

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

SPRING BUILDING NUMBER

Containing:

HOW TO PLAN THE HOUSE

*Timely Suggestions Illustrated with Photos
and Plans of Nine Well-Designed Dwellings*

DETAILS OF CONSTRUCTION & FINISH

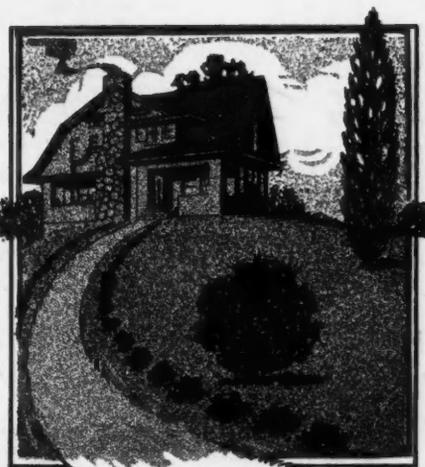
*And Other Practical Departments for
Carpenters and Building Contractors*

COMPLETE SET OF RESIDENCE PLANS

Scale Drawings of Modern Brick House

HOW TO GET A GOOD JOB OF PAINTING

QUESTIONS AND ANSWERS



144 Pages of Practical Building Helps in this Issue



A Flood of Convincing Evidence For **ATKINS SILVER STEEL SAWS**

What Carpenters Everywhere Are Saying

"Have used an Atkins Saw for five years and find same better than the best of others in my set, which includes four different makes."
W. A. Brown, Newman, Ill.

"Atkins Silver Steel Saws are the best I have ever used, as they do not require set in lumber that is not perfectly dry, and need less filing."
C. L. Marshall, Maywood, Neb."

"Atkins Silver Steel Saws certainly do the work and are not tiresome to handle as with other Saws."
Bruce M. Bean, Lansdale, Pa.

"I like Atkins Silver Steel Saws better than any Saw I ever used."
L. S. Hushberger, Chana, Ill.

"After eighteen years experience, I candidly say that Atkins Silver Steel Saws are the acme of excellence."
George S. Halse, Long Beach, Calif.

"I feel like a boy with a new pair of copper toed boots with my Atkins Silver Steel Saw, and I am busy boosting Atkins Saws."
W. E. VanDecar, Long Beach, Calif.

"I would not take twice the price I paid for them. Atkins Silver Steel Saws are the best saw for the man who wants to do good work."
Joseph Acurso, Jr., San Jose, Calif.

"Atkins Silver Steel Saws are the best I have ever used."
Jesse A. Davis, Primrose, Iowa.

"I have just completed a large barn constructed of hard, seasoned native wood and my Atkins was the only one to finish the job without refiling."
Isaac G. Hegyard, Quincy, Ill.

"I like the Perfection Handle because one does the work with the arm and not the wrist alone."
L. H. Greitenstein, Primrose, Ia.

"I find Atkins Silver Steel Saws far superior to any other, because they do more and better work."
J. C. Cothran, Center, Ala.

"My old Atkins Silver Steel Saw gives the best service for the money put into it outstanding any other make."
James Upham, Dorchester, Ala.

"I know by experience that Atkins Saws with the Perfection Handle are the finest saws on the market today."
J. F. Brundage, Waterville, Wash.

"Your Silver Steel Saws are all they are recommended to be."
F. A. Everingham, Ottawa, Kans.

"Atkins Silver Steel Saws are the best I could get, all even tempered and never lose their edge."
T. K. Hautz, Metz, W. Va.

"I rejoice when I can raise my voice in behalf of Atkins Saws."
Isaac G. Hervard, Quincy, Ill.

"I like Atkins Silver Steel Saws better than any other brand. They can't be beat."
W. J. Smith, West Durham, N. C.

"I think I cannot run a straight line unless I am using an Atkins Silver Steel Saw."
Elmer Small, Waldo, Fla.

"Atkins Silver Steel Saws cut faster than any saw I ever had."
A. R. Frankford, Calla, Ohio.

The Saw That's Modern

The Atkins Saw, throughout its career of fifty years, has represented Progress and Improvement.

The carpenter who isn't getting the benefit of these improvements is working an injury to himself.

The Atkins Silver Steel Saw cuts easier, faster and cleaner, stays sharper and lasts longer than any other.

To many users of the old-style "good enough" saws, it hardly seems possible that the Atkins will endure as much hard usage as its carpenter friends say. It is high time for all such to get acquainted with Atkins Silver Steel.

Better Than Razor Steel

It's a fact that Atkins Silver Steel is better steel than you'll find in most of the high grade razors. No such steel was ever used in any other make of saw, the world over. Made for over fifty years under the Atkins secret formula and gas-tempered by the Atkins secret process.

The Atkins blade is scientifically taper-ground—not merely given a little bevel on the back. Tapers all the way from tooth edge to back—thickest at the tooth edge. Doesn't bind or buckle in the wood.

Fitted with the Atkins Perfection Handle, which prevents the usual wrist-cramp. But you can have the old-style handle, if you prefer.

Our Guarantee:—If you don't find the Atkins Silver Saw to be the best saw, the easiest running, fastest cutting saw you ever touched, take it back to the dealer and get your money back.

Be sure the blade says "Silver Steel"—that's our best saw. If your dealer hasn't the particular saw you wish, ask him to order it for you from the wholesale house. He will be glad to do this—no trouble at all!

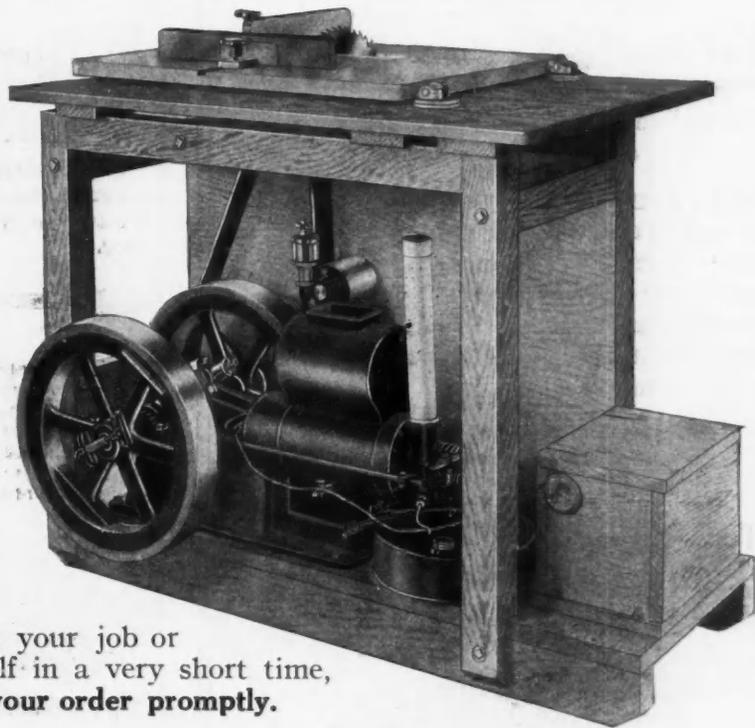
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Write us today (enclosing 10 cents in stamps to cover postage) and we'll send you free a good strong Nail Apron, together with our Carpenter's Time Book and our handy booklet, "Saw Sense." Address Carpenters' Department.

E. C. Atkins & Co. Inc., Indianapolis, Ind.
Largest Exclusive Saw Manufacturers in the World.

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**SAW
RIG**
ON
YOUR
JOB

WHEN you put in your estimate on a job, this Portable Rig would be the cause of your getting the contract, and why? **This Rig will do all of your mill-work.** It is a complete and economical operating mill and requires no line shafts or large amount of floor space. It is always ready to do sawing and one crank of the engine fly-wheel makes it run, the three horse power water hopper cooled engine pulling the ten inch saw with ease. A complete and perfect power plant, guaranteed to make you no trouble. **Cannot freeze or overheat.** This Rig put on your job or in your shop will pay for itself in a very short time, and we are in position to **fill your order promptly.**



Every part of the outfit, engine and all, is made in our factory. The Rig is the biggest time and money saver on the market today and we absolutely guarantee it to be perfect in workmanship and material. The Rig weighs 520 pounds and with the outfit is included: One eight inch rip and cross cut saw, one ten inch cross cut saw for bridging, one half inch dado head, one two inch jointer and attachments, one emery wheel, one extra spark plug, one wrench and oil can, one belt tightener attached to engine.

Let us have your order for one of these time and money savers. The Rig will make you independent. **SEND FOR OUR ATTRACTIVE FOLDER.**

Inter-State Equipment & Engineering Co.

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FIRE
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"TITELOCK" METAL SHINGLES

ARE THE EASIEST AND QUICKEST SHINGLES TO LAY



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Painted Tin Shingles are Superior to Wood
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Leading Architects always Specify
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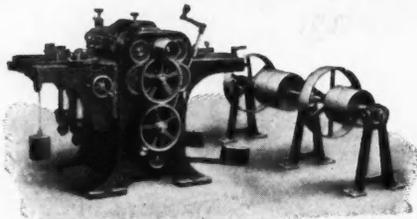
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Our medium size, general purpose Planer, Mather and Moulder was designed.

You need a compact machine that does not take up a great deal of room, that does not require a great deal of power; a tool that can be quickly set up for all kinds of general planing, matching and moulding. Then too, you want a machine that won't give you any sort of trouble—all at a moderate price.

We have just what you want—three different styles and four different sizes to choose from. Write for circulars Nos. 117, 119, 121. DO IT NOW.

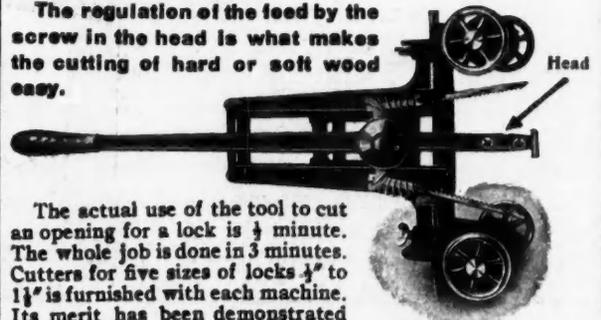
THE CORDESMAN-RECHTIN CO.
CINCINNATI, OHIO



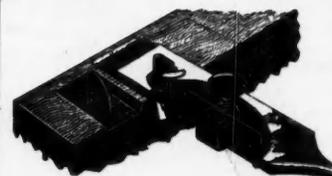
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IS SCIENTIFIC

The regulation of the feed by the screw in the head is what makes the cutting of hard or soft wood easy.



The actual use of the tool to cut an opening for a lock is 1/2 minute. The whole job is done in 3 minutes. Cutters for five sizes of locks 1/2" to 1 1/2" is furnished with each machine. Its merit has been demonstrated thousands of times. Sent on Trial.



Butt Mortiser

Cuts the seats for butt hinges in doors, jambs and other work. It does the work in one-third the time and makes a neat, clean, accurate job. Price, including rule gauge, 75 cents.

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HERALDS THE NEW ERA IN FLOOR SCRAPING

Eliminates all defects found in other floor machines. Does away with the man-killing toil of the heavy-weight machine. Makes floor scraping simple and agreeable. It embodies the mechanical principles of the plane. Planes and scrapes floor at one operation. Does better work than most hand work. "Wavy" floors prevented. Most rapid scraper on the market.

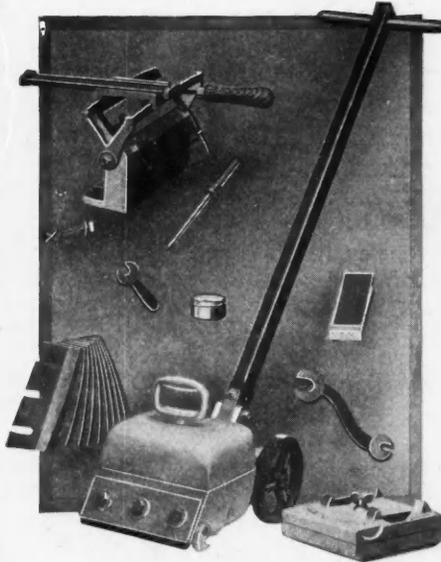
Be an agent in your locality for the floor planer of the future.

Particulars on request.

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until you have fully convinced yourself that it will do the work. Let the machine demonstrate by actual service just what it can do. Let it prove its value and you will then know its true worth.

I am always ready to send the Acme Floor Scraping Outfit to any carpenter, contractor or dealer on an absolutely **Free Trial Basis** at my expense. I make this liberal offer because I have the fullest confidence in my machines. I know that they can do the work when properly handled and am therefore willing to allow you to investigate before asking you to pay out one cent. If you think this is a fair offer, let me hear from you.

Full information and booklet mailed on request

JOSEPH MIOTKE

247 Lake Street : : : Milwaukee, Wis.

Let the Spring do the Work

The Easiest Running Machine on Earth.

The Only Floor Smoother Recommended by Architects.



Saves 90% of Your Floor Scraping Time Over Hand Scraping.

Easily adjusted to all kinds and conditions of floors. Guaranteed to give satisfaction.

SENT ON FREE TRIAL ANYWHERE

SPRING DRIVEN

Shullsburg, Wis., Jan. 31, 1911
Triple "A" Machine Co.
Chicago

Gentlemen: I have had one of your machines since last October and like it, as it is perfect in its work. In your advertisement in the December number of the American Carpenter & Builder, I see that you have made some improvements. Please let me know if I can use them on my machine. Please send prices of the various attachments. Yours very truly,
CHARLES J. O'NEILL

GEORGE B. WETZEL
Contractor and Builder

Dayton, Ohio, Feb., 5, 1910
Triple "A" Machine Co.
Chicago, Ill.

