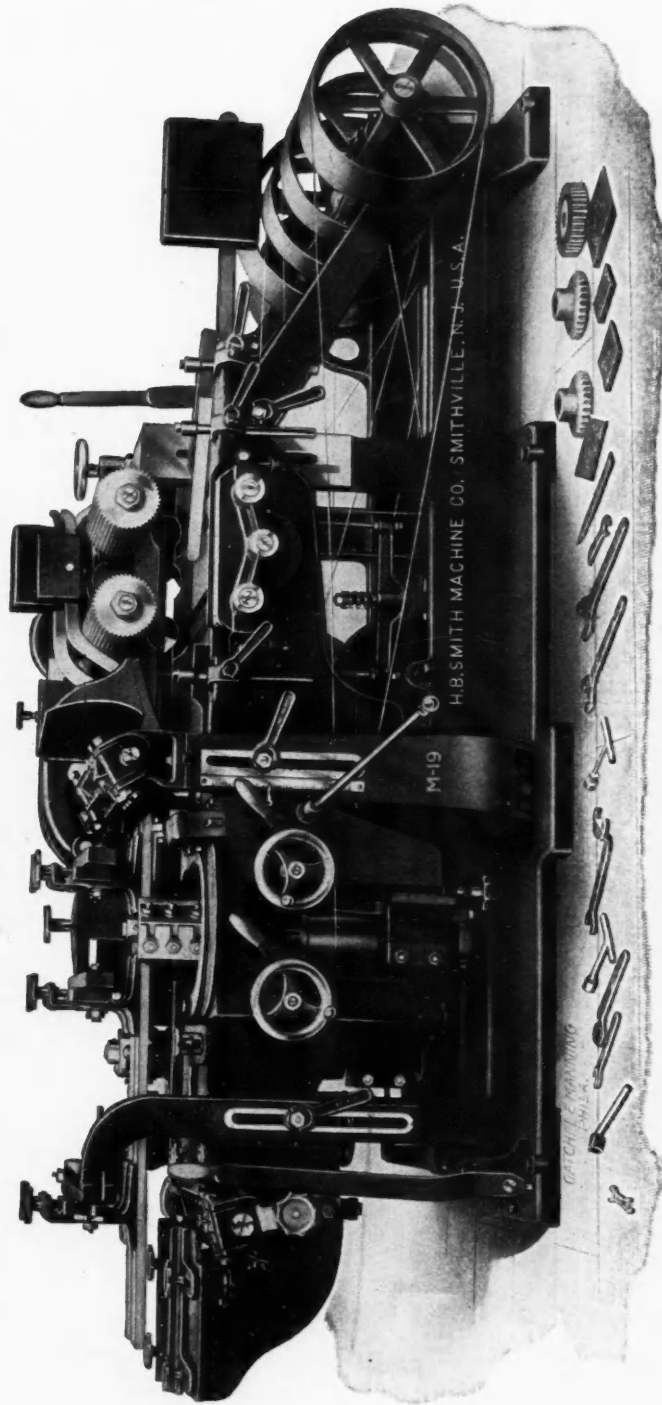
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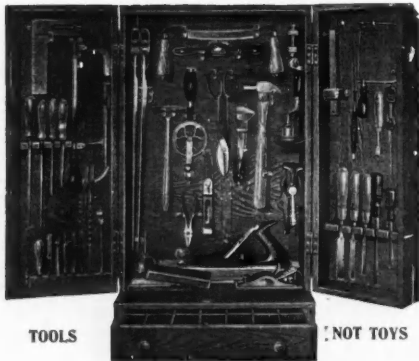
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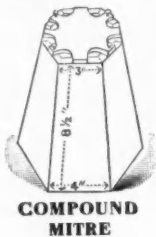
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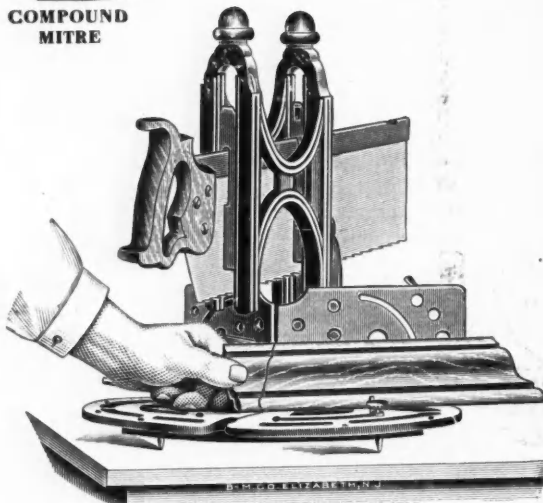
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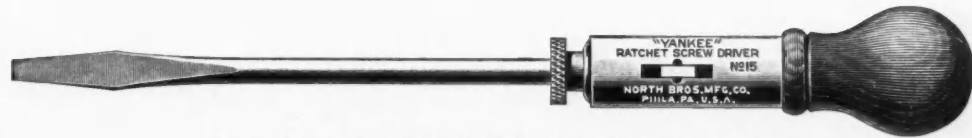
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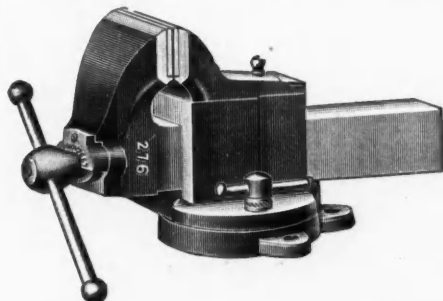
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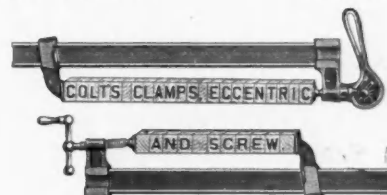
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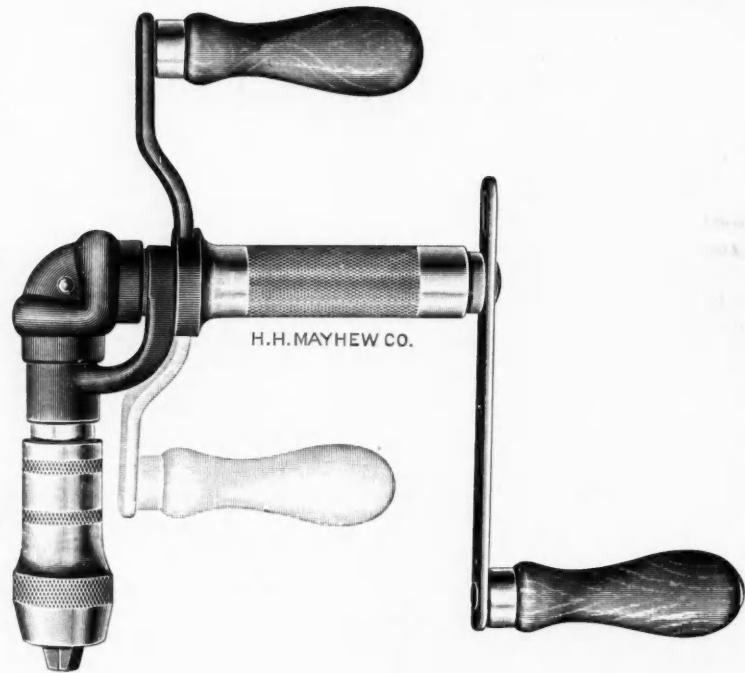
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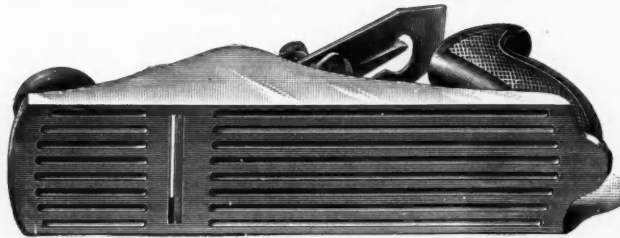


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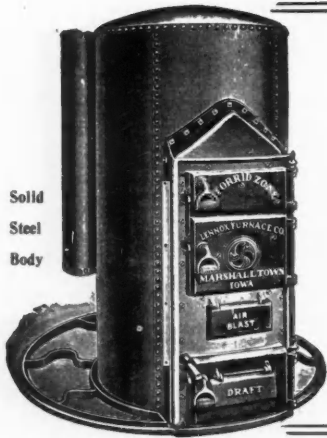
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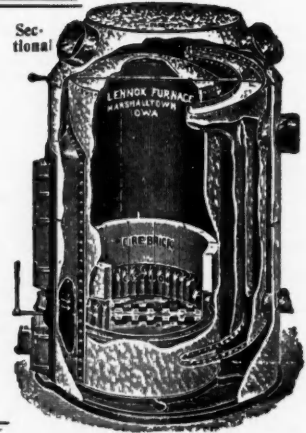
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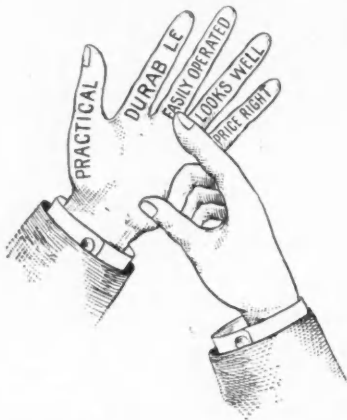
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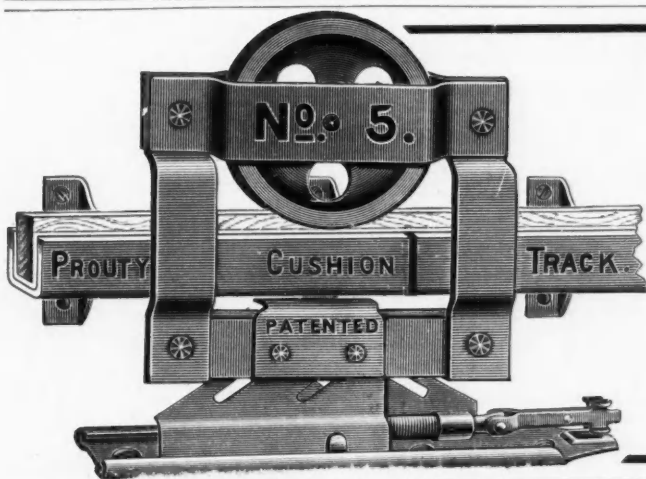
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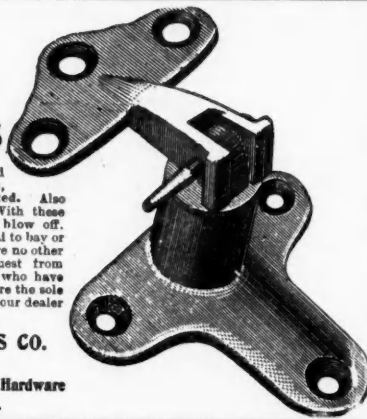


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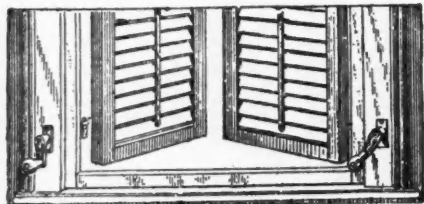
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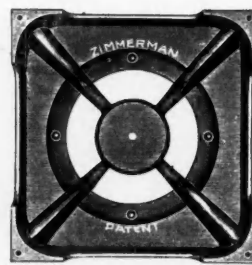
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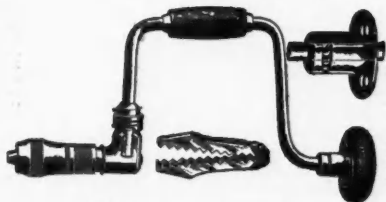
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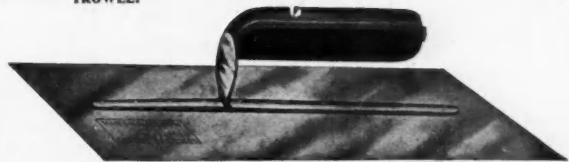
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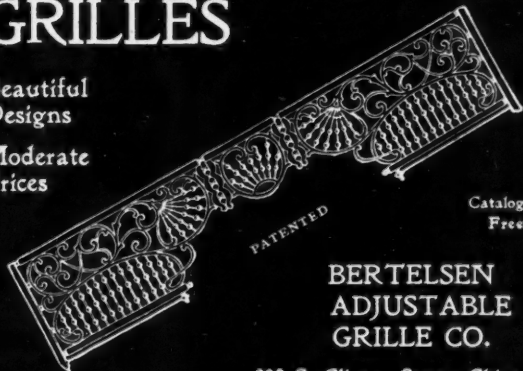
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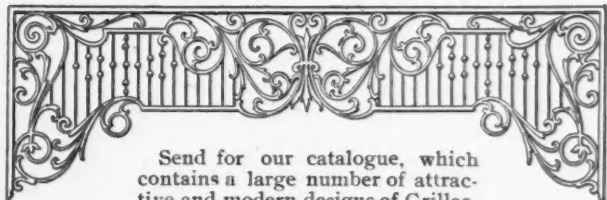


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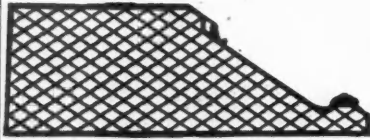
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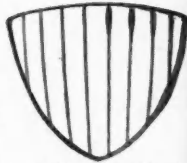
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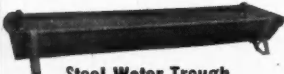
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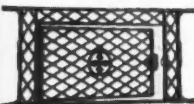


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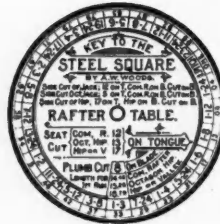
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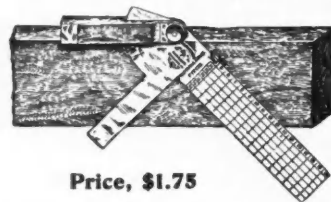
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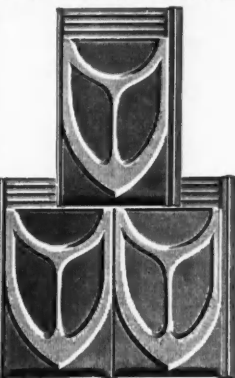


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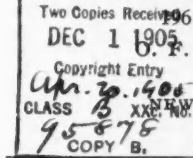
## American Carpenter and Builder

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.  
WILLIAM REUTHER, ASSOCIATE EDITOR.

Published monthly by

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NEW YORK OFFICE, 253 BROADWAY  
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VOL. I. DECEMBER, 1905 No. 9

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.

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IT IS A wise man that knows his competitor better than his competitor knows him.

CURIOSITY sometimes gets a man into trouble, yet the man without an inquiring mind is not likely to accumulate much information.

THE man who gets into the habit of dispensing with his nail set to save time has but to go a step further and send screws home with a hammer instead of a screw driver to be on the road to where he will

soon need some repairs to his reputation as a workman, and he will find this the most difficult job of all, the repairing of a damaged reputation.

### Furnishing the Hall

IN THE ordinary house the furnishing of the hall is the matter that gets the least attention and deserves the most. It is generally dismissed with a hall tree and a carpet or a rug, if the floor is hard wood, under the impression that that is about all that can be done for it. And true it is that it is difficult to make a small hall look like anything more than a thoroughfare for mere passing in and out, and the worst of it is that in a way the hall furnishes the keynote to the house. The visitor takes his first and last impression from it.

### Our First Christmas

AS THIS is the first Christmas our large family is together we feel that the occasion should be a most joyous one. We trust that this may be the first of many which we will spend together, and that each succeeding one will find us larger and stronger and be filled with ever increasing happiness and prosperity.

When the next Yuletide rolls around our large family will undoubtedly be much larger, and we expect the present members, who have taken such an active interest in our progress from the start, will have no small share in the future rapid growth of the AMERICAN CARPENTER AND BUILDER. Let each do all in his power to aid in the advancement and prosperity of not only the family collectively, but of its individual members. In another column we tell of one way in which this may be done.

### Care of the Dining Room

IT is pleasing to note that more attention is being given to the dining room than formerly. This room, of all others, should be cheerful and bright, and the decorations should be delicate in tone and

color. Dark paper and hangings should be avoided if possible, as they make the room dull and uninviting to the diners.

If the dining room has a south exposure, raise the curtains and let in the sun, as that does more to make the meal bright and cheerful. The finishing does not have to be elaborate or expensive, as some of the prettiest effects are often seen in humble homes.



### Adulterated Building Material

**I**T HAS come to the notice of several building inspectors of some of our large cities that many buildings are being erected simply for the purpose of selling them. While there is nothing specially harmful in that, there is danger in the fact that while from all outward appearances they are perfectly sound and safe in reality the material used in their erection has been adulterated. Thus for a few dollars which are saved on this speculative venture many lives are put in danger through the instability of the building. This can be remedied by having the building inspector test the various materials used in the construction of our buildings and not allow any to be used that would be a menace to public safety.

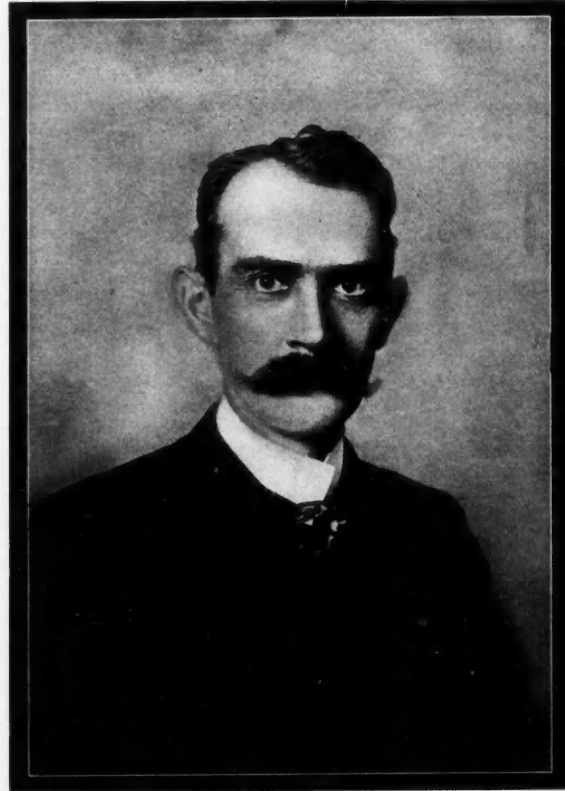


### An Unparalleled Opportunity

**O**PPORTUNITY is not always recognized when it knocks at a man's door, but no subscriber to the *AMERICAN CARPENTER AND BUILDER* can overlook the offer made directly to him on pages 601 to 604 of this issue. Here is an opportunity that should appeal to every man, young or old, who is one of the "great family" of subscribers. No matter whether he resides in a small town or a large city, his opportunity to secure unusually valuable prizes and rewards is equal. If he is located in a small town he may be the only one who will be striving for the valuable rewards offered for new subscriptions, while if in a larger town he will find that the field will be divided between a large number of subscribers. In any event, the very liberal commission allowed on each subscription, the special prizes where three or five are secured, even if not fortunate enough to secure one of the larger grand rewards, will amply compensate him for the little time and labor required. It will be noticed that there are thirty-eight of these grand rewards and territorial prizes, so that any really active contestant is assured of at least one if not two of these in addition to the others mentioned. It is expected that it will not require many subscriptions to win one of these large prizes—perhaps not more than four or five. Let each subscriber, who is pleased with the magazine—as everyone is—and who is interested in its advancement, enter this friendly contest and secure for the *AMERICAN CARPENTER AND BUILDER* and for themselves lasting and mutual profit.

### Death of Frank E. Kidder

**F**RANK E. KIDDER, the great architect and author, and one of our most valued editors, died October 27, at Denver, Colo., in his forty-sixth year. The death of Mr. Kidder leaves a break in the ranks of the architects of this country which will be hard to fill, as he was looked upon as a leading authority.



He was born in Bangor, Maine, in 1859. At the age of twenty he graduated as a civil engineer at Maine State College. Later, he studied architecture at Cornell University and at the Massachusetts Institute of Technology, where at the same time he also delivered lectures. He later established himself in practice in Boston, but owing to ill health was obliged to seek a healthier climate, and in 1888 moved to Denver, Colo. Mr. Kidder soon became an authority on all forms of building construction, and most of his work was done as consulting architect. He was distinguished as the author of "Architects' and Builders' Pocketbook," "Churches and Chapels," "Building Construction and Superintendence," and "Strength of Beams, Floors and Roofs." He was an earnest church worker, and took particular interest in designing churches.



**W**E are all furnished with something like an equal amount of ignorance when we are brought into this life, and we are also usually supplied with a faculty for getting rid of it as we go along; but some people either don't have much of this faculty, or don't put it to as good use as others.



## Uncle Rural Goes Out to Christmas Dinner

BY J. CROW TAYLOR

**N**OTHING would do Mosby but that Uncle Rural and all the gang including Aunt Cynthia and Susie Andrews should come and take dinner with him Christmas evening. He said Uncle Rural had been doing his share of the feeding act, and had just closed a deal with the Little Boss that involved the designing and building of a new house in the spring, and he wanted to celebrate. The designing and setting of the house at Mosby's was considerably like Uncle Rural's, partly because he had received his

training as a workman at Uncle Rural's hands, and partly because Charity, his wife, had been raised by Aunt Cynthia, and this raising had been both gentle and wise, and there was naturally a similarity in tone of the designing and furnishing of the house. There was one distinguishing feature about the Mosby dining room, however, that was not to

be found at Uncle Rural's or anywhere else in the community, and that was a bit of pyrography, a life size tracing of the head of Christ under which was burned the words, "The Carpenter's Son." It was the work of Charity, who had read a biographical sketch of Christ by an eminent minister of literary tendencies under that title, and had, when a son was born, and pyrography becoming a fad about that time, been inspired to execute this bit of conceit and to name him Immanuel Williams Mosby. The work at first excited some comment, but had never been discussed by her, and people had to be content with looking at it and wondering. And, on this Christmas day ten years later, although the peculiar fitness of this piece of work was probably felt by most of those present, not a word was said on the subject. In fact, Mosby was leading the talk and it was about the plans for the new house he was to build for the Little Boss.

"One room," he said, "is to be finished with yellow pine, something like the one the yellow pine people had at the Fair at St. Louis, with no ceiling and exposed joist overhead, another is to be finished in red gum panels and another in oak, but we have not decided yet which is to be which. It will be dining room, parlor and library, but which room is to be pine, which gum and which oak is a subject we are still debating on."



Mosby

"I don't know," said J. B., pitching into the talk, "but what that would be good subject matter to talk over at the carpenters' meeting and I am going to keep it in mind, that is, the subject of what kind of wood is most appropriate to finish certain rooms of a house. That reminds me, Uncle Rural, I had not told you yet about an idea I had in mind of forming an association of carpenters in this part of the country this winter. You have always told me that during the holidays one should give a certain amount of thought to the work of the new year and plan out at least one new line of work, or plan to develop some new idea of some kind during the year, and this is my new thought for the new year, to form an association of the local boys to discuss various subjects pertaining to the carpenter business with a view to making life more pleasant and profitable to all concerned, as well as further the propagation and carrying out of new ideas."

Uncle Rural looked up with interest at first, but gradually a far away expression settled in his face,

and though everybody waited for a full minute, he vouchsafed no answer until J. B. called him back to the present by saying, "What's the matter, Uncle Rural, don't his idea meet with your approval?"

"Well, in a way, yes. But, it also reminded me of something that took my mind back to the day old Deacon Street celebrated the completion of his new house by giving a supper and dance. I don't know that I ever told it to you be-

fore, but the story of that dance at the deacon's has been colored up and used by preachers as an illustrating circumstance at various times in the country and I guess you have heard it one time or another, but I am going to tell it again. Deacon Street was a man who had some fine ideas in his head, but he had such an original and radical way of carrying them out that he naturally got the name of being a crank. When he planned his house, for example, which set on a hill side facing the road that passed below, he insisted on having the kitchen in the front of the house



Charity

instead of in the back as is usually the case, because he said the women folks had a right to be where they could look out on the road while they were at work in the kitchen, and besides by having the kitchen on the front side of the house it encouraged the women to stay in the kitchen more than if it were on the back side. Everybody laughed and poked fun at the deacon for building his house wrong side to, but he stuck to his plans just the same, and there was really some good logic back of his ideas, but they were so radically carried out that the force of the logic was lost. When we got the house done, following the regular custom of the country, he passed the word around that he would have a supper and dance on a certain night to celebrate the event. There was some special invitations, that is, he especially invited the preacher and several of his close friends among the older people, but in those days personal invitations were not the rule, and every fellow that heard of a supper and dance and wanted to go simply hunted a partner and went, or went alone as the case might be, but in either event it was not considered essential to have a personal invitation. Information was all that was wanted or needed.

"If the old deacon was a crank he was well known as most cranks are, and by the time supper was ready there was one of the biggest crowds there that ever gathered at a country dance, and it pleased the deacon, too, until he took a little round outside to see if there was room for hitching all the horses and found that the boys from over Rings Creek way had come by the still house and brought a jug of fresh corn whisky, while the Peachtree Fork gang had bottles in their pockets, and from some smuggled talk he overheard they evidently had an intention to start a rough house before the evening was over. Then the deacon began to be worried a little, but as I said, he was a man of ideas, and it was not long until he figured out in his mind a way to save the day, so to speak, and prevent trouble. He caught the preacher as he was on the point of leaving after supper, before the dance commenced, thinking that it would be unseemly in him to remain and look on at the dance when the church doctrine as he taught it did not countenance such doings. After the deacon had a little talk with the preacher explaining his plan, and it appeared that he had persuaded the preacher to stay to the dance, quite a lot of nudging and tittering among the girls and boys was indulged in. But when the first sets were called on the floor this tittering was changed to consternation, for the deacon asked them to wait a minute. He explained to them that he was having a dance to celebrate the opening of his new house, and as he wanted to do the thing right and in the right spirit he would ask them all to kneel while the preacher said a word of prayer before beginning the fun of the evening. It was something that had never been heard of before, but the habit of respecting a call of this kind is so strong that there was no hesitancy

about complying with the request, but many of those present were more surprised and scared than they had ever been in their lives before. The surprises of the evening were not over yet, however, for as they waited patiently and respectfully for the preacher to finish his prayer he kept on and on, so far beyond the usual length of such supplications, that gradually it dawned on them that there was something unusual in the circumstance, or something special, rather, for the whole proceeding was unusual. But still, he kept on and on until the situation became so acute that those who had strife in their hearts and bottles in their pockets could not stand the fire any longer and they gradually edged to the doors one by one, slipped away in the darkness and cautiously climbed their horses and sneaked home like a lot of whipped curs"

"Am I to understand from this," said J. B., drawing a long face, "that the forming of an association of carpenters is something like a dance, and that dancing is something that should not be done?"

"No. What I want to impress on you is, that when you start in to get up an association of this kind there is a chance that some of you will come with strife in your hearts and bottles in your pockets, so to speak, and if they do, your work will be productive of trouble instead of good, and if to save the day you make them see clearly and face the fact that they must bow to the dictates of the element of good, as is exemplified by the highest type of conception we have of this element, it will not only dispel a lot of enthusiasm, but those with strife in their hearts and bottles in their pockets will forsake the association. There is no need, however, to get discouraged," Uncle Rural continued, as he looked across and saw the cloud on J. B.'s face, "for while there may be less enthusiasm in the start, if made in the right way it will go further and last longer than if you were to start off without duly considering the fact that the element of good must predominate. You know the old deacon's idea about dancing was that there was no harm in it, but it was good exercise as long as it was done in the right spirit, and when he recognized the wrong spirit was being present he took appropriate means, though he used them somewhat radically, to get rid of it. And, speaking of the right spirit, the true spirit of good, happy cheerfulness, we have more of that at Christmas time than any other time in the year it seems, so I want to ask why it is, or what it is that begets the good spirit at Christmas time? Can't you tell us something from personal experience, Mosby? How do you suppose that it came about that you and the Little Boss made up since you had the trouble about the barn falling down, and he gave you that contract for his new house?"

"I don't know that I stopped to figure it out, uncle, but it came about by the Little Boss and I being delegated to go after a Christmas tree last week to set up in the church house for the Sunday school class. You know I hung back a little about going and did not

want to go, but I did not want to act ugly and there was nobody but Little Boss and I together all day, so naturally as neither one of us wanted to act ugly and not talk, we fell to talking about the beauty of different kinds of timber, and the first thing I knew he told me he was planning a new house and he wanted me to build it for him. There was one thing about it, though, that gave me more pleasure than anything

"You mean that it is by doing good for others that we get the spirit of good?"

"Yes, and it is by this means that we get the most real pleasure out of the world, and incidentally do the most good for ourselves. You may recall what I told J. B. on the subject of training up apprentices, or men that may become your competitors, that in my personal experience I have never suffered any hurtful



Uncle Rural looked up with interest

else, and it came from my telling him that I thought Uncle Rural ought to have the first chance at the job, and he said that that was all right and he hoped to have your advice about some of it, but that you already had a bigger job on hand to build a house for his partner. I wanted the job, of course, but somehow it made me feel good to know that I had remembered you in the matter and I didn't lose anything by it, either."

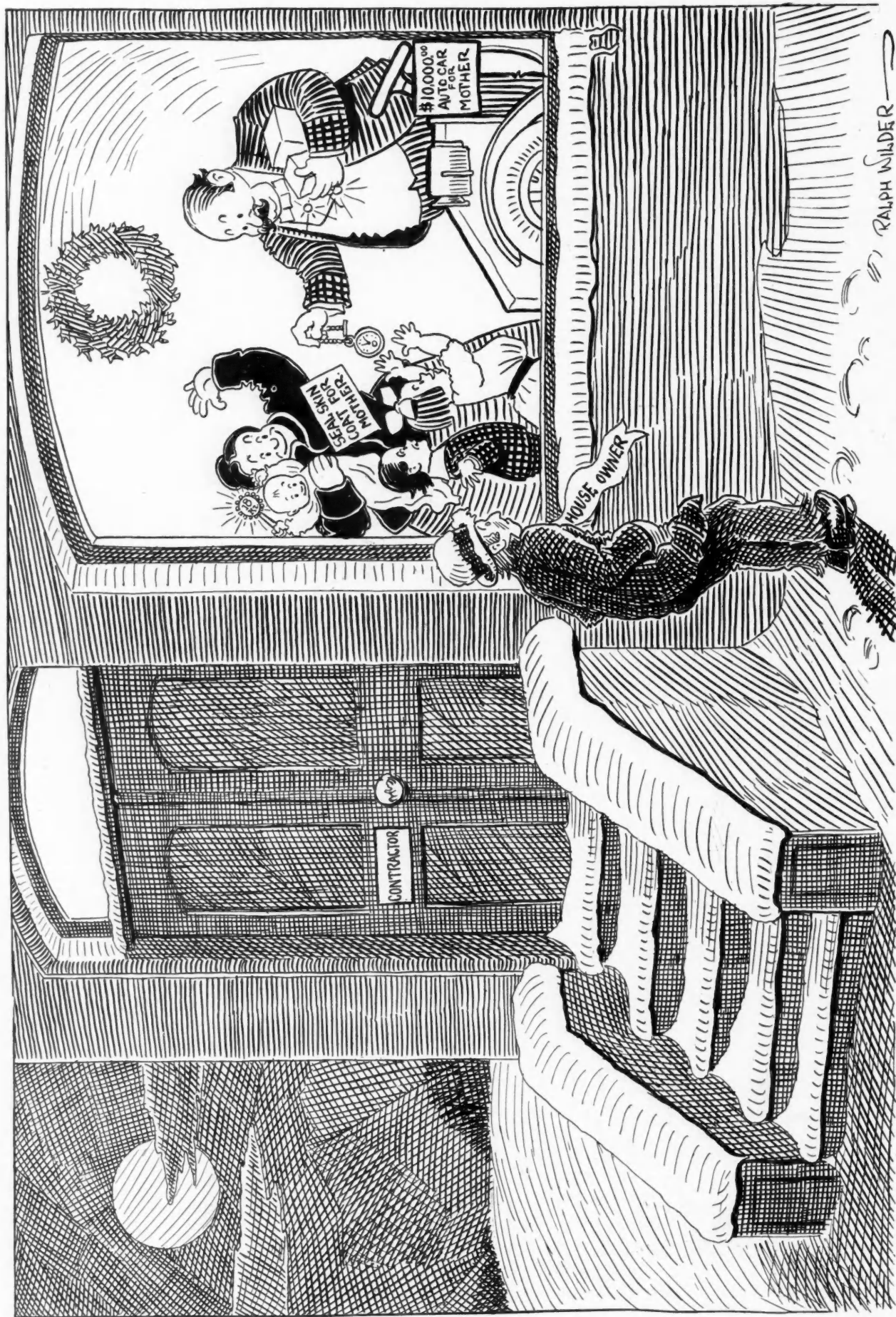
"Did it dawn on you," said Uncle Rural, "that the fact that you and Little Boss were on a mission of doing good for others, doing something that would give the Sunday school children pleasure, made you both feel better and think more of each other and everybody else in the world?"

competition from it. You have just given an example or demonstration of that fact by saying that you hesitated to accept that contract from the Little Boss until you found I had been provided for, and that of itself is sufficient proof that in helping you in your young days I have helped myself by inspiring a spirit of consideration instead of one of competition."

"There," said Mosby, turning to J. B., "is a bit of sentiment you should take with you and instill into that association you are going to form."

+

Avoid winters of discontent by placing your contract for heating apparatus with dealers advertising in this paper. They can be depended upon for reliable work.



The Contractor's Christmas — as figured out by the man who has just paid for his "extras"



# STEEL SQUARE

## ALFRED W. WOODS

### The Steel Square and Its Possibilities

ILLUSTRATING HOW TO OBTAIN ANGLES WITH THE COMMON STEEL SQUARE AND THE FIGURES TO USE IN LAYING OUT PARQUET AND OTHER DESIGNS

**T**HOUGH many of the illustrations that we have given may never come up in actual practice they show that when the principles are once understood the mechanic will know how to proceed to apply the square to solve anything pertaining to angles in his line of work. However, we have a few more illus-

trations that we wish to present before passing them by. cross lines extend beyond the large circle and from the center line as at A describe a circle cutting these lines and connecting up the ends will form the octagon as shown.

In Figs. 46 and 47 are shown patterns suitable for parquet or inlaid work. All of the miters contained in these designs can be had on the  $22\frac{1}{2}$  and 45-degree lines and the figures shown on the square when applied will give all of the angles as well as the miters contained in these illustrations.

In Fig. 48 is shown an example in line work for the nonagon or nine-sided polygon. We have not shown the square in connection with this illustration, but the figures to use are for the 20-degree, because 9 is contained in 180 twenty times. The small circles are divided into eighteen parts because 20 is contained into 360 degrees eighteen times. A further explanation of this illustration would be useless as it shows for itself.

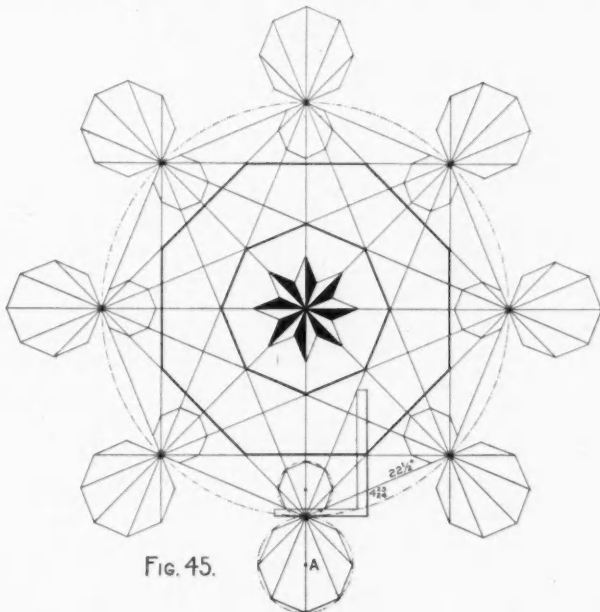


FIG. 45.

trations that we wish to present before passing them by.

In Fig. 45 is shown an example in line work. The figures to use on square are those for the octagon miter and consequently the whole figure runs to the octagon. The eight lines radiating from 12 on the tongue are  $22\frac{1}{2}$  degrees apart, the first one intersecting the blade at 4.97, or practically  $4\frac{23}{24}$  inches. The center for this design according to size wanted can be taken at any desired point on the 90-degree or perpendicular line above 12 on the tongue and where the circle cuts the first degree line from the tongue determines the length of the sides of the largest octagon contained in the figure. This distance spaced off on the circle. The cross lines are then drawn and the interior octagons will be formed as shown.

Those on the outer edge are formed by letting the

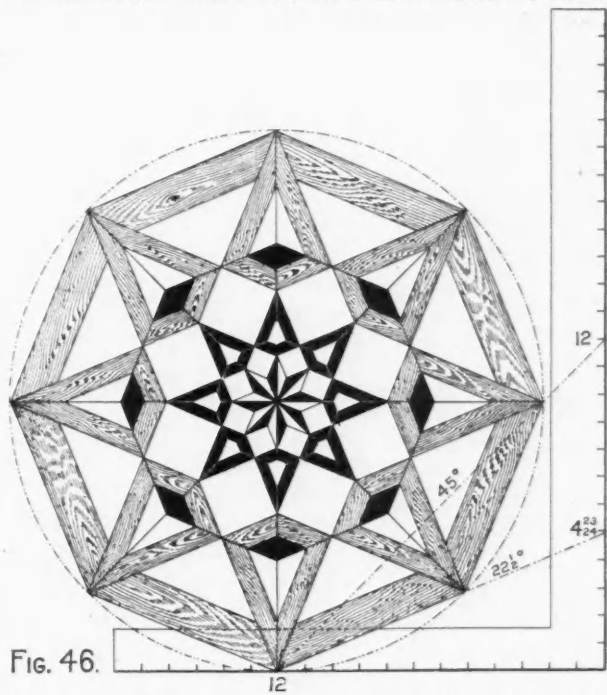


FIG. 46.

In Fig. 49 is shown a very pretty design made with eighteen squares. In this the center is at 12 on the blade and the intersection at  $4\frac{3}{8}$  on the tongues, which

is at the 20-degree line and represents the nonagon as will be seen by the formation of the tongues at the intersections. By extending the lines from the tongues

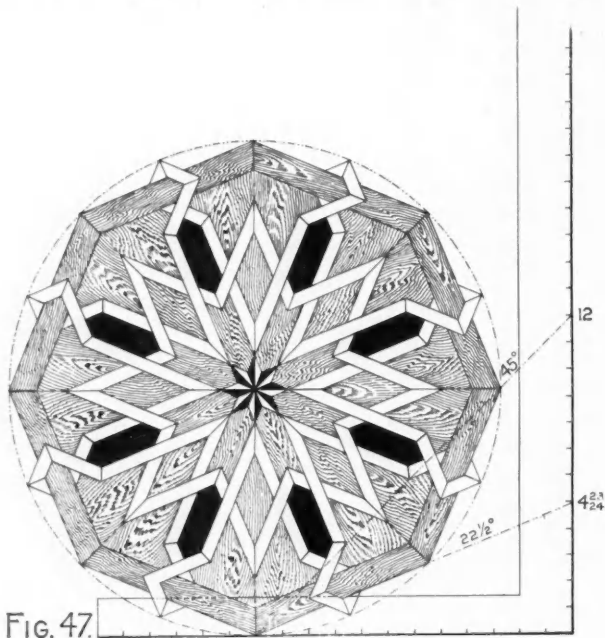


FIG. 47.

as shown by the dotted lines will form a nine pointed star.

In Fig. 50 is shown four steel squares placed in pairs as shown with lines radiating from 12 on the tongues and intersecting the blade at 2.12 ( $2\frac{1}{8}$ ); 4.37 ( $4\frac{3}{8}$ ); 6.93 ( $6\frac{11}{12}$ ); 10.06 ( $10\frac{1}{12}$ ); 14.3

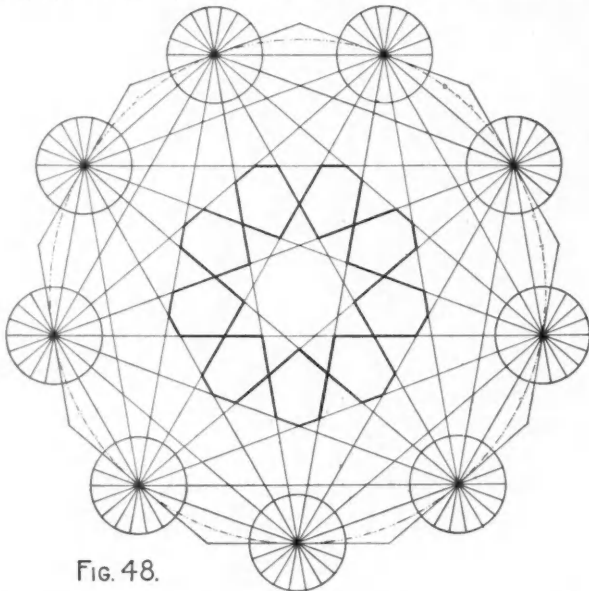


FIG. 48.

( $14\frac{7}{24}$ ); and 20.78 ( $20\frac{19}{24}$ ), which represent the degree lines as being ten degrees apart. These lines extend out to meet its complement, in other words, for example, the 30 degree line intersects the 60 degree line from the opposite side. The intersections rest at 10 degrees apart on a circle with a diameter equal the distance from 12 to 12 on the tongues of the opposite squares, and by connecting the intersections forms a polygon of eighteen sides. This rule applies to any

other polygon but is not a practical way of solving problems of this kind because there are simpler ways of arriving at the same result.

With this we close with polygonal figures except as we will have occasion later on to take them up in roof work. We have given enough to show that all work pertaining in any way to angles may be readily obtained by the use of the common steel square.



### New Building Material

The new building material known as "kremnite" is made in a factory near St. Petersburg and consists

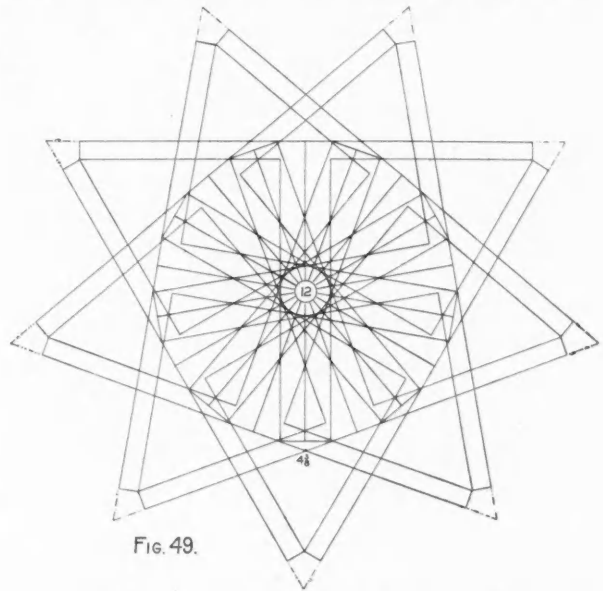


FIG. 49.

of powdered clay, sand and fluorspar melted together at a high temperature. The molten mass may be used like iron for molded castings as well as blocks. The material can be colored in a variety of shades, may be ground or polished, takes glaze well, and gives a good imitation of colored marble or other natural

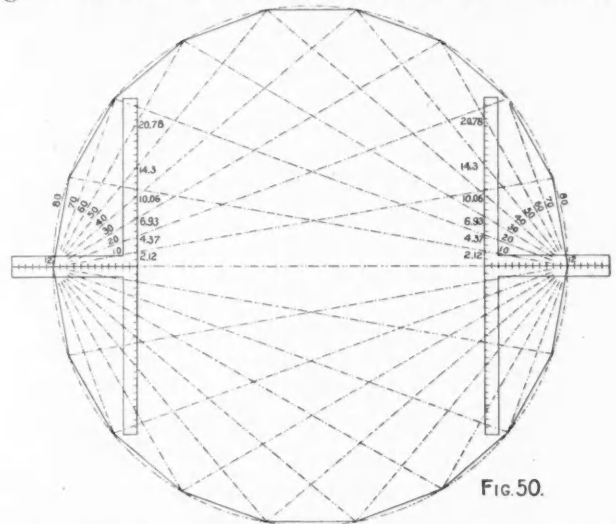


FIG. 50.

stone. It may be cast in large pieces of any desired form. It is well adapted for architectural and artistic purposes, yielding such products as hollow bricks for buildings and stoves, and fancy marble-like bricks.

# Practical Uses of the Steel Square

SHOWING THE GENERAL RULES FOR FRAMING HIP AND VALLEY ROOFS AND HOW TO PROCEED WITH THE STEEL SQUARE TO OBTAIN THE CUTS AND BEVELS

**F**OR this number of the magazine it has been thought best to give an article on roof framing in general, and in the January number take up the work more in detail, fully illustrating the different parts of the subject. It will be our object to show up the subject in such a way that the reader will readily understand why the solutions presented give correct results and can knowingly apply the steel square to obtain the lengths, cuts and bevels.

Every carpenter knows that the run and rise given the roof, taken to a scale on the steel square, will give the seat and plumb cuts for the common rafter. That the diagonal of a square with sides equal to the run of the hip or valley taken on one arm of the steel square and the rise given the common rafter on the other arm will give the seat and plumb cuts for the corresponding hip or valley. But as this requires a change of figures for different width

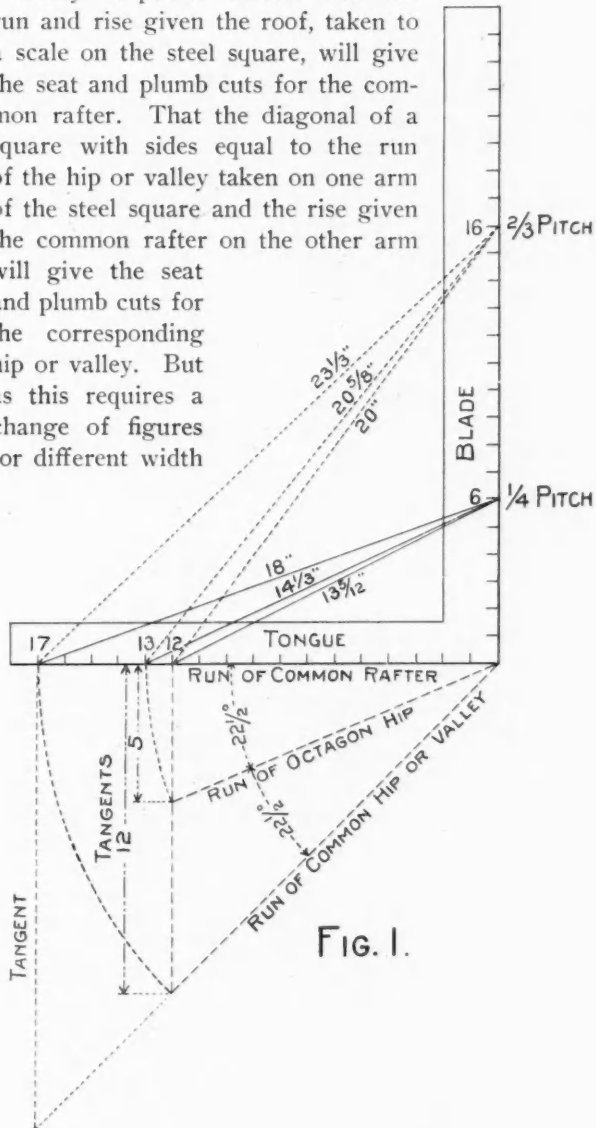


FIG. 1.

of buildings, it is better to use the full scale for a one-foot run of the common rafter which answers for any run.

Referring to Fig. 1 the square is shown on which are illustrated two sets of pitches for corresponding rafters, namely, the  $\frac{1}{4}$  and  $\frac{2}{3}$  pitch. The dotted lines shown below the tongue represent the position of the runs for the octagon and the common hip or valley

to that of the common rafter, and are placed here to show why 13 and 17 are set numbers on the tongue, as it will be seen that these figures represent their length to one foot run of the common rafter. How-

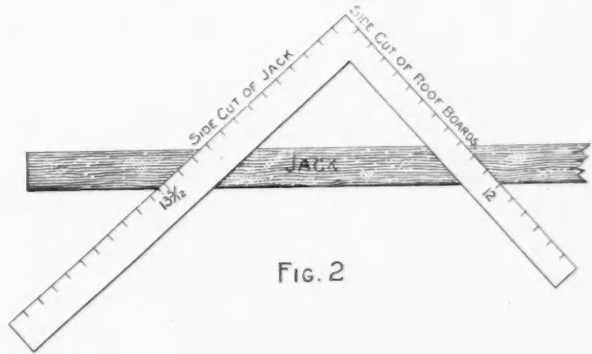


FIG. 2

ever, neither are absolutely correct, but near enough for practical purposes as far as the cuts are concerned. These are then fixed numbers and remain so regardless of the width or pitch given the roof. The lines running to 6 on the blade represents the  $\frac{1}{4}$  pitch for the

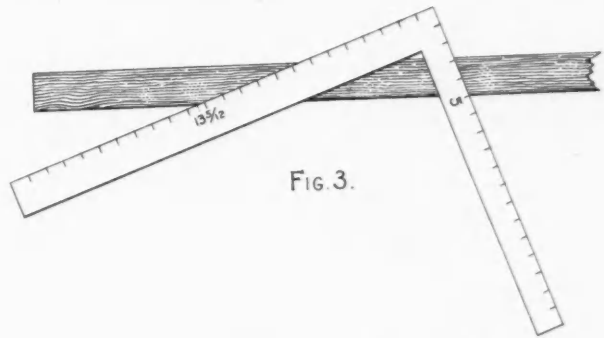


FIG. 3.

common rafter, octagon hip and for the common hip or valley resting on a right-angled corner. The figures on same are their lengths for a one-foot run of the roof. They also represent the number of twelfths in a one-inch run. Therefore if there happens to be

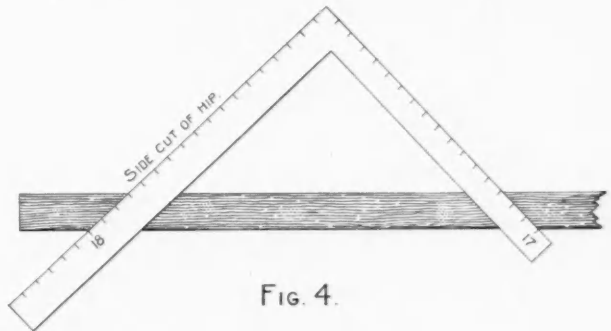


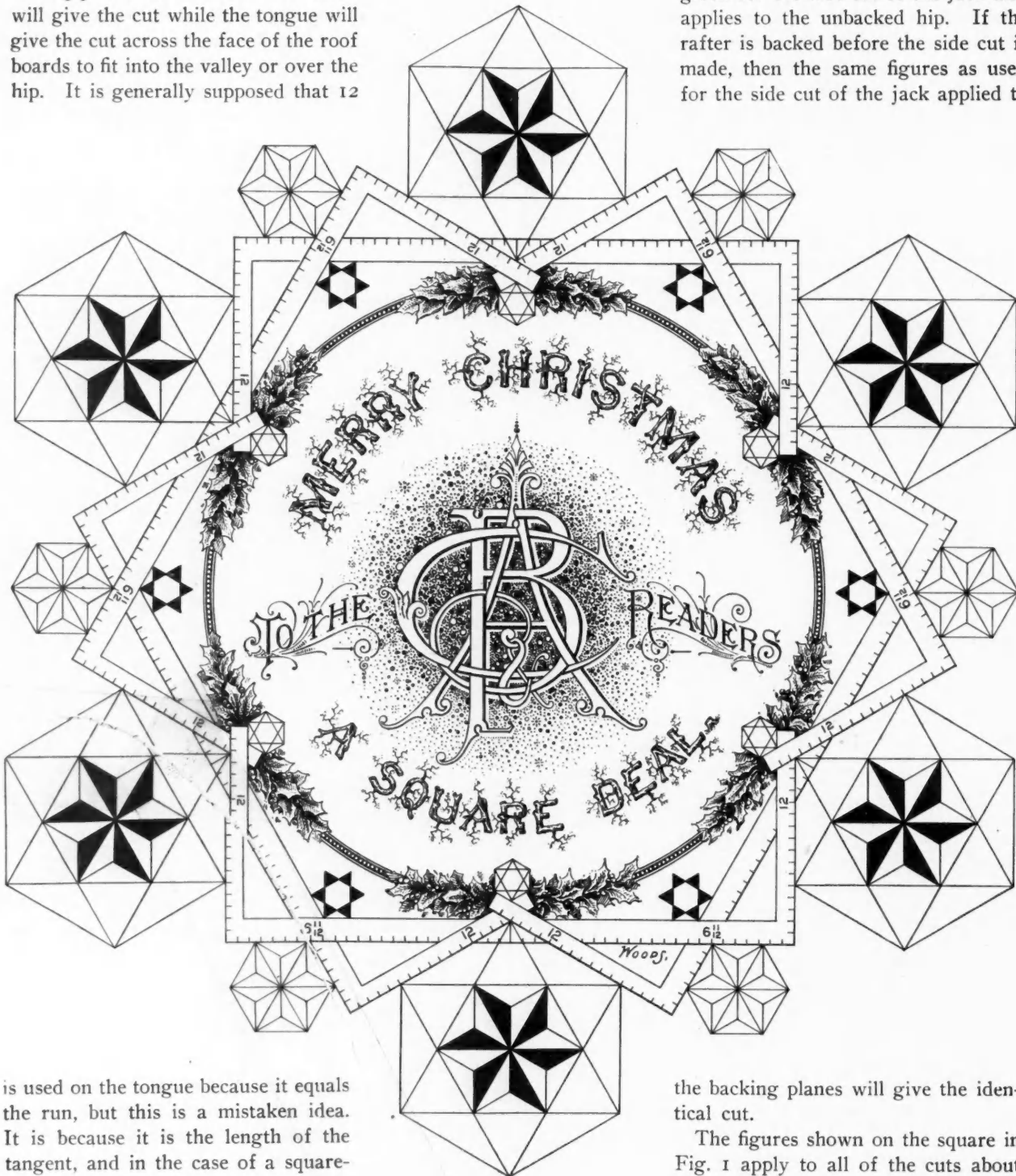
FIG. 4.

a fraction of a foot in the run, say three inches, all that is necessary to do is to multiply these figures by three and divide by twelve to reduce to inches, but all this computation may be avoided by setting a pair of

dividers to as many twelfths and spacing off three times just the same as spacing off for feet.

Fig. 2 shows the square in position to obtain the cut across the back of the jack to fit against the hip for the  $\frac{1}{4}$  pitch, commonly called side cut, 12 on the tongue and 13 5-12 on the blade. The blade will give the cut while the tongue will give the cut across the face of the roof boards to fit into the valley or over the hip. It is generally supposed that 12

shown on the degree lines in Fig. 28 of the August number. In Fig. 4 is shown the square in position to obtain the side cut of a hip for the  $\frac{1}{4}$  pitch when resting on a right-angled corner. The reader will observe that the same rule of its length and tangent as given for the side cut of the jack also applies to the unbacked hip. If the rafter is backed before the side cut is made, then the same figures as used for the side cut of the jack applied to



is used on the tongue because it equals the run, but this is a mistaken idea. It is because it is the length of the tangent, and in the case of a square-cornered building the tangent happens to equal the run.

In Fig. 3 is shown the same cuts for the corresponding octagon jack; 5 is taken on the tongue because it is the length of the tangent (however, the real length is 4.97 inches). To find the same cuts for any regular polygonal building substitute on the tongue the figures

the backing planes will give the identical cut.

The figures shown on the square in Fig. 1 apply to all of the cuts about the roof and cornice work for the pitches represented. All of which we will take up in course of our regular articles.



It is natural for every young man to want a complete set of tools. Pages 601-604 will tell him how to get them by a little work.



# BUILDING CONSTRUCTION

J·A·F·CARDIFF

## Building a Home

A SERIES OF ILLUSTRATED ARTICLES COVERING CONSTRUCTION DETAILS IN THE ERECTION OF OUR AMERICAN HOMES—  
FROM THE LAYING OF THE FOUNDATION TO THE DELIVERY OF THE HOUSE TO THE PAINTER

**P**LATES 17 and 18 continue the illustration of double hung sash windows in frame walls.

The first plate illustrates a skeleton frame with a ground casing.

Fig. 68 is a section through the window head and could be improved by the use of grounds nailed to studs to serve as a gauge for plastering and as a nailing for the trim. The tops of all windows on exterior are most always exposed to the weather and, as indicated in this case, should be well flashed with tin or copper.

Fig. 69 shows a section through the meeting rails.

Fig. 70 is a section through the jamb of the window and shows the ground casing, marked "G C." When grounds and ground casings are omitted, the trim must always be wide enough to get a nailing into the studs. The outside architrave should always be at least one and one-eighth inches thick, or better, one and three-eighths inches, to receive clapboards or shingles.

Fig. 71 is a section through the sill of the window. The openings around sills and heads of windows should always be plastered up with "scratch" mortar, as shown.

Figs. 72 and 73 are isometric views of the previous sections.

Plate 18 illustrates a somewhat better method of constructing the window frame and shows how a mosquito screen may be put on outside of sash.

Fig. 74 is a section through the head and shows the use of grounds, marked "G." The inside finish is more elaborate than in the preceding examples.

Fig. 75 shows the sliding mosquito screen on outside of sash. The running strip is nailed to the outside casing.

Fig. 76 is a section through the sill and shows the bottom rail of mosquito frame and the ground, marked "G." Also, instead of a single sill, as is used in cheaper work, a sill and sub-sill are provided, same being put together in white lead. The groove or water nose on bottom rail of sash prevents water from entering under same.

Fig. 77 is an elevation showing the inside finish around window.

### The Carpenter of Galilee

"Is not this the carpenter, son of Mary?"—Mark vi: 3.

No dreamer He, who spoke of toil,  
Whose simple message to us all  
Breathed with the savor of the soil  
And thrilled with its compelling call.  
No dreamer, for he knew the worth  
That in the finished task must be—  
This greatest workman of the earth,  
The Carpenter of Galilee.

He knew the striving and the stress  
Of labor; He could understand  
The soul-depressing weariness  
That often comes to heart and hand;  
He knew how weary night and day  
Brought heavy longings for relief—  
He, too, had walked on Sorrow's way  
And He was well acquaint with Grief.

But He knew also of the strength  
That grows with striving, did this One,  
The confidence that comes at length  
In viewing all that is well done.  
The endlessness of Labor's quest  
Was His; and He said: "Come to Me  
All ye that labor and find rest"—  
This Carpenter of Galilee.

Ah, learning that is not of schools,  
And knowledge that is gathered in  
From comradeship of bench and tools!  
He knew what battles were to win  
In daily toilings; and He knew  
The satisfaction and the pride  
Of doing best what one may do—  
And that is labor glorified.

—W. D. Nesbit in *Chicago Tribune*.



### Sawdust for Building

The latest thing in building comes from a firm of St. Paul contractors, who are using sawdust in place of sand for plastering purposes. It is said to make a very hard, though elastic wall and will stand more hard usage than ordinary sand mortar.



Wouldn't you enjoy writing to your friends on a typewriter? You can get one free. See page 601.

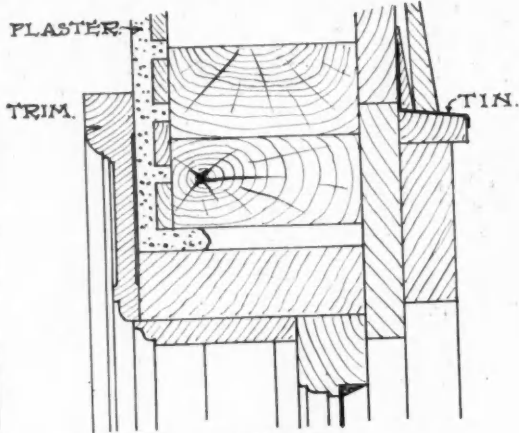


FIG. 68.

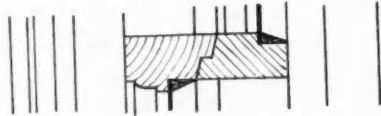


FIG. 69.

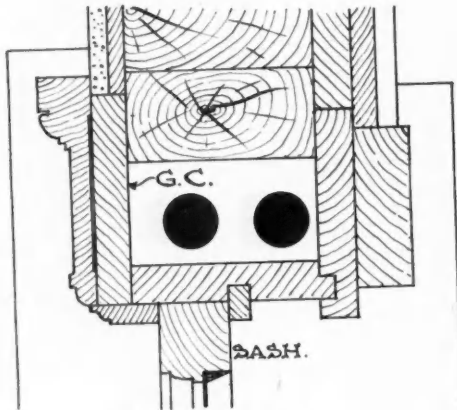


FIG. 70.

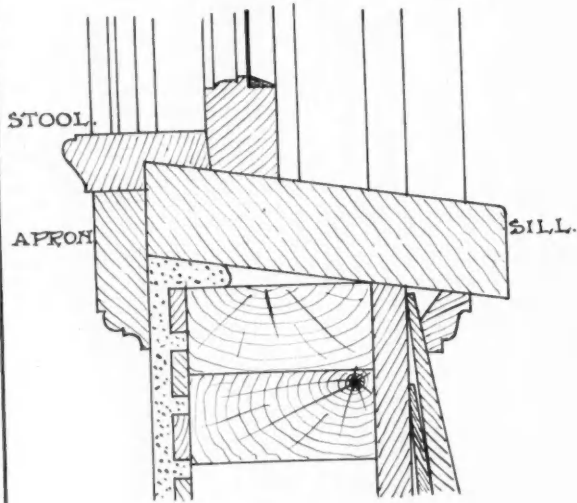


FIG. 71.

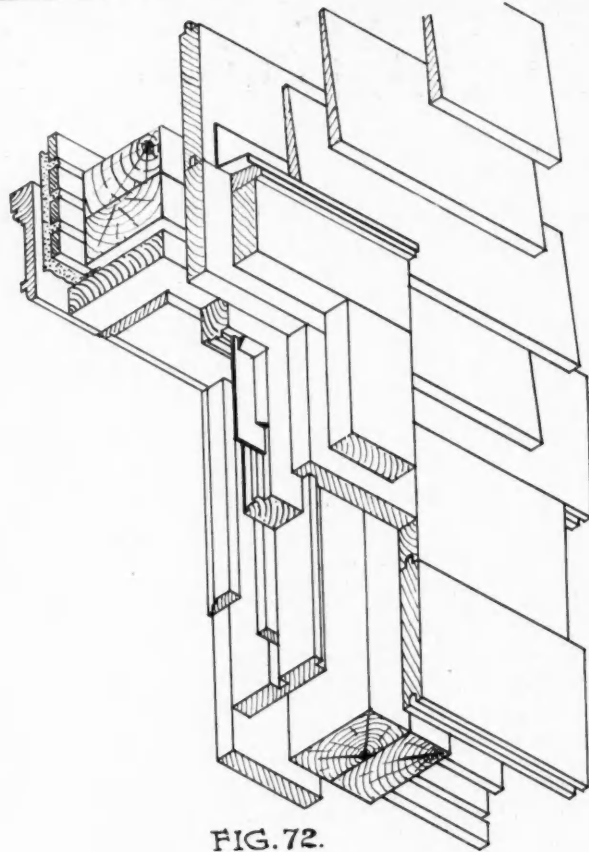


FIG. 72.

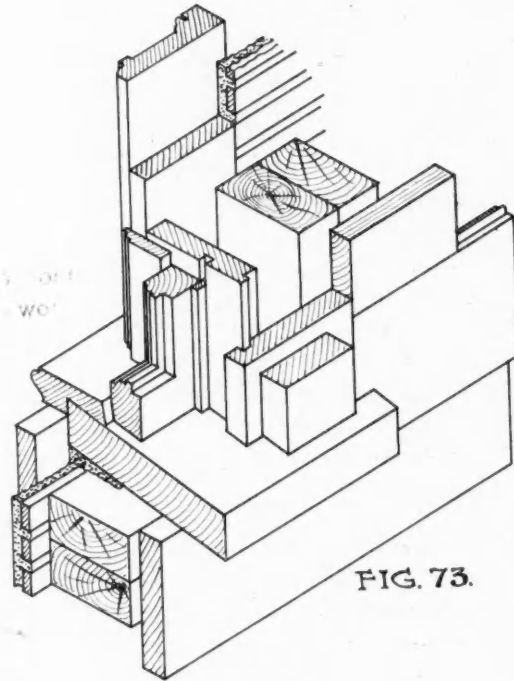


FIG. 73.

PLATE XVII.

WINDOWS.

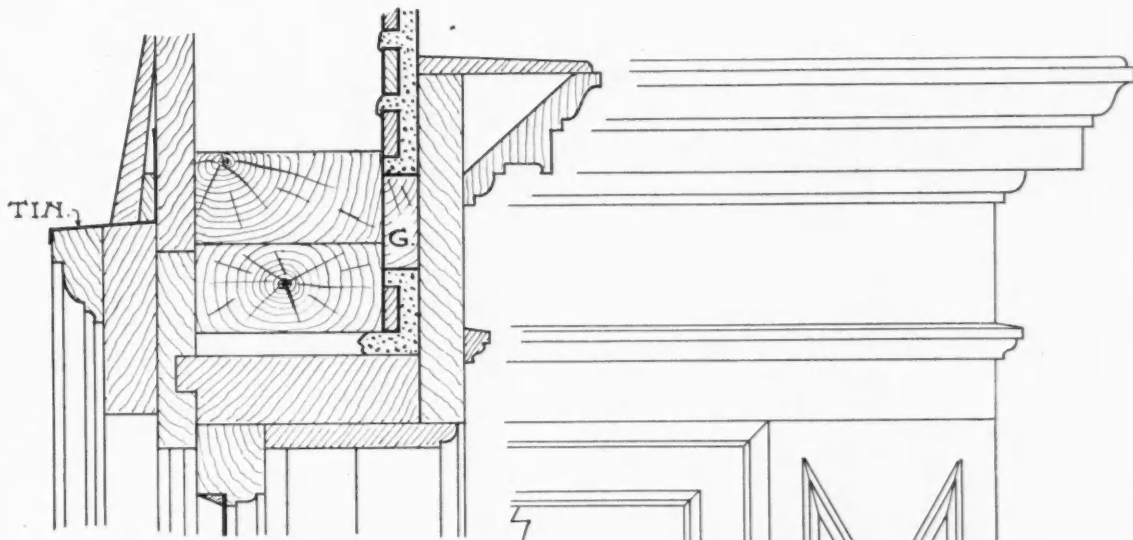


FIG. 74.

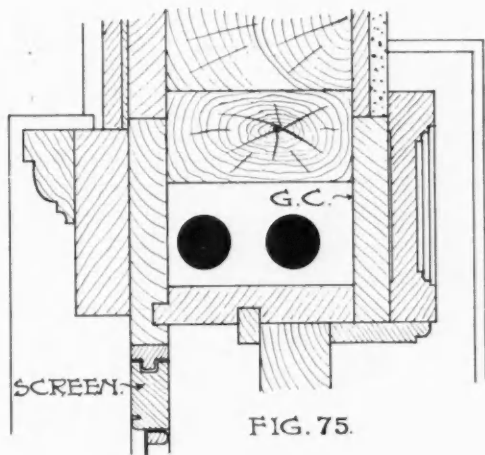


FIG. 75.

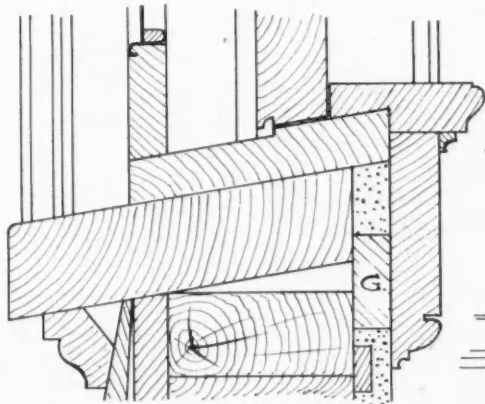


FIG. 76.

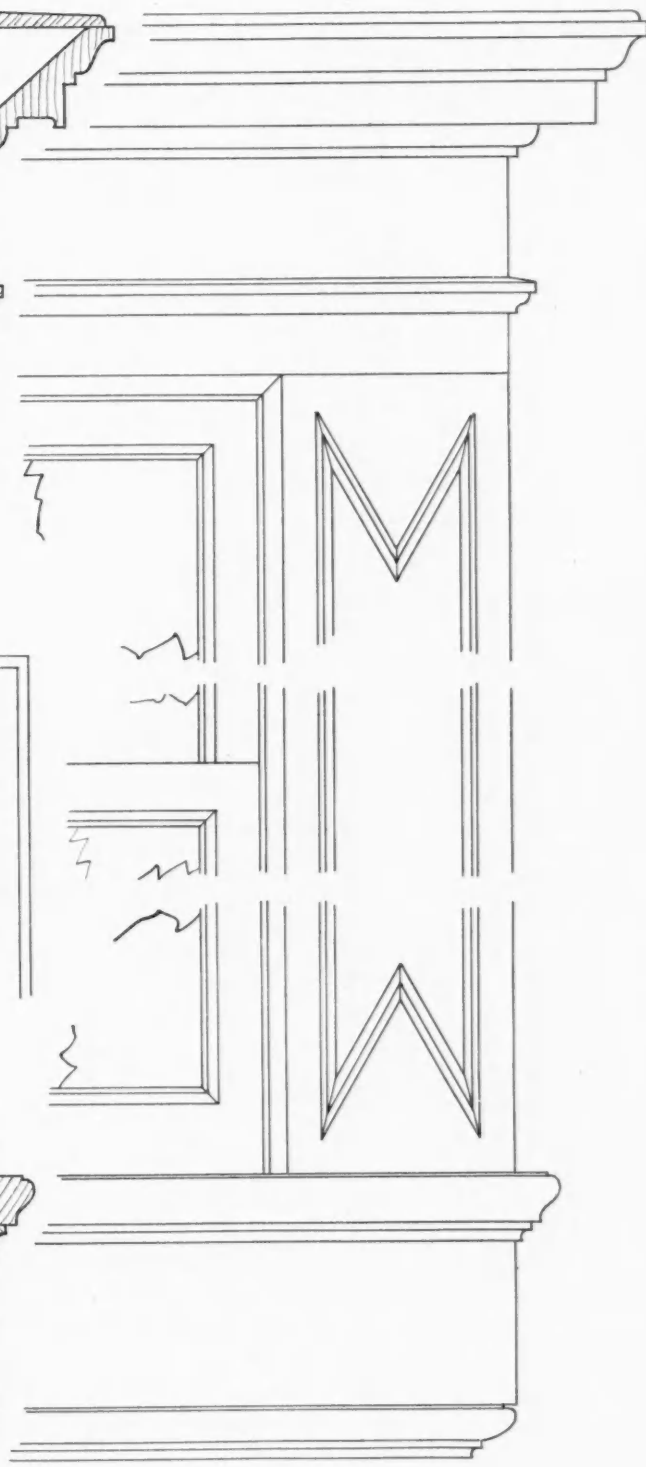


FIG. 77.

PLATE XVIII.

WINDOWS.



## Fitting and Hanging Doors

DIFFICULTY IN PROPERLY DOING SO—CAPABILITIES OF A CARPENTER ALONG THIS LINE—TOOLS ESSENTIAL FOR THE WORK

By Dwight L. Stoddard

**F**ITTING and hanging doors, at least by many in large cities, is almost what might be called a trade in itself. Many carpenters follow it almost entirely for a livelihood. Yet as no house is complete until the doors are fitted and hung, no car-

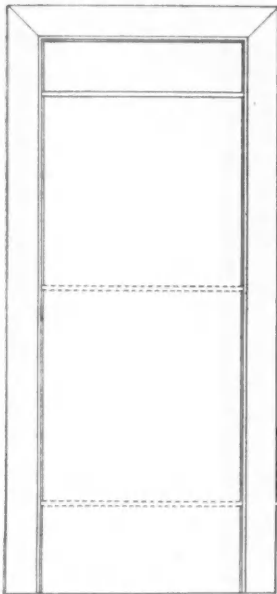


FIG. 1.

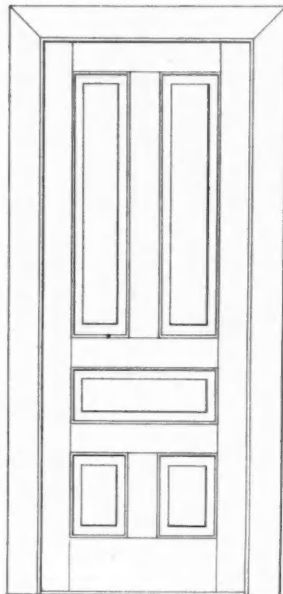


FIG. 2.

penter can build a house without the knowledge of fitting and hanging them.

I know of many good carpenters who actually dread to tackle the doors, yet every carpenter should realize he is not a real carpenter until he can not only fit and hang a door, but be able to fit, hang and lock about three in a day, and do it in a first-class manner.

Many will laugh at the idea of a carpenter only completing three doors in a day.

I noticed an article in this paper taken from "Record and Guide" stating a day's work for a carpenter was to fit and hang eight doors and to lock twelve.