Gentlemen: The Triple "A" Floor Smoother came to me in good condition. I have given it a good trial. I think it is the best floor scraper that is on the market today. There are a number of the different makes of floor scrapers in use in Dayton, Ohio, and I have tried every one of them and found them to be a failure and a disappointment, and one man could ruin a job of flooring in less time than it would take six men to put it in shape again. I have been looking for a machine that would dress floor for the past five years and I think I have found it in the Triple "A". It has the adjustments in every way that the knives are bound to cut. It also has the weight to keep it from jumping or making waves in the floor. Thanking you for your timely invention, I remain, Yours very truly,
GEORGE B. WETZEL



FLOOR SMOOTHER

Manufactured by TRIPLE "A" MACHINE COMPANY, 112 Clark Street, Chicago

TRY BEFORE YOU BUY

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

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

TRY IT ON YOUR OWN FLOOR

You can try the "Little Giant" Floor Scraper on your own floor and the trial costs you nothing. All that we ask is that you give it a fair trial. You be the judge and jury. Every carpenter and contractor can afford to invest in one as the time and money saved will pay for the machine in a very short time. By using the "Little Giant" Floor Scraper you will be in a position to estimate much lower than your competitor and therefore have more work. Can you afford to be without this machine?

**20,000
"Little
Giant"
Floor Scrapers**

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



We are making a Special Price for February

Hurley Machine Company

31 South Clinton Street, CHICAGO
1011 Flatiron Building, NEW YORK
73 First Street, SAN FRANCISCO

The Increasing Demand

is the best proof that the ABC Protractor Square is the tool the carpenters want. Every mail brings orders.

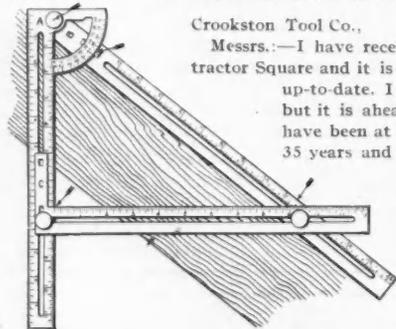
It gives Lengths, Bevels and Degrees. It's a Folding Square



Send \$3.00 for one of the tools, keep it 30 days for trial, and if you then find that the tool does not do what we claim for it, return it to us and your \$3.00 will be returned.

Remember we guarantee the ABC Protractor Square to do what we claim for it.

**CROOKSTON TOOL COMPANY
CROOKSTON, MINN.**



Crookston Tool Co., Jan. 22, 1910
Messrs.—I have received the ABC Protractor Square and it is true. The ABC is up-to-date. I have seven squares but it is ahead of them all. I have been at carpenter work for 35 years and have used quite a number of squares. I can sure recommend your square as the most convenient tool I have yet seen. Yours,
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P. O. Box 215,
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RAYL'S CATALOGUE

For Woodworkers



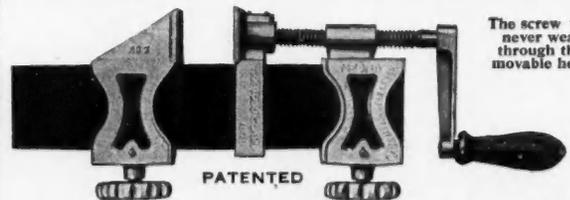
300 pages of Tools, the latest and best tools and many other things that shopmen use and that mechanics want. We will mail you one free of charge for the asking, but we won't object to your sending us the postage (.08) if you like. Representing also Russell & Erwin Mfg Co.'s Builders' Hardware.

T. B. RAYL CO.

Established 1875

DETROIT, MICH.

The TODD Clamp Will Save You Money

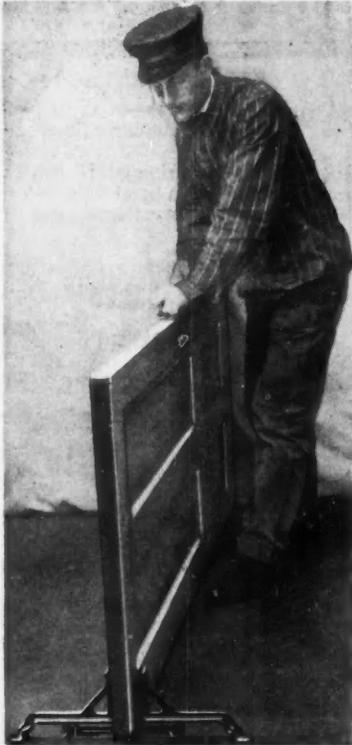


The screw will never wear through the movable head.

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

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

The Carpenter's Ever-Ready Door Clamp



**Durable, Efficient,
Inexpensive.
Saves Time & Labor**

The Carpenter's Ever-Ready Door Clamp will hold a door firmly on edge while the hinges, lock and other attachments are being fitted.

The clamp is durable and cheap. Its construction is such that the weight of the door serves to throw the clamping jaws toward each other to hold the door firmly. Every downward pressure upon the door, instead of moving it from the clamp, causes the clamping jaws to grip the door more tightly.

A simple thumb-screw provides for adjusting the clamping jaws to take different widths of doors, while the clamping faces are padded to prevent injury to the work. The clamp may or may not be fastened to the floor.

PRICE \$3.00

WILLSHIRE CLAMP CO., Willshire, O.

References, Farmers & Merchants State Bank, Willshire, O.

2 Machines instead of 1

And you save two dollars instead of one

Because the WEBER has two knives, one for the forward and one for the backward movement, and you can change from one to the other in an instant. You actually get two machines at one price.

The WEBER DOUBLE ACTING Floor Scraper

can be easily and quickly set at any angle for perfect work on all kinds of wood—maple, oak, yellow pine, fir, it makes no difference what. The blade holder is attached to a flexible frame by means of half-ball-and-socket bearings, which absolutely prevent chattering and the leaving of waves in the floor. No other scraper has these features.

Try it yourself. Try other machines, too, and make comparisons. Satisfy yourself that the Weber is the only perfect scraper made. Remember—I pay the freight.

Write for free descriptive booklet and price list—but don't buy a scraper until you have seen a Weber in action.

JNO. F. WEBER,
President,
Weber Mfg. Co.,
670 71st Ave.,
West Allis,
Wis.



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Do not Buy a Floor Scraper without first trying

THIS HIGH - GRADE MACHINE

Shipped on Approval at Our Expense
Adjustable Blade Holder
Rubber Bumpers

Universal Floor Scraper Co.

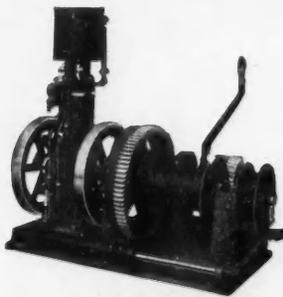
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should know about our Hoist direct connected with Gasoline Engine for use with Double Platform Material Elevators. We furnish Hoist and Elevator complete ready to run. This outfit will elevate more building material at a less cost than by any other known method. Our Bulletin No. 5 will give you all particulars.

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Simplest, Cheapest and Best on the Market
Weight, 75 lbs.

Also Attachments for Floor Scrubbing, Wax Polishing, Tile Rubbing, at Small Extra Cost. Put on in an instant.



Retails at \$18.00.

Enamelled dark blue and gold.



SARGENT'S IMPROVED STEEL SQUARE

The difference between good and indifferent Carpenters' Squares lies in something more than excellence of material and workmanship, which are, of course, among other "Sargent" features—it is in the qualities that increase its all-round efficiency. That is why the practical "Sargent" Standard Steel Square is the universal favorite wherever Squares are used. Our latest model has the scales and markings which enable the carpenter to lay out all kinds of work and to calculate quantities with an ease and accuracy never before thought possible. "A practical treatise on Steel Square" is what several recipients have declared our little publication. Copy free simply by mentioning you saw this ad in the American Carpenter and Builder.

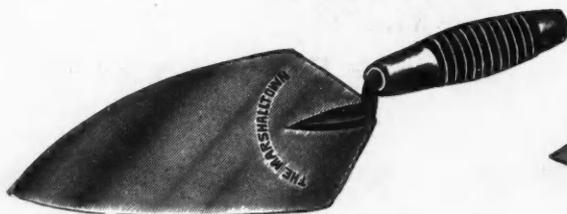
Sargent & Company

1149 Leonard Street

New York

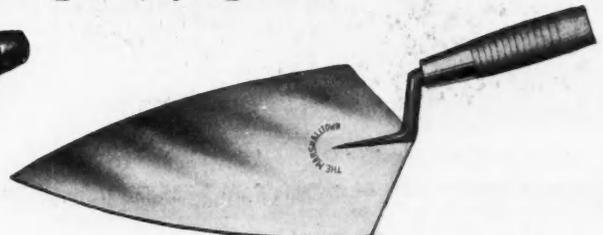
The Best Ever

You Will Never Regret Buying One



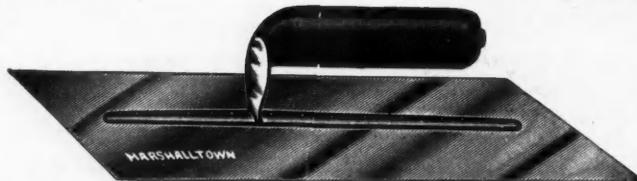
Wide Heel Brick Trowel

Made of Best Quality Crucible Trowel Steel.
Leather Handle.



The shape recommends it. The quality you all know. It's the Marshalltown.

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Genuine Marshalltown Trowel

Straight Edges Always. Best Quality Spring Steel Blade. Hardened Mounting. Ten Rivets. Imitated because they are good.

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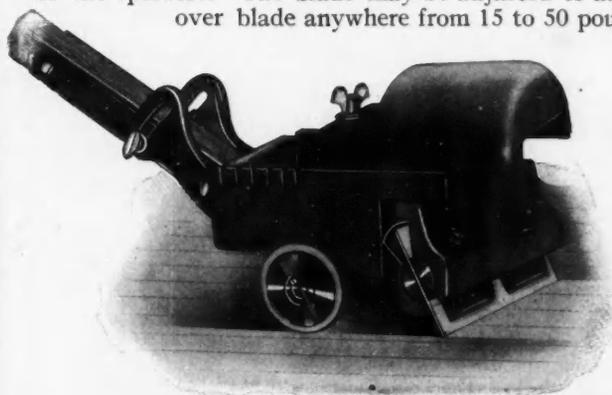
To Let You Try "The Adjustable"

Let me send the "Adjustable" to you and you can try it on your own floor. Compare it with other machines, and if it is not exactly as represented, and the best floor scraper you have ever seen, return it and I will pay the freight both ways.

THE ADJUSTABLE FLOOR SCRAPER

Will do more and better work with less labor than any other scraper made

It is the only one having such a wide range of adjustments that it can be readily adapted to any kind or condition of floor, hard or soft wood, old or new. The handle may be adjusted to the height of the operator. The blade may be adjusted to any vertical or lateral degree. Adjustment of weight over blade anywhere from 15 to 50 pounds. Adjusted weight over blade is permanent, not governed by pressure upon the handle, insuring a uniform cut.



My Free Trial Offer

The "Adjustable" will be sent to you FREIGHT PREPAID and you can test it on your own floor. You can be your own judge. If you don't want to keep it, it won't cost you a cent. Write and let me tell you more about it.

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Use our Rolling Partitions to subdivide rooms.

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WINDOW BLINDS

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A. J. WILKINSON & CO., 180 to 188 Washington St., BOSTON, MASS.

3 New Features

These three features form the Ackermann New Knife Sharpener—the invention that ensures a perfect cutting edge all the time. It means better floor scraping than hitherto—it means quicker floor scraping. Not a talking point but a device that saves dollars for every user.

Ackermann Floor Scraper

The Ackermann is the best floor scraper. We guarantee it to do more, better and easier work than any other machine on the market. If it doesn't you get one free. Send for details of our offer under which any contractor may test the Ackermann Rapid Floor Scraper and Ackermann's New Knife Sharpener free at our expense.

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The American Floor Surfacing Machine

is the original and only two-roll, self-propelling, dust collecting machine protected by U. S. and Foreign patents, and the only one that will satisfactorily surface any kind of a wood floor, and has been in general use by contractors, hardwood floor companies and others for over 6 years.

Its work is rapid, regular, smooth and even, because the power that drives the rolls propels the machine at the same ratio of speed.

Its work has established the standard for surfaced floors, and the only machine whose work is specified by leading architects and meets the requirements of contractors, owners and hardwood floor companies for finely finished, smooth, even floors.

It has surfaced and polished millions of square feet of the finest floors in America and Europe.

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

The only one whose construction is guaranteed and sold on its merits.

Write for our book "Surfacing Floors as a Business."

Manufactured by

The American Floor Surfacing Machine Co., Toledo, Ohio.

CONTRACTORS'

Portable Combination Woodworker

GAS, GASOLINE or ELECTRIC POWER

Rip Saw
Cut-off Saw
Jig Saw
Dado Head
Molder and Shaper
Jointer
Sander
Boring Machines
Emery Wheels

We Furnish Machine, Engine and Tools Complete.

Used by Contractors, Lumber Yards and Railroads Everywhere

A practical machine for every contracting builder, jobbing shop, cabinet maker, etc., combining nine machines, so assembled that they do not conflict. Large table surface. The power, 4-H. P. Engine, is rigid in the frame and machine can be used in the shop or on the job.

Send today for circular fully describing the best combination woodworker ever built.

C. A. & F. G. Diffin

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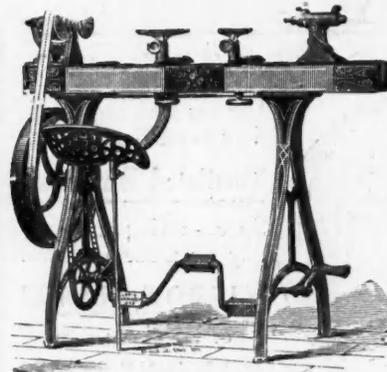
L. S. STARRETT SAYS:



"If you find any tools better than Starrett Tools, buy them."

Send for free Catalogue No. 186.

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



COMPLETE OUTFIT

Hand and Foot-Power
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Our No. 3 Wood Turning Lathe can be speeded from 1,000 to 2,000 revolutions a minute with perfect ease. Stopped or reversed at will of operator.

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For Highest Quality Buy

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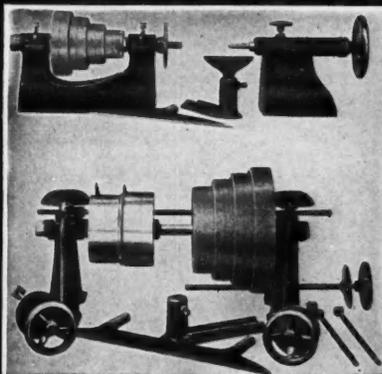
CHESTER, CONN., U. S. A.

21-6

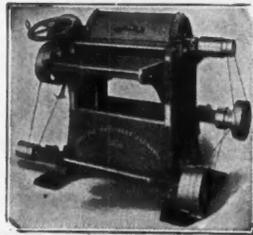
Do Your Own Millwork!!

Stop paying somebody else profit—put it in your own pocket. Be in a position to estimate below your competitors. You can do this by installing your own Machinery

Money-Saving Machinery



Wood Turning Lathe and Countershaft
16 and 20-in.



Chicago No. 35 Pony Planer



Chicago No. 7
Improved Swing Saw



New Hermance No. 1
Heavy Power Mortiser

THE contractor and builder who installs his own woodworking machinery can easily estimate under his competitors. Modern economic conditions demand it. Money you expend in millwork is profit for somebody else—the profit that rightfully belongs to you.

500 Machines in Stock

For a small investment contractors can obtain sufficient machines from us to make them independent. We have new machines, direct from manufacturers, and many rebuilt machines as good as new. 500 machines are constantly in stock at our warehouses.

Prices are Favorable

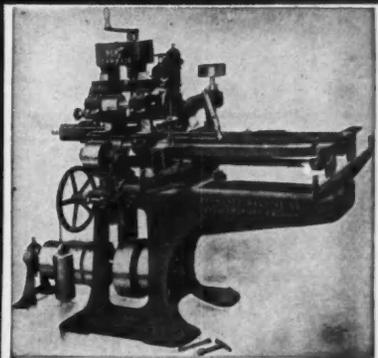
Our line is the most complete in the country and our prices are most favorable. All our machinery is of special construction to secure fine finished surfaces and reduce sandpapering to the minimum.

Send for Lists and Circulars

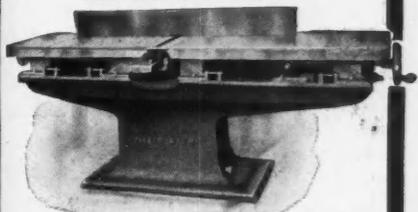
Our monthly list of rebuilt machines (free to contractors) shows just the machines you ought to have. Write today.

Chicago Machinery Exchange

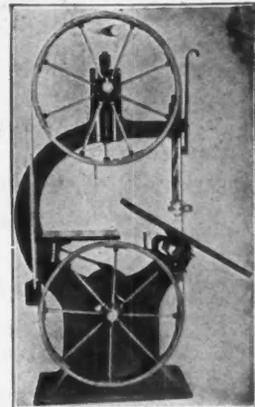
159-161 North Canal St., CHICAGO



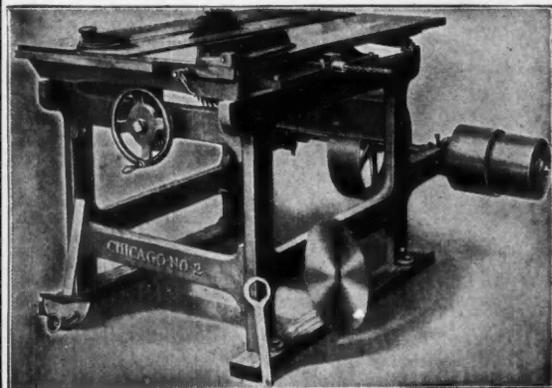
New Hermance No. 3 Tenoner



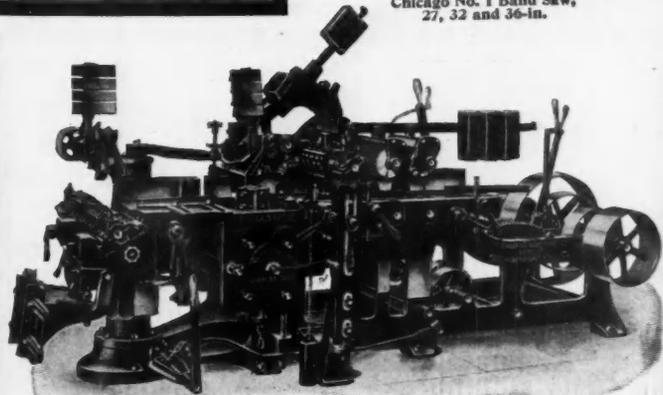
Chicago Hand Jointer, 8, 12 and 16-in.



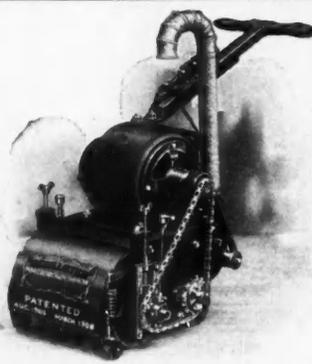
Chicago No. 1 Band Saw,
27, 32 and 36-in.



Chicago No. 2 Combination Saw Table
An excellent machine for ripping, cutting-off, mitering, dadoing, etc.



Hermance New 1909 "Wide-Open" Moulder
Up-to-date and a little ahead



Made in three sizes:
8x18 8x15 and 8x12 in. Roller.

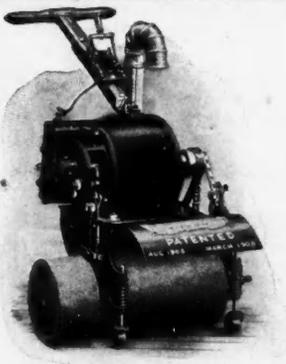
**Perfect Results Are Easily Obtained By
Using Schlueter Rapid Floor Surfer**

This machine is built on the only correct principle. It is guaranteed to be **The Best** machine with which to produce an even, smooth surface on any kind of large or small wood floor, old or new, hard or soft, and in all buildings: Residences, Stores, Factories, Bowling Alleys, Roller Skating Rinks, Reception and Dance Halls, Etc.

The **Schlueter** will remove all joints or warped edges, and oil, wax, lime stains, or the "muck" from skate wheels, in a most satisfactory manner.
(Earning capacity, \$20.00 to \$35.00 per day)

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

M. L. SCHLUETER, Chicago, Ill.
103 N. Canal Street

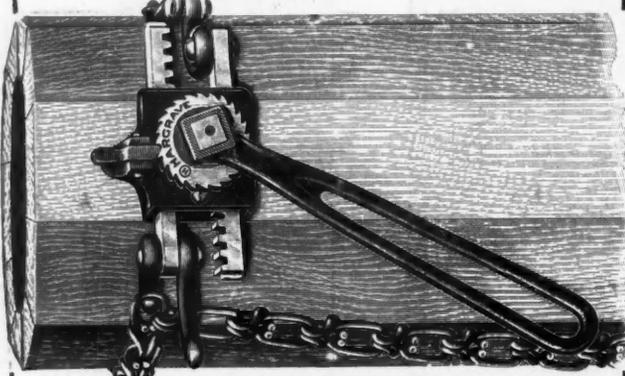


Edge Roller easily adjusted to either side.

Stop! Look! Listen!

(H)
HARGRAVE

COLUMN CLAMP



**MOST PRACTICAL, QUICKEST ADJUSTED
ON THE MARKET**

Write for Circular Price \$2.00 each

Department H,
The Cincinnati Tool Co.
NORWOOD, CINCINNATI, OHIO

This Is Not An Ox Horn

But is as handy to a carpenter as horns are to an ox.

Has Double
the Strength
of Any
Bracket
Hanger Made

Cannot Tip
Sideways



Write for
Circular

It Will Tell
You How to
Save Dollars

WAGNER BUILDING BRACKET HANGER
The Only One With a Double Hook

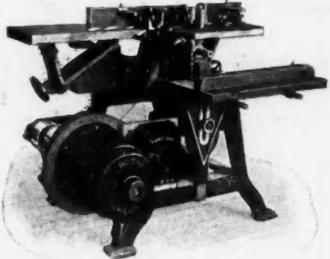
WAGNER MFG. CO., Cedar Falls, Iowa

ROTHMOTORS

are suitable for driving almost any kind of machine

We give careful attention to all inquiries. Be liberal in asking for information.

Roth Bros. & Co.
1422 W. Adams St.
CHICAGO, ILL.
N. Y. Office, 136 Liberty St.



PERFECTION

ELEVATORS

ARE

"BUILT TO STAND THE TEST"

Dumb Waiters, Carriage, Store Elevators, Sidewalk Hoists, Etc., Etc.



Our Elevators are noted for their EASY RUNNING and SERVICE-ABLE QUALITIES. They are practically self-contained, and can be erected by any carpenter in a few hours. We furnish plans for erecting.

PRICES \$19.00 AND UPWARD according to the kind, size, lift and capacity of the Waiter or Elevator.

State your requirements and we will give you our lowest money-saving estimate. **BETTER VALUES** for money than found elsewhere.

SIDNEY ELEVATOR MFG. COMPANY, SIDNEY, OHIO



Stanley Tools

This Company is one of the foremost producers in the world engaged exclusively in the manufacture of high-grade Carpenters' and Mechanics' Tools.

Among the many lines of tools we manufacture are

"Hurwood" Screw Drivers

shown herewith. These are mechanically the best Drivers ever offered and will stand more hard usage than any other Drivers made. Blade, shank and head are formed of one piece of steel and the blades are finely tempered. Be sure the word "STANLEY" is stamped on every tool. Send for Catalogue.



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




**DIEHL'S
Screen Door Catch No. 51**

Cut shows the inside construction of the catch. This is the only Catch made that has a double leverage, so that the spring always pulls across the corner and still has a direct leverage on each arm. This spring will never lose its tension, as it does not expand over one-eighth of an inch and is enclosed in a solid steel casing.

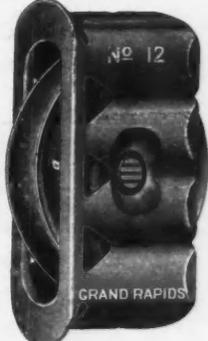
Samples can be had on receipt of ten cents.

MANUFACTURED BY
DIEHL NOVELTY CO.
SHEBOYGAN :: :: WISCONSIN

If You Have Power

You cannot afford to use any but the

Grand Rapids All-Steel Sash Pulleys



and the Grand Rapids Mortising Bit. Bores mortise at one punch. Used in common boring machines. We make boring machines too. Write for sample pulleys and prices.

Grand Rapids Hardware Co.

35 Pearl Street,
GRAND RAPIDS, MICH.



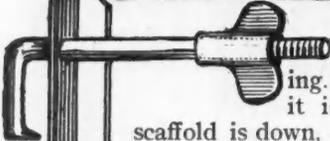
Say! For Metal Ceilings Write

Illinois Metal Ceiling and Supply Co.

23 Lake St., Chicago
Telephone Central 514

We Furnish and Apply them





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

Absolutely Safe— It requires only one man to put them up and take them down. Reversible— can be used with the short arm supporting the platform. Cheaper than wooden brackets in first cost alone. Made in 4 ft. and 5 ft. sizes.

Prompt Shipments Guaranteed.

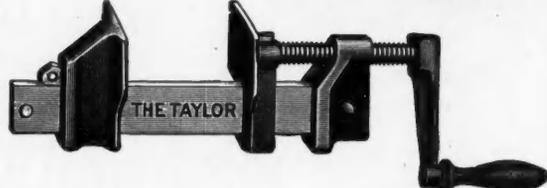
If you wish to try a pair, before ordering in quantity, write for terms of special trial offer.

THE TAYLOR STEEL SCAFFOLD BRACKETS

LAST A LIFETIME

A single pair will CARRY A TON without even springing. Write for Catalogue and Prices.

Quick Acting Self-Locking Screw Clamps. 21 Different Styles.

Let us tell you about our Improved Gripping Device, and the Special Grade of Steel we use.

JAMES L. TAYLOR MFG. CO., Bloomfield, N. J., U. S. A.

Self-Setting Planes are not like other planes. Why not try one, and if it is not worth to you twice its cost, return it at our expense and we will return you the amount you paid us, and the trial will not cost you a nickel. During March, 1910, we will receive this advt. as \$1.00 if the balance of the list price of a plane and 10 addresses of plane users, no matter where they live, is sent us from where the Self-Setting Planes are not sold.