Again I read an article from a carpenter stating there was a new man in his town who claimed he could fit, hang and lock twenty doors in a day. He stated he doubted it, as he thought he could fit, hang

and lock about as many as anyone, and he found twelve about all he could complete in a day.

When I read the article I thought of the remark of an old millwright in a town I used to live in when he heard of a certain carpenter claiming he could complete eleven doors a day. "I've got \$10 that says he can't fit and hang one, much less lock it."

This millwright of younger days had built up and owned his own mill, an electric light plant that supplied the city, and practically owned the town, yet he could remember back to his younger days, and knew it took time to do good work, and knew that any man who would claim to complete eleven doors in a day, indeed knew very little about carpentering.

Now, I do not write this to make the readers believe it is impossible to do a big day's work; far from it, for there is practically nothing impossible for the American mechanic. For I myself, not an expert on doors either, once fitted, hung and locked an outside church door in so much less than an hour that my time came to seventeen and one-half cents.

Don't think this was the front door, for it was a rear soft pine door. To complete the large double oak front doors cost nearer that many dollars.

As there has been so much said and written about fitting and hanging so many doors a day I thought it

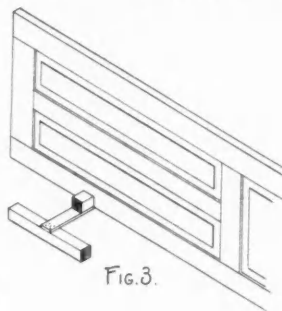


FIG. 3.

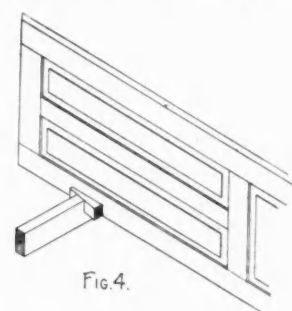


FIG. 4.

would be of benefit to the reader to dwell just a little on the subject, and to let them know what my experience has been in watching the mechanics of this country. When the carpenter has fitted and hung four

good-sized doors he has done a day's work, to say nothing about locking them.

Fig. 1 shows a very good way to get the width of your door by trying a stick between the jambs at top, bottom and center; mark your door to correspond and there will be very little refitting. A more common way is to fit the hinge-edge and then scribe the

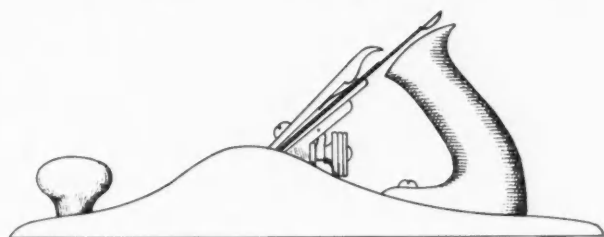


FIG. 5.

other edge, though it is not an easy matter to be on both sides of your door at once. Some may say, why try it with a stick, for if it is a three-foot door all you have to do is to dress your door to three feet. Quite true, yet I regret to say we use the stick simply because the human race is not yet quite perfect.

Fig. 2. When you try your door and find it fits, a very good and mechanical way is to mark both door and jamb with a sharp knife blade where the hinges go. We generally mark top of top-hinge and bottom of bottom one; then cut out for hinges on door and jamb and complete the hinging of all three hinges at once. Possibly a more common way is to hinge the door and put it up; mark the jamb and then hinge that. Some even leave finishing center hinge on jamb until the door is hung. I have tried it myself, but I think every mechanic should have more confidence in himself than that and cut them all out accurately at once.

Fig. 3 illustrates plainer than words the best all-around door holder I have ever used. About the best material to make it of is two pieces of wood a foot or two long of two by two; a piece of parquet flooring two feet long nailed on them and a two by two block

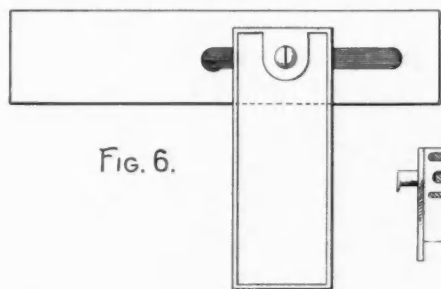


FIG. 6.

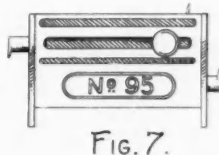


FIG. 7.

nailed on at each side of door. The weight of the door springs the thin flooring down and the little blocks pinch and hold the door. Two by four and seven-eighths nailed across will do just as well, only you have to saw into the seven-eighths and kerf it so it will bend.

This holder can be used anywhere, and is light and handy, much handier than the common way of putting

a piece between the jambs, and also saves marking the jambs all up besides.

Fig. 4 is another good holder, which is simply a piece of two by four, two or three feet long, with notch and wedge.

Fig. 5 is the main tool used in fitting doors. While an old, sharp wood plane is much better than a new dull iron one, yet my experience has been that this plane, in good order, will fit more doors with less work than any I ever used.

For common small doors the jack plane alone answers very well, but for large doors and good work both jack and fore-plane work well together. Some call it short jointer. The short jointer in an iron plane will do even better work than a long jointer wood plane and therefore the long jointer iron plane is not really necessary to fit doors.

Fig. 6 is the handiest try-square I have ever used for hanging doors, as the slot and screw allows the blade to be adjusted to any length desired. Doors can be hinged without any square at all. Simply use the hinge (which is commonly called butt) for a

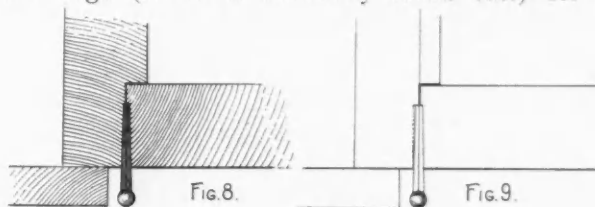


FIG. 8.

FIG. 9.

square and mark direct with it. In using a hinge I always mark at top of the hinge the same as I would the square.

Fig. 7 is the best butt gauge I ever saw or used. The thumb screw shown, adjusts both top gauges as they are both on the same piece and always allows the door to swing clear from rabbets. This gauge marks from back side of door and gauges what is not cut out, which is better than to gauge from face side and gauge what is taken out. There is another thumb screw on the other side that adjusts the gauge that marks the thickness of the hinge.

Fig. 8 shows the door hinged and shows the freedom in the rabbit probably a little too much, but I wished to make it plain. Now, if we should find it just a little hinge-bound a very common way is to loosen the hinge and shove in a piece of pasteboard, a handful of shavings, or a piece of an old shoe. A more mechanical way is to remove the hinge either on door or jamb and cut a little more out as dotted lines in Fig. 9 illustrate. This throws the hinge in such a manner as to throw the door free from jamb. To cut for the hinges, a short, sharp chisel is required and I will here mention the fact that sharp chisels are also needed to fit the locks, and bits that bore fast and well.

When the lock is on be sure and get the keeper to match the lock. This takes some care, or it will be too high or too low, but it is more liable to be out too much, which makes the door rattle. Some good

mechanics make the mistake of setting them in just a little too much; this makes the door catch hard. To

do everything in this world just right takes time, patience and perseverance.

## Geometrical Handrailing

SHOWING HOW TO DEVELOP A SECTION MADE THROUGH A PRISM HAVING AN ACUTE ANGLE BASE; CONTAINING AN INSCRIBED CURVE MORE THAN A QUARTER CIRCLE

By Morris Williams

HAVING in the first two articles shown how to develop a section made through a prism having a right angle base, and in the third to develop a section made through a prism having an obtuse angle base, we will now demonstrate how to develop a section made through a prism having an acute angle base, containing an inscribed curve more than a quarter circle.

tion at  $o'' a'' b'' c''$ ; its position being over and above the plan  $o$ ,  $a''$  above  $a$ , and  $b''$  above  $b$ , while point  $c$  is shown to be in both the plan and section. The point  $S''$  in the section is shown to be over and above the point  $S$  in the plan; and to be contained in the developed curve.

Assuming the plan curve to be the plan curve of the center line of a handrail at the bottom of a stairway

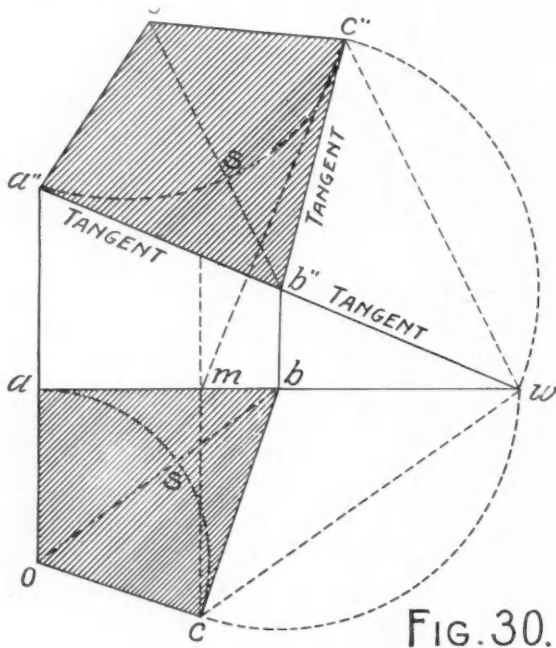


FIG. 30.

The plan of such prism is shown in Fig. 30 at  $o a b c$ , and of the inscribed curve at  $a s c$ . The inclination of the sectional cut made through two of its sides is shown at  $a'' b'' w''$ . From  $c$  in the plan draw the line  $c m$ ; from  $m$  and square to the pitch line  $a'' b''$  draw  $m c''$ . Make  $b w$  equal in length to the side line  $b c$  of the plan; fix one leg of the compasses in  $b''$  on pitch line; extend the other to  $w$ , turn over to  $c''$ , cutting the line previously drawn from  $m$ ; connect  $c'' b''$  and  $c'' w$ . From  $b''$  and parallel to  $c'' w$ ; draw the line  $b'' o''$ ; make it equal in length to  $b o$  of the plan; connect  $o'' a''$  and  $o'' c''$ , thus completing the form of the developed section. To develop the curve, make  $b'' s$  on the line  $b'' o''$  in the section equal in length to  $b s$  in the plan; take a flexible lath and bend it so as to touch the points  $a'' s c''$ .

The meaning of all the lines and points shown in this figure and the relation of those in the section to those in the plan will be clearly perceived by comparing it with Fig. 31.

The plan in Fig. 31 is shown at  $o a b c$  and the sec-

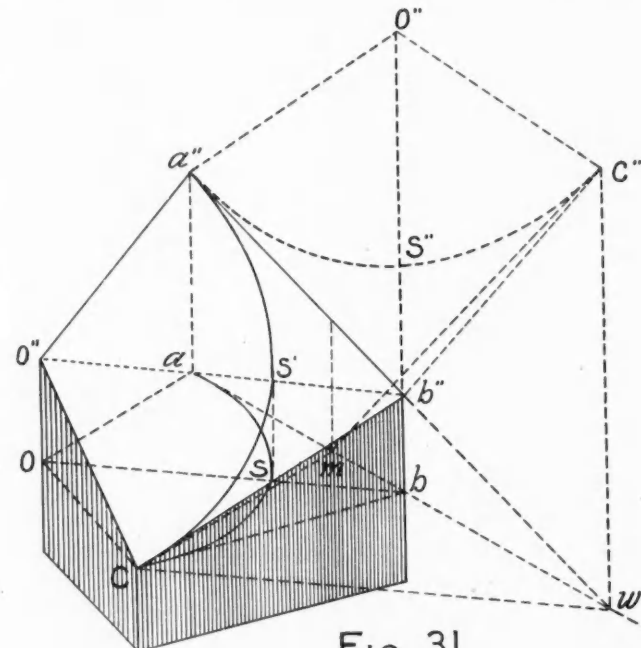


FIG. 31.

the lines  $c b$  and  $b a$ , then, would be the plan tangents, and the lines shown at  $b'' a''$  and  $b'' c''$  the developed tangents of the face mold; while the developed curve  $c s'' a''$  would be the developed center of the wreath.

The nature of the sectional cut in these figures is shown to be that of a cut of equal inclination to two sides of a prism. Applied to handrailing it represents the method to develop the tangents and curve of the face mold for a wreath having two equally inclined tangents which if connected to a newel at the bottom of a stairway would intersect at an angle equal the pitch of the stairway, as shown at  $K$  in Fig. 34.

In Fig. 32 is shown how to develop the section and curve in an acute angle prism when cut oblique through one of its sides, and level through the other, a case applicable to a curved handrail at the bottom of a stairway when it is ramped to intersect the newel at right angles as shown at  $w$  in Fig. 34.

Let  $o a b c$  (Fig. 32) represent the plan; from  $c$  draw the line  $c m$ ; from  $m$  draw the line  $m c''$  square to the pitch line  $a'' b''$ ; place one leg of the compasses

in  $b''$ , extend the other to  $w''$ , turn over to  $c''$  and connect  $c'' b''$ .

From  $o$  in the plan draw the line  $og$  parallel to the line  $cb$ ; on  $g$  erect  $gn$ , and from  $n$  draw the line  $no''$  parallel to  $b''c''$ , and equal in length to  $og$  of the plan; connect  $o'' a''$  and  $o'' c''$ , thus completing the form of the section.

To draw the curve, draw  $ms$  in the plan parallel

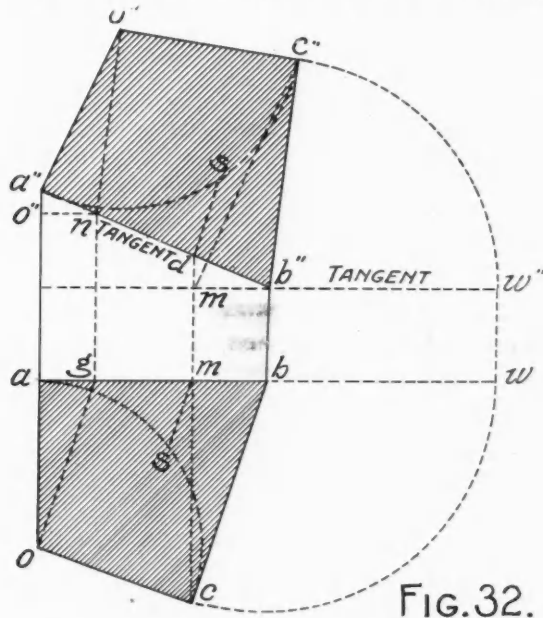


FIG. 32.

to  $cb$  and  $ds$  in the section parallel to  $c'' b''$ ; make  $ds$  equal in length to  $ms$  and draw the curve through  $a'' s c''$  as shown.

Now if all the lines and points in this figure are carefully compared with the lines and points having the same reference letters in Fig. 33 their meaning and utility in handrail construction will very easily be understood; and here I wish to emphasize that no stair builder can ever be proficient to make a satisfactorily construction without the knowledge contained in this and preceding solutions of the method to unfold sections of variant solids. It contained the fundamental principles, and as such essential to correct construction.

In Fig. 34 is shown a plan and elevation of a stairway curving out at the bottom, the curve being more than a quarter circle.

It will be noticed that the plan shown at  $o a b c$  is similar to the plan of the prisms in the other figures, and that the plan of the center line of the rail is similar also to the curve in the other figures; hence the curve and section for the face mold will have to be developed according to one or other of the methods shown in Figs. 30 and 32. If it is determined to have the same pitch for the curve as that of the straight rail, the method to develop the face mold will be that demonstrated in Fig. 30 and shown in perspective in Fig. 31. But if the curved rail is to contain a case-ment so as to meet the newel at right angle; the method shown in Figs. 32 and 33 will have to be followed.

In either case where the method to develop the prisms is known it will be a very small matter to develop the face mold.

In Fig. 34 is shown from  $a''$  to  $b''$  the upper tangent inclining uniformly with the pitch of the straight rail of the flight adjoining, and from  $b''$  to  $w$  the bottom tangent is shown to be a level tangent.

In developing the face mold for this rail we pro-

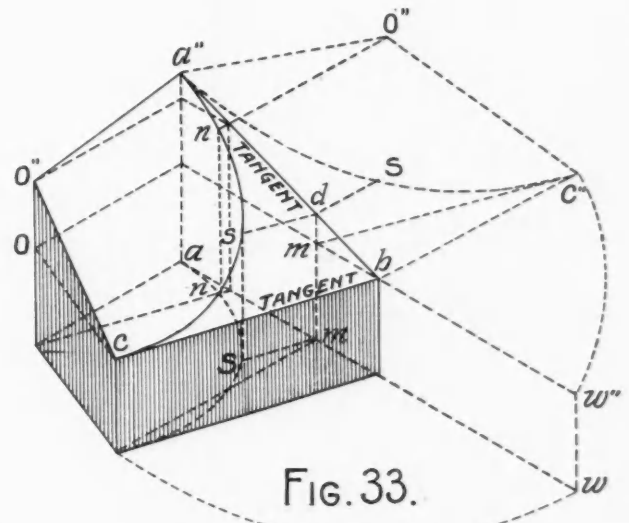


FIG. 33.

ceed precisely as shown in Fig. 32 to develop the section.

From  $c$  in the plan draw the line  $cm d$ , square to  $ab$ , which is the plan of the inclined tangent. From  $o$  in the plan draw the line  $on$  parallel to the plan line  $cb$ , which is the plan line of the level tangent. On  $n$  erect  $nn'$ . From  $m'$  draw the dotted line  $m'c''$  square

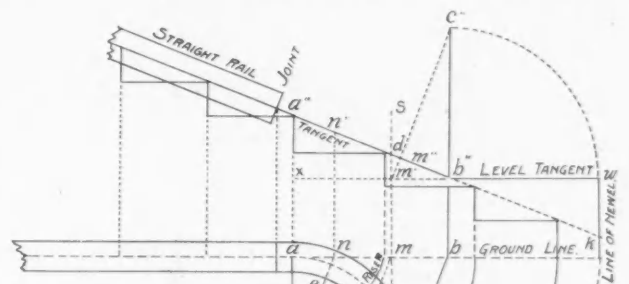


FIG. 34.

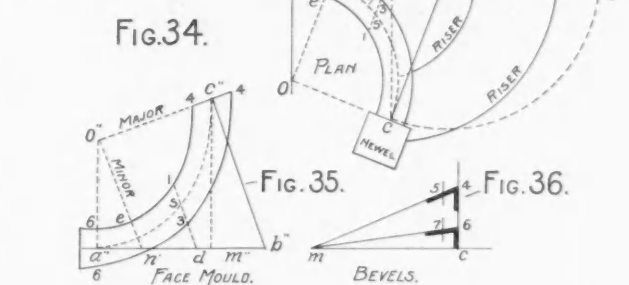


FIG. 35.

FIG. 36.

to the inclined tangent  $a'' b''$ ; place one leg of the compass in  $b''$ , extend the other to  $w$ , turn over to  $c''$  and connect  $c'' b''$ .

By this process the level tangent  $b'' w$  is transferred

to its position as required in the face mold to square the joints at each end.

In Fig. 35 the face mold is shown developed.

The points  $a'' n' d m'' b''$  in this figure are transferred from the inclined tangent  $a'' b''$  in Fig. 34; on  $m''$  the dotted line  $m'' c''$  is drawn square to  $a'' b''$ , and  $b'' c''$  made equal in length to  $b'' c''$  in Fig. 34, which represent the level tangent. The line  $a'' b''$  represents the inclined tangent, and the angle required between the two tangents thus formed relatively to one another, will be  $b'' a'' c''$ . The joint at  $c''$  will be square to the tangent  $b'' c''$  and at  $a''$  square to the tangent  $b'' a''$ . From  $d$  draw the line  $d z s I$  parallel to the level tangent  $b'' c''$ , and from  $n'$  draw the dotted line  $n' o''$  parallel to the level tangent  $b'' c''$ ; make  $n' e$  equal to  $n e$  in the plan Fig. 34; and  $d z s I$  equal to  $m z s I$  in the same figure.

The points  $n'$  and  $z$  will be contained in the outside curve of the mold and the points  $e$  and  $I$  will be contained in the inside curve. The bevels will determine the width of the mold at each end. On each side of  $c''$  place the distance 4.5 taken from the bevel, and on each side of  $a''$  place the distance 6.7 taken from the other bevel.

The curve for the inside and outside of the mold may now be drawn by bending a lath to touch each point, namely, for the inside curve the points  $6 e I 4$ , and for the outside the points  $6 n' z 4$ .

In Fig. 36 is shown the bevels, which are found as follows: Make  $c m$  equal  $c m$  in the plan Fig. 34;  $c 4$  equal  $4 a''$  in Fig. 34; connect  $4 m$ , which is one bevel for the end  $c''$  of the mold. Again, make  $c 6$  equal  $m' m''$  in Fig. 34 and connect  $6 m$ ; the bevel at  $6$  is to be applied to the end  $a''$  of the mold.

## Suggestions for Modern Decoration

TREATMENTS TO GIVE THE WALLS IN DINING ROOM AND HALL—COMBINATIONS OF COLOR TO USE—  
POSSIBILITIES IN THIS LINE

By Sidney Phillips

MODERN decorators are not content to follow the old and so-called historical styles, but have broadened out and are no longer bound by conventionalities. If they believe a certain combination of lines or colors has intrinsic merit in itself,

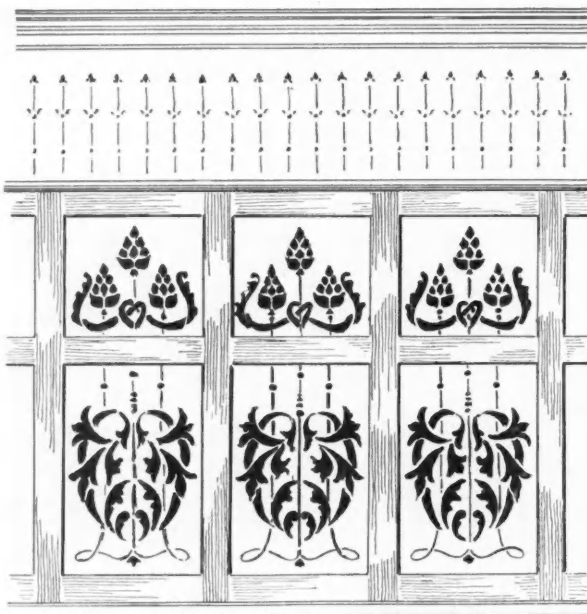
search wherever he will for beautiful forms that may be adapted to decorative use.

The modern English wall paper designers are particularly happy in this respect, and they adapt the most commonplace things to decorative purposes. For example, one of the recent pictorial friezes produced by a leading English wall paper manufacturer represents a view of the River Thames above London, with one of the typical English river steamboats as a prominent part of the picture. Who but an Englishman would have ever thought of considering a steamboat as a fit subject for decorative design?

In modern house decoration the decorator avails himself very freely of mouldings, applying them over the plastered wall simply for ornament and employing them to separate the various divisions of his decorative scheme. Not only are these mouldings used for the side wall, but they are applied to the ceiling as well, and one manufacturer of decorative room mouldings has offered to the trade the necessary mouldings to produce the effect of a deeply beamed ceiling, or a heavy paneled wooden ceiling, the whole thing being merely tacked to the plaster by means of thin wire nails. Such mouldings as picture mouldings, plate rails and the like, which at one time were made a part of the carpenter's specifications and were put up by him with no regard whatever to what was to follow in the way of decoration, are now almost always left to the decorator and the carpenter has nothing whatever to do with them.

In this connection we offer a couple of suggestions for decorations that may prove useful either carried out as they are, or may be used as suggestions for other treatments.

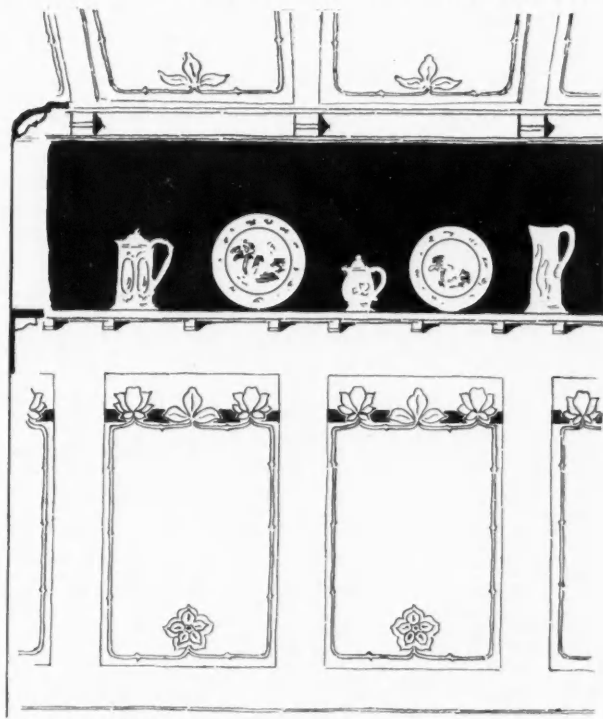
The first is well adapted for a hall treatment and is



it need not have the sanction of Greek or Renaissance taste, but it must stand or fall upon its own merits. It is true that in those of our public buildings in which the architect has followed some historical style more or less closely, the decorator usually aims to keep his work in the same period, but when he comes to the homes of the people, it is no longer necessary for him to restrict himself to so limited a field, but he can



intended to be carried out in fabrics in combination with mouldings and stenciling. For about three-fourths the height of the room, the walls are to be paneled, after a rich, warm brown burlap has first been hung upon them. Wide, flat mouldings are used to form the stiling of the panels. Then the stencil ornament shown in the illustration, or some other suitable design, is stenciled upon the burlaps in a deep red. The frieze is carried out in natural burlaps, the stenciling being done in a light yellow brown. The ceiling angle is broken by a heavy wooden cornice. The mouldings may either be finished in fumed oak, or in the dark, almost black, Flemish oak, or they may be stained a forest green or sealing wax red, with good effect. One curious feature of the stenciling is that the pattern is carried right through as though it were continued back of the stiling. A similar idea would



be quite effective in the case of stenciled ornaments on doors, a treatment which deserves more recognition than it usually gets at the hands of decorators, who leave the doors as great blank spaces of monochrome in the midst of a highly decorated wall.

Another effective method of carrying out a hall decoration of this character would be to use a figured burlap or a lincrusta or some similar material that is made with ornament in low relief, for the panel fillings. In that case it is not necessary to stencil any ornaments. The upper part of the wall could then be hung with a paper or a burlap having a small set figure powdered upon the background.

The second suggestion is for a dining room decoration. Unfortunately the necessity for rendering this sketch in black and white, in order that it might be engraved, takes away from its effectiveness. In carrying out this design, the lower portion of the wall is

paneled with wide, flat oak boards, using a rich bright red for the panels. The border design is stenciled on in shades of green, with the flowers in a dull yellow tone, taking care that it does not clash with the red background. The oak woodwork is stained a forest green, or may be finished in black Flemish oak if desired. A shelf rail, supported by brackets, serves as a resting place for odd bits of pottery, which stand out against a plain background of dark green burlaps. The ceiling is also paneled, a bracketed cornice breaking the angle. The ceiling panels are filled with bright red buckram, lighter in tone than the dado panels, and the border is stenciled in green bronze. Other color treatments will suggest themselves according to the amount and character of the lighting which the room receives and the colors desired for the draperies and furniture coverings. Another color scheme, for example, would be to stain the oak mouldings a rich red, making the dado panels a light green and the upper wall a warm brown. A very effective treatment, although somewhat expensive, would be to gild the oak on the unfilled wood with leaf gold, using the brush to force the gold well down into the grain of the wood. This gilded surface is then given a glaze coat of asphaltum to soften down its brightness. The dado panels and the ceiling are strong red and the upper wall is a dull blue.

Suggestions of this kind are intended primarily to show the possibilities that are open to the modern decorator, who finds himself absolutely unhampered by precedent in the choice of decorative forms, colors and materials with which his ideas are to be carried out. Recent years have brought so many beautiful decorative fabrics, such as burlaps, grass cloths, finely woven matting, buckram, imitation leathers and similar materials, that it is no wonder that the wide-awake decorators who are alive to the possibilities of all these new things should have struck out for themselves along new lines and should be producing decorative effects that are not only new and novel, but have every element of good taste as well.



### Boys, Attention!

On pages 601-604 is your chance to earn any tool you may desire for your work in manual training. If you do not see what you want among the list of prizes write us and we will see that you get it. Should it be very expensive we will make a special arrangement with you whereby you can earn it and not cost you anything but a little hustling. Don't let this chance go by.



### Filling a Long-Felt Want

Ever since I received the April number of the AMERICAN CARPENTER AND BUILDER I have intended to write to you and thank you for filling a long-felt want. The advertising part has been especially beneficial to me.—R. D. Drury, Park Lake, Mich.

# CEMENT BUILDING CONSTRUCTION

## Successful Block Making

WHY SOME ARE NOT SUCCESSFUL IN THE MANUFACTURE OF CONCRETE BUILDING BLOCKS—  
ESSENTIAL PRINCIPLES TO BE FOLLOWED

By Fred W. Hagloch

**T**HE building season just closing has been beyond doubt the greatest cement era ever known, and should nothing unforeseen prevent, next year will far surpass the present.

Briefly noting the past year in the hollow block and artificial stone industry, we see much to be commended and much to be condemned, for the building world has never before seen such extremes, of unbounded success and complete failures, in the same industry, in the same localities and at the same time.

How is this? and why? is naturally asked by those interested. I cannot better explain than by giving a brief history of two firms located side by side. The one whom we shall call Mr. A is now out of business, losing practically every dollar he had invested, and the other, Mr. B, is increasing his plant and has reaped large results.

These two men began making blocks at about the same time, and in a short time found ample market for their products, as both made a good merchantable article and each had every indication for a bright future. Mr. A had the most popular block, but Mr. B was the most practical builder, but Mr. A was not far behind, as he is a practical carpenter. A large order hove in sight and Mr. A cut the price, which captured the order, and, believing success was his, he reduced the quality by using cheaper cement and loamy sand, which gave him some trouble, but not sufficient to cause an immediate reaction. Mr. B held up the quality and contented himself with small orders.

The season (1904) closed with fair profits to both and flattering prospects, in which each had an even chance. The next spring (1905) found both with plenty of orders, Mr. A leading in the larger ones, and he reduced his quality again, although the general opinion had already been slightly against him on quality of concrete, but favored him on construction of block. Mr. A, believing success was his, left matters largely to hired help and assumed an attitude far above his competitor, Mr. B, who was giving his personal attention to the smaller orders which had come his way.

Mr. A's blocks began to be very irregular in strength and color, and many were rejected. He placed the blame on the purchaser, then on the cement and various other causes, while the facts were he did not become practical and had changed workmen so often that he had not a practical cement worker in his establishment. This resulted in a dropping off of orders and serious trouble in collecting for products sold, as well as several builders rejecting his material after same had been delivered, which created a loss far greater than the profits; he attempted to sell the plant, but no buyer would pay half the first cost, as architects generally condemned his material.

Mr. B, who had studied the business and had become practical, furnished the material to complete Mr. A's work, and later purchased Mr. A's plant by paying the labor and material claims against it. I recently visited this plant, and by inspecting the blocks I found that the profits of this season alone will exceed three thousand dollars, which is remarkable considering the fact that he began two years ago with less than five hundred dollars. Besides Mr. B has learned to make a better product at less cost than two years ago.

By carefully examining the products of each we found that of those made by A no uniformity had been maintained, some being fully 30 per cent cement, others containing less than 10 per cent cement, some had been well moistened during the hardening period, while others were very brittle, indicating that no moisture had been given them after leaving the machine.

The blocks made by B were uniform except that a slight improvement could be noticed as he continued; the last building having the most durable product, notwithstanding the fact that less proportion of cement was used, but that various sized grains of sand was the means employed to reduce the voids.

The above clearly indicates several important facts: That all artificial stonemakers should study their materials and make experiments on as small a scale as possible; that the most expensive block is not always the best; that a little labor with proper knowledge

often goes farther in this work than an abundance of capital; that no cement product is finished when it leaves the mold in which it was formed, any more than a clay brick before burning; the best process or block will fail under careless and inattentive management; that a weak process or poor block may become a success under able and attentive management.

#### **Making Concrete Blocks**

To the Editor: Beaumont, Texas.

As a subscriber of your paper I will appreciate very much any information you give me as to the best method of manufacturing concrete blocks.

S. T. Brogdon.

Answer: The dry tamped process is beyond question the best. This is done by the use of molds or hollow block machines. Directions: Mix one part Portland cement, three to five parts sand (varying according to nature of sand and kind of work), mix with sufficient water to make the composition damp (not wet), then tamp into mold and keep moist for six or eight days by sprinkling at least six times a day. For rough underground work four parts gravel may be added to above.

#### **Concrete for Platform Step**

To the Editor: Baltimore, Md.

I desire to make blocks for a platform step and wish you would answer the following inquiries: What proportion of cement and sand should be used to make a solid block? What will prevent the cement from adhering to the sides of the mould, and is it necessary to put so many parts of sand to cement? Will lime and cement mixed make a good plaster?

H. J. Ellis.

Answer: One part Portland cement, four to five parts sharp sand will make good blocks for your purpose and if same is used for steps it will resist wear well; however, one part cement and two parts sand makes the best wearing surface, but a wearing coat need only be one-half inch thick, provided both are mixed and molded at the same time, thus allowing the cement to unite by settling. The addition of three parts gravel will increase the strength and cheapen the cost but will make rough appearing work. Wood molds made of surfaced lumber coated with liquid shellac, oil or paraffin will not adhere to concrete. The proportion of cement and sand is necessary to obtain uniform and sound work as well as color. Plaster for outside work should be made of cement as lime disintegrates, besides fresh lime requires much more water than cement hence should never be mixed together. Where a mixture of lime and cement is required, first reduce the lime to a paste by slacking with plenty of water to prevent burning. Cement always contains sufficient lime properly treated so that no more lime is required unless a cheap product is desired. For inside plaster, lime is a safe article and a little cement will strengthen it, but darkens the material.

#### **Making Cement Sidewalks**

To the Editor: Terrill, Texas.

Can you give me reliable information with regard to making cement sidewalks or pavements?

C. P. Sites.

Answer: A good concrete walk should have a three and one-half inch base with a one-inch wearing surface. Upon gravelly or well-drained soil this will be sufficient, but in clayey or heavy soils it is best to construct the walk with a subfoundation consisting of from four to ten inches of well-compacted gravel or cinders. Drainage is also necessary in heavy soils in order to prevent heaving of the walk during the winter. Another precaution that should be observed is to cut the walk into blocks about five feet square, taking pains to cut entirely through both foundation and surface layers, so that any heaving from frost or settling due to poorly compacted sub-bed, will not break the individual stone, but simply move the block at the cutting line. The attempt to cheapen the work by using a natural cement for the base and a Portland cement in the wearing surface is ill-advised economy. It is quite questionable whether a perfect union between the two masses of concrete can be secured. The gain in cost is so small when the question of the greater allowable proportion of aggregates with the Portland cement over that with natural cement is considered, that it does not pay to risk the character of the work to make the gain. The body of the work which, as above stated, should be three and one-half inches thick, made of one part Portland cement, three parts sharp sand and three to four parts gravel or crushed stone, well tamped and covered with a composition of one part Portland cement and two parts sand, troweled with a plasterer's trowel for smooth finish, and for a rough surface use a kalsomine brush freely dipped in water and always drawn in a parallel direction, thus giving it a workmanlike appearance.



#### **Use of Jointless Floors**

The use of jointless flooring, made from pulverized wood fibre and other materials and laid in a plastic condition on a cement foundation, was begun in Germany about ten years ago. This flooring has proved so successful that several other mills manufacturing the same product were started and are now running prosperously. The problem has been to make a continuous flooring which will fit closely at its junctions with the upright walls, and be not only fireproof but impervious to liquids, dust and vermin of all kinds. It is also hoped to make this flooring a poor conductor of heat and sound, easily cleaned, neat and attractive.



#### **National Association of Cement Users**

A convention of the National Association of Cement Users will be held in Milwaukee, Wis., January 9-12, 1906, in the large Armory building, and a large part of the exhibit space has already been applied for. These applications are made to the secretary, Charles Carroll Brown, 310 Commercial Club building, Indianapolis, Ind. A number of interesting and instructive papers are being prepared and the convention promises to be the most successful ever held.

# PLUMBING

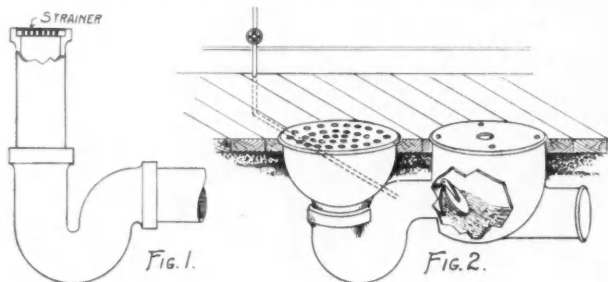
Wm. R. MARSHALL

## Proper Floor Draining

DEVICES USED IN DRAINING FLOORS—REASONS FOR USING SAME—ADVANTAGES OF NEW METHOD OVER THE OLD—VARIOUS DRAINS SHOWN AND USE OF EACH

FLOOR drains, when used in cellar or basement, should be connected to leader side of a rain leader trap wherever it is possible. Some sanitary engineers go so far as to say that floor drains should never be used, their objection to them being that the floor is not washed often enough to furnish sufficient water to maintain a water seal at all times against sewer gas ingress, and their argument is well taken; but floor drains in a basement are very con-

venient, and are part of a well-installed sanitary sewer system. As we said before, the one great objection to a floor drain in the ordinary house, is that there is seldom sufficient water used on the basement floor, to maintain a perfect water seal in the trap. To neglect to see that the floor drain trap is not always filled with water and to argue against its installation on that point only is wrong. Neglect renders many valuable comforts of life valueless.



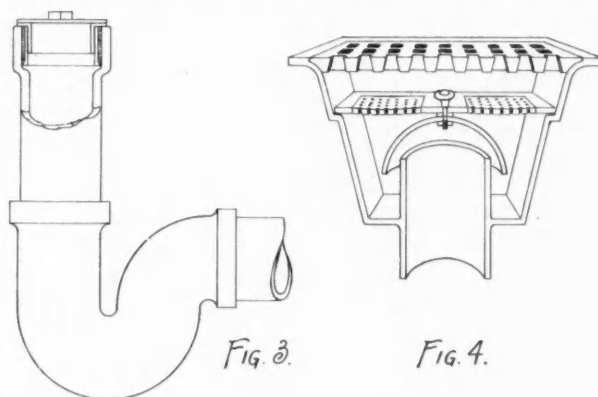
venient, and are part of a well-installed sanitary sewer system.

In case of a seepage of water through the foundation walls, during a rainy period, it is well to be provided with some means to carry the water away quickly, without having to resort to the laborious (and oftentimes expensive) practice of pumping.

The evils of a floor drain are not so much due to their inefficiency, as they are to the care taken of them. The cemented floor basement of the modern home today is just as important to be kept clean and sweet as the bathroom, and the thorough housekeeper takes just as much pride in it, and realizes the necessity for having it so from a sanitary standpoint at least.

The old method of installing a floor drain or floor outlet which consisted of placing a running trap in the line of drain pipe to the catch-basin, and running a piece of pipe to the floor level and simply closing the opening with a bar strainer grate, as shown in Fig. 1, is wrong. The grate, even when cemented into the hub end of the pipe, will in time become loosened, and dirt, sticks and other rubbish will soon clog up the trap and render it useless.

Floor drains should never be used without a back-water or tide valve, which will prevent sewer water from backing up into the basement. We show a number of different styles of floor drains in this article, which are built on the proper lines. The one shown in Fig. 2 is a combination floor drain and back-water gate valve. This accessible cleanout cellar drain flushing cesspool and back-water gate trap valve combination has much to be commended. It has a hinged strainer, through which seeping and floor waste water finds a direct outlet to the trap and sewer. The trap has a deep water seal, which is always desirable, and is always provided with a brass back-water gate valve or flap valve which will not rust and which will close and hold tight against a back flow from the sewer; it



also has a tapped opening to which a water supply pipe can be attached, and by means of a valve being placed on the pipe at some convenient point, the drain trap can be thoroughly flushed and cleansed by simply opening the valve for a few minutes.

Another method oftentimes used to provide for a floor outlet to sewer is to run a piece of iron soil pipe from the trap on the sewer to the floor level, and to caulk into the hub of the pipe a brass ferrule or thimble with a brass screwed cover, which is screwed down tight against a rubber gasket, as shown in Fig. 3.

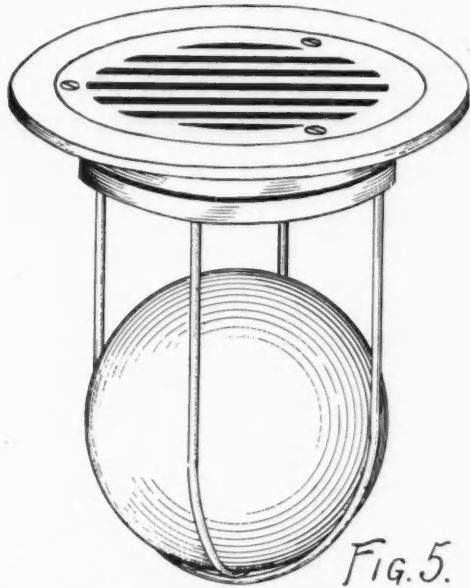


Fig. 5.

An outlet of this character is only opened when occasion demands, by unscrewing and removing the cover until its need is past.

In Fig. 4 we show an extra heavy cesspool suitable for barns, carriage rooms and places of like nature. The top is sixteen inches square, the body ten inches deep and has a four-inch outlet, suitable for caulking

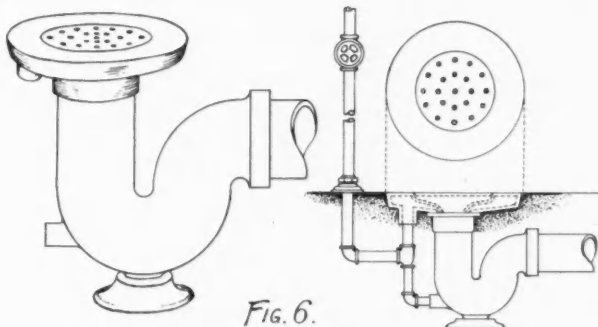


Fig. 6.

into the hub of a four-inch iron sewer pipe; the top cover or grating is heavy enough to permit of horses, wagons and carriages passing over it. The second grating or strainer is of finer mesh, which catches any obstacles which might clog up the sewer; it can be lifted out by the knob and easily cleaned at any time. The deep water seal in this trap is one of its good features, the bell or hood not only serves to maintain a water seal, but where used in stables is a shield over the outlet to prevent oats or grain of any description which might fall through the second strainer from getting into the sewer.

Care should be taken to prevent the bottom of the cesspool from filling up with fine strainings.

Fig. 5 is a combination floor strainer and back-water seal and is used in the hub of a sewer pipe which extends down to the trap placed in the sewer run. The rubber ball prevents the flooding of the basement from backing up of water, by being floated to seat above.

In Fig. 6 we show a floor drain and trap, designed especially for hospital operating rooms and other places where it is desirable not only to cleanse thoroughly the floor, but also to remove all sediment from the trap itself for obvious sanitary reasons. The trap is of cast iron, and is enamelled inside. This gives it an impervious and smooth surface and prevents the trap from becoming coated and slimy. This trap is provided with heavy brass cast flushing rim and has a brass removable strainer.

In the sectional cut, we show the method by which the water supply is connected to both the rim and trap, by means of which not only every portion of the body may be cleansed, but also all sediment removed from the jet inlet at the bottom.

The trap is built especially to maintain a deep seal and is three inches in diameter.



### The Editor and the Advertiser

Once on a time I knew a man  
Who said it didn't pay  
To advertise the goods he had  
To sell or trade away.

To prove that he was off his base  
And make him clearly see,  
I gave him half a page of space  
And let him have it free.

It almost scared him into fits  
To see himself displayed  
As I displayed him, but he felt  
Its influence on his trade.

I kept it up, his business boomed,  
The customers swooped down  
Upon his store until he had  
The biggest rush in town.

One day I went around to call  
And found him on the run,  
With people waiting for their turn  
When those ahead were done.

"Well, well," I cried in great delight  
To see things boom that way,  
"Don't advertising pay, old man?  
What have you got to say?"

I thought he'd like my work so much,  
And think my plan so nice,  
That he'd not only praise his wares,  
But pay me double price.

And did he do it? Listen, please,  
I thought that I'd drop dead  
When suddenly he turned on me  
And vigorously said:

"Take out that advertisement, quick;  
Gol dern yer pesky skin,  
I'll never git a chance to rest  
Ez long ez it stays in."


W. J. LAMPTON.

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# PAINTING



## EDWARD · · · HURST      BROWN

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### Painting the New House

USE OF VARNISH IN WOOD FINISHING—ITS HISTORY AND MANUFACTURE—SUBSTANCES USED AND HOW PREPARED—  
WHY GOOD VARNISH IS EXPENSIVE

**S**O FAR in this series of articles on painting the new house, we have considered the question of painting, in which one of the objects aimed at was that of obscuring or hiding the surface painted by a thin film of an opaque pigment held in suspension by a vehicle or liquid, which possessed the property of binding the minute particles of pigment together and also of attaching them firmly to the surface which had been coated. In the case of water paints, the casein, which is the binding principal generally used, was mixed dry with the pigment, but this makes no practical difference because as soon as the water is added the casein is dissolved and becomes a part of the vehicle.

We will now consider another branch of the painters' and wood-finishers' art, that of coating the surface with a transparent film which shall not only protect the wood, but shall have the property of bringing out and accenting the hidden beauty of the grain. Incidentally it may be necessary to change the color of the wood to make it harmonize with the decorative scheme, to make the wood appear old and as if darkened by time or to imitate in inexpensive wood the effect of the rarer or costlier timber. In this will be included the various branches of staining, varnishing, polishing and wax finishing.

#### Some Varnish History

Probably the best definition of varnish is that given by A. H. Sabin in his recent work on varnishes. He says:

"As the term is commonly used, varnish is a substance which is applied as a liquid, and on exposure to the air hardens and forms a thin and somewhat transparent film (but some varnishes are black and nearly opaque), which improves or better displays the surface over which it is spread and to a considerable degree protects it from dirt and injury. Some varnishes harden by a chemical change, which in almost all cases is the absorption of oxygen from the air; others by the evaporation of the solvent."

Although the finishing of hardwoods with varnish is generally spoken of as a modern art, in reality the

use of varnish is very ancient, going back as far as ancient Egypt. Wooden mummy cases brought from that country and dating back two thousand five hundred years or more still show traces of the varnish that was used to make them lustrous, though just what was the character of this ancient varnish is uncertain, but it is supposed by the best authorities to have been composed of gums dissolved in oil of cedar, which essential oil was known to the Egyptians, for Herodotus describes it as having been used in the process of embalming. This ancient varnish, which may be noticed on the mummy cases in the Metropolitan Museum in New York City, is still surprisingly free from cracks, is of a yellowish color and appears to have been very roughly applied as though perhaps it might have been smeared on with a knife.

The use of varnish is indicated by old accounts dating back to the thirteenth century, but it was probably employed more for the protection of pictures or for use on musical instruments or for special purposes, and was possibly not used for finishing ordinary woodwork of buildings, since there is no vestige of it on any of the old roof trusses or other timbers of the cathedrals or other examples of Gothic architecture that have come down to us. These appear to have either been finished with oil or to have been left unfinished, and to have gradually darkened or become black by time and exposure. Wax was also used for finishing some of the medieval woodwork, and its use has continued down to the present time, no method of finishing equalling it for softness and delicacy.

#### Different Kinds of Varnish

Varnishes are of two classes, oil varnishes and spirit varnishes. The first are made from certain resins, known in the trade as varnish gums (although, strictly speaking, they are not gums), and linseed oil and thinned with spirits of turpentine. Cheaper grades of varnish are made from ordinary rosin (the resin of the long-leaved pine), and are sometimes thinned with benzine. Within the past two or three years considerable tung or China wood oil has been used in the manufacture of certain grades of varnish, and it is

claimed by the manufacturers using it to be superior to linseed oil, although it is not used to the exclusion of the latter. Oil varnishes dry or harden by the chemical change of the linseed oil contained in them to form linoxyn by combining with the oxygen of the air.

Spirit varnishes are made by dissolving the resin or other substance—although resins are chiefly used—in a volatile liquid, such as alcohol or spirits of turpentine. When a varnish of this kind is spread over any surface it dries or hardens by the evaporation of the volatile liquid, and the resin is then left spread over the surface in a thin film, the liquid simply having served as a mechanical means for spreading the resin over the surface.

The character and quality of an oil varnish depend largely on the kind of gum or resin which is used in manufacturing it. Most of the varnish gums are fossil resins, being dug up from the earth, and are sometimes found in localities where the trees producing them have long since passed away. Still some inferior grades of varnish are made from the softer gums taken from the living trees. Ordinary rosin is much used in the manufacture of cheap varnish, especially in connection with some of the harder gums. As a general thing, the harder the resin used for making the varnish, the greater will be its durability, especially under severe conditions of exposure. Varnishes for exterior use should always be made of specially selected hard gums and great care must be used in their manufacture. It might be well to mention here that to make good varnish, not only must the materials entering into it be selected with great care, but the various gums must be combined in such proportions as experience has shown to be best adapted for the particular purpose for which the varnish is intended. And not only this, but every operation in the work of varnish making requires the unceasing attention of a skilled workman, who must depend largely upon experience to guide him in its manufacture.

In making varnish the selected and cleaned resin is put into a large copper kettle, mounted on wheels and fitted with a long iron handle, by which it can be readily moved. This kettle is then rolled over a grate fire which is in a large fireplace built under a peculiar shaped square stack, tapering upward, to carry off the fumes. When the gum has been thoroughly melted, the varnish kettle is rolled off the fire and the requisite quantity of linseed oil, either measured or weighed, as the case may be, is slowly added and stirred in, and the kettle is placed over a slower fire, where it is cooked for several hours. During the cooking it is continually stirred with rods which are introduced through apertures left in the cover of the kettle for the purpose. The workman judges by the appearance of the mass adhering to the rod, as he draws it from the kettle now and then to examine it, placing a drop or two on a sheet of glass, whether the varnish has been cooked long enough or not. If he

leaves it over the fire too long the entire batch of varnish is apt to be spoiled and rendered utterly worthless. If it is not cooked enough, it will be of little value. In order to make the varnish dry rapidly enough to satisfy practical requirements, a certain percentage of driers must be added either to the oil before it is placed in the kettle or during the after-process of cooking the varnish. The driers most commonly employed are either certain lead or manganese salts or resinates of lead or manganese (compounds of lead or manganese salts with colophony or common rosin). In general it may be said that the quicker a varnish dries the shorter will be its life, and that if a varnish is desired which shall have the maximum of durability under severe exposure, it must necessarily be slow drying. But as it is essential that a varnish should set within a reasonable time in order to avoid, as much as possible, injury from dust, it is necessary to make a compromise with durability, and for this reason a varnish containing no driers would be of little practical value. After the varnish has cooked for the requisite length of time it is taken off the fire and the kettle is run into the thinning room, where the varnish is allowed to cool down a little, but not enough to chill it, and then the volatile thinners, consisting of turpentine, benzol, benzine or solvent naphtha, or whatever else might be used, are added, pouring them in slowly and constantly stirring so as to prevent undue loss by evaporation. When the proper degree of fluidity is obtained, the varnish is pumped off into overhead tanks and is then run into filtering presses, where any impurities that may have been mechanically mixed with the resin are removed, and it is then pumped into storage tanks in warm rooms, where it is allowed to remain in order to ripen, settle and properly age. The longer the varnish remains in these tanks the better it will be and the greater will be its durability. The statement has often been made, and it is doubtless true, that an inferior varnish that has been well aged is better in every respect than a varnish made of higher grade materials that has not been aged. Many varnish manufacturers keep the varnish in storage for from six months to a year before putting it upon the market. Of course this means the locking up of considerable capital in this stored varnish, and it involves a large tankage capacity. Hence a well-made and well-aged varnish cannot be bought for a low price, and the selling price of the varnish must necessarily be considerably in excess of the cost of the raw materials and the labor.

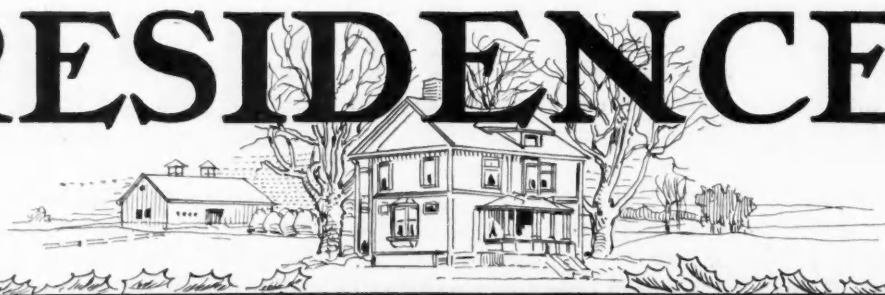


Did you ever stop to think what an improvement and convenience it would be to have a roll-top desk in your home or office? Pages 601-604 will tell you how to get one without paying one cent.



Keep telling a boy that he will never amount to anything, and he generally won't.

# RESIDENCES



## Three Modern Houses

SHOWING THE PERSPECTIVES AND FLOOR PLANS—DESIRABLE FEATURES ABOUT EACH—BUILT IN DIFFERENT SECTIONS OF THE COUNTRY

**T**HE six-room cottage shown on page 647 is of the one and a half story type and was designed by Simon Fluor. The floor plans show it to be a building 23 feet 6 inches by 29 feet and is well arranged for a cheap comfortable house. The rooms are large and well lighted.

A closed stairway leads from the living room to a hallway on the second floor from which entrance is had to a large room on either side and also to the bath room.

Ample closet room is provided for the rooms on this floor.

A door at grade as shown in the perspective answers for a side door to the kitchen and also for an outside door to the basement. The wide porch in front gives the house a very pleasing appearance as well as making a comfortable home at a moderate price.

### A Japanese Cottage

The house and floor plans on page 648 were made by John Y. Benfer, of Seneca, Kansas, and he describes it as follows:

"Since the whole world became interested in Japan, it would be expected that the American architect would find something in their architecture, as well as in their fighting qualities, to admire. I became so interested in them that I gave that part some study, and after seeing the September number of your valuable magazine, with the Japanese farm houses on the cover page, it came to my mind that this cottage of mine would interest someone, so I will here give a brief description of my first production.

"At my leisure I worked out a plan as here shown and soon found a customer for it in the person of H. W. Jenkins, a druggist of our city. It was completed at a cost of about \$2,000.00. He is well pleased with it and it is admired by a great many on account of its novelty in shape. You will note the graceful curve in the roof. Those curves are always pleasing. It is not difficult of construction as the roof at the eave is a parallelogram in shape, with the dormers and balcony jumped on. The curve is easily made. There is a plate eight feet from the out one, which supports the main rafters. These have a pitch of 60 degrees, while the lower rafters are rather flat, 30 degrees. The

curve is then made out of one-inch material, all of which was shown by a complete working detail.

"When we study the floor plan, it shows convenience and ample room for a small family. As a matter of course we must not expect too much in a house of that size. The mantel and open stair case give a good effect, not often found in a cottage. The front room on second floor is a fine room, having a balcony. The other room is a very fair room. The space at the head of the stairs, being so well lighted, is used as a sewing room. The basement is divided into four parts, a laundry room, a furnace room, a fuel room and a vegetable cellar.

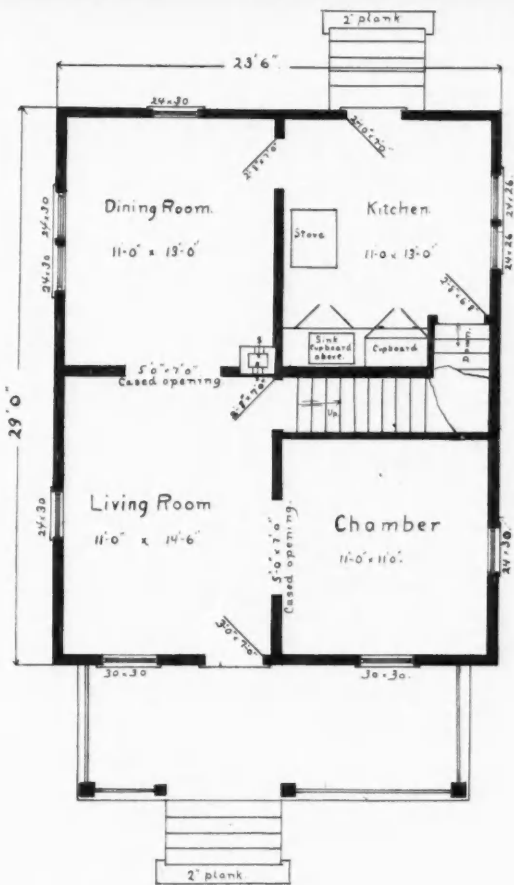
"The building proper is thirty inches above grade line, while the stone wall is only eight inches above grade. This lower woodwork is sheathed inside and out and back plastered to insure it being frost proof. Note the graceful curve it forms near the grade line.

"Referring to general finish, the first floor rooms are finished in oak, modern plumbing, heating and lighting, and the walls neatly decorated. The exterior is painted as follows: The whole roof, dark red; the body of the house, light colonial yellow, trimmed in white; sash, India red; porch floors and steps, a light drab; porch ceilings, a natural wood finish."

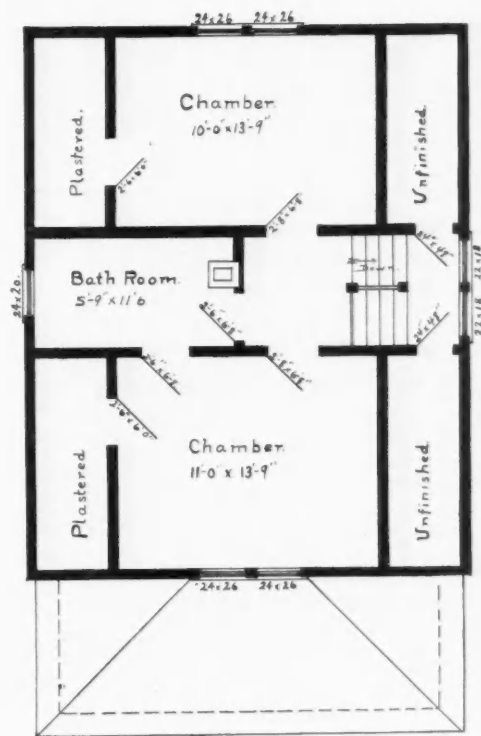
### A Desirable House

The house with floor plans on page 649 was designed by H. Wittekind, and is a cozy frame cottage, one and one-half stories and basement. Exterior of clapboards and shingle roof. Porch across entire front. The reception hall is of good size, and has small bay window with shelf on the landing, which is two steps up from the floor. Also coat closet under main stairway. The parlor has triple window in front, and sliding doors leading to hall, and cased opening into library, which rooms may be thrown together on special occasions. The library is the chief center of family life, and has artistic bay window effect, and large open fireplace, with built-in book cases on both sides of same. This room may be shut off from the remainder of the first floor without interfering with the arrangement, as both dining room and parlor may be reached directly without passing through the library. This feature also holds good for the parlor, which may

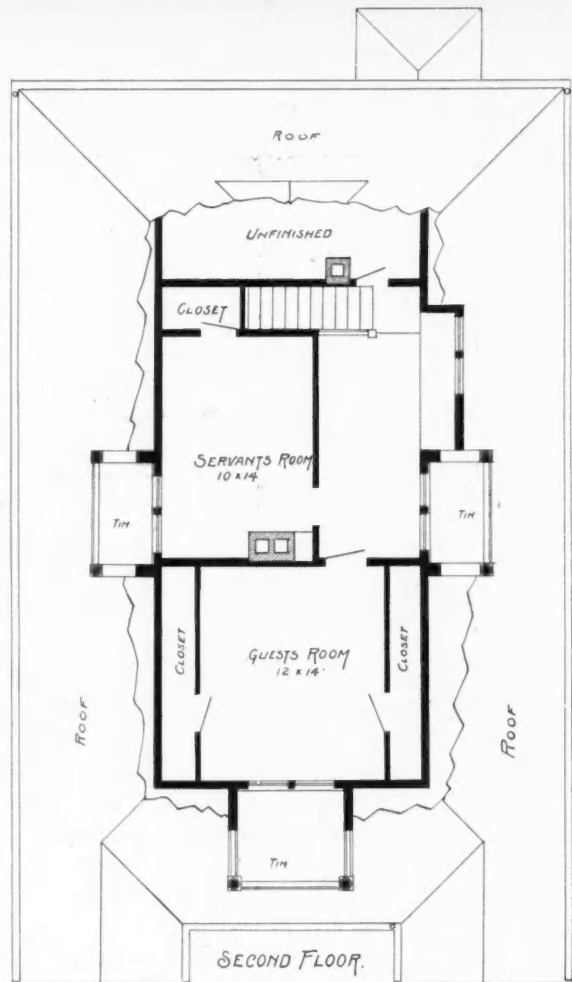
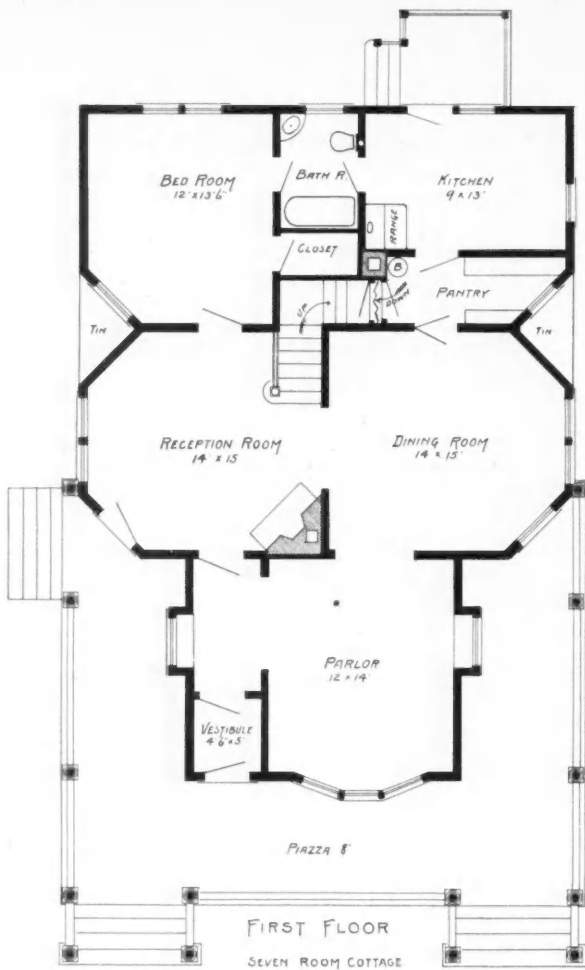




First Floor Plan



Second Floor Plan.





also be separated from the remainder of the rooms. The dining room has bay window in which a seat or flower shelf may be built, as the windows are kept three feet above the floor. This room also has a full height window overlooking the garden. The kitchen is a well ventilated and lighted room; has large and complete pantry, and the rear stairway also answers as a grade entrance.

The second floor contains three good size chambers; plenty of closets, and well arranged bathroom, with modern plumbing.

The interior finish in first floor is oak, except kitchen and pantry, which is in Georgia pine, with maple floor. Entire second story is trimmed in Georgia pine.

The basement extends under the entire house; contains furnace and coal room; laundry with stationary trays. Cement floor.

The main body of the house is 27 feet wide and 25 feet long, exclusive of bay windows; the kitchen portion is 15 feet square.

All in all, this house presents a pleasing, convenient and economical arrangement, and is artistic in design.

## Two Desirable School Designs

SHOWING THE PERSPECTIVES AND FLOOR PLANS OF A TWO-ROOM AND AN EIGHT-ROOM SCHOOL HOUSE—  
GOOD FEATURES ABOUT EACH

**T**HE accompanying perspective and floor arrangements are for an eight-room school building adapted for the common eight-grade school.

It is designed to be of brick with stone trimmings. The main cross walls are also of brick, thus making the rooms sound proof.

The basement can contain the heating plant, fuel and storage rooms as well as toilet rooms and still leave space enough for a gymnasium or play room.

There are front and rear entrances leading to a large, well lighted corridor. The main or front entrance is protected by a massive porch which adds to the architectural effect as well as furnishing a protection.

Instead of the usual cloak rooms a low wire partition is provided for each room, where the wraps are placed while passing from the corridor to the school room. Easy stairs lead to a similar corridor on the second floor with the addition of a teacher's or principal's room which is some three feet below the level of the second floor and from which a commanding view can be had of both corridors. The school rooms are large and well lighted, each room being provided with a large bay-window which adds much to the beauty of the room and with the bookcases give it a more home-like effect. The seating capacity is about forty-five to a room.

The sanitation is well provided for and the whole make up of the building is one that would be a credit to any city.

### Two-Room School House

The design of a two-room school house shown on page 652 is for a brick building with stone trimmings. There is a high basement under the entire building, one-half of which can be used for the heating plant, fuel and storage room, leaving the other half for a play room for the smaller children, which is very essential in cold or stormy weather.

There is a well-lighted vestibule from which a short flight of stairs leads to the main hall and also to the basement.

From the hall there are doors leading direct to the school rooms, besides entrance to the same may be had by passing through the cloak rooms, 6 by 18 feet in size, and which are designed for the pupils to leave their wraps and lunch baskets while passing to the school room. The rooms are 25 by 36 feet in the clear and will accommodate fifty pupils.

The light is taken in from two sides only and the seats can be so arranged that the light will fall from the rear and left side of the pupil. The blank wall affords excellent space for the necessary black boards. Each room is provided with a large closet for the teacher's exclusive use.

The architecture of the building is of Spanish mission style which is now very popular throughout the country. For the best effect the walls should be of dark vitrified brick and the roof covering of glazed tiling.

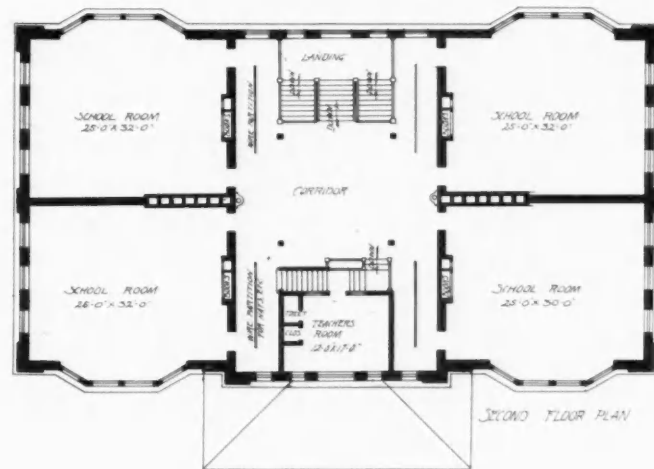
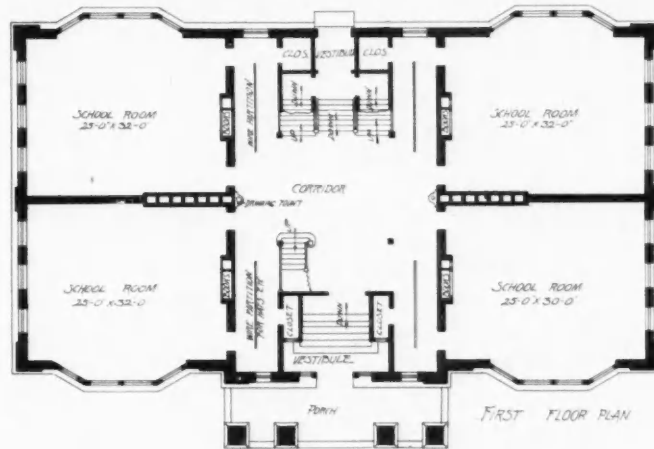
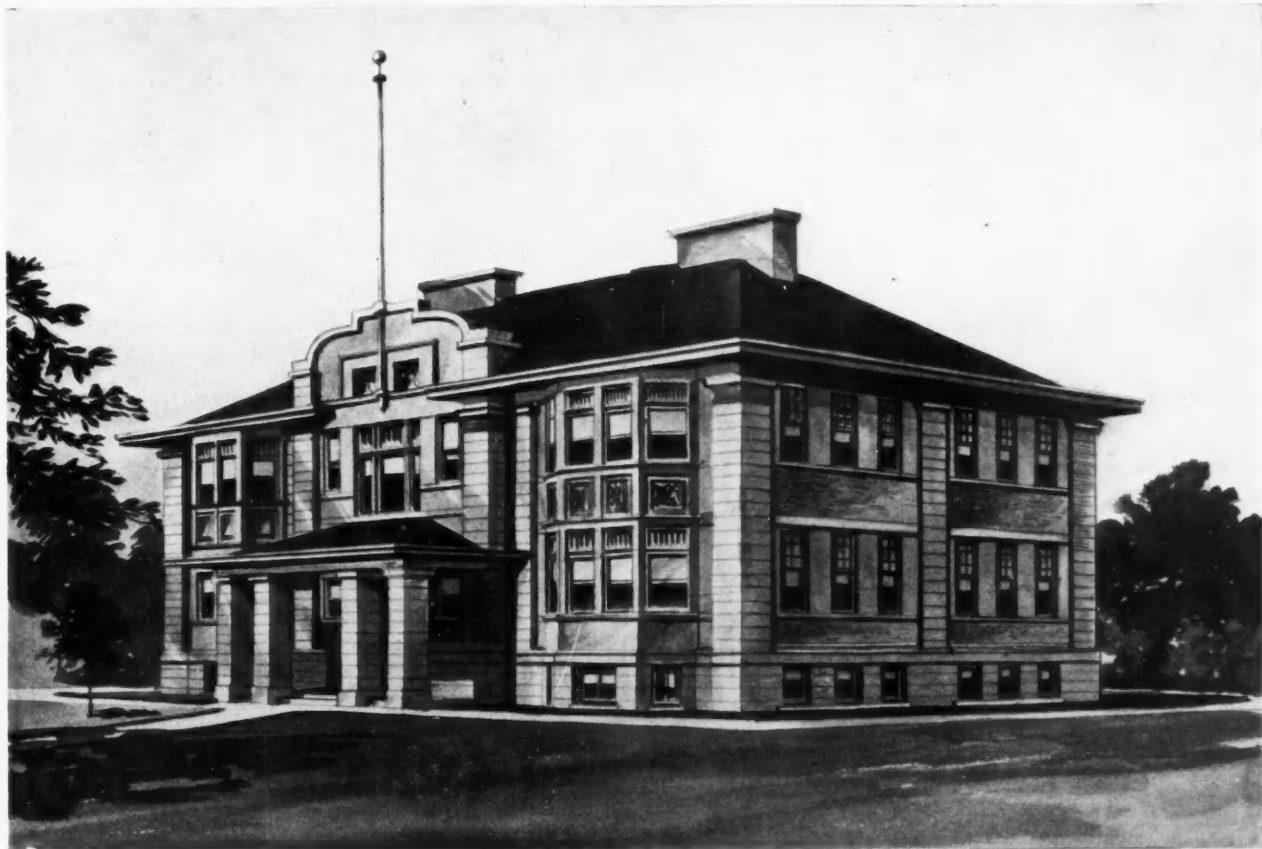


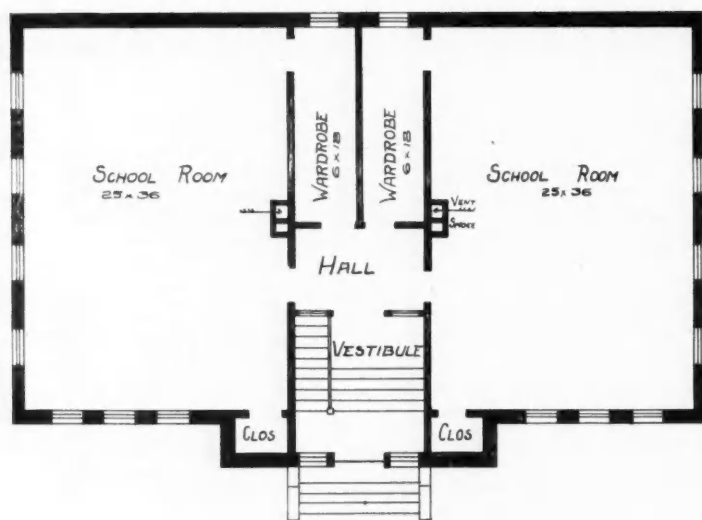
### A New Building Journal

The AMERICAN CARPENTER AND BUILDER, established a few months ago at 196 Fifth avenue, Chicago, now claims a paid subscription list of over 25,000 names, which have been secured by energetic promotion work. O. F. Byxbee, general manager of the publication, states that no free circulation is included in the statement, nor even the newstand circulation, which comprises 550 copies. A small booklet showing departments of the paper in miniature demonstrates that it is practical and direct in its treatment of building problems. It is claimed for it that it is the largest journal of its class in the world, and that simply a circular letter, a prospectus and a copy of the first issue brought 20,000 subscriptions the first month.—*Printers' Ink.*



Some are born great, some have greatness thrust upon them—others advertise. The merchant who sits down and waits for business to come to him will find himself among the left over baggage when the Empire State express of business success pulls out.