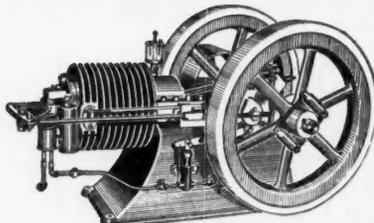
THE BEST IS THE CHEAPEST.
None Cheap but the Best.
All Want the Best.
Sent on 30 Days' Trial as per Circular if Dealers do not keep it.



If you send only the ten addresses, no matter where they live, we will send you circulars and a carpenter's hard, tough pencil. If you send a two-cent stamp we will send you another pencil. March 1, 1910.

GAGE TOOL CO., Vineland, N. J.

Your Word Is Good With Us



You don't have to sign any specially worded order blanks or contract when you order the Gade. Just ask us to send you one on 30 days' trial and the engine will go out. There are no strings tied to the Gade free trial. Buy your engine from a company that can ship an engine without first requiring a deposit. The Gade is shipped on its own merits; we let it talk for itself. Freight paid both ways if not satisfactory. Ask us why we use 1/3 less gasoline than other makes. Remember, the first cost of an engine is not the only point to consider. Address

Gade Bros. Mfg. Co., Main Street, Iowa Falls, Iowa



Patent Applied For

SEE THESE HARDENED ENDS AND CORNER

LOOK FOR LABEL ON WRAPPER

WE HARDEN THE CORNERS OF ALL OUR FRAMING SQUARES ALSO NOS. 100-1, 2 and 3 STANDARD SQUARES

Nicholls Manufacturing Co. Sole Manufacturers **Ottumwa, Iowa**

WITH NO MORE COST TO YOU

THE "LIGHTNING" AUGER BIT

WARRANTED



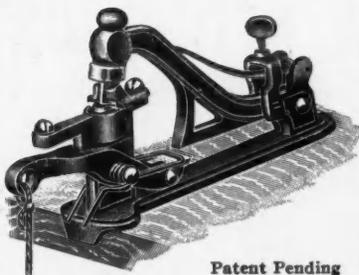
WARRANTED

It will bore through any kind of wood in common use about twice as quickly as the best and fastest heretofore on the market. The worm has a double thread terminating in two cutting points.

The double thread with the specially formed twist secures its double quick work without increase of power. Only by actual test can the great advantages of the lightning bit be fully realized. Secure from your dealer or sent by mail. Price postpaid.

1/4	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
\$0.28	.28	.28	.28	.32	.34	.38	.42	.50	.50	.55	.55	.62	.62	.73	.73	.85	.85

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



Everybody using a saw has need of the improved "Buckeye" foot power saw set. Formerly the "Foote" Hammer Saw Set.

This Saw Set is guaranteed to set any saw from the finest tooth to the two man cross cut saw perfectly, and with great speed, as it is operated by foot power, leaving both hands free to handle the saw.

Patent Pending

Requires very little space in the tool chest. Weighs 2 1/2 lbs., retails for \$1.50. Ask your dealer for it, or will send one to any address prepaid on receipt of \$1.50. Write for special proposition to agents. We also manufacture a full line of Saw Vises, Chain Drills, Hollow Augers, etc. Catalog to dealers upon request.

BUCKEYE SAW VISE CO., 2044-50 West 55th St., Cleveland, Ohio

"OHIO" CHISELS

Are made from a High Grade of Tool Steel, Skillfully Treated, Correctly Tempered, Accurately Ground.



Every "Ohio" Tool is fully warranted. They have been on the market a great many years and the experienced mechanic who does not care to take any chances on tools of doubtful quality always insists on having "Ohio" Tools from his dealer. He knows them to be good tools, with keen and tough cutting edges.



Look for this trade mark when buying Planes, either Iron or Wood, Chisels, Drawing Knives, Auger Bits, Gouges, Spoke Shavers, Bench and Hand Screws, Cabinet Makers' and Manual Training Benches, Etc. Write for our Catalogue No. A, if you are interested in GOOD TOOLS.

Registered **OHIO TOOL CO., Columbus, Ohio**

JOIN THE CRUSADE AGAINST THE HOUSE FLY



Full Length Screens Keep Out All the Flies—Always

The best way to attach full screens is to hang them from the top with

Gossett Hinges

Screens can be taken off or swung out in a jiffy to wash windows. No ladder or tools needed even on upper stories. Storm sash can be hung with the same fittings.

Samples Free to Carpenters for trial
F. D. KEES MFG. CO.
Box 522 Beatrice, Nebr.

PARKS' COMBINATION WOODWORKING MACHINES

Make a Complete and Economical Operating Mill for Carpenters and Contractors Take our No. 410 for instance—here is a Combination of Three Machines in One—



A Table Circular Saw
A Six-inch Joiner and Boring or Routing Attachment

Ready for Instant Use
No line shafts and large amount of floor space required.

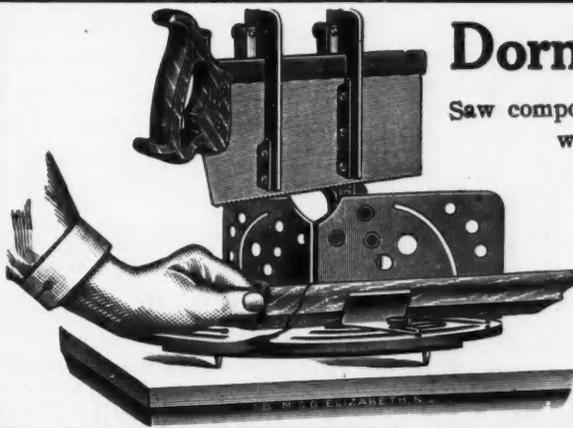
SIMPLE—STRONG and Ready-to-Go—with little power. We deliver on short notice.

Prices and Catalogue on Request.
Parks Ball Bearing Machine Co.
Fergus and C. H. & D. Ry.
CINCINNATI, O.

Originators of the Circular Saw, Band Saw and Jointer Combination, also Foot and Hand Power Machines.
BOURNIVAL & CO., St. Barnabe, P. Q., Agents Canada

Dorn's Revolving Mitre Box

Saw compound as well as plain mitres any width with a back saw 4 inches wide

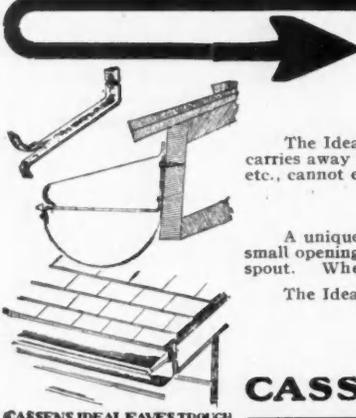


SEND FOR BOOKLET
IT TELLS THE STORY



Compound Mitre

MANUFACTURED BY
Braunsdorf-Mueller Company
1093 E. Grand Street, ELIZABETH, N. J.



CASSENS IDEAL EAVES TROUGH

TAKES WATER ONLY

The Ideal completely overcomes the disadvantages of the old style open gutter. It satisfactorily catches and carries away the water that falls on your roof. Its use insures clean, healthful cistern water. Leaves, trash, gravel, etc., cannot enter it. Neither can birds build nests in it. Therefore it is never clogged.

Ice Will Positively Not Break Down the Trough

A unique and important feature of the IDEAL is that it will not fill with snow and ice. When it sleet the small opening (about one-eighth inch) is quickly closed. This prevents the bursting of the trough, also of the down spout. When it thaws the ice melts, and the entrance opens automatically before the water from the roof reaches it.

The Ideal can now be erected with a Wire Hanger if face-board has mouldings.

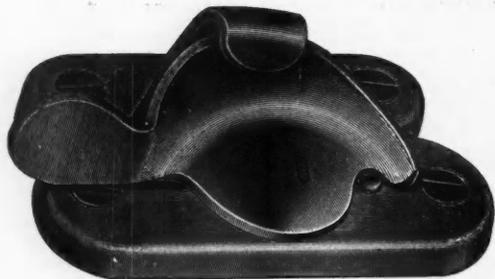
Special Propositions to Contractors, Builders and Architects

Write for free booklet

CASSENS MFG. CO. Edwardsville, Ill.

CASSENS IDEAL EAVES TROUGH
PAT. NOV. 10, 1908. OTTUMWA, ILL. U.S. PAT. OFF.

MONITOR SASH LOCKS



(PATENTED)

NEVER BREAK

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

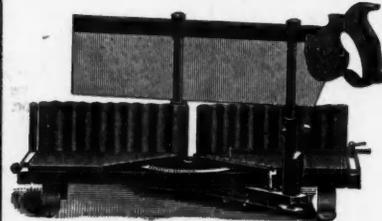
If the upper sash drops, the Monitor "Never Break" Sash Lock will pick it up from lower point than any other, adjust the sashes perfectly, prevent all vibration and lock securely, so it cannot be opened from the outside.

MADE IN TWO SIZES AND ALL FURNISHED BY

The Champion Safety Lock Co.
Geneva, Ohio

GOODELL MITRE BOX

Made of STEEL - Cannot Break

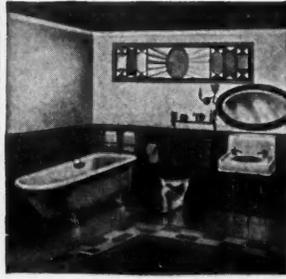


First in Quality and Improvements
Automatic Stops for holding up saw.
Corrugated Backs. Graduated.
Gauge for duplicate cuts and many other features.
Send for Circular "C"

GOODELL MFG. CO., Greenfield, Mass.

PLUMBERS' SUPPLIES

AT WHOLESALE



When in the market for Plumbing Supplies and you wish to

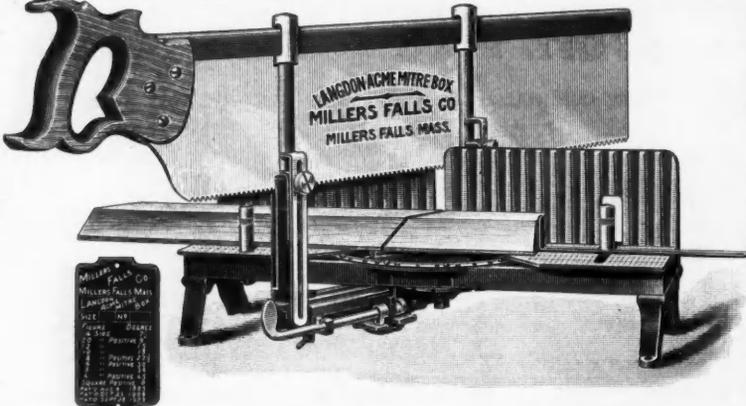
SAVE
20 to 40 Per Cent

on every article, write for my free illustrated Catalog. The only house that sells first class guaranteed goods at wholesale prices direct. Shipments are promptly made from a very complete stock.

Small orders are as carefully handled as large ones.

[B. KAROL. 768-77 W. Harrison St., Chicago, Ill.

THIS IS THE MITRE BOX YOU WANT



LANGDON ACME MITRE BOX
MILLERS FALLS CO.
MILLERS FALLS, MASS.

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

The advantage over other styles are too numerous to mention in this advertisement, but our pocket catalogue tells the whole story. You can have one of the catalogues by asking for it. It illustrates our full line of tools.

Millers Falls Company

28 Warren St., New York, N. Y.

Disston

SAW SETS

The best saw ever made is useless unless kept properly set and sharpened. Use **DISSTON** Files for sharpening, and **DISSTON** Saw Sets for setting.

Many saw-sets ruin good saws, but the **DISSTON** makes do not; they are the **SAW-SETS** used in the **DISSTON** works.

The **DISSTON** "Monarch" Saw-Set applies the pressure through the lower lever, making it easy to hold the saw-set right, while the necessary pressure is gained by merely closing the fingers.

The **DISSTON** "Triumph" Saw-Set is especially adapted for Handsaws, Cross-cut Saws, Circular Saws, and all Small Saws.

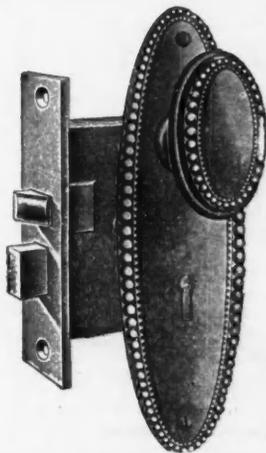
The **DISSTON** "Triumph" Saw-Set is the best saw-set on the market—a simple **TRIAL** of it **PROVES** the truth of this.

If you are unable to obtain the Disston Brand, write us and we will see that you are properly supplied.

BRANCHES—Chicago, Cincinnati, Boston, New Orleans, Memphis, San Francisco, Portland, Vancouver, Toronto.

Henry Disston & Sons, Inc.

KEYSTONE SAW, TOOL, STEEL AND FILE WORKS
PHILADELPHIA, PA., U. S. A.



IT'S UP TO YOU

Let us show you how to save money on builders' hardware for that next job.

No. 5155. Lock set, old copper finish, as per cut.

Per dozen sets, **\$4.75**

REHM Hardware Co.
1501 Blue Island Ave.
CHICAGO, ILL.

Carpenters and Contractors, stop and consider the cost of your Scaffolding and the waste of material.

Also the time and labor saved by using the

Celebrated Scaffold Bracket



Pat. Nov. 16-'09.

\$12.00 per doz.

We herewith show an illustration of our Celebrated Scaffold Bracket, for which we claim unusual advantages, great saving in time and material in scaffolding frame buildings. Its advantages over building the ordinary Scaffold are:

First—Eighty per cent saved on material and labor.

Second—No nails to contend with in scaffold lumber.