FLOOR PLAN OF  
A TWO ROOM SCHOOL HOUSE

# PLANING MILL WORK

J. CROW TAYLOR

## Work for Winter Months

THINGS THAT CAN BE MADE IN CARPENTER SHOPS HAVING SMALL EQUIPMENT—HOW TO GET GREATEST USE OUT OF SAWS

WHAT we can turn to in the way of planing mill work to fill in to the best advantage during the winter months depends so largely on local conditions that one is at a loss when it comes to making suggestions which might be of the most good to the greatest number. The making of wood mantels offers some opportunity in a great many sections of the country, especially those remote from mantel factories, for fine wood mantels are growing in popularity right along and there appears to be room for good profit in their manufacture. Clock mantels and mission styles are great favorites these days, and of these the mission styles in the different varieties offer probably the best opportunities. There is, however, plenty of room for the exercising of originality in designing mantels, especially where one has the faculty of anticipating the peculiar likes and dislikes of the people for whom one designs. This latter, the ability to anticipate, to foresee what will take and what will not take in the community, is really the keynote to success in any kind of special work one might turn to, and it offers a line of study that is both interesting and worth while, paying as good returns in fact, as close attention to the planning and devising of ways and means to carry out the details of work to the best advantage. It gives one a wide scope to work on, and may lead into furniture lines, or into any of a hundred and one things that have only been given a passing thought heretofore, and opens up opportunities that might otherwise be passed by.

The designing and planning out of work is one of the essentials before the work can properly be begun, and that is the wherefore of this prelude to a talk on how certain things may be done, because aside from what it may be worth itself in the way of suggestions it opens the way to some possible requirements in the way of machine work during the winter months. One of these where any great variety of work is done would be the making of thin panel stock; in other words, resawing. One of the most difficult things to get promptly in small quantities in the lumber world is thin stock for panels. That is, thin stock in the shape of boards. You can get it on orders in carload

lots, or certain quantities put in a carload, but the regular yard stock for retail lumbermen, while it includes bevel siding, thin ceiling, and stock of that kind, does not usually contain boards much thinner than what is classed as one-inch. This difficulty of getting half-inch or three-eighths-inch lumber, or any thin stock of this kind has probably been met with at one time or another by every carpenter and builder, but it is especially annoying to a man who does special cabinet work during the winter involving the use of thin panel stock. Now then, what we desire to point out here is, that may be you have overlooked a chance to make some of this same stock with what little simple machinery you have in the shop; that is, make it by resawing standard thicknesses in boards. As a rule panel stock is short stock, and when you have once devised a way to do a little resawing there is an opportunity to work up lots of scrap stock about the place into very useful material. This is getting a little ahead of the game, however, and the first thing we want to see is whether or not you have any machinery in the shop that can be converted into a makeshift re-saw. If you have either a table saw or a band saw you have some opportunities that are limited only by the capacity of machine for size of saw in the saw table, and by the clearance space under the guide on the band saw.

If you have a table or bench saw as practically your only equipment in the way of sawing machinery, examine it for possibilities of reach of cut above the table and then you can figure that your chance in the way of resawing so far as width is concerned is just twice the reach you can get above the table with your saw. Say your saw extends five inches, that will enable you to resaw ten-inch boards by running them twice and turning them end for end, and not over sideways for the second run. Reconstruct the fence, or guide, as some people call it, either by putting a new face on it, or a new fence front entirely and make it wider—if possible make it as wide as the stock you intend to resaw, or at least make it wide enough to extend above the top of the saw. With this fence or guide carefully adjusted, and your saw well swaged and filed, so that it will cut freely and not bind, you

can by careful work do a surprising lot of resawing on short lengths of boards of all widths up to and including those that are twice as wide as the reach of the saw above the table.

If you have a small band saw machine in the shop it is in order again to remind you of the fact that the band saw is a great machine and is capable of being converted to more different uses than almost any one machine you can get hold of. Of course, we all know that there are band re-saws and band log-saws, but some of you may not yet have realized the full possibilities of the small shop band saw in the way of resawing. It takes a little heavier blade to do resawing than it does to do scroll work and other light jobs on a band saw, but with a one-inch blade, for example, it is possible to do quite a little resawing on boards up to as wide as the machine will take in between the table and the top guide when it is raised up to the limit, and then, by using a heavier blade there are still greater possibilities. Instances are known where a two-inch blade on a thirty-six-inch band saw machine has been made to do quite a lot of resawing by constructing a home-made appliance as a guide for the stock in hand feeding. As a rule, however, it is not advisable to go to this extreme, for when any great quantity of thin panel stock is wanted, that is, quantity enough to justify such extensive preparations, it is generally better to order the stock made at some mill or else put in a resaw. In other words, it is no use to burden a light sawing machine with a two-inch blade and go to the expense of buying the blade just for the sake of doing a little resawing. Of course, if there is other work, if you are using the saw for heavy ripping instead of using the saw table with circular saw, or have other use aside from that of resawing for this heavy equipment, its use may be both justified and advisable. For general purpose work, however, and for doing what little odd jobs of resawing one may feel called on to do from time to time, it is seldom advisable to get a blade wider than one inch or one and one-quarter inch, and a blade of this width will do very good service in resawing if kept in good order, and will also be found very handy for doing other kinds of straight line and heavy work.

For the simpler jobs of resawing on a band saw, that is, short pieces, say not over six inches in width, there is practically no fence or guide needed, as one can take a square block, such as is used as a guide and support around nearly any shop band saw for doing various kinds of shaped work and do very well with it. In fact, as long as it is short work, no matter what the width, one can make a skeleton square block in box form big enough to act as a movable fence support to any width. If the work extends two feet in length, however, or even if quite a number of pieces of the shorter length is to be run this square block idea can be enlarged on a little and by fastening it down to the table with hand clamps be made to act as a stationary fence or guide for resawing with a band saw after the

same manner as the regulation fence or guide on the rip saw table. The idea can be extended still further and made quite elaborate when the quantity of work to be done justifies, and, as has been done in instances where two-inch blades were put on the machines for doing quite an amount of resawing, one can make wooden rollers mounted in a frame and clamp them on to the table so that the whole rig when complete and in place bears considerable resemblance to some of the smaller sizes in resaws. As a rule, however, this is not advisable, for it smacks too much of spending more for preparations than the work is worth, in other words, it is making shop kinks take the place of the machine, which should not be done. If there is any great quantity of resawing required, the thing to do is to get a machine made for the purpose. There are some band saw machines with forty-inch wheels, two and one-half inch face, that have a combination attachment for doing resawing, which, when not in use, can be swung out of the way and the machine used as a regular band or scroll saw, and it is something of this kind that a man should turn to if he has large quantities of resawing to do, that is, large quantities for a small machine shop. All this, however, is getting entirely away from the subject in hand, though it is done to point a moral and adorn a warning against going too far with shop kink ideas. What a man usually wants to do in a small machine carpenter shop, however, can generally be done on the small band saw machine as indicated above, and the time and expense required in the preparation of this square block or box fence as a guide in feeding the stock to the saw should be very little, with practically no cost, while in turn, there is an opportunity to work up, not only the short pieces of boards into panel stock and into thin lumber for making pigeon holes and all the other hundred and one things that it may be used for in the work of the shop, but one can also use up short lengths of two-inch, three-inch or any thickness of stock up to sills or square timbers which may be readily worked into any thickness of stock required, making a saving in lumber that is not only worth something all the time, but is getting to be worth more and more each year as lumber becomes scarcer and more valuable.



### A Widely Read Class Paper

The AMERICAN CARPENTER AND BUILDER, Chicago, sends out to prospective advertisers a neat little booklet presenting a miniature reproduction of its cover and pointing out the merits of the publication. O. F. Byxbee, general manager, swears to a paid subscription on Oct. 1 of 25,119. William A. Radford is editor of the paper.—*The Editor and Publisher.*



Everyone would like to get a fine Christmas present. Read pages 601-604 and find out how to get one.



## Drawing Lessons for the Carpenter

SHOWING HOW TO ILLUSTRATE THE DIFFERENT PARTS THAT GO TO MAKE UP A SET OF PLANS  
FOR A FRAME RESIDENCE

**I**N THE first lesson we simply got ready for business. Now we will proceed with how to illustrate the principal parts that go to make up a set of plans for a frame residence. The illustration shows these parts disconnected and not to a given scale owing to the reduction in preparing the plate. The scale generally used by architects is to let one-quarter of an inch represent one foot, except in cases of very large buildings, when the scale is reduced to one-eighth inch or even smaller.

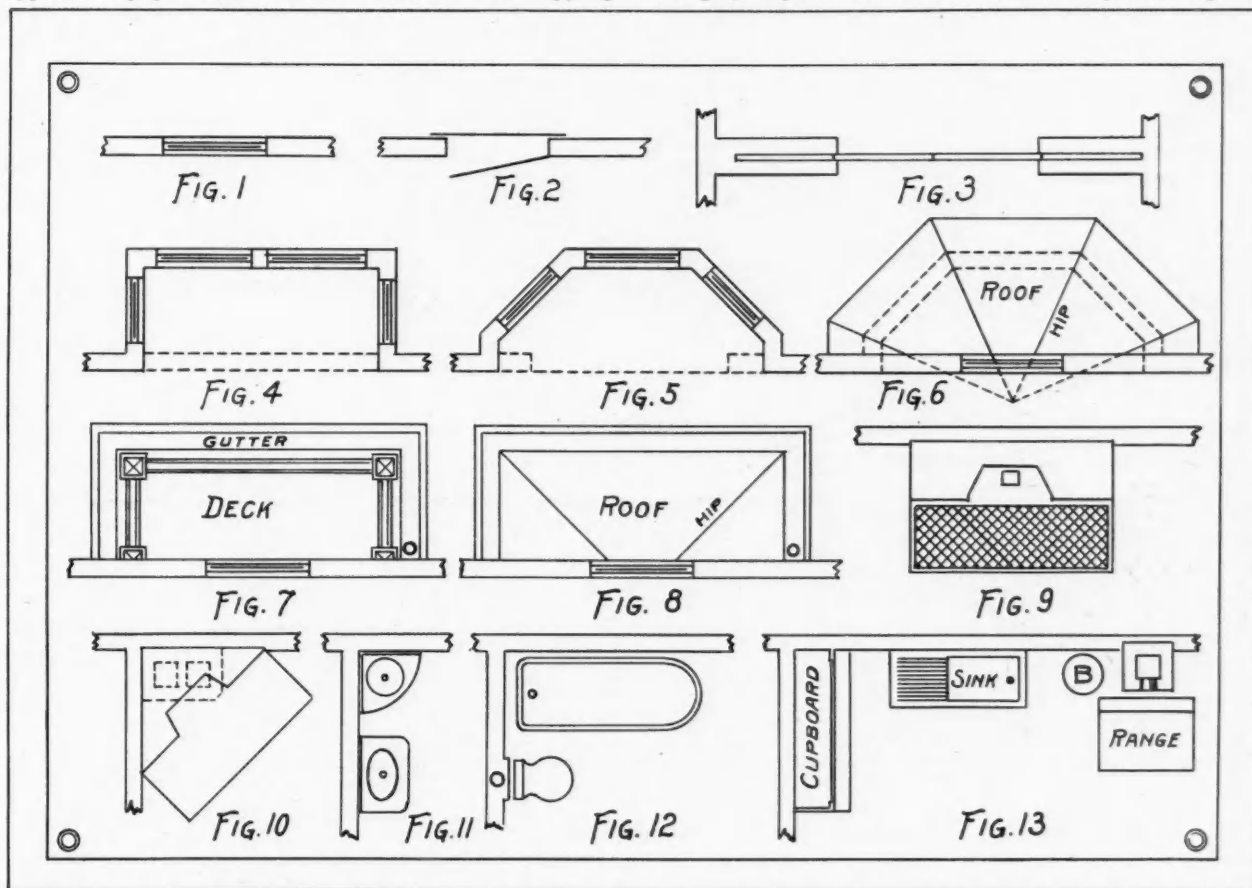
These drawings will serve to show how they should appear on paper and would recommend first copying

Fig. 4 represents a square bay window. The dotted lines indicate that there is to be a soft or an arch at the ceiling.

Fig. 5 represents an octagon cornered bay window. The single dotted line indicates that there is to be a drop in the ceiling and that there are to be brackets at the corners.

Fig. 6 represents an octagon roof for Fig. 5, showing where the hips would die out against the wall, also where they would center if continued. The dotted lines indicate the position of the frame work below.

Fig. 7 represents a roof with balcony for Fig. 4,



them just as they are, and in our next lesson combine these parts into a plan and to a given scale. They are as follows:

Fig. 1 represents a window and should be to the width of the sash and the size of the glass should be given.

Fig. 2 represents an exterior door. The single line on the outer side represents the sill, while the inner line represents the door, and to which side it is to be hung. The size should be marked, and if there is to be a transom the size of the sash should be given. For an inner door omit the sill.

Fig. 3 represents a pair of sliding doors. The width of the partition should be not less than one foot. The size of one of these doors should be given.

while Fig. 8 represents a hipped roof for same, with boxed gutter and location of outlet.

Fig. 9 represents a fireplace with tile hearth. The usual size is a five-foot breast and allow about two feet in width for the hearth.

Fig. 10 represents a corner fireplace. The dotted lines indicate that the brickwork above is to be squared up to two flues.

Fig. 11 represents corner and side wall wash basins.

Fig. 12 represents a roll-rim bath tub; a closet seat is also represented in this figure.

Fig. 13 represents a combination of things found in a kitchen, as follows: Cupboard with counter-shelf; sink with drain-board; kitchen flue with range and boiler in position.

# FARM BUILDINGS

## HENRY H. NIEMANN

### Hay and Feed Barn

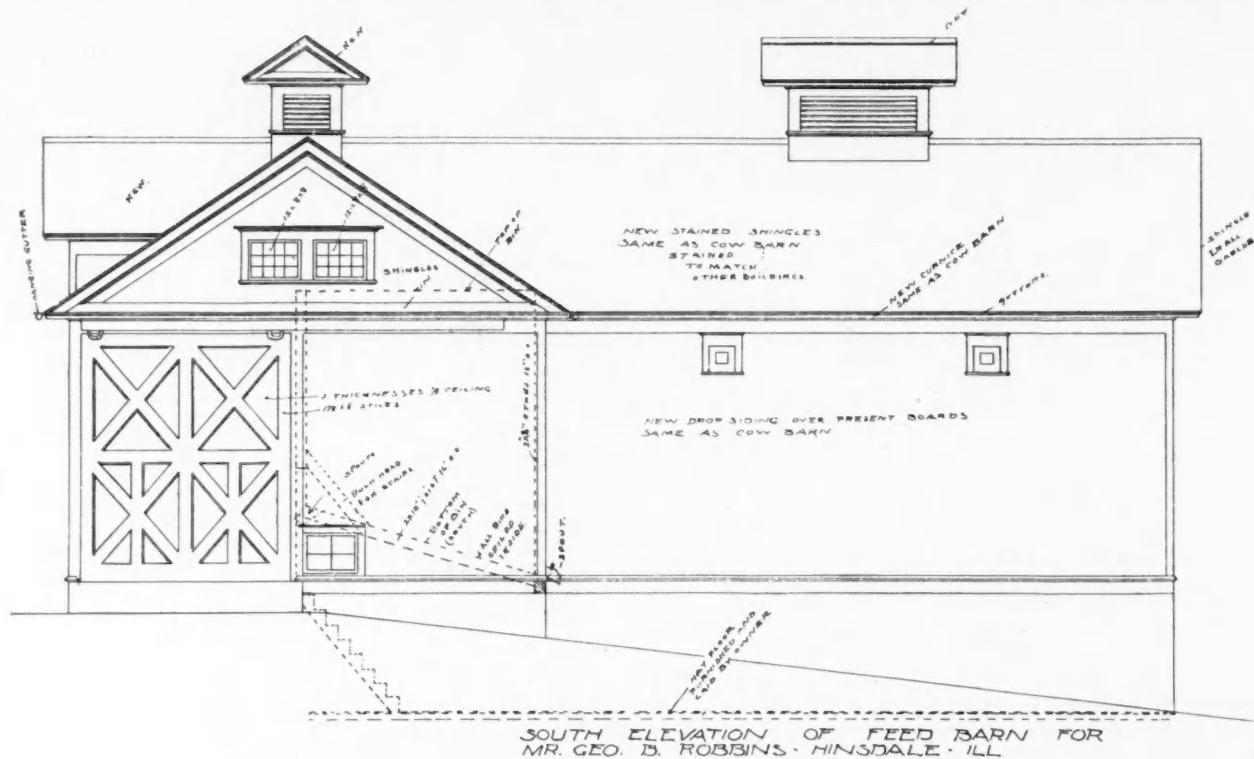
GIVING DETAILED DRAWINGS TO SHOW THE CONSTRUCTION—REASONS FOR CERTAIN ARRANGEMENTS—HOW TO REMOVE INTERIOR CROSS TIMBERS WITHOUT WEAKENING THE STRUCTURE

**T**HIS month we illustrate the hay and feed barn of the Geo. B. Robbins' farm with a brief description of such parts of the construction and design that will be of interest to the carpenter and builder.

This barn is an old building and was originally

mason work necessary to fit it up for its new purpose. The superstructure, however, required very extensive alterations, both interior and exterior, not only for utility but also to bring it in harmony with the architecture of the new buildings.

The east wing is used for the storage of hay, and



used for general farm purposes, having the cow stalls in the basement, horse stalls on the first story, also feed bins, tool room for storage of small machinery, etc., wagon room in the middle with large doors at either end and a hay mow overhead.

When improvements were begun this building was found to be located at the most convenient place for the storage of hay and feed relative to the best site for the cow barn and young stock barn; so it was decided to remodel this building for this purpose.

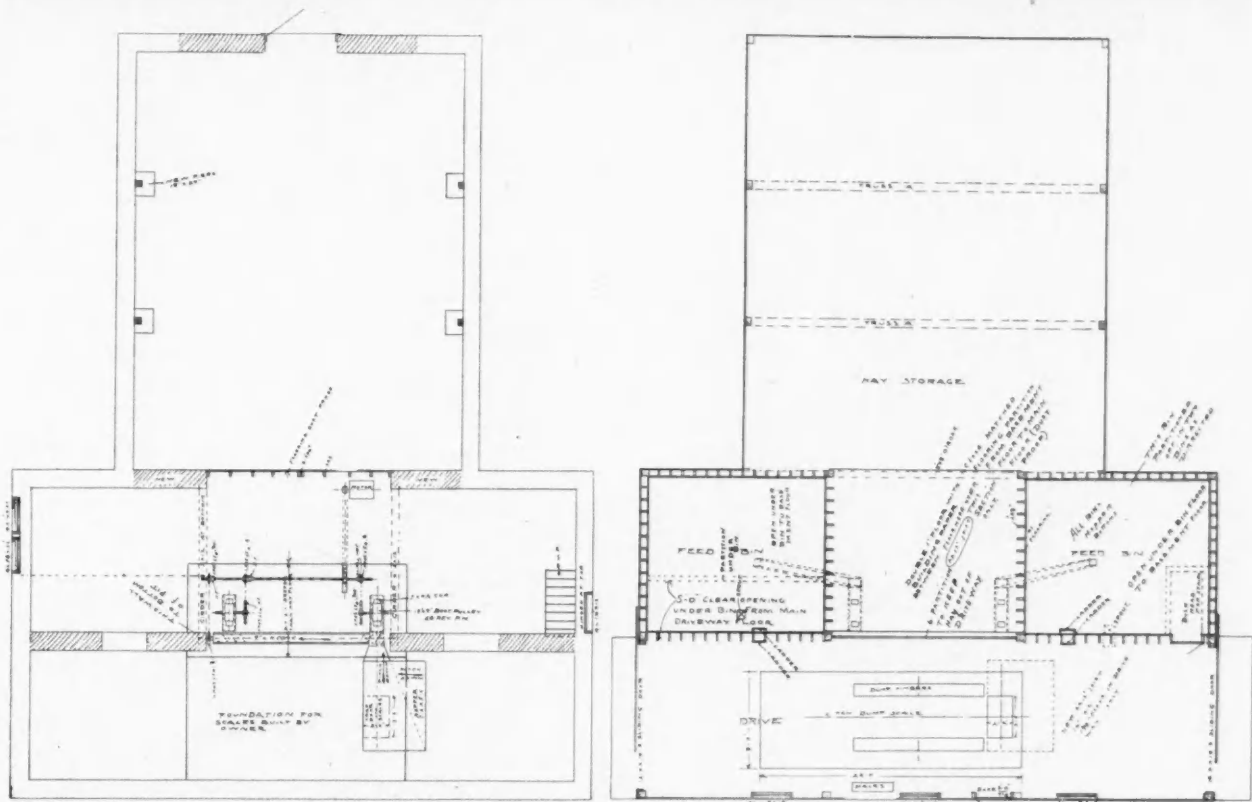
The rubble stone basement was found to be in fair condition and required but few repairs outside of the

to make it practical for the use of a traveling hay fork to run on a track the full length of the building so that hay could be loaded or unloaded from either end of the building, it became necessary to remove all cross timbers which support the main floor and hay floor in this wing including the only supports of the roof purlins.

The simplest way to remove all this interior framing and bracing without in any way weakening the structure was accomplished by building piers at the inside of the basement wall projecting about one foot above the basement floor. The main floor girders after the

joist had been removed were sawed off about three feet from the sill and then a new 6 by 6-inch post was set on the new piers and run up to the under side of the

the basement floor to the ridge of the roof. After the new struts were well fastened to the old girders and the lower ends braced to the lower girders, sill and



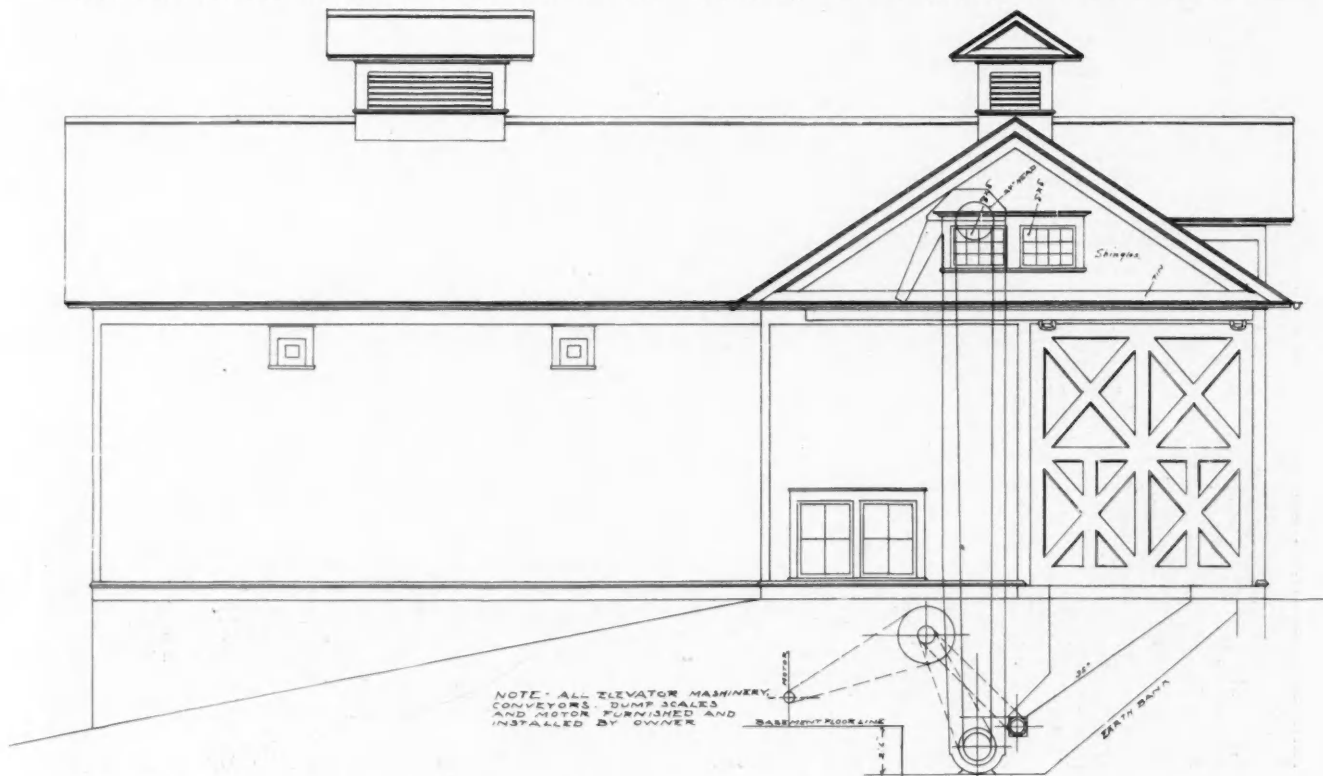
old hay loft girders. Then 2 by 10-inch planks were thoroughly bolted on both sides to the top end of the 6 by 6 and the old hay loft girder and run up to the ridge of the roof, thus a new truss was formed from

wall posts, the middle section of all the girders, posts and braces were removed, leaving a clear span from basement floor to ceiling, for the traveling hay fork which was hung from a track supported by new collar

beams resting on the purlins and spiked against the rafters.

The west half of the barn contains bins for the

this building. The doors at each end of the driveway are very large and will admit a large load of hay so the hay can be unloaded inside of the barn and car-



storage of grain and a driveway running through from north to south with a scale and wagon dump for unloading grain into a hopper below the driveway floor from which it is elevated to the top of the grain

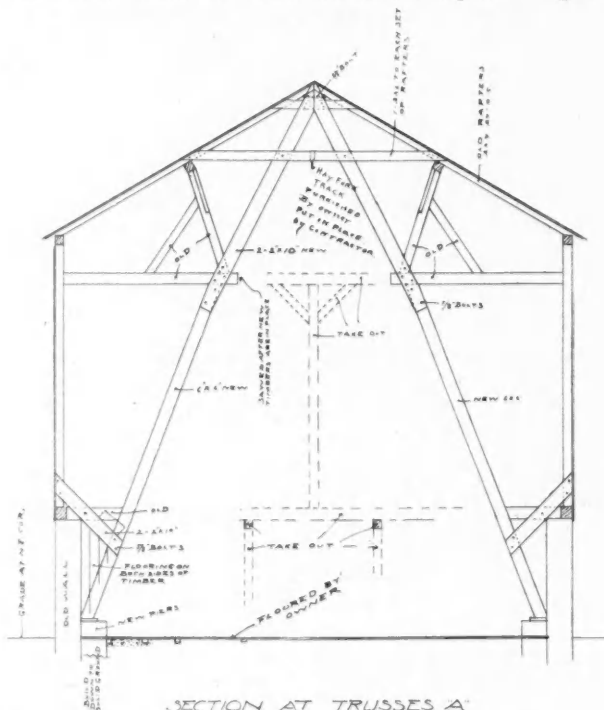
ried to its place by the hay fork.

After the grain is dumped into the hopper under the scale platform it is run into the boot of an elevator having 7-inch by 4½-inch belt cups and an 18-inch by 9-inch boot pulley with a speed of 66 revolutions per minute. The grain can also be transferred by means of spout gates in a 9-inch horizontal conveyor which carries the grain into the boot of another elevator and is then hoisted into another bin for storage or reloading into feed trucks.

This makes a very convenient, rapid and economical system for handling of grain and feed for a dairy farm where the hay and feed are not stored in the same building with the live stock.

The exterior of the building, as will be seen by the photographic reproduction has been designed to harmonize with the new buildings as far as the established outline would permit. The two ventilators on the roof add to the exterior appearance as well as supplying fresh air to the interior, and the large dormer to the west gives light and track room for the hay fork.

Next month the writer will illustrate the dairy building, which is the seventh and one of the most interesting buildings of this farm.



bins. These bins are constructed with hopper bottoms and have a spout leading back to the driveway, so the grain can be run back into wagons or feed trucks and hauled to the cow barn which is directly south of

Don't be honest merely for the sake of policy, but because it is the right way to feel and live. And it is this, and not the mere policy of the matter, that should actuate one.

# MANUAL TRAINING

IRA S. GRIFFITH

## Something the Boys can Make

SHOWING HOW TO MAKE BRACKETS WHICH CAN BE USED ABOUT THE HOUSE—APPROPRIATE COLORS TO USE ON THEM—ILLUSTRATIONS SHOWING DESIGNS THAT CAN BE MADE

THE brackets described this month are very easily made. They can be used for a variety of purposes; and, when appropriately designed and colored, make pretty pieces for the walls. They afford a chance to combine something of art with craft.

Fig. 1 shows a blank bracket; that is, one in which

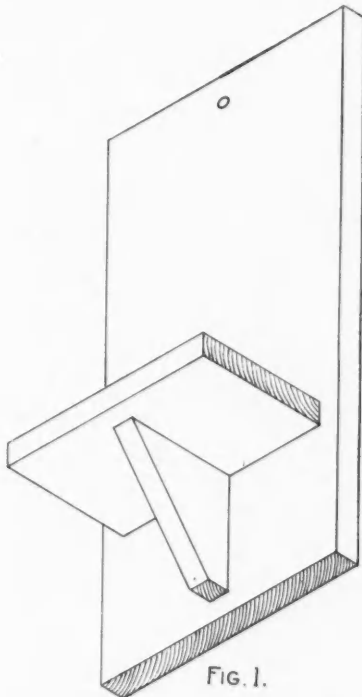


FIG. 1.

the parts, the back, the shelf, and the support, have merely been squared up and screwed together. A glance at the brackets shown in Fig. 2 shows what an improvement is made by designing the outline and adding some decoration. The outline for these brackets was designed by the Manual Training Department of the New York City schools.

There are certain principles governing the making of out-

lines so as to make them pleasing to the eye. It is not my intention to write of these. It may be said, however, that long, smooth, flowing curves combined with short snappy ones produce better effects than curves all of which are similar in size and shape. It will be well for those boys who have not had drawing and design in school to copy the designs shown rather than to try to work out something entirely original. Originality is always desirable, but, unless the design has something else to recommend it, originality may well be sacrificed.

Inasmuch as the curves shown in Fig. 2 are not arcs of circles, they cannot be laid off by the use of the compass or dividers. A pattern must be made

for the back; another of the shelf, and still another for the supports. These patterns should be made full size; that is, just the size the parts of the bracket are going to be, and should be drawn on good tough paper that can be easily folded.

Fig. 4 shows the manner of making a pattern when two parts are alike. A design of this kind is said to have two part symmetry.

With a ruler or straight edge draw a line as at a-b, Fig. 4. Sketch free-hand one-half of the design. Do not try to draw all of the outline with one placing of

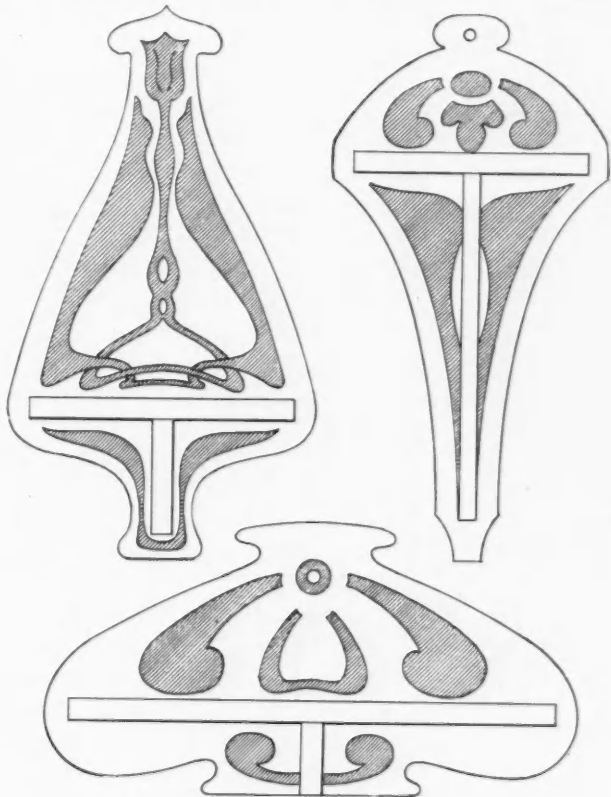


FIG. 2.

the pencil. Draw as many lines as you please, then, when you think you have a good shape, go over the design making a heavy black line for the outline. Do not try to draw the other half, for it would not be possible to get the two parts alike in that way. Fold the paper along the line a-b carefully, and with the chisel handle or any other smooth object rub hard over

the line just drawn. This will cause part of the heavy black line to be transferred to the other half of the paper, thus making both parts alike but in the reverse order. The second line will be faint and must be gone over with the pencil. A piece of carbon paper placed between the halves and folded so as to have the carbon trace on each half, is better, but not a necessity.

The outline for the decoration should be put on the pattern at this time, making one-half and transferring it to the other as was done with the outline.

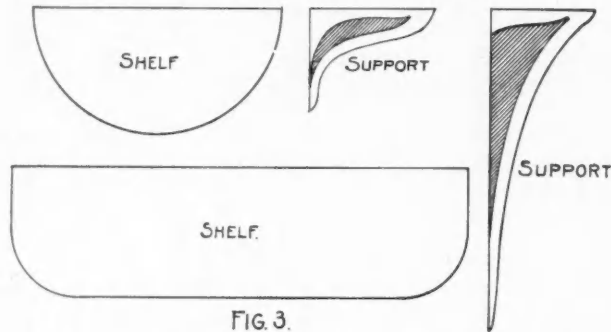


FIG. 3.

The pattern for the shelf is similarly made, but that for the support, since it has no two parts alike, cannot be traced. These parts should be in proportion to, and the outline should harmonize with that of the back, Fig. 3.

Often, the boys at school are given blanks of wood out of which to make the parts of the bracket. Their designs must not be larger than the wood. These blanks, for small brackets, should be six inches by twelve inches for the back, four inches by six inches and four inches by twelve inches for the shelves, depending upon the design. The parts for the supports can usually be gotten out of the scraps left after cutting the back. The grain of the wood should run the long way of the piece whether it be horizontal or vertical when in place.

Basswood, because of its softness, whiteness and

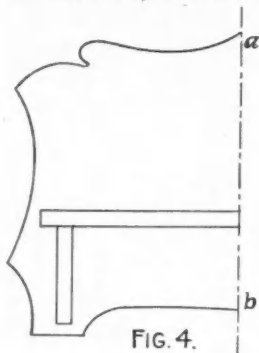


FIG. 4.

evenness of grain is good, though any wood such as butternut or poplar will do.

Surface or smooth the wood by planing, scraping and sandpapering with very fine sandpaper. It will be well to get stock one-quarter of an inch thick so as to allow a little for smoothing up.

Place the pattern upon the board, using thumb-tacks or a little glue to hold it in position. The tacks or glue must be placed so as to be outside of the design.

Trace the design upon the board by pressing hard with the pencil, so as to make an indentation in the wood, or, better still, first slip a piece of carbon paper between the wood and pattern. Trace the decoration as well as the outline at this time.

Cut the parts using a coping saw such as carpenters use in coping mouldings. A satisfactory saw and a dozen blades can be got at any hardware store for twenty-five cents if you don't happen to have one.

It will be found convenient to saw a V-shaped opening in one end of a piece of seven-eighths inch stock, Fig. 5, and to clamp this to the top of the bench so that the V projects out over the side. Place the piece upon this block while sawing so that the saw shall work up and down in the V thus supporting the wood on either side of the saw. The saw blade should be put in place with the teeth pointing downward or towards the handle so that it will cut when pulled instead of when pushed.

Cut to the line and smooth the curves with fine sandpaper held on a chisel handle, or a lead pencil for the small curves. The edge of the shelf which is to fit against the back should be tested for squareness with the try-square. The support should have an edge and an end square with each other and with the working-face.

With a knife or skew-chisel or veiner cut a V-shaped or a U-shaped groove around the outline of the decoration.

Good stain can be made by thinning oil colors with turpentine until it allows the grain of the wood to show through. The beauty of wood is its grain, and it must ever be kept in mind that staining is not painting.

Brown, green and red work up nicely, but should not be used until they have been greyed, or have had their brightness taken off by the addition of a little black to each. A dull brown background, dull green stem and leaves, and a dull red flower will make a pretty combination.

Experiment on waste wood, making sure of the colors, before applying them to the bracket.

Still another way of decorating would be to carve the outline of the decoration and also a small border around the outline of the bracket and stipple the background. This is done by filing a nail to four prongs and driving it over the surface promiscuously.

The parts can be put together with brads or screws, fastening through the back into the shelf and its support. If screws are used, holes large enough to receive the screw without the head should be drilled through the back, two for the shelf, and two for the support. Countersink for the heads that they may be flush or even with the surface when in place. Holding the shelf in place, punch through the holes with the awl and place the screws in. Do likewise with the support, putting a brad through the shelf into the support if necessary.

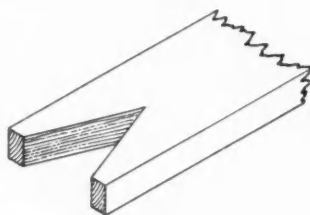


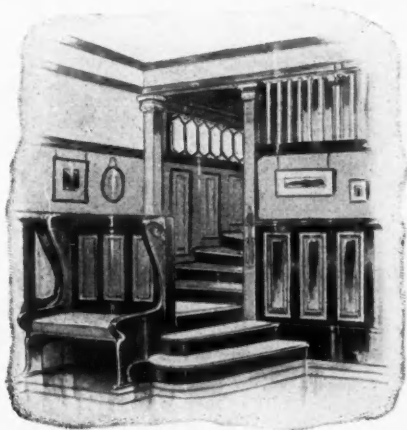
FIG. 5.

### Talks by a Wood Finisher

PROPER TREATMENT TO GIVE TO OLD FURNITURE AND OTHER WOODWORK

MRS. ADAMS called me down to her home the other afternoon, telling me over the telephone she had something important for me to attend to. I have done all the Adams' work for years, finished all the hardwood floors and woodwork in their new house and all the other work that falls to a man in my line.

The Adamses have an heirloom in their home, several in fact, but there is one of which they are especially proud and to which they always call a visitor's attention, if he never has seen it before. It is a big mahogany rocker, which Mr. Adams' great grandfather had in his parlor, over a hundred years ago. There are a lot of interesting stories about him and the chair, which you are sure to hear if you stay any time. I've heard most of them. The chair had received numerous coats of varnish and shellac until you could hardly tell it was made of mahogany. It needed refinishing badly and so Mrs. Adams sent for me. When I came she showed me the chair and asked me



to take it down to the shop and put it in shape. She looked decidedly surprised when I said, "There's no need at all of my doing that, Mrs. Adams, the other work I have done for you was more complicated and I could do it best, but this is quite different. You can do it just as well as I can and you'll enjoy doing it. All you need is a solvent to soften the old finish so it can be removed and some prepared wax which is easily applied and produces a beautiful finish."

"I refinish the chair! Why, I don't know one least thing about it, even how to begin."

"That's easy and simple. You do not want to put on a coat of new finish over the old, for that will emphasize all the defects and leave your chair far less attractive than it is now, instead of making it more beautiful. You must first apply a proper solvent. In about ten minutes the old finish will be so soft that you can remove most of it with a putty knife, though you may need a little excelsior in the carvings or places the putty knife will not reach. If any of the old finish still remains, put on a little more solvent and rub with

steel wool or a suitable substitute for sandpaper. Then saturate piece of burlap or waste with benzine or naphtha and then wipe the wood clean."

"That's plain. What do I do next?"

"The solvent will leave the wood bare and clean, same as before it was ever finished. If you wish to color the wood, apply dye, suitable color, and then apply a coat of prepared wax and rub with polishing mitt. If the wood is open grained a paste wood filler should be applied over the dye, so as to make a proper surface for the prepared wax."



"Wouldn't you put on a varnish instead of wax?"

"No because varnish will show every scratch, and your chair will soon be in as bad condition as ever. And then you would have to apply several coats of varnish and each coat would hide the natural markings and beauty of the wood. Varnish costs more, too. Prepared wax will not show scratches. You can touch up any marred portion of the chair any time with wax without going over the entire chair. If your chair was varnished and it became marred or scratched you would have to re-varnish the entire chair and not simply the marred part. You will be delighted at the looks of the chair and surprised at the little time and trouble it will take. Quite a number of ladies you know do it, since I told them about it. Mrs. Swift and Mrs. Cox I remember especially."

She became more and more interested, I noticed, as I went on, and decided before I mentioned the other ladies that she would at least make, as she afterwards told me, the experiment. In the morning she went down town, got the packages of solvent, prepared wax, a polishing mitt and the other accessories and began, though she had to confess, with fear and trembling. She was astonished to find how easy it was and what a beautiful finish she produced.

"When Mr. Adams came home for lunch"—she said the next time she saw me on the street—"I took him into the library and showed him the chair in its new dress. I wish you could have seen his face when I told him I did it all. Since then I have refinished a number of pieces of furniture and some of the woodwork. Mr. Adams declares I am always looking for a chance to do something of the kind, but he doesn't know what a pleasure it is, nor will any woman till she tries it herself."





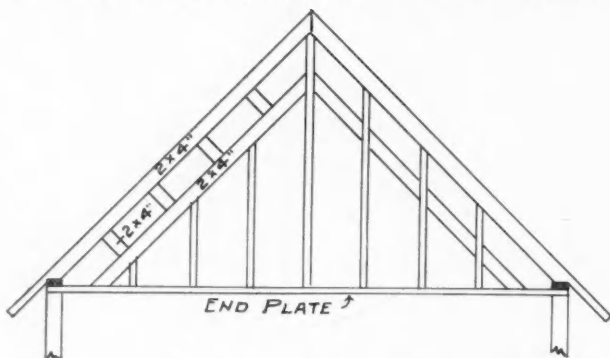
# CORRESPONDENCE

## Putting in Snow Blocks

To the Editor:

Equality, Ill.

I herewith submit a rough sketch of my way of putting in snow blocks, which in the way they are commonly put in are always more or less of annoyance. In the sketch, both the common and my way are shown. In the common way the



blocks are pieces of 2 by 4, cut in between the gable studs, which if not extremely well nailed will become loosened in nailing on the siding. In my way the blocks are in one continual piece, fastened in center to the gable stud just low enough to receive the siding and cornice. While this plan may be old to some, it may be new to many. It is often some of the simple things in our line that are of much importance.

J. H. GODFREY.

## Painting a Shingle Roof

To the Editor:

Melville, La.

I have just completed a shingle roofed house. These shingles were painted about two months ago with ready mixed red roofing paint, two coats, the second being put on about three days later than the first. The water caught from this roof tastes so badly that it is unfit for drinking purposes. Please let me know what is the best way to go about remedying it.

L. A. ROBERT.

Answer: The ready mixed red roofing paint referred to by our subscriber is in all probability a paint made by mixing a mineral red or metallic paint, red oxide of iron, with linseed oil (probably more or less adulterated) with rosin oil or mineral oil, since this is the usual composition of such paints. While such a paint would undoubtedly give a disagreeable taste to the water for some time and would discolor it to a certain extent, there is nothing poisonous about it, such as there would be in any white lead paint that could be used. As a rule, it is better to avoid painting a shingle roof if the water from it is to be used for drinking purposes. Any additional coats of paint applied to this roof would add to the difficulty, and moreover the paint would find its way into the crevices between the shingles, causing little dams, which would hold back the water and rot the shingles. The present condition will probably disappear in the course of a month or two at most. When the paint becomes powdered

on the surface it may be given a coat of hot linseed oil, but other than that we should not advise any treatment. Care should be taken in heating the oil to avoid fire. The best way is to put the can containing it into a large kettle of water which, is brought to a gentle boil over a slow fire. Cold raw linseed oil will answer the purpose, but will not penetrate the wood as well as hot oil. It might be well to add here that, while dipping the shingles in creosote stain is found to preserve them, painted shingles do not last any longer than unpainted. Creosote, however, will give a very disagreeable taste to water taken from a roof where such stains are used.

EDWARD HURST BROWN.

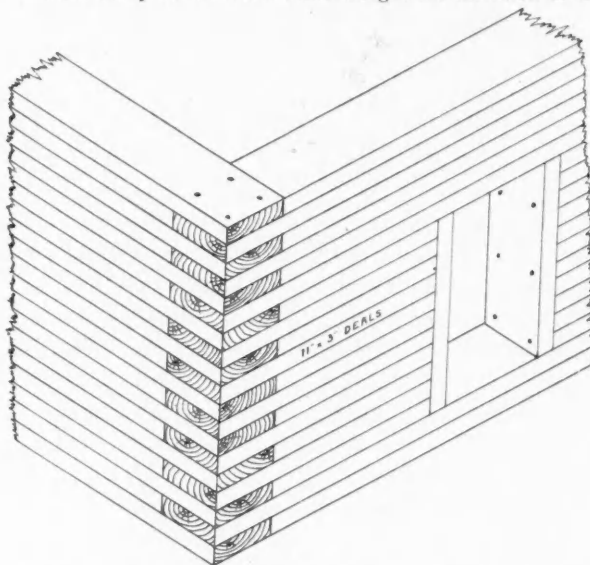
## A Curiosity in Construction

To the Editor:

Fredericton, N. B.

Recently, while in a small town in the north of New Brunswick, the writer came across a method of wooden construction which was quite unique in his experience. The town was Campbellton, a busy little place, the seat of a flourishing lumber industry, and also known to many big game hunters as the center of a region where moose, caribou and deer abound.

The curious piece of work which caught the attention of the



writer, was a three-story house, the outer walls of which consisted wholly of 11 by 3 deals laid on the flat. The lower story was finished and occupied as a store, but the upper stories were bare and showed the method of construction, the deals being lapped at the angles, and, presumably, spiked there and in other places. In districts like that in which Campbellton is situated it is not a far cry from the charming modern dwellings, so characteristic of North American towns, to the log hut of the backwoodsman, and it seemed likely that the log hut construction had suggested the method adopted in this house. The framing round the window open-



ings was very simple and consisted of a deal spiked to the ends of the horizontal layers on either side to form the jambs.

The writer could glean no particulars as to the reason for adopting such a method of building, neither did it seem that the example had been followed in any other structures. Probably it was just a freak, but some other reader of this journal may have come across other instances of such a curious and wasteful way of constructing a wooden house.

T. B. KIDNER.

### Nailing Machines for General Work

To the Editor: Hillsboro, Ohio.

I would like to ask a little information about nailing machines, how they are operated, their capacity, and whether they can be used on good work to an advantage or just for nailing up boxes in a box factory.

THOMAS BROWN.

Answer: Nailing machines, while they are more extensively used in box making than any other one line of work, are not by any means confined to this industry, and may be used anywhere and for almost any kind of work that has enough nailing to do to make the use of the machine justifiable and can be gotten to the machine. In other words, you can't take a machine on the roof and nail shingles with it, or take it about your work anywhere, but where you have work that can be brought to the machine and have enough of it to justify you can get a machine to do it, though at times it involves the building of machines of special designs. There are, however, quite a variety of nailing machines being built already for various kinds of work aside from box nailing, and if you have

nailing to do in any great quantity and will explain just what it is we can advise you better, or communicate with the manufacturers of this class of machines, telling them exactly what the work is, and they will furnish all the information you desire on the subject.

J. CROW TAYLOR.

### Concrete for Veranda Floors

To the Editor: Peebles, Ohio.

Would you recommend concrete for a veranda floor in preference to wood, as the surrounding ground is higher than the foundation of the house?

R. H. PETERSON.

Answer: Concrete floors for verandas, porches and even balconies are desirable, costing about twice as much as wood and when properly done are imperishable. Such floors may be built on the ground same as walks or on rough wood supports. One part Portland cement, three parts sharp sand and three to five parts gravel mixed with sufficient water to become plastic (not pouring) and tamped in position to a thickness of three inches, which is covered with a coat made of one part cement and two parts sand; smooth or trowel with a plasterer's trowel and let harden, keep damp for six or eight days.

FRED W. HAGLOCH.

### Benefit to His Business

Every enterprising carpenter and builder should be a reader of your magazine, as it will be a great benefit to them in their business.—Alfred Lang, Farwell, Neb.

# PRACTICAL TRADE APPLIANCES

## Builders' Iron, Brass and Bronze Work

The Acme Fancy Wire Works, Detroit, Mich., have just published a new catalogue of ornamental wire, iron, brass and bronze goods for bank, office and stable fixtures. They have a nice line of iron fences, as well as interior work. They will be pleased to send catalogue to any one sending their name and address. Write to the Acme Fancy Wire Works, Cor. Canfield, Ave. E. and Moran St., Detroit, Mich.

## A Lesson From a Cartoon

Our readers will undoubtedly remember the cartoon we published a few months ago showing the various contractors and material men passing the blame for delay from one to another around a circle, while the owner stands within the circle, dizzy from watching the blame travel from one to another and unable to put it onto any one man.

The cartoon was drawn in Mr. Wilder's best style and showed pictorially in a striking way an experience that is included in the history of many a building.

But bad as a situation of this kind may be to the owner, it is infinitely worse when the man in the middle is a general contractor who has a delay penalty clause in his contract and the men in the circle around him, busily engaged in passing the blame as children pass a bean bag, are the sub-contractors and material men who, through inability or inattention have failed to live up to their promises and have brought the contractor face to face with a bad loss.

As a rule the material man is in a bad way himself. He

tries to do all he can to make his deliveries on time and insure the friendship of the contractor.

Take hardware as an example. In most cities the hardware man handles one make of trimming hardware and only one. The hardware man knows that if he delays the contractor until the penalty clause becomes operative and puts the general contractor out of business or cripples him financially, the loss comes back on the material man because he has lost a friend and customer.

Suppose it happens that the hardware specified for the new building is "Rusgents". The dealer doesn't carry "Rusgents"—he handles "Readbin's", but he writes to the Rusgent factory and gets a price on the list of goods specified. The price is satisfactory and he gets the order which he sends to the Rusgent factory.

A few weeks pass and the contractor wants the goods. Mr. Hardware Man will write and see what's wrong. He gets an answer that tells him nothing much. He bombards the factory with telegrams—doing all he possibly can—and finally after the contractor's time limit is up, the last of the goods come in.

The contractor has lost some money and learned a lesson and the hardware man is sorry, but helpless.

This is not a piece of fiction—it happens every season many times over and the point of it for the contractor is just this:—Don't blame the hardware man for your mistake in letting the hardware to a "one line man." When the factory delays shipments he cannot go to his shelves and give you the equal goods in some other make as the Orr & Lockett Hardware

Co., of Chicago, can. If you want some or all of the hardware in a hurry he cannot give it to you from his stock—unless it is his one line—as Orr & Lockett can; no matter what goods are specified and ordered. He doesn't buy in the quantities they do and he cannot sell as cheap as they do.

With them there is no occasion for trying to pass the blame—there is seldom any to pass.

### A Novel Plan Succeeds

Four years ago the Hess Warming & Ventilating Company ventured on a novel plan for selling their Leader steel furnaces, which, at that time, seemed reckless, but which has developed into a most satisfactory and profitable method for seller and buyer.

"From factory to consumer" is the keynote of the plan under which sales are made direct to the users of furnaces, no middlemen being considered in the negotiations.

Estimates are provided, on request, for the complete heating equipment of any building, no matter where situated, and the seller agrees to deliver the full outfit anywhere, freight prepaid, with complete directions and plan for setting it up, and *guaranteeing* the results desired or money refunded.

Hundreds of building contractors have taken advantage of this plan, not only avoiding the payment of dealers' profits, but securing the expert aid and advice of the makers in planning the work, and, by erecting the equipments with their own men, retaining the profit on labor which would ordinarily go to others.

Distance is no bar, freights being prepaid in all cases and safe delivery guaranteed.

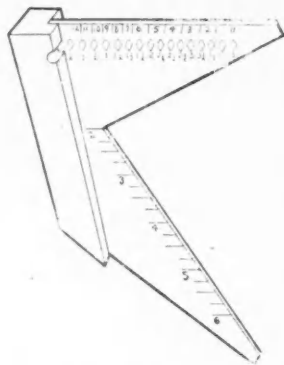
The successful operation of furnaces sent out by this company has resulted in an enormous increase of orders, necessitating a yearly increase in space and facilities to meet the growing demand.

The company publishes free printed matter fully describing its goods and methods, as well as a booklet of names and customers' letters which never fails to convince the most skeptical inquirer of the high merits of the heaters offered.

See their advertisement on page 667.

### The New Universal Square

The Duby & Shinn Company of New York city wish to call attention to an improvement in their square, which combines the two lines of diamond holes into one line, and to explain the effect of the change. It is an improvement, inasmuch as it corrects a slight discrepancy in the measurement



of the circle, which was the case with the old style. Also the new style will be found more useful in marking off a straight line at every eighth or quarter inch. This can be done very neatly and accurately by placing the pencil in the diamond corner and making a dot, instead of the old method of placing a rule on a line and marking off measurements from it.

They also wish to call the attention of the trade to their relief from the past small output of their squares, in consequence of their original small shop and equipment, which did not enable them even to cope with the demand from local houses, who were flooded with back orders on account of the first delay caused by the necessity of a specially prepared steel.

The company has changed their factory quarters and now have a fully equipped plant well under way, with a thoroughly experienced tool maker in charge and a force of ex-

perienced tool makers as assistants, so they are now ready for stock orders, guaranteeing not more than two weeks delay to shipments of same.

Any mechanic who purchases a square and finds it "out" in any detail is asked to please return it either direct or through his dealer, and receive a perfect one in its place. This is a standing guarantee.

### Inquiries From Many Lands

The Waterloo Concrete, Brick and Block Machine Company of Waterloo, Iowa, writes:

"We have recently received inquiries from prospective buyers in Brazil, Zanzibar, Africa, Freetown, Africa (on east coast); Calcutta, India and New Zealand. We have within a few weeks shipped machines to Virginia, Georgia, Illinois, Nebraska, Washington and North Carolina. The advantages of concrete blocks are becoming better known to builders in the Southern States, and we are having many inquiries from the Southern and Gulf States."

### Columns and Porch Work

The Henry Sanders Co. of 70 to 80 Weed street, Chicago, make a specialty of columns, pilasters and porch work for the trade. They are the manufacturers of Koll's patent lock joint staved and turned columns and are the originators of the lock joint stave. They guarantee all their work. This company claims to have the best equipped factory for the manufacture of columns in the country, making them from six to forty-five inches in diameter and proportionate in length.

As the appearance of the building is made or marred by the columns provided, the owner as well as the architect is realizing that a cheaply built column is dear at any price. The ingenious construction of the lock joint and its absolute permanency appeals to the practical man in a way that assures a continuance of his substantial patronage.

The Henry Sanders Co. will be pleased to correspond with any of our readers who are in need of anything in their line, and as they make all kinds of columns, pilasters, pedestals, general porch work, hardwood and veneered columns for interior work, sun dials, brackets and consoles, as well as composition capitals, their output should appeal to our subscribers. They will send a catalogue for the asking.

### Concrete Mixers

It has been proven many times that it is practically an impossibility to equal by hand mixing, the concrete produced by an up-to-date mixing machine. This is true on any class of concrete work, but the manufacturer of concrete building blocks and the like, who has made a careful study of the business, realizes fully the importance of obtaining the most perfect mixture. Even though the best materials are used, the strength of the blocks will be greatly impaired by improper mixing of these materials. Hand mixing, at the best being slow and expensive, it is considered that no concrete plant is really complete without an up-to-date batch mixer.

We have just received from the International Fence & Fireproofing Company of Columbus, Ohio, their very interesting and attractive booklet No. 5, which fully describes and illustrates the "1906" model of the American Concrete Mixer, manufactured by that concern.

Briefly, this mixer may be described as follows: It consists of a heavy iron and steel drum, having but one opening, and being supported by a substantial oak frame. Extending through the center of this drum is a heavy steel shaft, on which malleable plow arms are keyed. To these arms, steel plow blades are secured and by them, the mixing is accomplished. The drum is constructed with a "wearing part" of heavy hard steel plate which will withstand a very great

# Johnson's Wood Dye

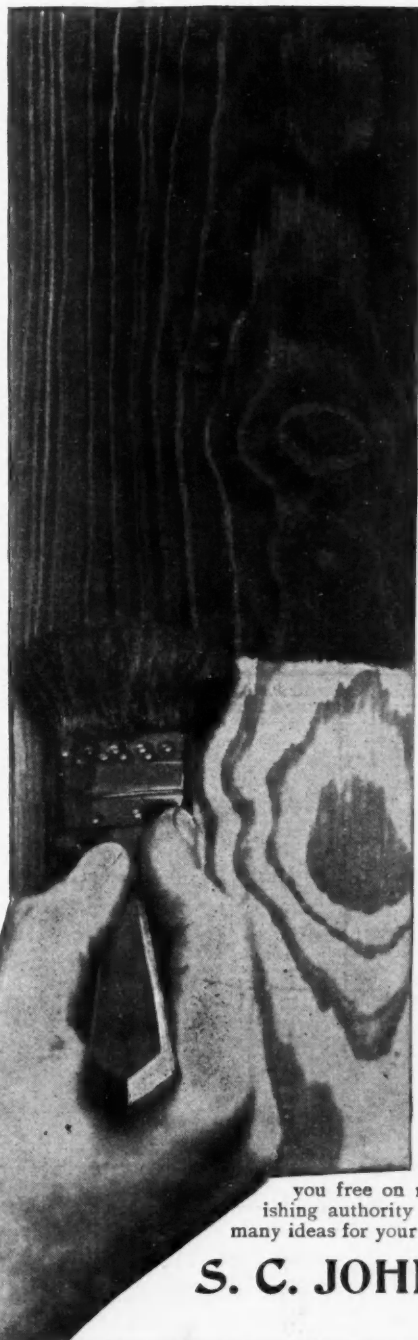
*"For the Artistic Coloring of Woods."*

Johnson's Wood Dye is the result of years of experimentation. Because of its acknowledged superiority it has met with wonderful sale. Don't confound Johnson's Wood Dye with various "stains" now on sale. Water "stains" and spirit "stains" raise the grain of the wood. Oil "stains" do not sink deep into the wood, nor do they bring out the beauty of the grain. Varnish stains do not properly color the wood—the color being only in the finish. When varnish finish is marred or scratched it shows the natural color of wood—revealing the sham. Johnson's Dye is a dye. It penetrates the wood; does not raise the grain; retains the high lights and brings out the beauty of the wood. Johnson's Dye is the best for use on floors, interior woodwork and furniture.

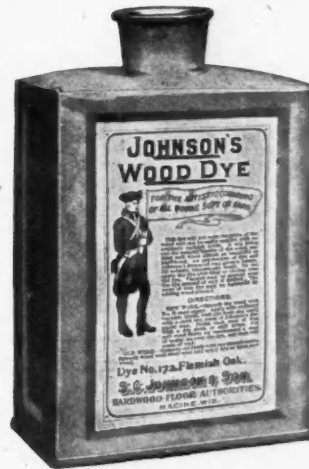
**Johnson's Wood Dyes are Sold by all Dealers in Paint. They are Prepared in all Shades as Follows:**

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

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



Don't buy "stains" but be sure to get the genuine Johnson's Dyes if you desire best results. Don't take a substitute.



One-half pint cans . . . . .	30 cents
Pint cans . . . . .	50 cents
Quart cans . . . . .	85 cents
Gallon cans . . . . .	\$3.00

One gallon covers 700 square feet upon hardwood, 400 square feet upon soft wood. It is very easily applied with an ordinary paint brush.

**Special FREE Offer.** We will send you a sample any shade, absolutely free for your paint dealer's name.

**Send for FREE Book.** We have just published a new edition of the interesting, practical book, "The Proper Treatment for Floors, Woodwork and Furniture," that we will send you free on request. It is illustrated from life and written by a wood finishing authority with over 23 years experience in this line of work. Contains many ideas for your business. Write us now. Mention edition ACB 12.

**S. C. JOHNSON & SON, Racine, Wis.**

*"The Wood-Finishing Authorities."*

amount of hard usage, but should it become necessary, this plate may be removed and replaced without disturbing other parts of the machine.

The construction of the American is such that in it are found many valuable features not ordinarily embodied in this class of machinery. In this connection, mention might be made of the large hopper and drum opening, which permit of the charging from either side or either end of the machine, and through this opening, the full batch of concrete is within view of the operator while being mixed.

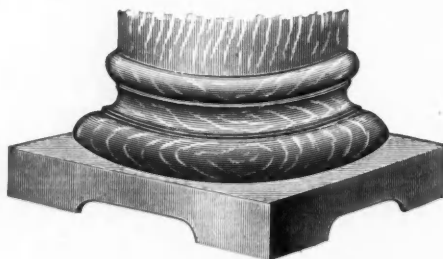
The International Fence & Fireproofing Company advise that their Booklet No. 5, which, by the way, has been copyrighted by the author, will be sent promptly upon request to such parties who are interested, also re-productions of many letters from satisfied customers.

### Information Wanted

If the party who wrote Nov. 9 from Princeton, N. J., to the Batavia Clamp Co., Batavia, N. Y., will kindly send his name to them they will gladly send him their catalogue. The party failed to sign his letter.

### Metal Bases for Wood Columns

The "Zimmerman" iron base for wood porch columns was an inspiration which the inventor thought would bring some revenue by introducing them in his home town, Syracuse, N. Y., and surrounding territory. This simple common-sense



invention, however, took hold of the entire country, and instead of being a side line has grown to be an extensive business. The Zimmerman base lifts the column from 1 7/8 to 2 3/4 inches off the floor, according to the size of the column, to preserve the general architectural effect. The base to all intents and purposes is invisible, especially when painted to match the column. These bases are made round or square, in all sizes, and are adapted to all styles of columns, also in halves for pilasters. The rotting of wood columns at the base, and of the platforms around them, has always been a great annoyance; this is now overcome by the use of the Zimmerman base. The price of these bases is so absurdly low that it would be the height of folly to place a wood column without one. Write the manufacturer, C. E. Zimmerman, 204 Burnet avenue, Syracuse, N. Y., for illustrated price list.

### Ives' Window Hardware Specialties

The H. B. Ives Co., New Haven, Conn., are placing upon the market, a line of window hardware specialties, some of which are shown on page 669 of this issue of the American Carpenter & Builder.

The Ives patent window ventilating lock, of which they make special mention, is a simple device which requires neither mortising nor the boring of holes to apply it, being fastened by screws in the ordinary way.

It is claimed by the manufacturers that this permanent fixture affords extra security to the window in addition to the usual sash fastener, and also perfect safety in ventilating rooms.

This old and established firm is a sufficient guarantee of the utility of the articles mentioned in their advertisement, and it will repay anyone, carpenter or those contemplating

WHEN WRITING ADVERTISERS PLEASE MENTION

## A COMPLETE FACTORY For \$650

1 CONCRETE BLOCK MACHINE, 1 CONCRETE BRICK MACHINE, 1 POWER CONCRETE MIXER, 1 5 H. P. GASOLINE ENGINE, 1 WINDOW CAP AND SILL MOLD, 1 SET OF SIDEWALK TOOLS

This is the most complete outfit made for the manufacture of concrete building material. Get ready for the spring trade. \$650 invested in this outfit will bring larger returns than \$3,000 in a Mercantile Business or \$6,000 invested in a farm. We shall be pleased to send you our catalogues and printed matter.

**Northwestern Steel & Iron Works**  
Eau Claire, Wisconsin

## SLATE WE HAVE WHAT YOU WANT

*In Roofing Slate, Slate Blackboards  
Structural and Plumbers' Slate*

SATISFACTION GUARANTEED IN QUALITY AND PRICE

ASK FOR DELIVERED PRICES

**J. K. HOWER, Station C., Slatington, Pa.**

H. J. KICHLINE, Sales Agent

## SLATE! SLATE!! SLATE!!!

Black Boards for Schools - - - Roofing Slate for Houses  
Are you going to build a home? I trust you are, and that you will put on it for a Roof (one of the most important things about a house) SLATE, which is always CLEAN, FIREPROOF and BEAUTIFUL. Write for prices, and I will tell you all about SLATE.

DAVID McKENNA, SLATINGTON, PA.

### JUST OUT



Shows how to cut all kinds of Roofs. Gives degrees, pitches, polygons, ovals, ellipses, etc. Before I could get it from the press, I received orders from Massachusetts to California, and from Texas to Canada. So order at once if you wish to get it at

Introductory price, 10c. Dwight L. Stoddard,  
AUTHOR OF "STEEL SQUARE POCKET BOOK"

328 West Raymond Street INDIANAPOLIS, IND.

## PATENTS

Valuable and Salable Patents Promptly Secured. Advice as to Patentability and Commercial Value Free. :: Write for Inventor's Hand Book.

**Shepherd & Parker, Patent Lawyers.**

"During the past ten years Mr. Shepherd of Shepherd & Parker, has obtained for us a great many important patents. We have no hesitation in heartily recommending him to any one having need of the services of a patent attorney."

HALLWOOD CASH REGISTER CO.

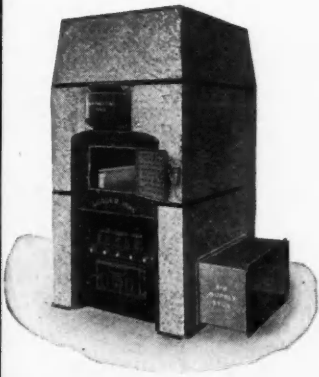
Mr. Parker on Nov. 1, 1903, resigned his position as an examiner in the U. S. Patent Office to enter this firm. Address, Dietz Bldg., WASHINGTON, D. C.

## CARPENTERS

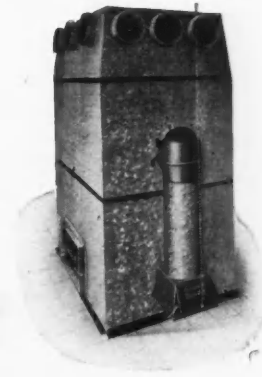
desiring to fit themselves for better paying positions should send for 200-page handbook (FREE) describing our course in Carpentry, and over 60 other courses, including Contracting and Building, Architecture, Structural Drafting, Electrical, Mechanical, Steam and Civil Engineering, Heating, Ventilating and Plumbing, Mechanical Drawing, Telephony, Textiles, Etc.

**AMERICAN SCHOOL OF CORRESPONDENCE, CHICAGO, ILL.**

THE AMERICAN CARPENTER AND BUILDER.



# The *Leader* Steel Furnace



## Mr. Carpenter and Builder:

When you need another HOT AIR FURNACE send us your name on a card and let us tell you of the good thing we offer builders.

1. We make our own goods, and we sell DIRECT FROM OUR SHOP TO YOU, with no middlemen's profit added to cost.
2. We supply the full heating equipment, all made to measure, with plan, so you, or your men under your directions, can erect this heating outfit. Your local tinner or plumber need not be employed.
3. We pay the freight, and if anything arrives broken we send new parts prepaid, free of charge.
4. We guarantee our heater fully, and if it fails it may be shipped back at our expense and the money will be refunded.
5. Or we will ship the complete outfit and when it arrives you may pay your local bank for it, and the bank will hold the money while you test the heater 30 or 60 days.
6. Or, if you are responsible and of good habits, to be certified by two references, you may pay a portion down, the balance in monthly installments to meet your convenience.

There's no experiment in this. We have sold hundreds of furnace outfits this way and have saved thousands of dollars for furnace buyers.

## The Leader Steel Furnace

Has riveted body, gas and dust tight; burns any kind of fuel; has rocking grates; large evaporating pan; chain regulation, etc., etc., and is sold at prices no dealer can match. For instance: Our No. 45, large enough for 6 to 9 rooms, we sell for

Freight prepaid to any point east of Omaha.  
Pipes and registers are extra at factory rates.  
Five other sizes at proportionate prices.

# \$49.00

Send us a description of your house and we will name our price for the whole heating equipment, laid down at your station.

*Send also for our free hand book "MODERN FURNACE HEATING" which contains instruction in heating valuable to any builder*

## HESS WARMING & VENTILATING CO.

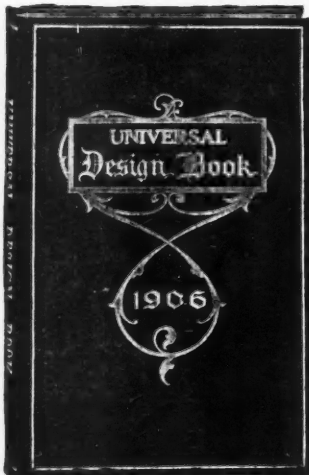
720 Tacoma Building, CHICAGO

building, to send for their miniature 40-page catalogue of hardware specialties, which will be mailed free upon application to all readers of the AMERICAN CARPENTER AND BUILDER.

### Reorganized and Incorporated

The T. O. Eichelberger Co., Dayton, O., has recently been reorganized and incorporated with a capital stock of \$75,000. This company manufactures the "Superior" block machine. They have secured a two-story building with 8,500 feet floor space and are now installing machinery to do their own foundry work. Mr. Eichelberger will continue as president and manager of the new corporation. The Superior machine

has enjoyed a large sale the past year. Some of the leading points of superiority claimed for it are: that it is so constructed as to form the stone with the face down; this enables the use of a small quantity of fine rich material to form the face, and much coarser, cheaper material for the main body of the block. After the material is thoroughly tamped in the mold, a wooden follow board is hooked to the top, which holds the block in place, while the entire mold is reversed or turned upside down by the operation of a lever, when a truck, which slides on an incline track, is shoved under the follow board, and the mold opened, leaving the block on the board face up, ready to be taken to the curing shed.



## UNIVERSAL Design Book

416 Pages—Handsomely Bound in Cloth—1500 Illustrations.  
Official Lists Throughout—Size of Page, 7x10½

**\$1.25 POSTPAID.**

The **phenomenal success** of our large Design Book throughout the United States, the many testimonials we have received as to its usefulness, is assurance the book is all its name implies, viz: "Universal." Corrected to date, it contains all the Official Lists, including Window and Plate Glass, Mouldings, Corner, Head and Base Blocks, New Sash and Door List, etc. Almost invaluable to the Architect, Contractor, Builder, Jobber and Manufacturer, alike. A book of ready reference, and referred to constantly. Special care having been taken in its compilation by the best authorities, assuring accuracy and judgment, and nothing listed that cannot be obtained at all times without annoyance and delay.

Handsomely bound in cloth, lettered in white and gold, beautiful enamel stock, with Art Glass, Parquetry Flooring, Painted and Grained Doors, illustrated in seventeen colors—a work of art, a Design Book that no office is complete without. Send for one while the edition lasts.

We also publish and keep in stock the following Official Lists:

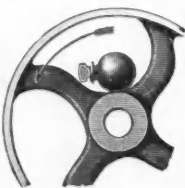
**96 Page Sash and Door List—232 Page Sash and Door List**

THE ABOVE IN VEST POCKET SIZE.

**OFFICIAL MOULDING BOOK—WINDOW AND PLATE GLASS LIST—ART GLASS CATALOGUE**

SEND FOR SAMPLES AND PRICES.

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To every manufacturer using wood-working machinery of any description, who will tell us he saw this ad in the American Carpenter and Builder, we will send *free of charge* one of our

**VAN DUZEN LOOSE PULLEY OILERS**

They do not waste or throw oil—can be used on almost every size and speed of pulley. Tried and tested 15 years. 7 sizes, all brass. Ask for price list 26 Z.

**THE E. W. VAN DUZEN CO., CINCINNATI, OHIO**

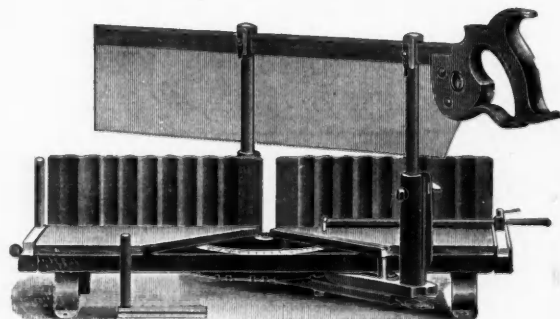
## GOODELL MITRE BOX

MADE ENTIRELY OF STEEL. NO MORE BREAKING  
FIRST IN QUALITY AND IMPROVEMENTS

AUTOMATIC STOPS FOR HOLDING UP SAW.  
CORRUGATED BACKS. GRADUATED.  
GAUGE FOR DUPLICATE CUTS and many  
other features.

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

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

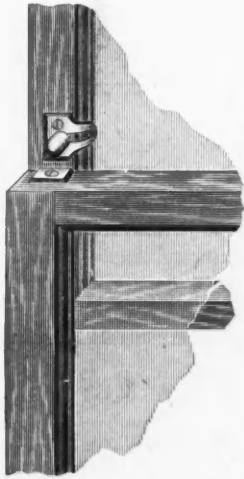


WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER.

(Good ventilation essential to good health)

## The Ives Window Ventilating Lock

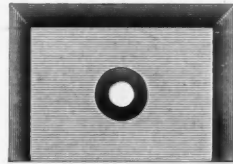
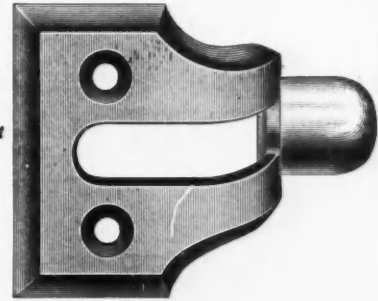
*A Safeguard for Ventilating Rooms  
A Lock, quickly applied and operated.  
Affording Safe Protection against  
Intruders.*



**Children kept in**

**Burglars kept out**

To introduce this meritorious article, we will pack and mail complete with screws, four genuine bronze or brass metal Ives Window Ventilating Locks, in bronze, antique brass or copper finish, upon receipt of One Dollar. This article when applied is a permanent fixture, giving an extra protection to the window, and to carpenters who wish to canvass for its sale, we will include a mounted working model and a forty page Catalogue of Window Hardware Specialties, all prepaid without extra charge.