Third—No danger of poorly constructed scaffold. This is the only folding Bracket for scaffolding that is practical and absolutely reliable for frame buildings. It does not interfere with lathing and plastering when in use. It is a very strong Bracket and has stood the test of several times its requirements. This Bracket will pay for itself in three months use. Carpenters and Contractors cannot afford to be without them.

ALBERT W. GUTHAT & SONS
1536 Adams Street Chicago, Illinois

PERFECTION DOOR LOCK MORTISER

Makes a perfect mortise without brace and bit or chisel. The only machine of its kind in the world. Worth its weight in gold to the twentieth century contractor and carpenter. You cannot afford to be without it. Automatic, ball bearing, can be set for any size mortise, any size bits furnished.

This bit moves up and down while boring



PERFECTION MFG. COMPANY
407 E. Rich St., COLUMBUS, OHIO

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

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



Here is a Gimlet

Equal in quality and usefulness to any Brace Bit

HANDLE OF
SELECTED
COCOBOLO
WOOD

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

Price Postpaid **15 cents** each

H. H. MAYHEW COMPANY
SHELburnE FALLS, MASS.

GRILLES



COLUMNS AND

CONSOLS

In quality and price our work is not surpassed.

You will make no mistake in writing us before ordering elsewhere.

Send for 48-Page Catalogue No. 15

It contains many fine designs of modern Grilles Columns and Consols.

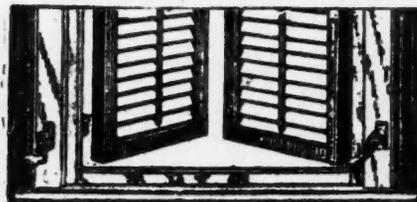


Consol Design No. 1.

Northwestern Grille Works

CHRISTENSEN BROS., Props. 1820-24 Milwaukee Ave., Chicago

MALLORY'S



Standard
Shutter
Worker

New and improved patterns and designs.

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

MALLORY MANUFACTURING CO.
204 Flemington National Bank Building. FLEMINGTON, N. J.

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

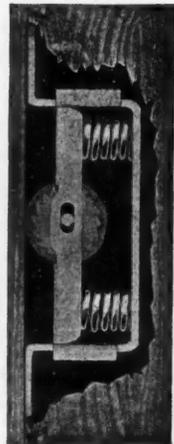
The "AUTOMATIC" SASH HOLDER

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

Prevent rattling and permit the window to be moved up and down with ease. Hold it safely at any point desired.

A sample set of four sent, postpaid, for \$1.20. Ask your dealer, or write to us direct.

Automatic Sash Holder Company
277 Broadway, New York City.



"Last a Lifetime and Give Satisfaction To the End"



BUTT CHISEL

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

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

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

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

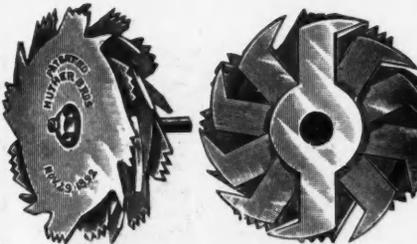
"SILVER LAKE"

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



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

Huther Bros. Patent Groover or Dado Head



Can be used on any Circular Saw Mandrel.

For cutting any width groove from 1/4" to 2" or over. Will cut a perfect groove, either with or across the grain, and leave edges smooth. Will ship to any responsible firm on ten days' approval; if not satisfactory you are at liberty to return at our expense. We also make a speciality of concave ground, smooth cutting circular Mitre Saws, for either rip or cross cut; Grooving Saws for all kinds of special work; Lock Corner Cutters, Concave Saws, etc.

Showing Arrangement of Cutters.

Try our Scraper/Blades and you will use no others.

HUTHER BROS. SAW MFG. CO.
1880 University Ave. ROCHESTER, N. Y.



This DUMB WAITER
complete ready to erect for - **\$18.50**

SELF RETAINING MACHINE
HARDWOOD CAR
SECTIONAL WEIGHT
ROPE, GUIDES, HARDWARE,
knocked down and shipped with the only complete directions for erecting ever issued

SEND FOR SPECIAL PAMPHLET

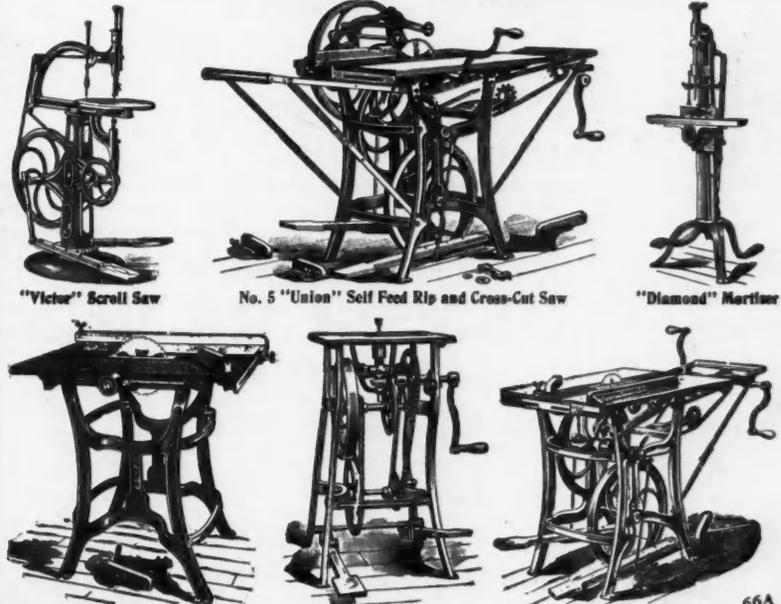
R. M. Rodgers & Co.
174 Washington Av., BROOKLYN, N. Y.

FOOT. HAND and POWER

Wood-Working Machinery

FOR WORKING WOOD IN ANY MANNER

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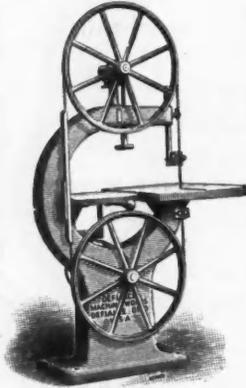
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For Manufacturing

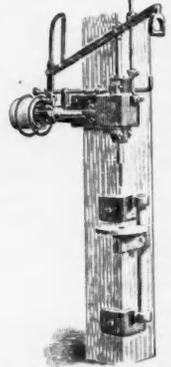
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General Woodwork.

Invented and Built By

The Defiance Machine Works
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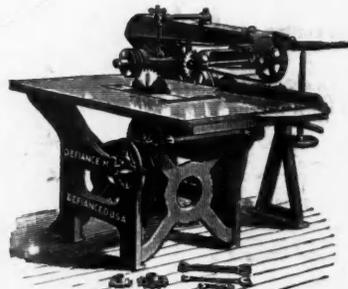
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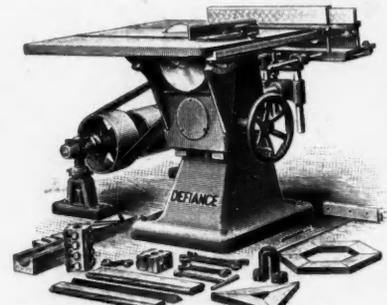
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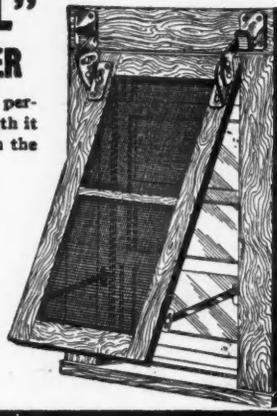
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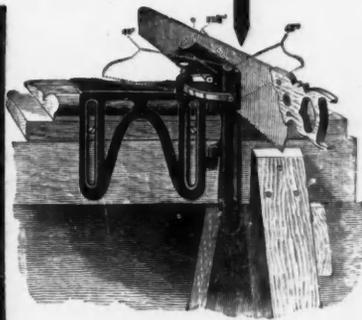
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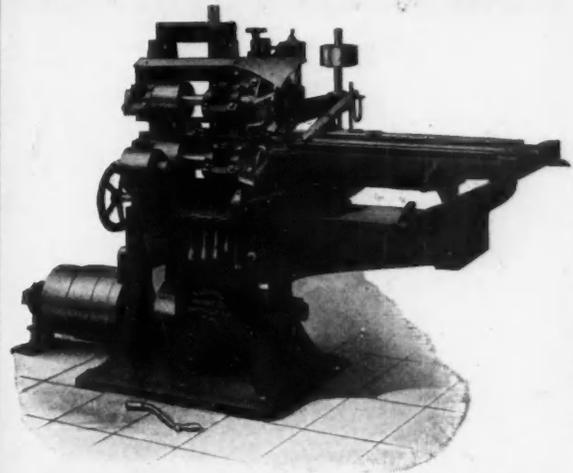
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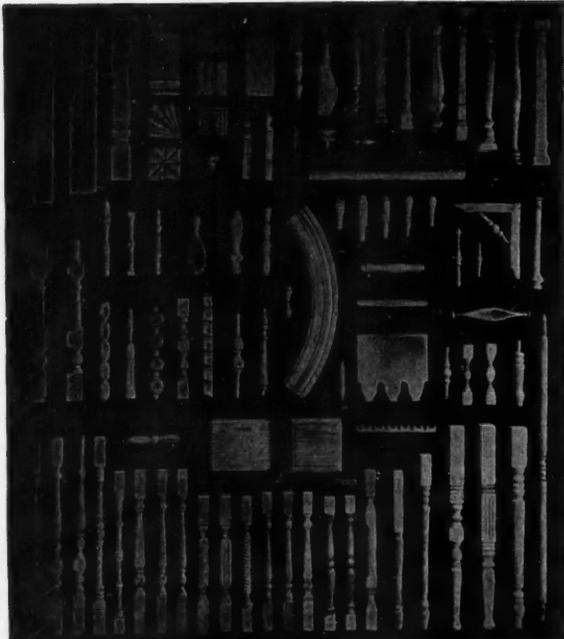


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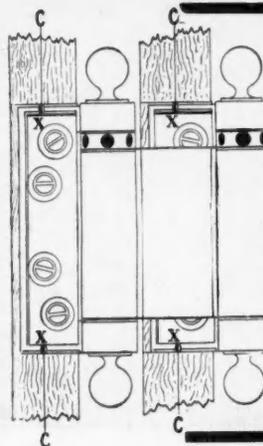
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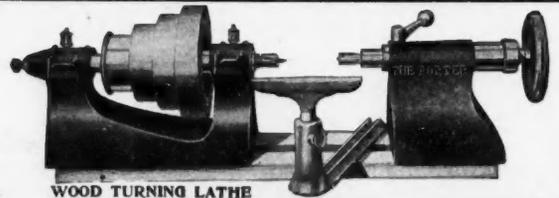
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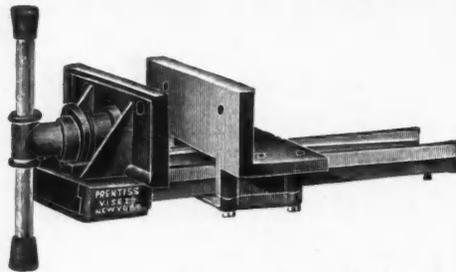
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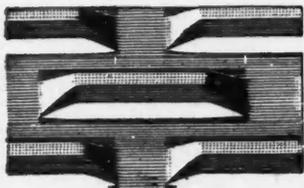
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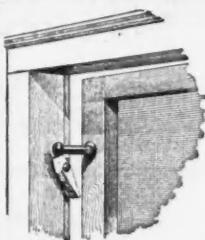
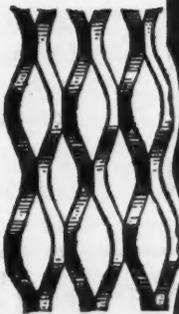
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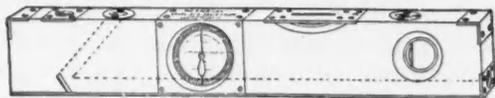
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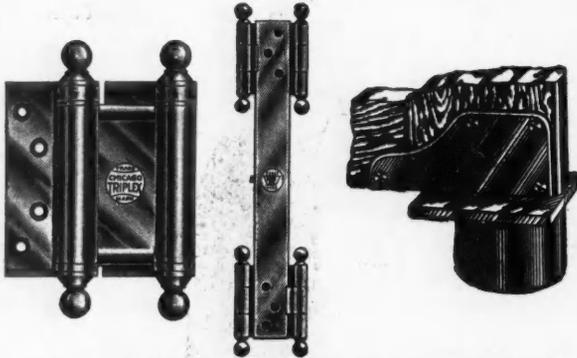
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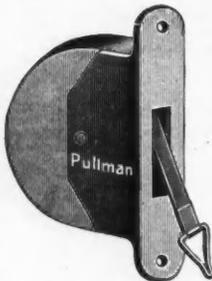
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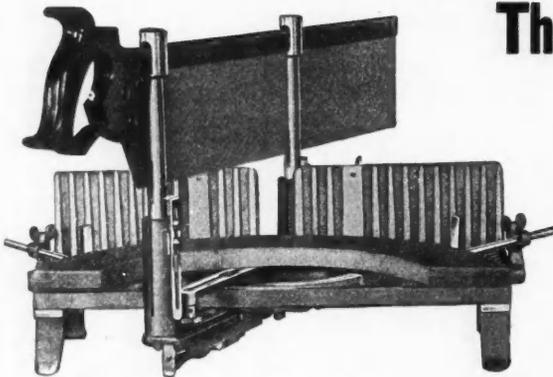
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American Carpenter and Builder

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

Published on the first day of each month by

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VOL. VIII

MARCH, 1910

No. 6

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Do You Paint?