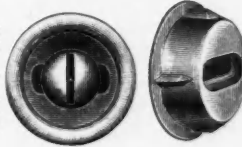
Patented

### THE "IVES" WINDOW STOP ADJUSTER

The only Stop adjuster made wholly from one piece of metal with a heavy bed that will not bend in tightening the screw, it has a thin flange to admit of a close adjustment of screens, and also to prevent the screw from drawing it into the wood.

The solid ribs will drive into the hardest bead or stop, and prevent the Adjuster turning in either direction.

In appearance it is neat and ornamental, affording a quick and simple adjustment of the shrinkage or expansion of windows, doing away with unsightly weather strips and anti-rattler devices.



ASK YOUR DEALER TO SHOW YOU THESE GOODS.



Weight Fastener

Sash Cord Fastener

### THE "IVES" SASH CORD AND WEIGHT FASTENER

An up-to-date method of hanging windows.

## The Crescent SASH FASTENER.

TRADE-MARK REGISTERED



### The "CRESCENT" SASH FASTENER

The best Sash Fastener on the market. For sale by all hardware dealers.



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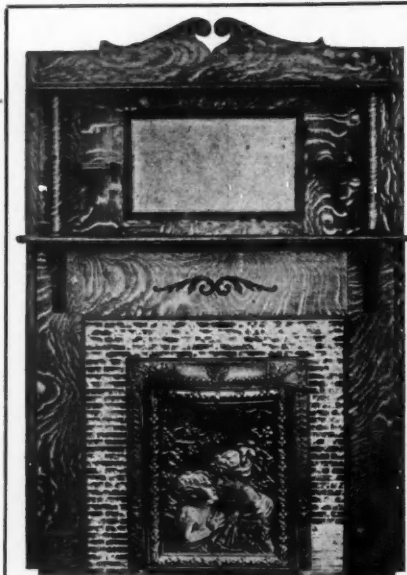
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ESTABLISHED 1876

**THE H. B. IVES CO.**  
NEW HAVEN, CONN., U. S. A.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER.

# A B A R G A I N



Oak Mantel, handsomely figured with veneered quartered oak columns, beveled *plate* mirror, polished and rubbed finish, tile facing (slabbed) and steel summer front, delivered anywhere.

**\$18.00**

Other designs and woods at equally low prices.

**We carry a stock of over 200 mantels in 50 designs, in all kinds of woods.**

Send *to-day* for our 40 page Catalogue.

Address, Department "M" **THE A. W. BURRITT CO.,**  
 "The Mantel Folks,"  
 349-473 Knowlton Street, BRIDGEPORT, CONN.

# LORENZEN

## • MANTELS •

are **not** designed to meet the requirements of persons who are satisfied with **ordinary** common-place designs so universally offered. They are exclusive in pattern, workmanship and material, because no other maker has the workmen, the woods, or even the **inclination** to make them as thoroughly good—inside and out—as the makers of

### Lorenzen Mantels, \$10 upward

Our Craftsman, Modern Mission and Colonial designs embody the acme of artistic achievement. Nowhere in the world will you find the careful wood selections, the elegance of form and finish, the skilled workmanship.

**To Carpenters and Builders Free**  
 We will mail our large, handsome, 96 page (10x22) Catalogue, the largest Mantel and Grille book ever published, which cost us nearly 50 cents. Send us your business card and we will show you a way to make money by becoming our sales agent for your territory. **Write today.**

**CHAS. F. LORENZEN & COMPANY**  
 220 N. Ashland Ave., Chicago, U. S. A.

Fifty Lorenzen Mantels were recently purchased by the U. S. Government and shipped direct from our factory to Pekin, China, for use in new buildings of the U. S. Government

Legation. After a thorough test of all other makes the government chose the Lorenzen Mantel as superior in attractiveness, workmanship and durability.



# THE New Universal Square

(Note Change. See Reading Notice, Page 664, This Issue.)



**Com-  
bination:**

—

Tri; pitch-cut;  
Hip and Valley  
Cut, and Mitre Square.  
Draws circles; gauges  
lumber; octagonal cuts; laying  
out mortise and tenons; plumb  
and level; straight-edge and innumer-  
able other purposes. Its operations  
are simply reversing it from side to side.  
It marks  $\frac{1}{8}$ " on one side and  $\frac{1}{4}$ " on the other.

**Made in Three  
Sizes**

- No. 1— 6-in. . . . . \$0.65
- No. 2—10-in. . . . . 1.00
- No. 3—13-in. . . . . 1.50

**Always Ready  
Nothing to be  
Adjusted**

Made completely of best  
steel and of light weight.

**Coppered**, then oxidized or  
nickel as desired. **Can't  
rust.** Guaranteed abso-  
lutely true.

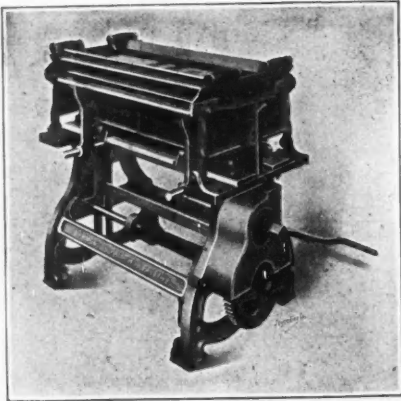
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For sale by all first-class tool deal-  
ers. Write for descriptive circular

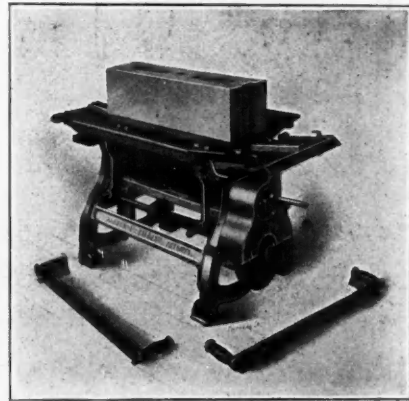
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**The  
Duby and Shinn  
Mfg. Co., Inc.**

**NELSON BUILDING  
19 Park Place - 16 Murray St.  
NEW YORK**



**Only  
Machine that  
can make  
Water-Proof  
Work**



The original inventor's latest production in Hollow Concrete Building Block Machines; advancing the industry one hundred per cent

**Harmon S. Palmer's  
Self-Closing-Automatic-Adjustable**

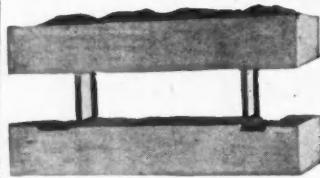
The Crystallization of Every Merit in the industry to date. Blocks of every size, length, angle, height and contour produced with astonishing ease and rapidity. Also brick. A marvel of ingenious attachments to the machine which has made more buildings than all infringers and imitators combined. We gave the world the Hollow Concrete Block Industry, the first machine and the first practical block. In the race for advancement and business, we are still in the lead.

Two Highest Awards at St. Louis Exposition. Adopted by the United States Government and Panama Canal Commissioners.

**Wanted!—Live Agents, Good Factories and Local Lawyers**

We agree to prosecute infringers. Many already enjoined. Many suits pending.

Write for Catalogue "A."  
Washington, D. C.

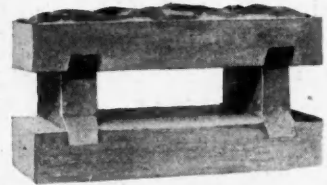


**DUNN'S CEMENT STONE MACHINE**

Makes the only reinforced *steel bonded* block and the best bridge block on the market. It makes them in all sizes and in many designs all on the one size wooden pallet. The most complete portable machine on earth. Equipment includes plates for sills and lintels up to 60 in. long. The exceptionally low price will interest you. *Machines sent on trial.* Also molds for sewer pipe, well curbing, tanks, manholes, etc.

Write for catalogue

**W. E. DUNN & COMPANY** 353 W. FULLERTON AV.  
CHICAGO, ILLINOIS



Shingle Roof being covered with our Standing Seam Roofing.

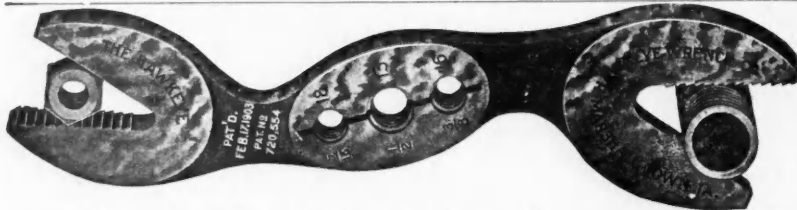
**STEEL ROOFING  
AND SIDING**

Cheaper than tin, slate or reshingling. Cooler in summer; warmer in winter. Saves insurance and danger from fire.

**LLOYD IRON ROOFING  
& PAINT CO.**

100 West Monroe St., CHICAGO, ILL.

Manufacturers of Metal Ceilings and Sidewalls, Corrugated and Crimped Iron, Steel and Galvanized Iron Roofing, Roofing Paints and Cement



**A NUT WRENCH, PIPE WRENCH AND  
THREAD CLEANER**



Has more uses than any wrench made. Should be in the Tool Chest of every Carpenter. You will have occasion to use this many, many times. This Wrench is made of the best quality of English Tool Steel and is Scientifically Hardened.

Will be mailed to you on receipt of 75 cents in stamps. Order one today

**HAWKEYE WRENCH CO.,** Marshalltown, Iowa



**THIS MANTEL \$24.00**

Golden Oak, 82 inches high, 5 feet wide. Includes enameled tile hearth and facing, 20-inch oxydized finish combination grate with summer front.

Catalogue E Free—Mantels \$20.00 up. Our handsome large 72 page Catalogue for 10c postage.

**CALHOUN MANTEL & TILE CO.**  
KANSAS CITY, MO.

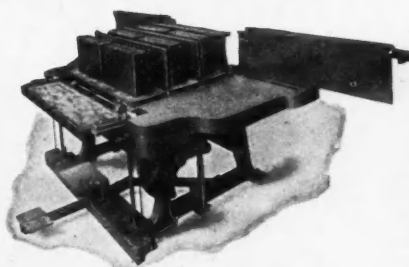
**Tile Floors  
AND  
Bath Rooms**

Send Sketch of  
Space for Prices

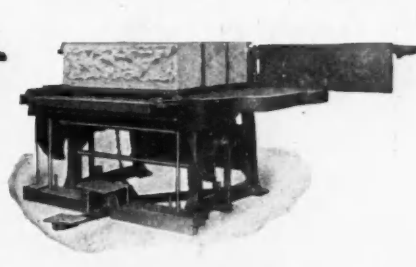
**THESE CUTS SPEAK FOR THEMSELVES, No. 4 CHICAGO, 1906 MODEL**



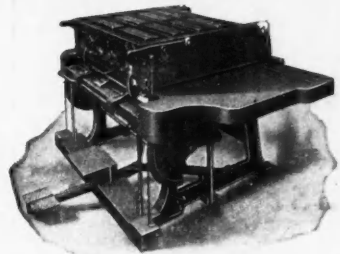
Rear view. Set to mould 3-8x32 inches at one mould. Adjustable to 60 in. long x30 in. wide. Cores down. Back brace shows patent dates and gold medal award.



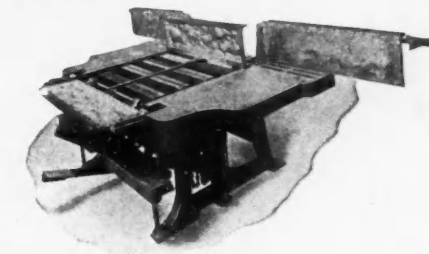
Front and end view. Set to mould 3-8x32 inches. Cores raised, pallets and divisions in position. Mould box ready to close. Name stamp on one division.



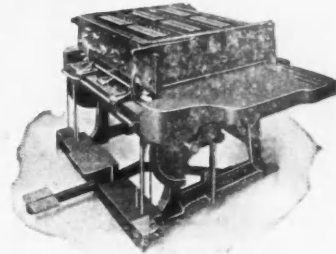
3 blocks moulded 8x32 inches. Mould box open ready to off bear blocks. See pallets and divisions. Cores are withdrawn by stepping on compound lever.



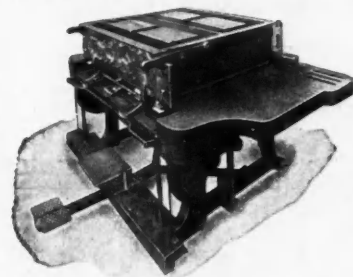
Set to mould 4-6x32 inches. Machine is closed. Cores are raised and locked automatically by stepping on lever.



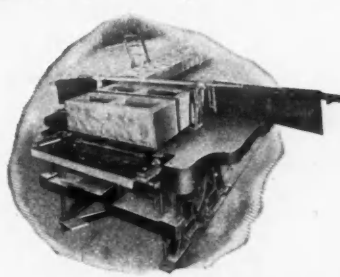
Cores withdrawn, divisions removed. Machine open, front and back plate shown. See slotted end doors for divisions.



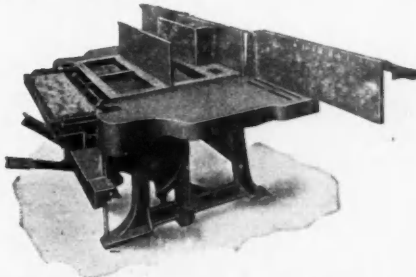
Closed. Cores raised. Divisions in position ready to fill and tamp. Blocks can be made any design face.



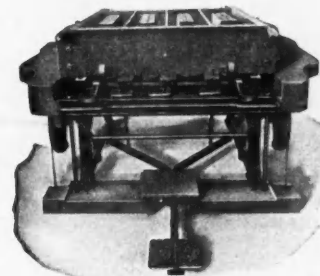
Set to mould two blocks, 14x32 inches. raised. Divisions ready to fill and tamp. Cores are raised and lowered with foot lever.



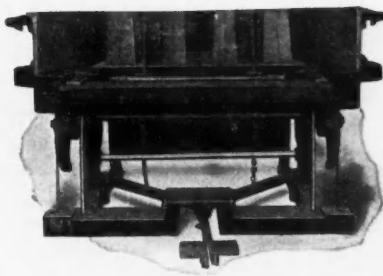
Cores 2-14x32 inches. Blocks moulded. Cores withdrawn. Division shown in center. Front block is carried away first. Moulded block in rear.



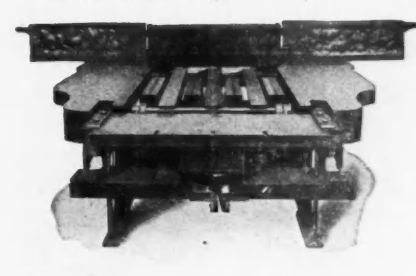
Open. Set for 1-10x32 in. straight and 1-10x32 in. corner. Rock face inside angle, plain division. Use rock face division and rock face end to rock face outside angle.



Front. Set to mould 4-8x24 inches. Any designs can be used. Four blocks can be moulded as quickly as one in a common mould.



Open. Cores raised. Pallets in position. Center division not in. Has two sides of any design wanted.



Open. Cores withdrawn. Divisions removed. 24-inch rock face doors shown. The No. 4 Chicago is the only perfect adjustable machine.

**COUPON**

Cut out this coupon and mail to us with 25c in stamps and we will mail you sample of **waterproofing and coloring** for cement stone, guaranteed to make a **perfect color and waterproofing** at not to exceed 1c per face foot of stone. Any block can be waterproofed and colored after it is cured. Blocks do not need to be faced in order to be waterproofed and colored if our color and waterproofing is used after block is made and cured. We will furnish enough of the waterproofing and coloring to waterproof and color 100 sq. ft. of surface for \$1.00. State color wanted *when ordering*. Write today for sample and be convinced. Our catalogue is free. Write us today.

SALES DEPARTMENT, CEMENT MACHINERY MANUFACTURING COMPANY, BURLINGTON, IOWA

The above cuts show our 1906 model No. 4 Chicago Machine set in several different ways. Blocks from 32 inches long up to 60 inches long are moulded lengthwise of the machine. Blocks from 15 inches long up to 28 inches long are moulded crosswise of the machine. We guarantee twice the capacity of any other machine, and that blocks moulded on the No. 4 machine will not be 1-64th part of an inch out of square or plumb.

We build twenty different styles of block machines, ranging in price from \$150.00 up to \$450.00, depending on the equipment. We are the largest exclusive manufacturers of cement working machinery.

We were awarded the Highest Prizes at the World's Fair. We build machines, not crude, cast boxes. See our machines before buying. Every part of the No. 4 machine is machined and interchangeable. There is no design that we cannot furnish, unless under cut, to work on the No. 4. The cores are raised and withdrawn with compound foot-lever, and being counterbalanced, a boy can draw 8 cores at a time or raise them to position. Cores lock automatically when raised and are released with handle bar in front. We build the No. 1, No. 2, No. 3, No. 4, Junior No. 2, Junior No. 3, and Junior No. 4 Chicago machines. The Junior No. 3 is the same as the No. 3 except cores are drawn from top. The Junior No. 4 is the same as the No. 4 except cores are drawn from top. We have the strongest patents but do not sell territory or patent rights. We manufacture special moulds from drawings. We make patterns for block machines. We carry a stock of pallets for every standard machine and can make prompt shipment. We manufacture every class of cement working tools and moulds. Write us for anything you want. We have more than 2,000 users of Chicago machines, all satisfied. We have shop capacity of 5 machines per day and can ship promptly. We will gladly furnish you a list of users of our machines. We furnish all repairs for one year from date of sale free of charge. We have the best face down machines on the market. We will show you 40 different styles of machines if you will visit us. If we cannot please you, we do not expect you to buy.

If you are intending to purchase cement working machinery, we agree to pay your transportation if you will visit us, or we agree to ship one of our No. 4 machines to any point in the United States, freight prepaid, and send our representative to start it. If machine is not satisfactory, we remove it at our expense. We will take old machines of any make made of iron in exchange for our new models. We will build you a No. 4 with special equipment just as you want it at less than you can buy a crude mould box. We want every plant to be a success; tell us where you are located and we will tell you what equipment to buy. Don't buy a large outfit if a small one will do; we build them all sizes and we want to sell you only what you have use for. We agree to ship on approval or to pay your expenses to visit us; it will be more satisfactory for you to visit us and see all the different makes and choose just what you want. Last of all, don't buy territory or patent rights. Buy the best machine you can find. Write us today. Cut out coupon, pin to your letter, and address to SALES DEPARTMENT, CEMENT MACHINERY MANUFACTURING CO., BURLINGTON, IOWA.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER.

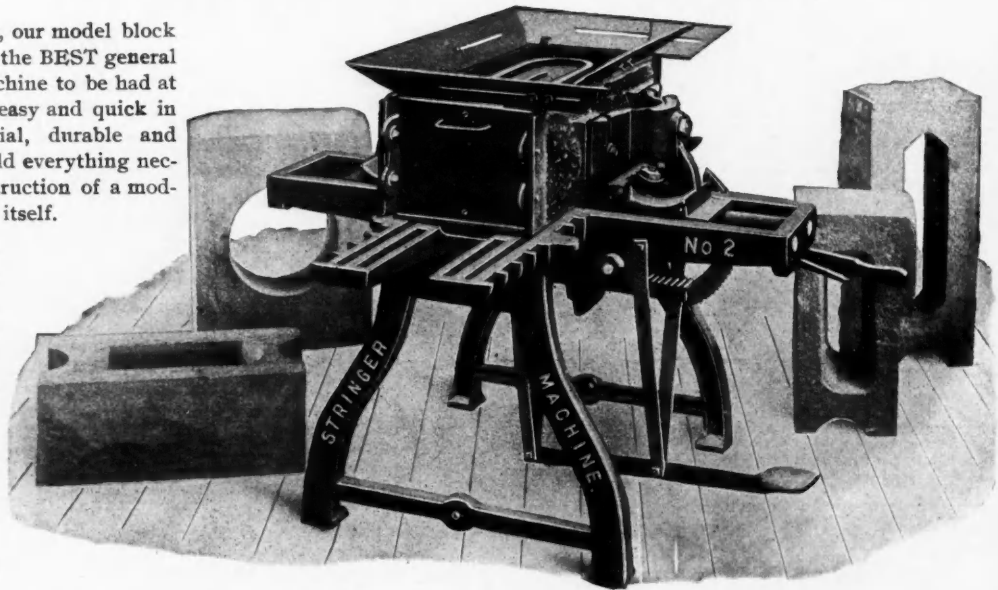
## A Model Cement Block Machine For 1906

To the Public and Purchasers of Cement Machinery:

We offer you this, our model block and sill machine, as the BEST general purpose cement machine to be had at a reasonable price; easy and quick in operation, substantial, durable and strong; and will mold everything necessary for the construction of a modern building within itself.

Commence communicating with us AT ONCE, that we may be able to supply your demands with promptness and dispatch.

Keep this ad in mind, it may not appear again.



ADDRESS

**STRINGER MACHINE CO., Jackson, Mich.**

On the High Wave of Popularity

### The Ideal Hollow Concrete Block Machine

Not a New Machine. Tried and Tested Over Two Years. Satisfied Users Everywhere. Interchangeable to Various Widths. Adjustable to Sixteen Lengths.

No wheels, cogs, gears, chains or cranks.

Nothing to clog, break or get out of order.

Simplicity, rapidity, adaptability, durability.

Face formed in bottom of the mould.

Cores withdrawn horizontally by lever.

Guaranteed Capacity—two men, 10 hours, 200 blocks.

Portable—Can be carried by two men Over 200 in use in the state of Indiana alone. The only machine by which can be accomplished the facing of blocks by the Borst System.

A business proposition to the maker of blocks. An appeal to the common sense judgment of the builder. In correspondence with us we make our business your interests.

**Ideal Concrete Machinery Co.**

SOUTH BEND, INDIANA



### MR. CONTRACTOR?

Are you satisfied with your method of estimating? Do you know how much profit you are going to make? Are you sure you get everything figured in? And do you know the exact cost of each separate part of the work? Is your method rapid and practical? Is it simple and reliable? Do you know that "The Lightning Estimator" solves these problems and is making more successful builders than any other method heretofore sold?

Are you going to continue guessing when you can get this method for a 50-cent money order?

Particularly adapted to residence and repair work.

First edition sold out in 3 months. Second edition now ready. A table of 4600 rooms, giving square yards in each, given with each course.

A LEADING MAGAZINE SAYS OF IT:

"A wonder of terseness, compactness, and comprehensiveness."—*National Builder*.

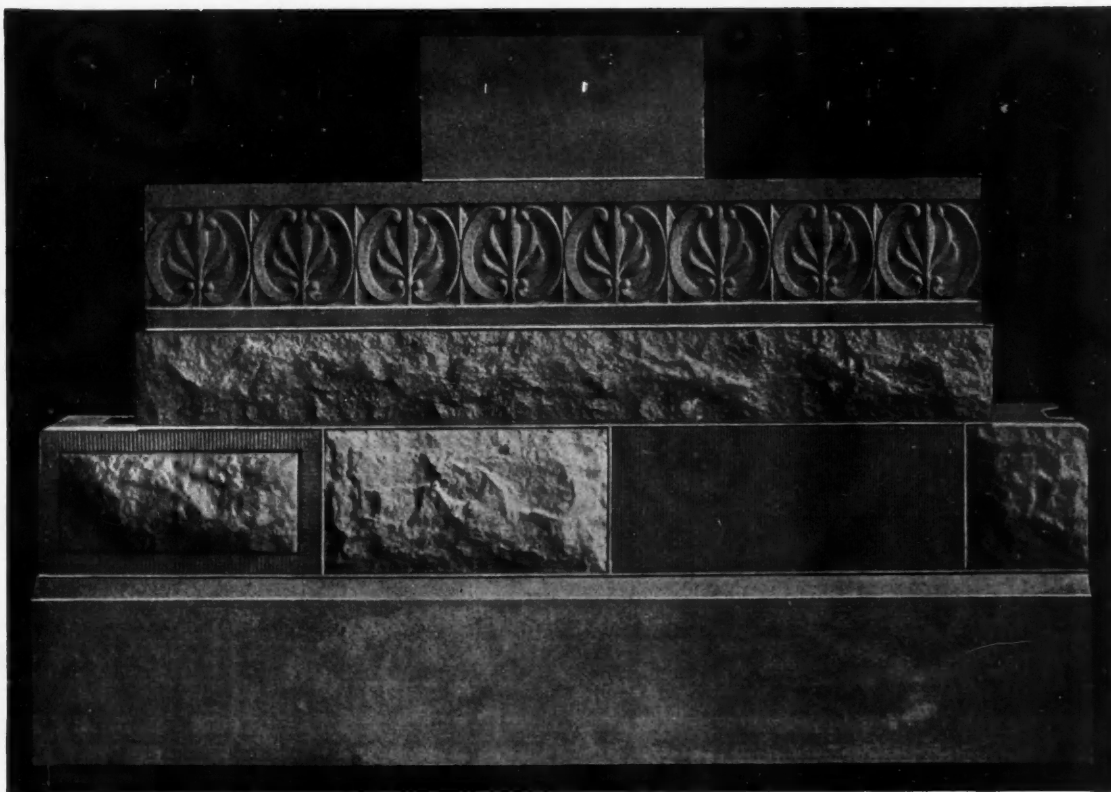
WRITE NOW

**Bradt Publishing Co.**

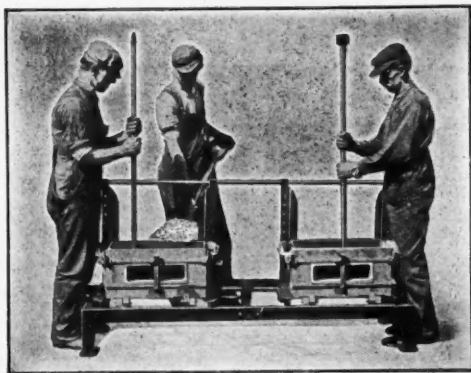
1260 Michigan Ave.,

**JACKSON, MICH.**

# That Hercules Cement Stone Machine



Taken Directly From Stone, Made On One Hercules Machine



Showing Method of Making Two Stone at One Operation

reducing the cost of labor to a minimum, saving you the expense of purchasing two machines—important item, this.

**Reason No. 3.** "That tamp on the face method" guarantees a perfect reproduction of the face plate, which means stone that has the appearance of natural stone,—that bold, sharp appearance,—allows 2 to 1 composition for facing and 5 to 1 for backing—great saving in material, this, and insures a face on the stone that will be durable. By this method you may make your mixture more wet, guaranteeing perfect chemical action and a stronger stone.

## Knowledge is Based on Reason

You may SUPPOSE that an artificial stone machine is superior, but if you would know, you must have reasons. We KNOW the superiority of

### "That Hercules Machine"

#### Here Are Some of Our Reasons:

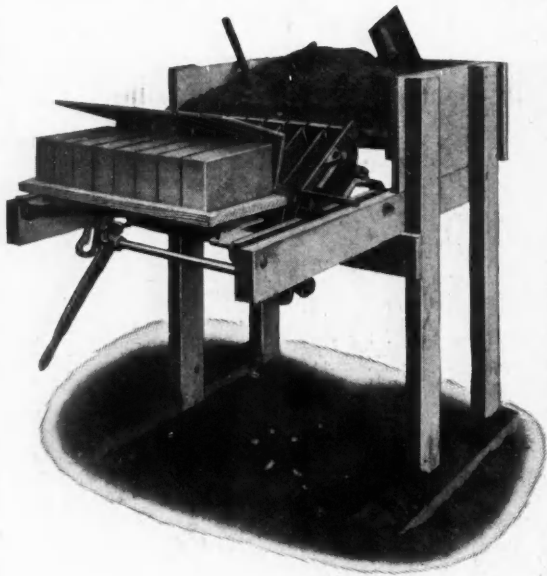
**Reason No. 1.** "That large variety," which means supplying the architects and builders with that class of stone essential for all building purposes. It is the only machine in the world that can make, in addition to hollow blocks of all shapes and sizes, water tables, sills, lintels, coping and ornamental work, up to 6 feet long, all on the one machine.

**Reason No. 2.** "That double operation feature" permitting two stone to be made at one operation, doubling your capacity and

For Accuracy, Strength and Simplicity of Construction and High Class Work, "That Hercules Machine" is Without a Peer. Send for Beautifully Illustrated Catalogue X, With More Reasons

**Century Cement Machine Company,** 173 W. MAIN STREET  
ROCHESTER, N. Y.

# Get the best



To the conservative business man  
To the man who wants value received for his money

we present for his consideration and investigation this new

## Boos Automatic Cement Brick Machine

confident that on examination it will demonstrate its superiority over any brick machine on the market. Compare its merits with its competitors, the rapidity of its work, the quality and uniform size of its product, the simplicity of its construction, and you will readily admit that we do not exaggerate in our statement when we say that one man can readily turn out 2,000 brick in ten hours, and in presenting the Boos Automatic Brick Machine to the public, we feel we are presenting for your consideration a high grade, practical machine that will be appreciated by those who want the best.

Manufactured and sold by

**COLTRIN MANUFACTURING COMPANY**  
140 W. Main St., Jackson, Mich.

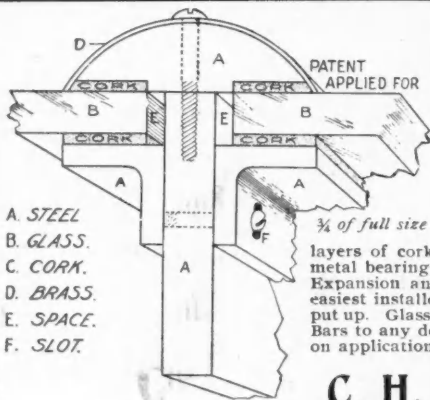


## DIXON'S CARPENTERS' PENCILS

Are unsurpassed for strength, toughness and clearness of marks.  
Black and color leads. Made in many shapes and sizes.

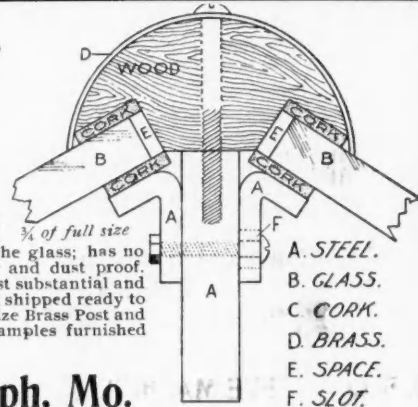
SEND 16 CENTS IN STAMPS FOR SPECIAL CIRCULAR 182-J AND SAMPLES

JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.

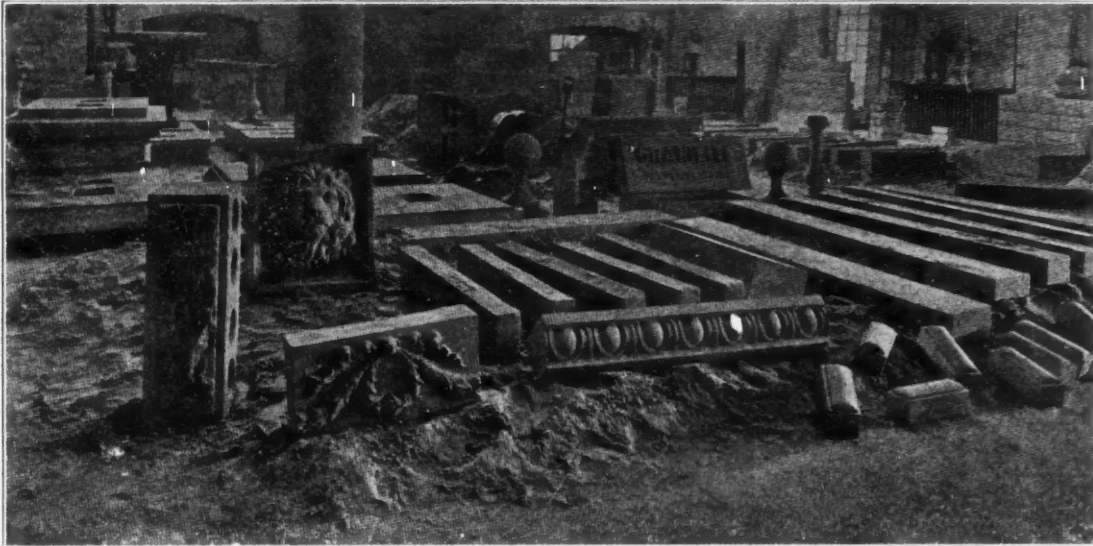


## Shultz's All-Steel Corner Posts, Mullions and Transom Bars

$\frac{3}{4}$  of full size are the handsomest and strongest Bar made, the glass being bedded on both sides between  $\frac{3}{4}$  of full size layers of cork, preventing any crushing or cracking of the glass; has no metal bearing on the glass; no putty; is absolutely water and dust proof. Expansion and setting amply provided for. Are the most substantial and easiest installed of any Bar made. All Bars are fitted and shipped ready to put up. Glass put in from outside. We manufacture any size Brass Post and Bars to any design, also Brass Thresholds. Prices and samples furnished on application to



**C. H. SHULTZ, St. Joseph, Mo.**



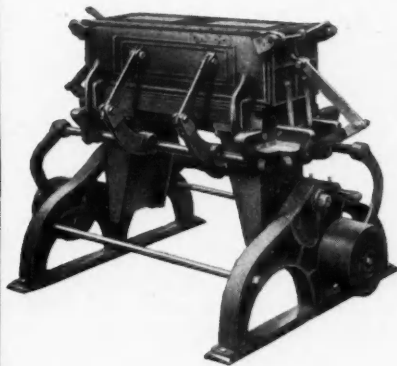
Granilite manufactured by the McClenahan process

**C**ONTRACTORS and builders are amazed at the perfection of this product. Highly approved by architects everywhere.

DURABILITY UNQUESTIONED      LESS ABSORBENT THAN NATURAL STONE  
ABSOLUTELY FIRE-PROOF

Every detail of architect fully carried out. Our Licensees are not compelled to compete with the owners of \$25.00 hollow block molds. Parties with capital should write for illustrated catalogue.

**STANDARD STONE CO. OF AMERICA** (Sole owners of McClenahan patents) No. 1 Madison Ave., New York City



## The "Runyan"

Is the only machine that will make concrete building blocks of any description, pavement blocks, window and door caps and sills, BRICK and curbing. The only combination brick and block machine ever invented.

**C. M. RUNYAN & CO.**  
ELYRIA, OHIO

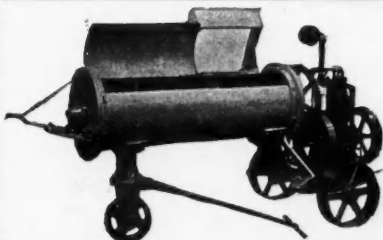


**Strong, Simple, Durable**  
Capacity limited only by what can be fed into it. It's doing business all the time. Operated by 3 H. P. gasoline engine, the entire machine when equipped weighs but 1,700 lbs.

## The GRANT

The Mixer that Mixes  
Dry Concrete, for it is not a revolving drum or cube

It has the dry and wet mix of our famous CONNOLLY and, of its character, is the lowest priced concrete, cement and mortar mixer equipped with power on the market.



The rapid and peculiar motion of its 23 paddles attached to the center (mixing) shaft, making 62 revolutions a minute, throwing the material over itself and giving it lateral and edgewise thrusts, the entire product gets a thorough and absolutely perfect mix.

We make and try to keep in stock our Special Type of Grant with mixing cylinder 10 ft. in length and equipped with 53 paddles, a superb mixer designed for dry concrete. This we sell with or without power, stationary or on wheels, and is essentially a machine for block and all kinds of artificial stone work.

Make no mistake but send for Booklet "G" and prices.



Ready for Shipment

**U. S. CONCRETE MACHINE Co., Majestic Bldg., Detroit, Mich., U. S. A.**

# Well! Well! Get in Line!



## HOW?

By using the Coryell Cement Block Machine. When we ask you to get in line, we mean get in line with a block that will make a hollow wall, so that when your customer asks you if you can build a hollow wall, you will not have to evade the question by saying: Our or my machine makes a hollow block. A hollow block is all right as far as it goes, but they will not make a hollow wall. Now if you want to avoid trouble with moisture and frost, use the Coryell Block, which is better than all, for it makes a hollow wall.

Our catalogue can be had for the asking.

Write, **The Kells Foundry & Machine Co.**  
 82 N. Main St. WHO MANUFACTURE AND SELL THE MACHINE **ADRIAN, MICH.**

## FACE BRICK

**THE FEDERAL CLAY PRODUCT CO.**  
 MINERAL CITY, OHIO

Manufacturers of the Famous Impervious

## SPARTA

Face brick, with and without glaze, for interior and exterior work. Our Glazed brick are especially adapted for lining corridors, toilet rooms, play rooms in school buildings, etc. We also make **fire brick** of all grades and for all purposes, make a specialty of special work, which can be gotten out on short notice at reasonable prices. Write us, tell us what you are in the market for and we will be pleased to quote our best prices.