DO YOU paint? If you live in the city or a town of any magnitude the chances are you don't. You do carpentry work and leave the painting to someone else; or probably you and some painter work together. You throw work in his way and he helps you out, and you find it a pretty good arrangement. In some of the country districts, however, the carpenter frequently has to be painter, brick mason, plumber, and everything else. In short, many a country carpenter is supposed to take all the raw material neces-

sary to complete a home, put it in shape, and do all the work. In some country districts, there are painters and carpenters who keep in touch with each other the same as if they were in the city and probably this is the better way.

There is no relation between carpentering and painting in the use of tools or the manual requirements; but the two are frequently so closely associated in work that the carpenter is called on to do quite a lot of painting. It may be in country districts he is called on to paint the house that he builds, or, whether in the city or in the country, he may do considerable cabinet work in the shop. This he must finish, paint and varnish himself, or else go out and hunt someone to do it for him. Naturally under such conditions the carpenter is inclined to do his own painting and varnishing. In this connection there is room for an exchange of experiences in finishing different kinds of cabinet work that should be worth while to all. Also there is room for discussion in the matter of painting houses, that is, as to when the carpenter ought to do it and when he ought to insist on someone else doing it. What do you think about it and to what extent do you paint or varnish in the course of your work through the year?

Copyright for Architecture

IT SEEMS possible that lovers of the unusual in architecture may soon be able to live in a house of their own design in the confidence that no one may reproduce it without rendering himself liable to penalties. The English committee on the law of copyright recommend in their recent report that architecture be accepted as matter to be protected under the law of copyright, both in order to bring about uniformity with the revised International Copyright Convention signed at Berlin on Nov. 13, 1908, and "because it deserves to be protected and presents no difference in principle from that applicable to the sister arts."

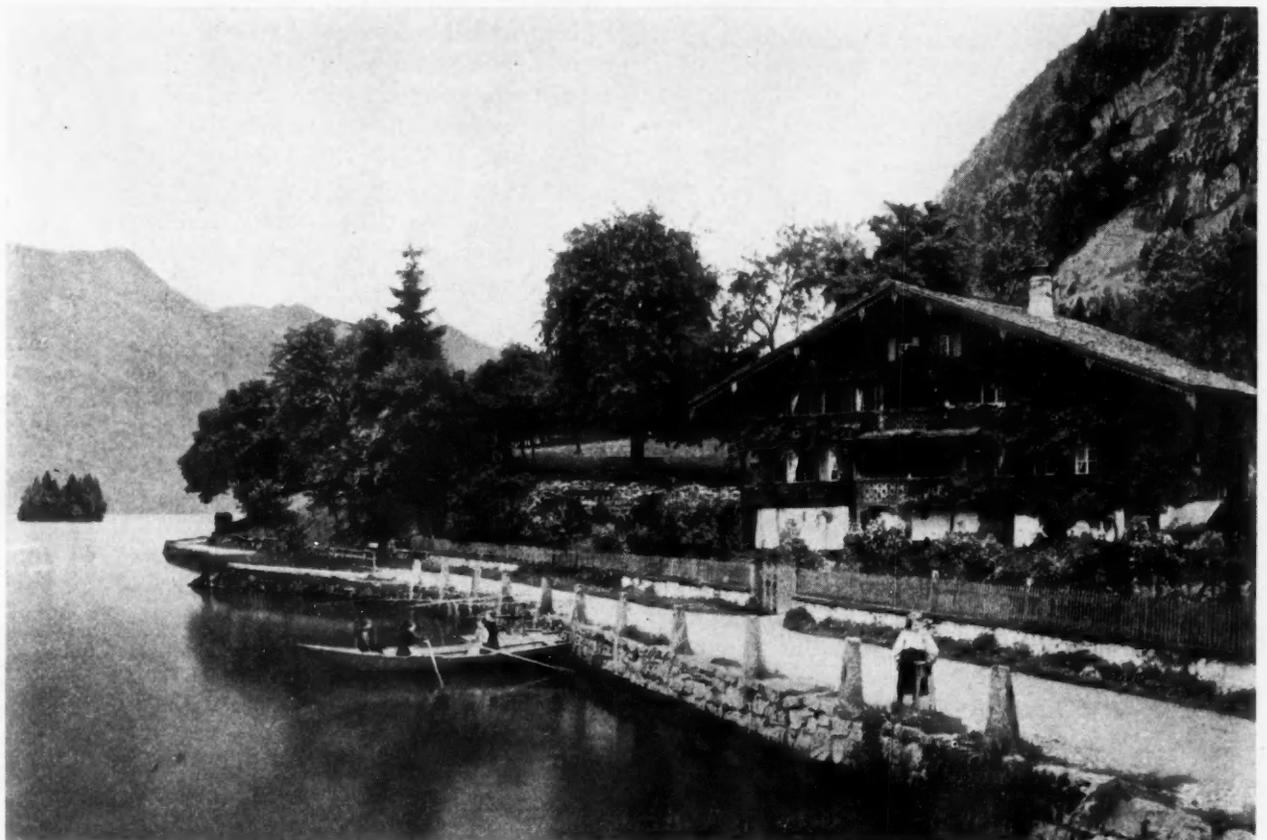
The committee add that they refer only to works of original and artistic character, and not works of common type which have been frequently produced on previous occasions.



A staunch old Chalet at Interlaken

SOMETIMES a song, a bit of scenery, or a way-side house can call up such alluring memories that the less happy present ceases to be. Whenever I see a Swiss chalet in America, street cars and crowded humanity fade away and I am in the snowy Alps once more, or it is spring along the Axenstrasse.

In Switzerland the chalet is not only a thing of beautiful suggestion, but it is beautiful in itself. What could be lovelier in tone than the soft browns and reds of the unfinished woods! The carved brackets and the far protecting eaves add to its picturesqueness. From numerous cheery little windows, the light streaming



The Beautiful Swiss Chalet in its Native Setting

across the snow brings the heart of the wanderer a sense of peace and of home.

When the chalet ceases to be home-like and simple—when its imitators strive for a palatial effect—the result is rarely artistic. For the keynote of the chalet is simplicity and use. This type of architecture had a very humble beginning. The name was applied originally to the herdsman's hut. The shepherds who went to the high Alps with their flocks in summer, constructed from the rough timbers the most primitive of cabins which were known as chalets. Then, since the industrious Swiss must keep occupied, he began to improve

pointed-roof houses do not seem the work of man, but a part of the scenery, so admirably do they fit in with their mountain background.

One of the photographs is of such a group of chalets with the barren mountainside behind dotted with the smaller huts of the herdsmen. Sometimes it is literally true, as Mark Twain writes—that in Switzerland, if a man happens to fall out of his front garden he may tumble a thousand feet before he can find anything to stay his descent.

With the chalet the building of the roof is a matter for serious consideration. It must have just the in-



Wirtschaft or Hostelry at Treib

upon his little structure and decorate the brackets with carving. The herdsman went back to his summer home season after season. He found that the heavy winter snows had slipped from the sloping roof and left it uninjured. The water trickled from the far projecting eaves and left the walls dry and clean. Because of the strong and enduring lines upon which this type of house was built, and because of its inexpensiveness and economy of room it became gradually the popular style of Swiss home.

In some regions where stone is more plentiful, as in the fashionable St. Moritz country, the chalet is rarer, or where it does occur the style of the house is quite different. The lower part is stone and the upper stories are of timber rather carefully finished. On the hillsides, however, where heavy lumber is plentiful, there are chalets innumerable. These little groups of

clination that will admit of the upper story being utilized most effectively. Then there must be slope enough so that the heavy winter snows will loosen and fall to the ground of their own weight. Most important of all, the roof must be securely enough fastened so that the sharp winds that rush through the valleys may not lift it bodily and carry it away. If one studies this group of Swiss houses carefully, a great pile of stones may be seen on the shingles—a weight just heavy enough to defy the tugging winds and cutting blasts.

If the roomy attic is broad enough to hold the winter's supplies, so also is the broad basement of like generous proportions. Here the goats and cattle in Switzerland often find a friendly home until there is pasturage on the hillsides.

Some most exquisite vine-covered chalets are seen

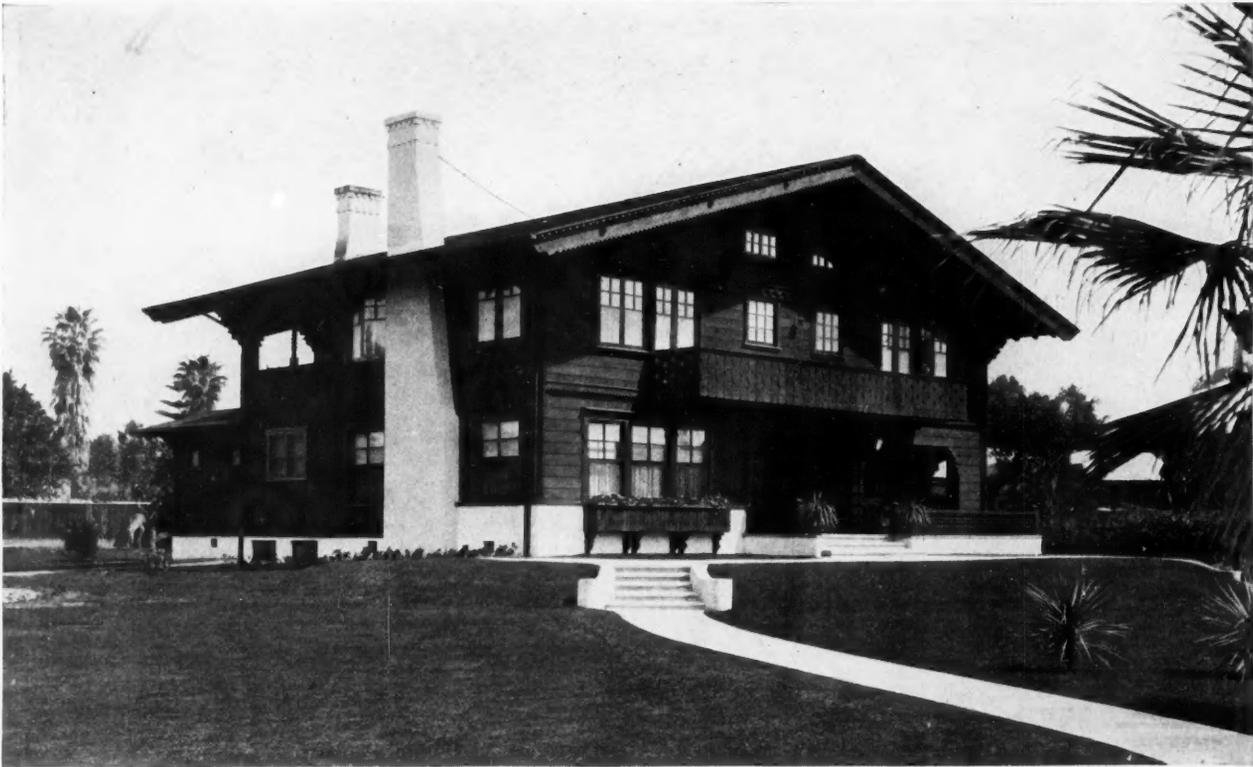


A Typical Swiss Village

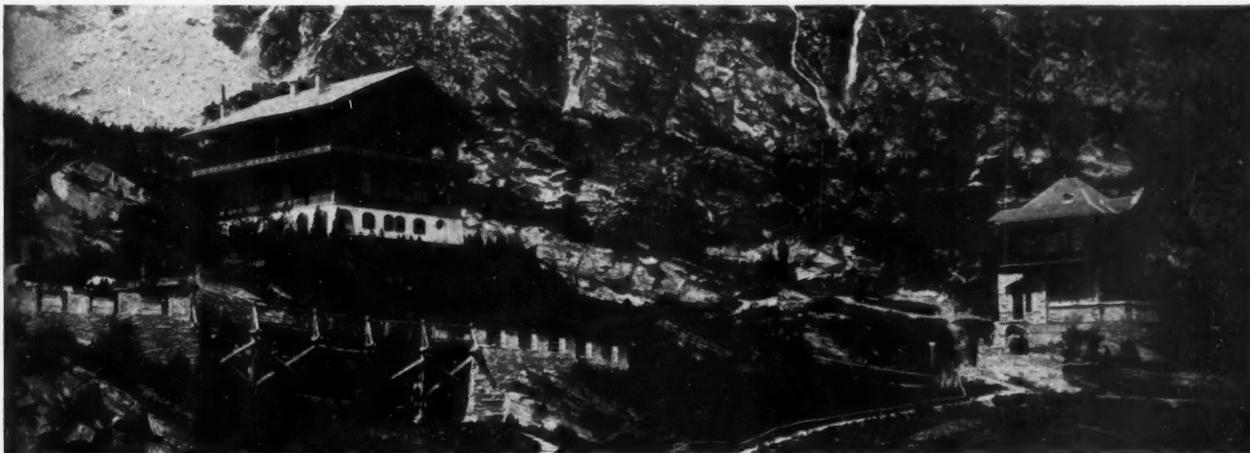
at Brienersee and Interlaken. The old timbers and boards of rough unfinished wood have taken on the soft reds and browns that come from weathering. The purples and greens of the clambering grape vines

add to the warmth of the coloring. The chalet hotels, as the one at Treib, have often extra adornments, such as a dormer window or a frieze of carved wood.