## FIRE BRICK

*It is always safe to be first*

## CONCRETE Construction Taught BY MAIL

**Artificial Stone Making**  
**Concrete Steel Construction**  
 and **Hollow Block Building**

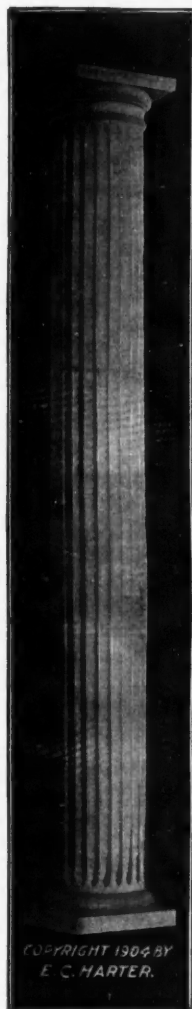
*3 Practical Courses by 3 Practical Instructors*

Send for Catalogue and be  
 the first in your locality

**College of Construction**  
 Cleveland, Ohio



# THE FACE PLATES



COPYRIGHT 1904 BY E. C. HARTER.

of our \$25.00 concrete Stone Outfit are all interchangeable. The stone made by it are just as artistic of design and as practical for building buildings as those made on the more expensive machines. We ship to responsible parties on ten days' trial. 411 machines shipped on trial during 1904; only three were returned. If we were selling gold dollars for 90 cents each we could scarcely hope to beat this record. Don't

argue—we pay the freight when not satisfactory. Send for our book of instructions for making concrete stone.



**CEMENT WORKING MACHINERY CO.**

195 LAFAYETTE AVE., DETROIT, MICH.



## THE IMPROVED "MILES"

### CONCRETE BUILDING BLOCK MACHINE

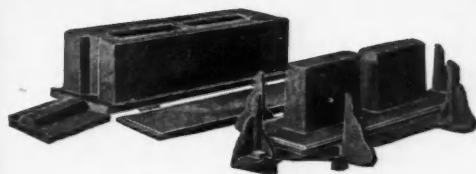
MOLDS ALL BLOCKS FACE DOWN

Makes circles, octagons, gables and water table blocks for hollow, solid or veneer walls.

Write us today for circulars and descriptive matter

**THE P. B. MILES MFG. CO.**  
Suite 23, Dwight Bldg.  
JACKSON, MICH.

## Concrete Blocks! The Clipper Block Machine Produces Them



The Clipper Block Machines are simple, durable, light, strong, accurate, and will produce a great variety of shapes and sizes in hollow blocks, veneering blocks, chimney blocks, pier blocks, circular blocks.

**ALL FACE BLOCKS TAMPED WITH THE FACE DOWN.**

Rock faced, plain faced, panel faced. Continuous air space, damp and frost proof. Machines on the installment plan. Write for particulars.

**R. T. FROST, Exclusive Agent**  
Address Dept. "A" Dows, Ia.

\$29 <sup>75</sup>/<sub>100</sub>

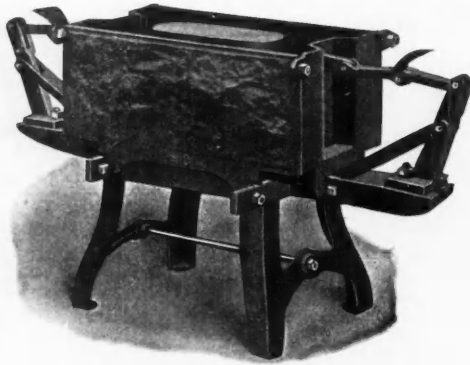
11 DOORS

DRAW OR STATIONARY CORE

\$29 <sup>75</sup>/<sub>100</sub>

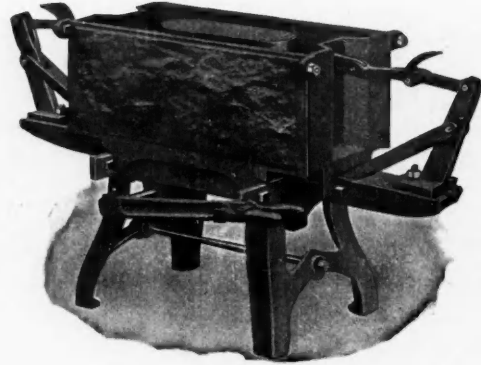
11 DOORS

THE COLTRIN BLOCK MOLDS—PATENTED APRIL 12, 1904



STATIONARY CORE—CLOSED FOR FILLING

DROP  
\$34. <sup>75</sup>/<sub>100</sub>  
CORE  
11 DOORS



DROP CORE—CLOSED FOR FILLING

MANUFACTURED EXCLUSIVELY BY

THE KNICKERBOCKER COMPANY  
LIBERTY STREET JACKSON, MICHIGAN

**Rebekah's Well**  
WOULD BE STANDING TO-DAY IF IT HAD BEEN  
MADE OF **Frost Cement Blocks.**

WE SELL THE MACHINE,  
YOU MAKE THE BLOCKS

WE HAVE A PROPOSITION TO MAKE YOU RIGHT NOW IT WILL INTEREST YOU

Write us. You cannot afford not to. Our catalogue illustrates our machine, which is practically 40 machines in one.

Write us today, not tomorrow

**FROST CONCRETE STONE CO.**

607 Commercial Avenue :: :: WATERLOO, IOWA

**Waterloo Concrete Brick & Block Mach. Co.**



ONE movement of the lever operates the ENTIRE machine consuming the least time for operation of any machine. Two men will make 250 blocks per day.

Our block is patented. Has double, a vertical and horizontal air space.

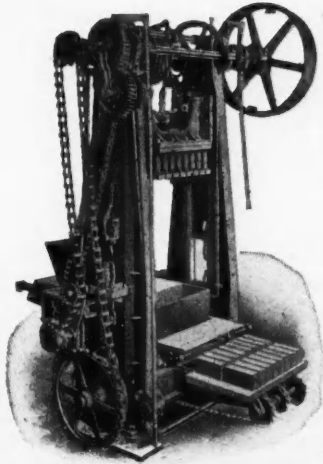
The brick attachment makes 18 brick as easily as a block.

No gears or chain to clog or break.

Write for catalogue "B."

Agents Wanted. **O. H. SWEENEY, Sec.** 101 E. 4th St. WATERLOO, IOWA.

Southern Agents, SILVERA & GADSDEN, Savannah, Ga.  
Agents for the Pacific Coast, C. J. TALLON & CO., 618 Bailey Building, Seattle, Wash.



**40,000 SAND-CEMENT BRICK or 5,000 BLOCK (8 x 24) PER DAY**

Only TAMPING principle power machine made. We also make an up-to-date mixer.

Write for our Catalogue of power machines, also of our perfect bond, damp-proof block wall. (Hand moulds.)

**CONCRETE MACHINERY Co.**

950 Majestic Building, DETROIT, MICH.

**Do You Need a Concrete Mixer?**

If so you certainly need the best one obtainable—one that is strictly up to date. It will cost no more than old-style machines of same capacity—will save you more money and give better satisfaction.

**THE AMERICAN MIXER**

is the up-to-date machine. It mixes any kind of material in the most thorough, uniform and perfect manner—feeds while running, taking the materials in any order—discharges instantly and is self-cleaning. Less time is required to mix a batch than with any other machine and the concrete is within full view of the operator while being mixed. Furnished without power or with any kind of power required—several sizes. Catalog No. 5 upon request.

Manufactured by

**The International Fence & Fireproofing Co., Columbus, O.**



**CEMENT BRICK**

**BE YOUR OWN BRICK MAKER**

LARGE CAPACITY — 5,000 BRICK PER DAY  
SKILLED LABOR UNNECESSARY. SIMPLE AND INEXPENSIVE

**Seaman's Cement Brick Machine Co.**

23 Fountain Street . . . . . Grand Rapids, Michigan

"Any old weather suits"

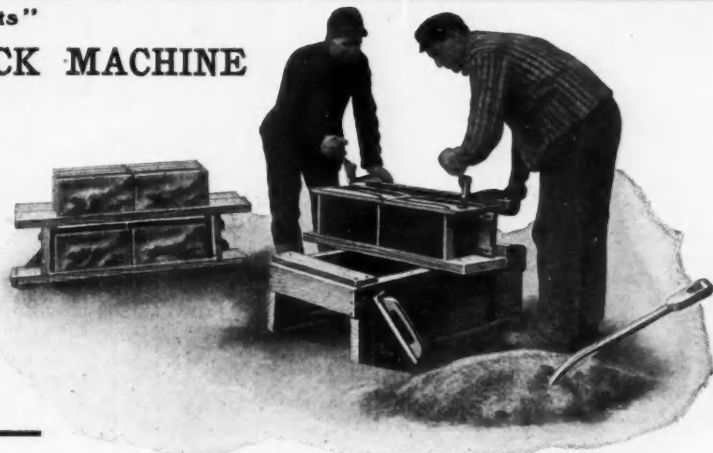
**A BATTJES CEMENT BLOCK MACHINE**

It may be operated in a small yard out doors in summer

Winter weather does not stop work, because it can be operated at a profit in a small room.

Learn our compact system of piling. Learn how the busy contractor or builder can make his stone in the dull months of winter. Learn the value of a machine that can be operated continuously.

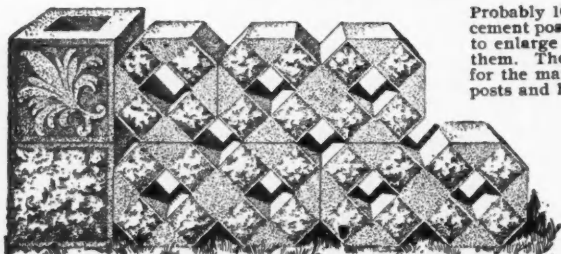
Write today for the "CORNER STONE." It tells how to make any style of stone in any kind of weather.



**The Battjes Building Material Company**  
GRAND RAPIDS, MICH., U. S. A.

# THE CROUCH SYSTEM

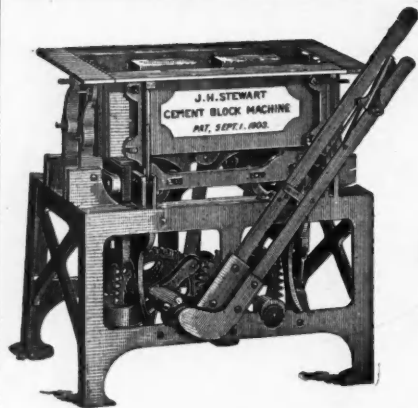
THE SAND PALLET BEATS THEM ALL



Probably 10,000 persons contemplate engaging in the manufacture of cement posts or cement building blocks this year. Many more propose to enlarge their plants or perfect their equipment. You are one of them. The cost is an item of importance. Before buying a machine for the manufacture of cement building blocks, porch blocks, fence posts and hitching posts, write for my new catalog and learn about the Sand Pallet and the economical system of making them.

By using the Sand Pallet you cut out the cost of wooden or metal pallets. This item alone will save you \$200 to \$500 on a small outfit to make 150 blocks per day. This amount is more than I ask for an outfit to make 25 varieties and sizes of stone, posts, lattice and piers. Besides this, the other kind of machine costs more than mine. You will be right when you adopt the Crouch System.

J. M. KEITH, 1190 West 4th Street, Des Moines, Iowa.



## GET A MACHINE THAT WILL DO THE BUSINESS

The cut of the church shows what can be done with the Stewart Machine, as this church was erected of blocks made on a Stewart. You can make blocks in any old box, but if you want to make good blocks,

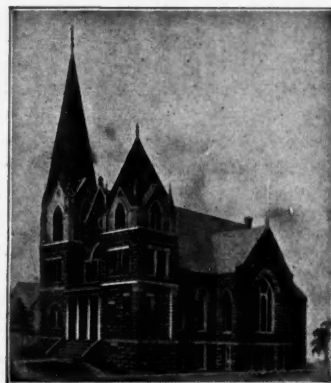
## GET A STEWART

Write for catalogue to the

**STEWART CEMENT BLOCK MACHINE CO.**

888 Lafayette Block, WATERLOO, IOWA

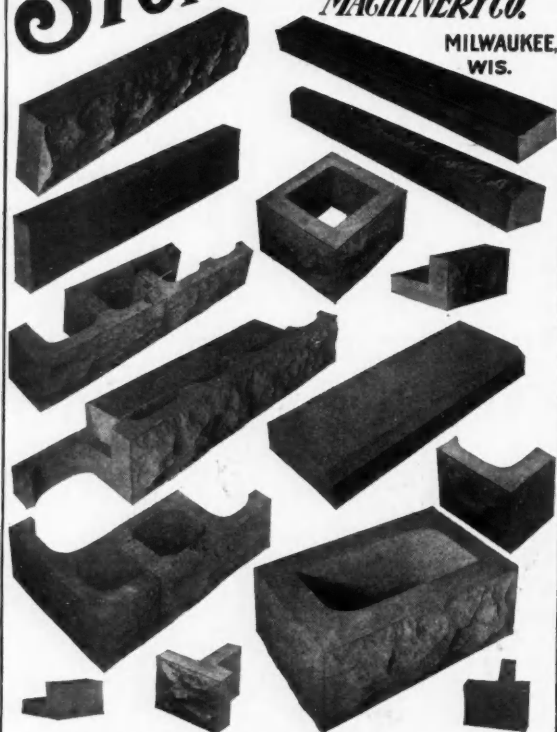
The OHIO CERAMIC ENGINEERING CO., Cleveland, Ohio  
Agents east of Wisconsin, Illinois and the Mississippi River.



# CONCRETE STONE

MADE BY NATIONAL BUILDING BLOCK MACHINERY CO.

MILWAUKEE, WIS.



211 GRAND AVE., MILWAUKEE, WIS.

## ONLY CONCRETE BLOCK MACHINE



(Showing Face Down Position)

### To receive an award at the Portland Exposition was THE "WINGET 1906 MODEL"

The judges quickly recognized its superiority over all others.

This is called a Universal machine because it combines completely all the three standard kinds of machines into one machine, and does the work of them all most perfectly and quickly.

Up to this time the purchaser of a concrete block machine must choose either an upright machine, a face down machine or a two piece block machine separately. Now if he buys a "WINGET" he gets them all in one, and to his great advantage all the movements are quickly and easily operated by one simple automatic lever.

As an upright machine it has never been equaled in wide range of adjustments, speed, economy and ease of operation. As a face down machine it far excels others in convenience of operation, but more notably in its great advantage of being the only face down machine that gives finished molded surfaces to all sides of the block, all other machines leaving a rough, irregular troweled surface on one side. As a two piece block machine it has the advantage that it makes two of these blocks at once. For full particulars regarding the Winget System of Concrete Machinery, address the Columbus office or branches.

New York Chicago St. Louis Los Angeles Greensboro, S. C.

**IT'S A HOOSIER**



**AN IDEAL FACE-DOWN CONCRETE BLOCK MACHINE**

PRICED COMPLETE, including Iron Pallets that will not warp, split or have to be replaced.

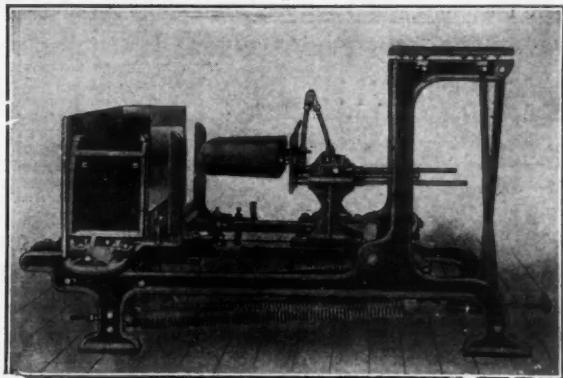
**PRICE** Well, this is attractive and will interest you.

ADDRESS  
**Hoosier Mfg. Company**  
Auburn, Ind., U. S. A.

**THE GENERAL PUBLIC** is not educated as to the degree of perfection to which Block Machines have attained, many believing the cheap machines will do the work, as it is nothing more than an experiment.

However, this idea is wrong, and experimenting with an inferior machine will invariably prove a failure.

The Block business is permanent, and the trade demands that the machine prove its efficiency before it becomes a fixture on the market.



The success of our machine is established, and it is classified as permanent and invaluable because of its many superior features.

Its speed is unlimited, and you are assured of the very best results in quality and appearance of blocks, because of the fact that they are moulded with the face down.

Write us for descriptive catalogue J.

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126 Liberty Street, Jackson, Mich.

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BUFF AND BLUE

Sawed, Planed, Turned  
Cut Ready to Set

Estimates promptly made for stone delivered to any point. Plans sent for — estimate promptly returned.

**Bedford Steam Stone Works**  
Bedford : : Indiana

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Makes Concrete Blocks Absolutely Waterproof

It is applied with a brush  
It is used cold : It does not discolor the blocks  
It is lasting : It costs one cent for seven square feet

**Trial Gallon \$1.00**

**ASTRAL MOULD WASH**  
Is painted on the block mould and keeps it free from concrete  
A Gallon Costs \$2:00  
Pays for itself in a week and lasts two months

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**THE BANGOR STRUCTURAL SLATE CO.**  
LOCK BOX 48 BANGOR, PA.

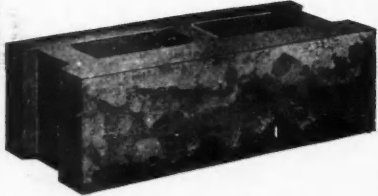
**KEEP OUT DAMPNESS**

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**R. I. W. PAINT**  
"REMEMBER IT'S WATERPROOF"

Sold in Barrels, \$1.25 per gallon; 5-gallon cans at \$1.35 per gallon; 1-gallon can, \$1.50 per gallon; all F. O. B. Chicago.

PROOF AGAINST WATER, ACID, FUMES OR ALKALI  
Special Elastic Compound for Each Specific Purpose.

**THE GARDEN CITY SAND CO.**  
Dealers in All Kinds of Building Materials;  
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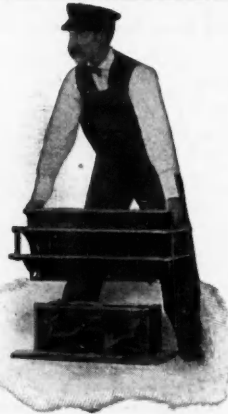
## We Move the Machine NOT THE BLOCKS

Saves labor of off bearing, loss by damage; obviates necessity for heavy and expensive iron pallets. Reduces cost of plant and cost of operation. Every one knows that concrete should not be disturbed after it is molded or while it is setting, but this is the only machine by which this is possible. The blocks cost 6 cents to make—sell for 18 cents. One man can make 200 blocks per day. Whole outfit costs \$125.00. Figure the profits.

Competition simply demonstrates the superiority of the Pettyjohn machine. Unlimited guarantee. SENT ON TRIAL

### THE PETTYJOHN COMPANY

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### FACTS CONCERNING THE HARTWICK AUTOMATIC CONCRETE BLOCK MACHINE

All parts are machine finished and every block guaranteed perfect. Makes all forms, **Solid or Hollow Blocks**. Has fewer parts and works easier than any other machine. **No Springs—No Cogs—No Wheels**, Simplicity and durability its strong points. Either **Wood or Iron Pallets** for all kinds of work.

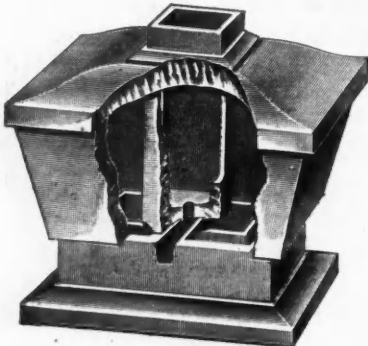
### THE SCHEIFFLER, Continuous Automatic Proportioning Mixer

The only Mixer that will automatically proportion in any amounts from 1 to 2, to 1 to 10, and will not clog with Cement. Made in all sizes; any kind of power required. Used for all kinds of **Street and General Contract Work**. Hand Machines are fitted with pulley power—can be attached. Are especially adapted for **Concrete Block Manufacture**.

### HARTWICK MACHINERY CO.

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### Useful, Durable, Inexpensive

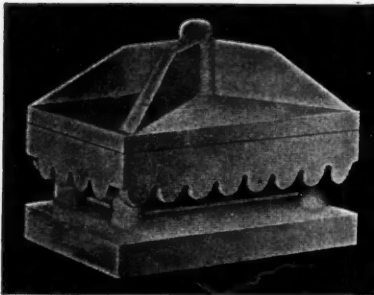
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We want to send you a leaflet telling about them. Write.

We want a man to handle our ware in Chicago. Write.

### National Chimney Co.

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Improved      Old Style

### High Grade Concrete Block, Brick, Post and Mixing Machinery

“We have the Leaders.”    “The Big 7.”



“Normandin Style C”

- 1 Normandin Concrete Block Machine (Face Side).
- 2 Peninsular Concrete Block Machine (Face Down).
- 3 Gemaco Concrete Block Machine (Face Side).
- 4 Champion Concrete Veneer Block Machine (Face Down).
- 5 Favorite Sand Cement Brick Machine.
- 6 Systematic Concrete Mixer.
- 7 Universal Cement Line, End and Brace Post Machine.

We are in the business. We can give you the best value for your money. Write us. Don't delay. Get started. Concrete posts, blocks and brick are in demand. We solicit your trade because we can please you. Our machines are standard; adopted twice by the United States Government. Highest awards Universal Exposition, St. Louis, 1904, and Portland Exposition, 1905.

### CEMENT MACHINERY COMPANY,

JACKSON, MICHIGAN, U. S. A.

## The Standard Sand & Machine Co.

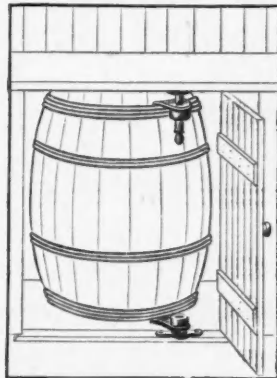


**BEST** in the world. No experiment. Been on the market since 1903 and successfully stood the test. Ask for catalog “A” and prices.

### The Standard Sand & Machine Co., Cleveland, Ohio.

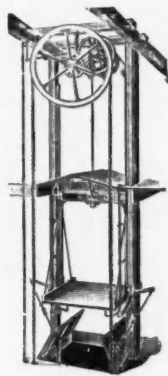
**It costs them less**

Contractors say, to furnish the Perfection Barrel Swings than to fit up the broad shelf in the old way, and their customers are pleased with the improvement. Your Hardware Dealer will supply them.



**Perfection Barrel Swings**

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**THE LEAVITT MACHINE CO.**  
ORANGE, MASSACHUSETTS



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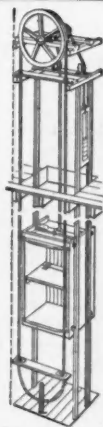
The "COLUMBIA" or "JUMPER" always leads. Shall we send you descriptive matter that tells all about them?

HAND and POWER **ELEVATORS**  
SIDE-WALK or CELLAR **HOISTS**

**J. G. SPEIDEL**

Send for catalog "A"

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**AUTOMATIC DUMB WAITERS**  
—AND—  
**HAND ELEVATORS**

of latest design and most improved construction

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NEW YORK SALESROOMS, 128 LIBERTY ST.

Send Catalogue on application.

**Dumb Waiters**  
**Hand Power Elevators**

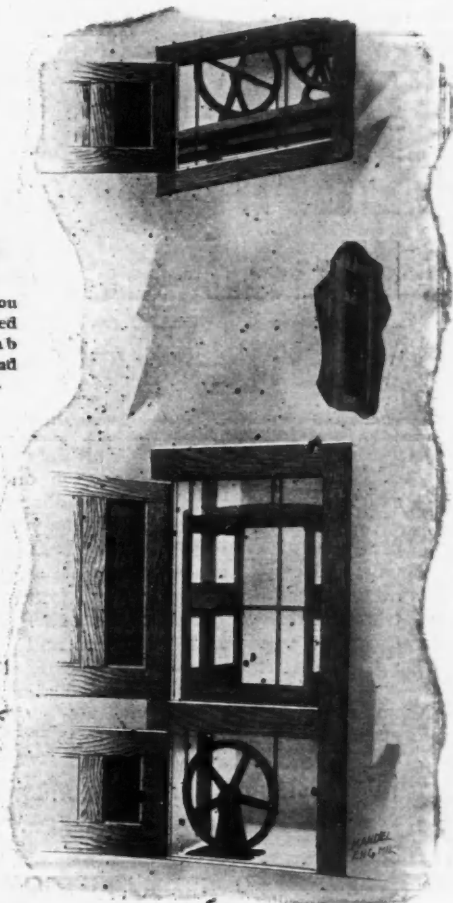
Let us quote you our low delivered prices on Dumb Waiters and Hand Power Elevators.

We ship them complete, ready for erection.

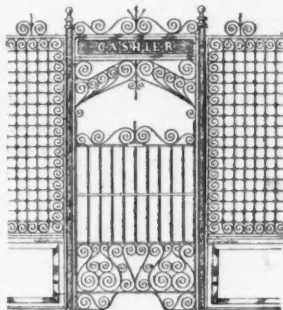
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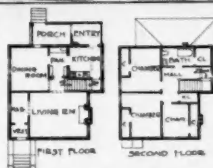
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Three Chambers, with plenty of wall space and closets, and Bathroom, conveniently arranged in second story.

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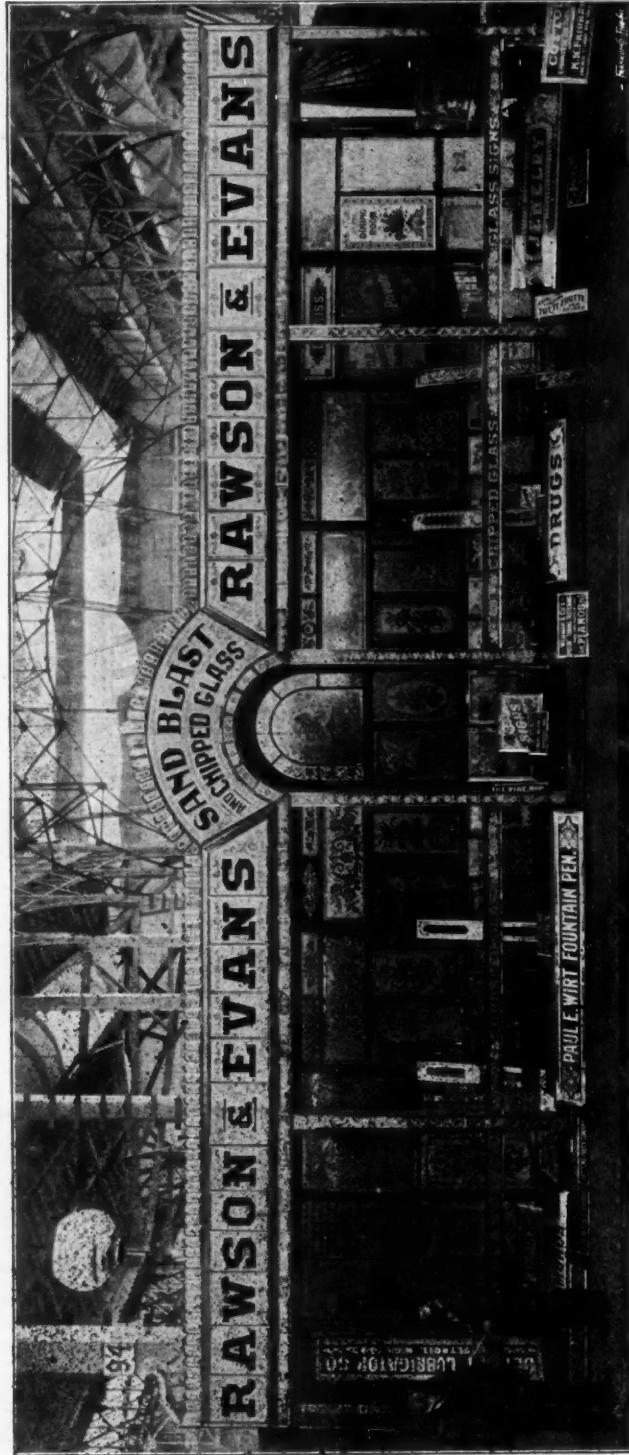
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Double pro-  
cess Chipped  
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ometric  
Chipped  
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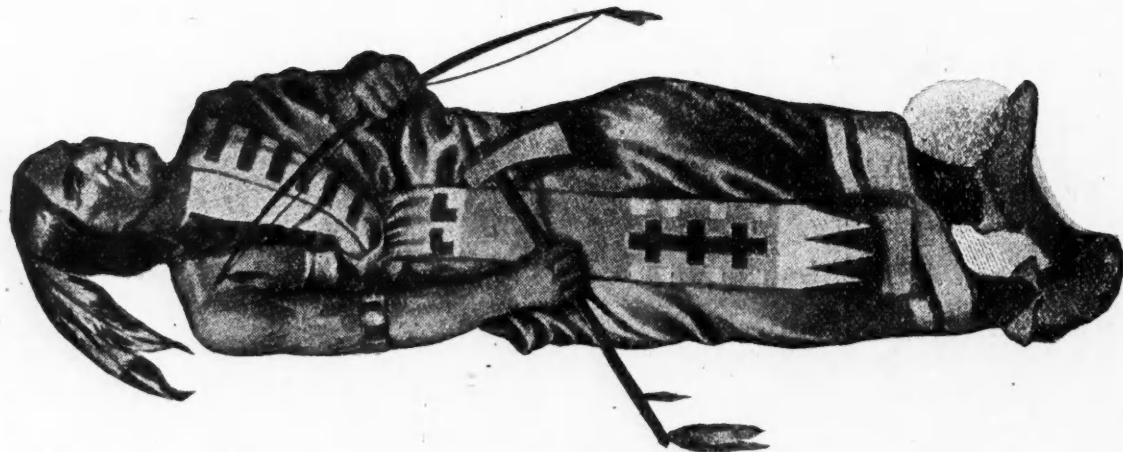
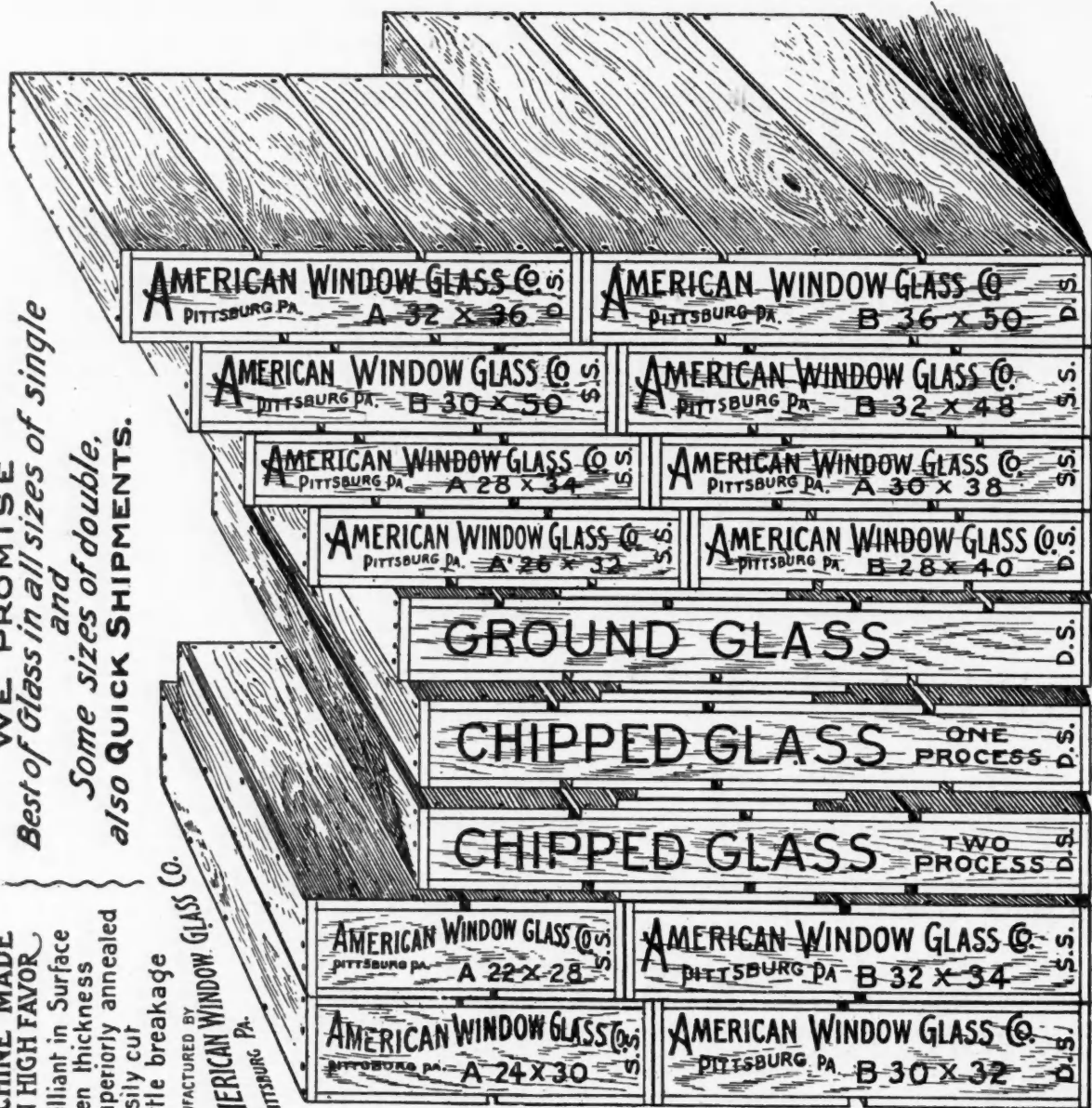
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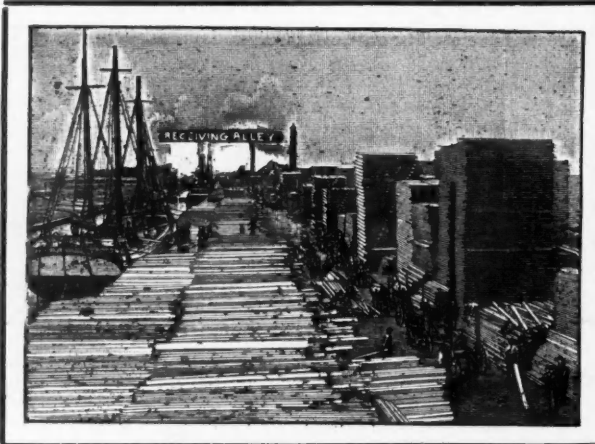
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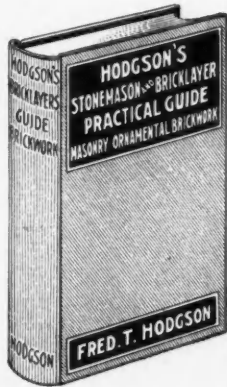
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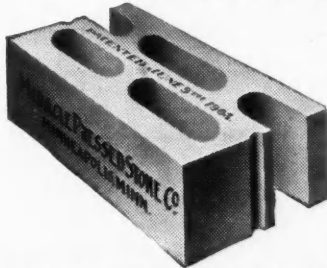
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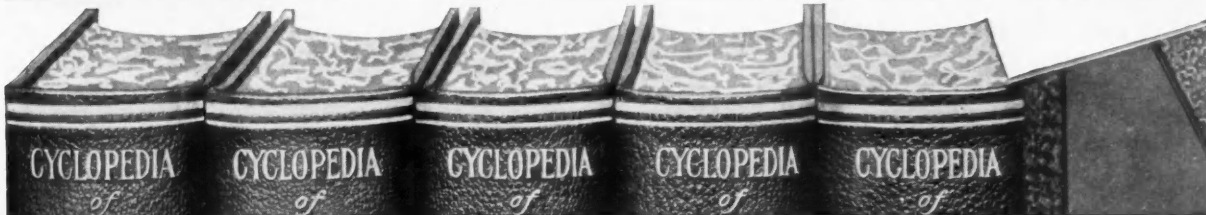


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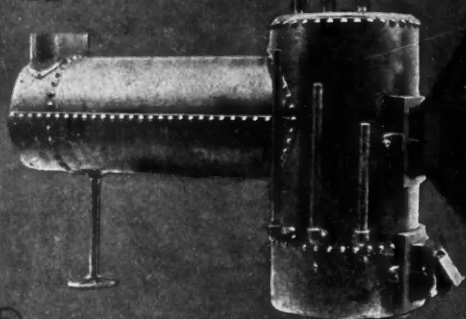
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