At Maloja is a modern rather pretentious sort of a



American Adaptation of the Chalet at Pasadena, California Cost \$9,000



Two Chalets at Maloja—More Pretentious than most Alpine Lodges

chalet—the type one sees very effectively copied in America, especially in California, where there is every variety of house that can cover its inexpensiveness (?) with a fanciful name, there are chalets not a few. The chalet is not in general so well adapted to the California landscape as the bungalow, or the red tiled Mission type. But occasionally along some rough roadway one meets a real rustic chalet with rough stone foundation and simple heavy timbering which, with the bare mountain beyond, makes one feel that beyond the turn in the road lies Switzerland.

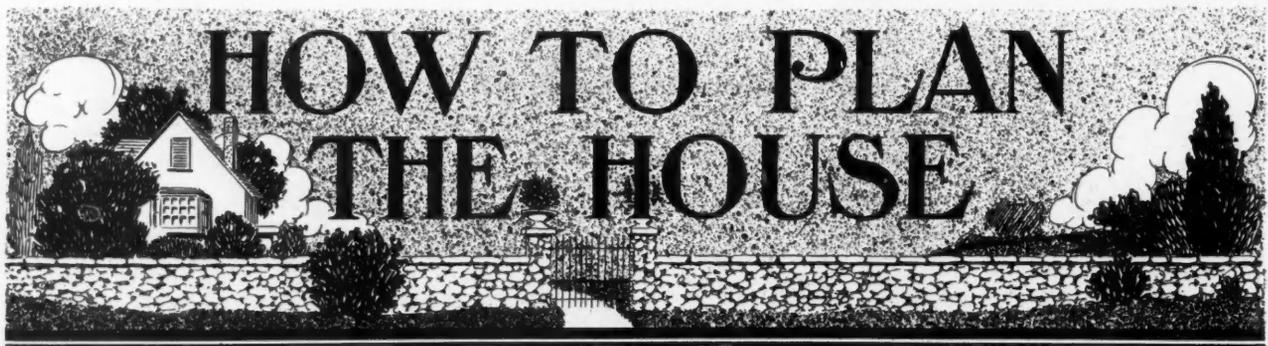
Along the sides of Mt. Wilson, whose white summit is plainly visible from Pasadena, are some charming

chalets, beautifully in harmony with Alpine scenery, whether the background is the soft green slopes of early spring, the bare brown of late autumn, or the silent snows of winter.

The chalets built along a level road, or crowded in by other houses, are seldom very successful. As one sees them along the California driveways, shaded by tall palms, they seem ill at ease and out of harmony with their environment. The chalet cannot be transplanted with success except into rough and rugged locations resembling in part the mountains where the style originated. There, however, no style is more beautiful and appropriate.



An American Chalet—Home of Mrs. James A. Garfield.

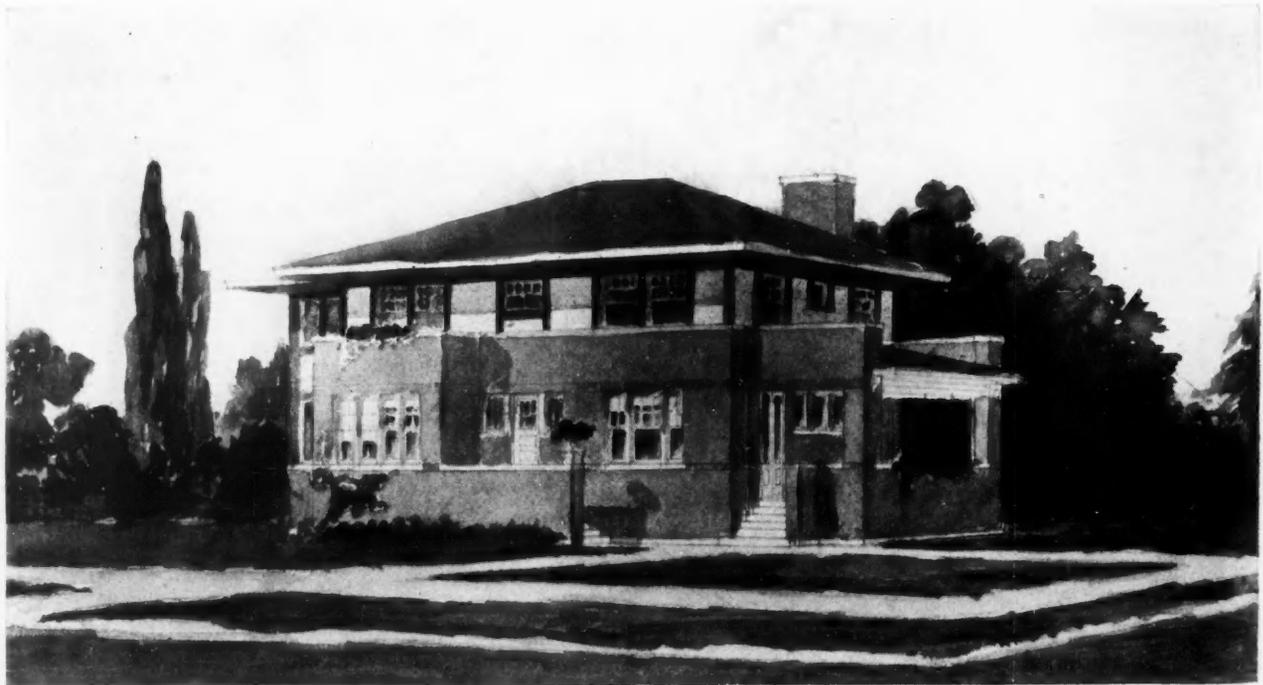


Suggestions for Home Builders

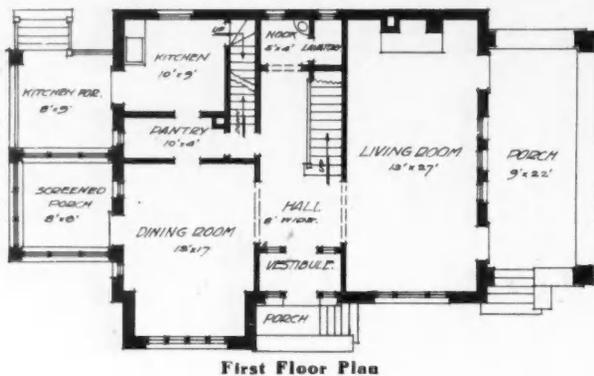
IDEAS FOR THE ARRANGEMENT OF ROOMS, MATERIALS TO USE, PROPER INTERIOR FINISHES, ETC.—PHOTOS AND PLANS OF SUCCESSFUL DESIGNS OF VARIOUS KINDS

WE ARE offering a number of attractive, medium-size and medium-cost residence designs herewith, each one of which embodies some feature or features of distinct worth, making them worth while for study. Our idea and purpose in this is that the prospective home builders may get from them

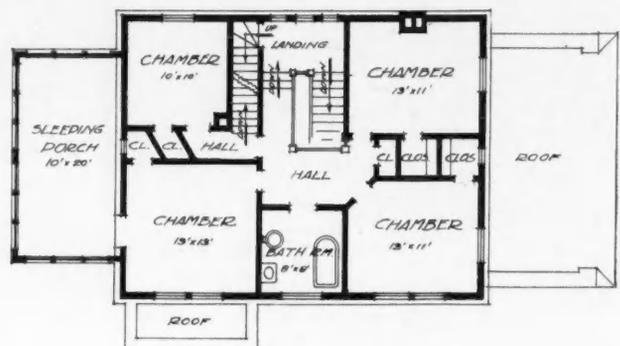
some good ideas that can be incorporated in their own building plans—to the possible improvement of the same and the lasting convenience and satisfaction of the house keepers. The carpenters and builders can also get suggestions from these plans and pictures that will help them considerably. The art of small house



Straight-Line Brick and Plaster House Being Built for Mr. Wm. F. Waller at Berwyn, Ill.; G. W. Ashby, Architect



First Floor Plan



Second Floor Plan

designing has developed in a wonderful way in the last two or three years; these houses are the work of some of the leading men of all parts of the country, who have made this matter a special study. They will show the very latest methods of arrangement and uses of material. The builder who is on the lookout for new features that he can introduce into his own work is the one who gets the most business and his business pays him the best. It is the little *extra* things in home building that make well-pleased customers; the little extra conveniences that can be put in just as well as not—and often with very little extra expense—if only the builder knows of them and plans for them in time.

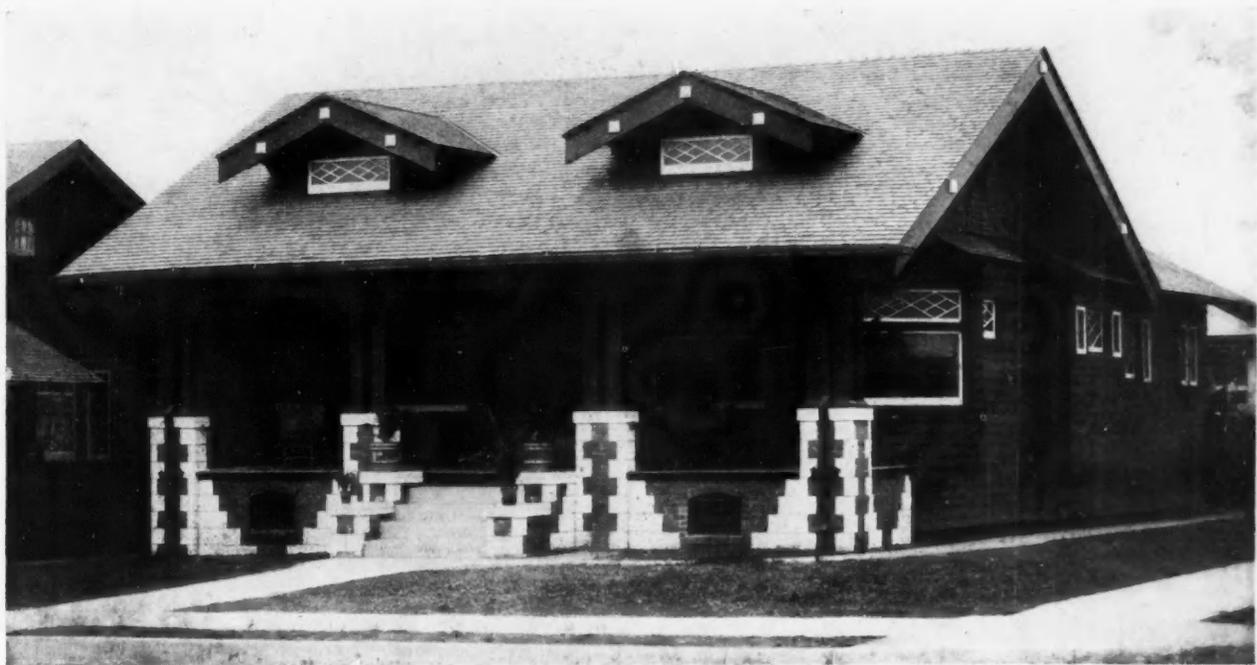
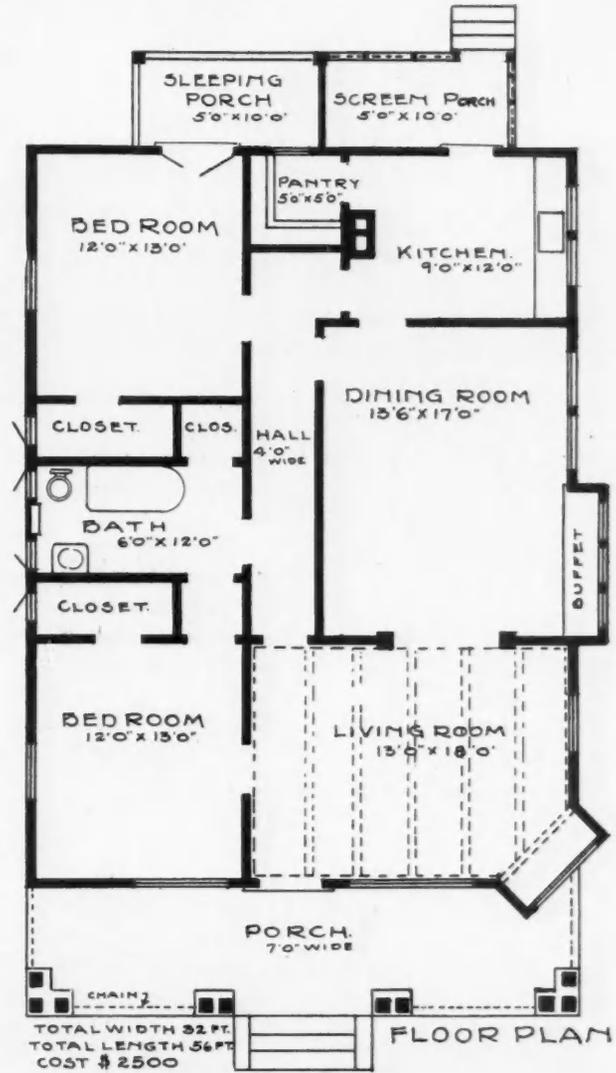
Straight-Line Brick and Plaster House

The house shown in the accompanying drawing, page 744, is being built for Mr. Wm. F. Waller, at Berwyn, Ill. The construction is of frame, veneered to the second story window sills with dark red paving brick. Above this the walls are plastered with cream tinted cement, the window casings and corner boards being stained dark brown. The low overhanging roof is of shingles stained green. The pleasing exterior features combined with a well-planned interior go to make this a very attractive home at a comparatively small cost.

The special features of this house that should be mentioned are the long, well-lighted living-room, the screened porch off the dining-room and the large, screened, sleeping porch on the second floor.

A Western Bungalow

The popularity of the bungalow style of architecture for small and medium size houses seems to have diminished not at all. In fact in the smaller towns and rural districts it is just coming into its own. This is well too; for the bungalow to be a real success, must have

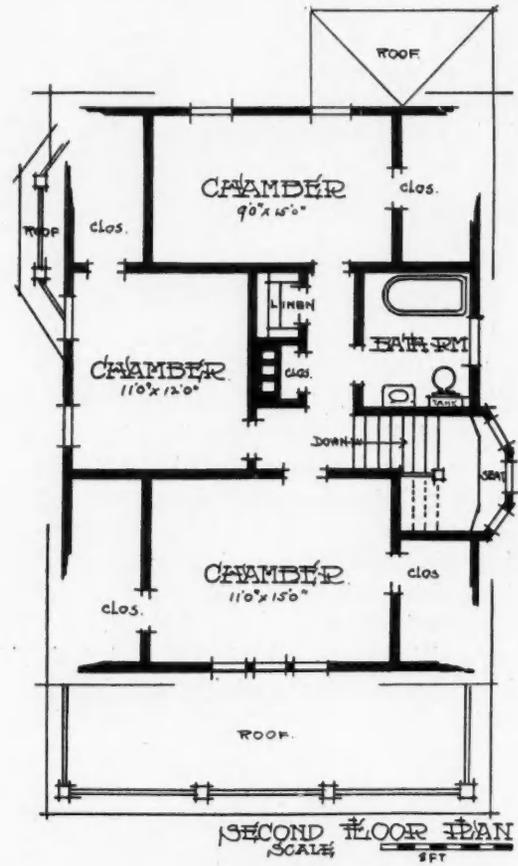
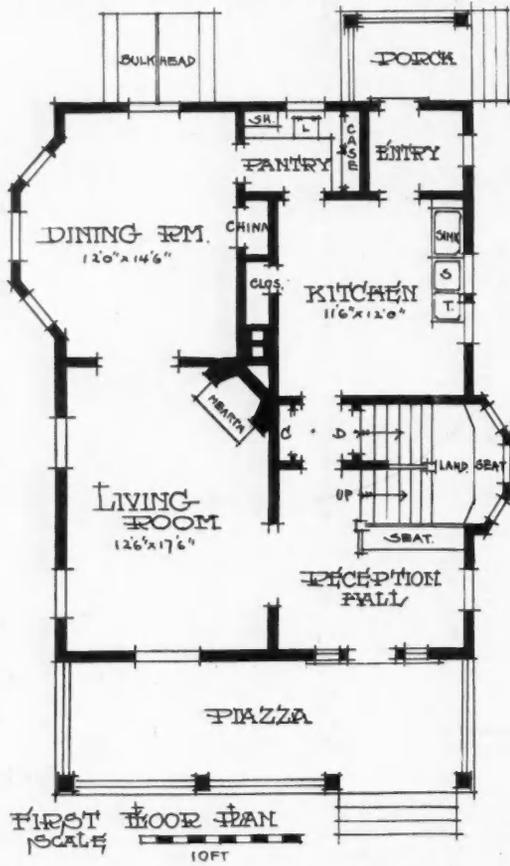


A Typical Western Bungalow at Cedar Rapids, Iowa; Brown Bros., Architects

plenty of room to spread out in, with good unobstructed light on all sides. This, of course, is the condition in the smaller towns where building lots are large.

The bungalow illustrated on page 745, contains five

rooms and bath. The arrangement gives great convenience and spaciousness, yet at the same time there is a good deal of privacy—for a bungalow. That's the most frequent objection to these little houses where



[Gambrel]Roof House with Shingled Walls Built at Plymouth, Mass., for \$3000; W. F. Barlow, Jr., Brockton, Mass., Architect



Dining Room in Gambrel Roof House



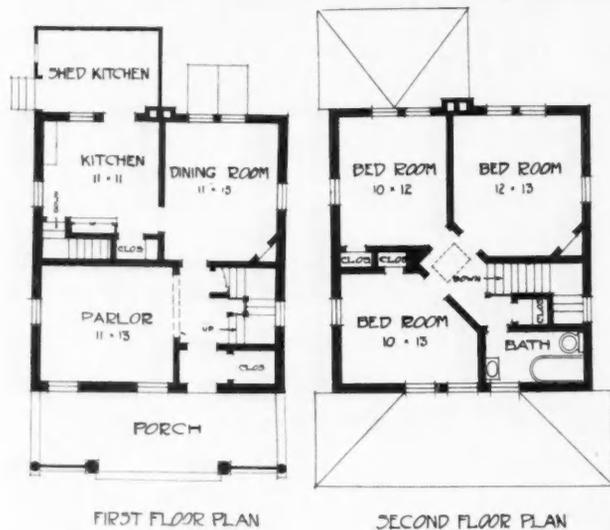
Living Room Looking Toward Dining Room

all the rooms are on one floor, just as it is the objection to the majority of city flats. Yet both the bungalow and the city apartment can be arranged properly.

\$3,000. This house has concrete cellar, steam heat, hardwood floors and open plumbing. It is wired for electricity and piped for gas combination fixtures.



Brick and Stucco House of Unique Design Built at Wilmington, Del., for \$3000; Suburban Arch. Ass'n. Architects



The living-room is very large with three wide windows and a fireplace. Wide openings to hall and dining-room are hung with portieres.

Notice how the kitchen is isolated from remainder of house by two doors at each entrance. This keeps all cooking odors from other rooms. There is a large entry with place for refrigerator.

The outside is finished entirely with shingles, left to weather. Trimmings are painted a cream white. The long wide porch in front makes a pleasant lounging place in warm weather.

Chambers are all full height rooms, space under eaves being utilized for large and spacious closets. Linen closet off hall second floors is fitted with shelves and drawers. Seat on stairs makes a nice place for plants.

Unique Brick and Stucco House

The exterior of this house is stained shingles. Creosoted $\frac{7}{8}$ -inch cypress rough boards would make a very effective siding also.

The home-like place illustrated on pages 746 and 747 was erected at Plymouth, Mass., for a contract price of

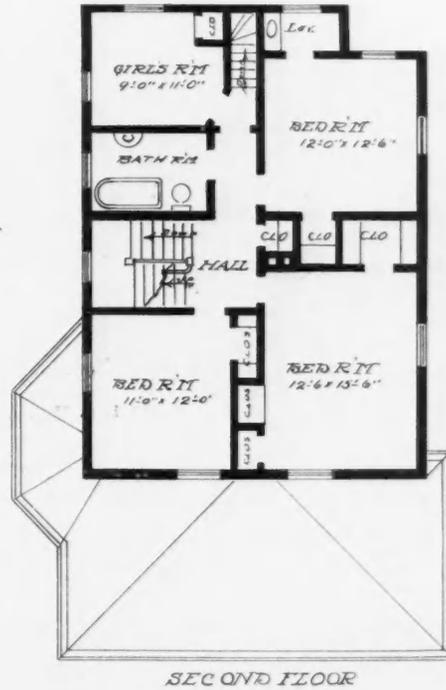
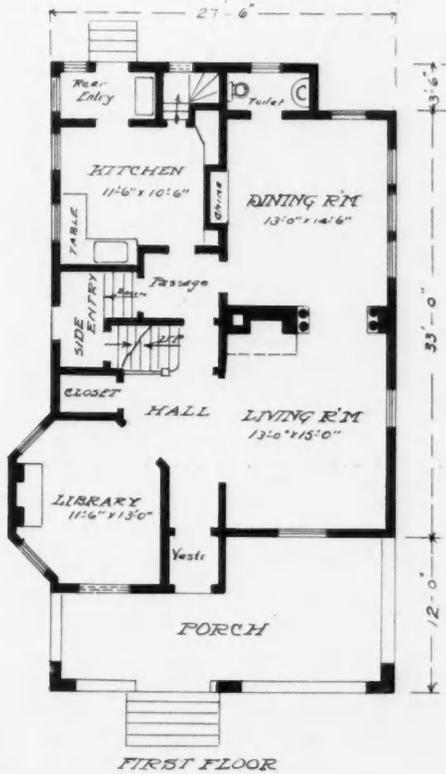
The six-room house on page 748 is intended as practically fireproof. This matter of substantial building and especially of fireproofing as nearly as possible is one of great importance. In England they do not think of building with transient and easily destructible

materials, but have come to use masonry entirely. The result is that England's annual fire loss per capita is about one-fifth what ours is. Those, building homes out where fire protection is uncertain, if not entirely lacking, should give this matter thought.

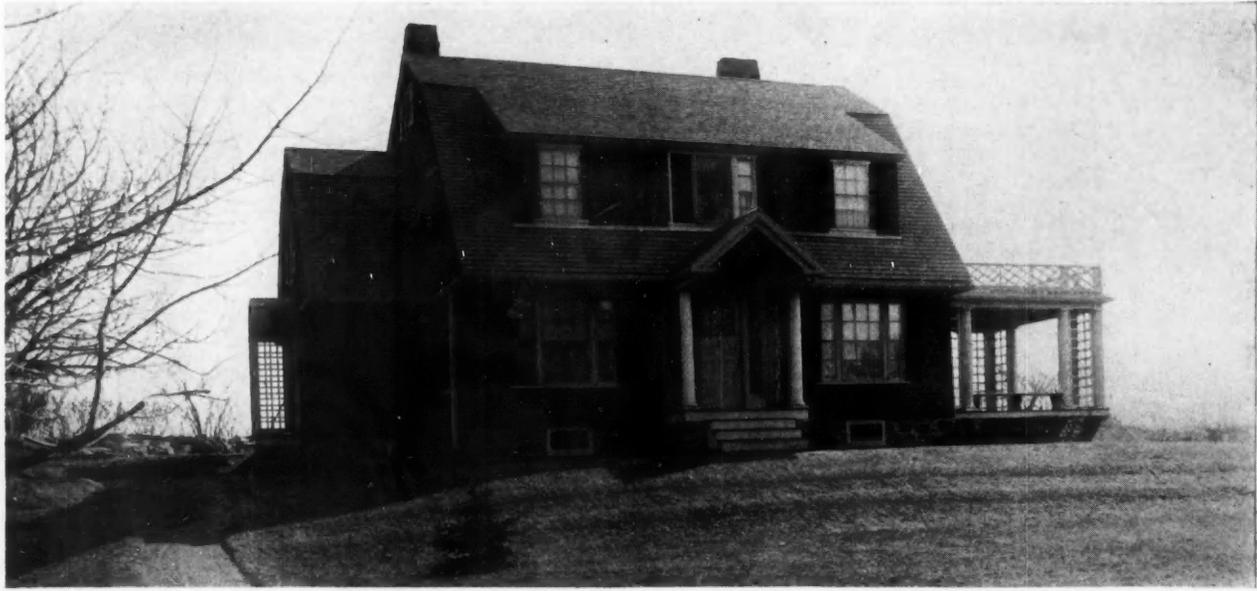
This brick and stucco house was designed on substantial lines; yet the cost was not excessive.

Square House with Spaced Siding

The residence with accompanying floor plans shown on page 749 is just about a model of its kind. It is an



Square House with Spaced Siding Built at Lincoln, Neb.; Fisk and Dieman, Architects



Modern Colonial House at Salem, Mass.; Cost \$5000; Peare and Quiner, Boston, Architects

eight-room house admirably arranged with all of the modern conveniences, making it up to date and that too, at a moderate cost.

The exterior of this house, while being purposely plain, is so proportioned as to give it a dignified

appearance of solidity and comfort for those who dwell therein.

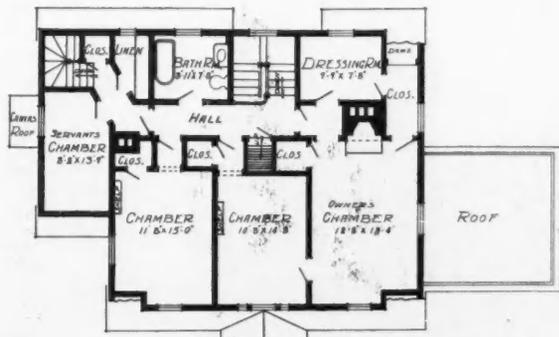
After all, that is what an architect is for—to plan to the best advantage, all things being considered. How often good material is worse than wasted by builders



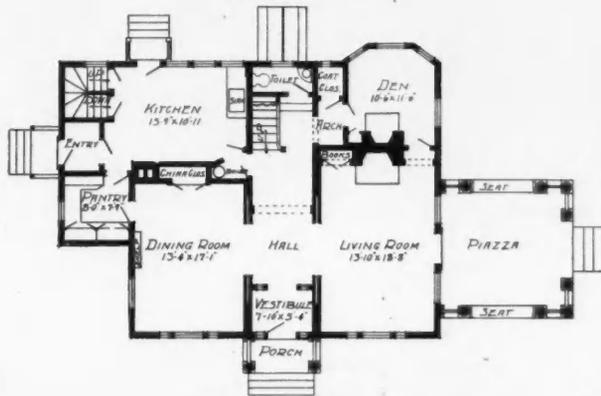
Vista from Dining Room Through Hall and Living Room

who work on the order of plan as they build and trust to luck for the architectural effect at the finish. It pays

to have plans and specifications prepared in advance for even a two room cottage. The owner can see in advance what he is going to have in the completed building and the builder can know what is expected of him and can figure intelligently. In short, it furnishes a basis for all of the different craftsmen on the job, to



Second Floor Plan



First Floor Plan

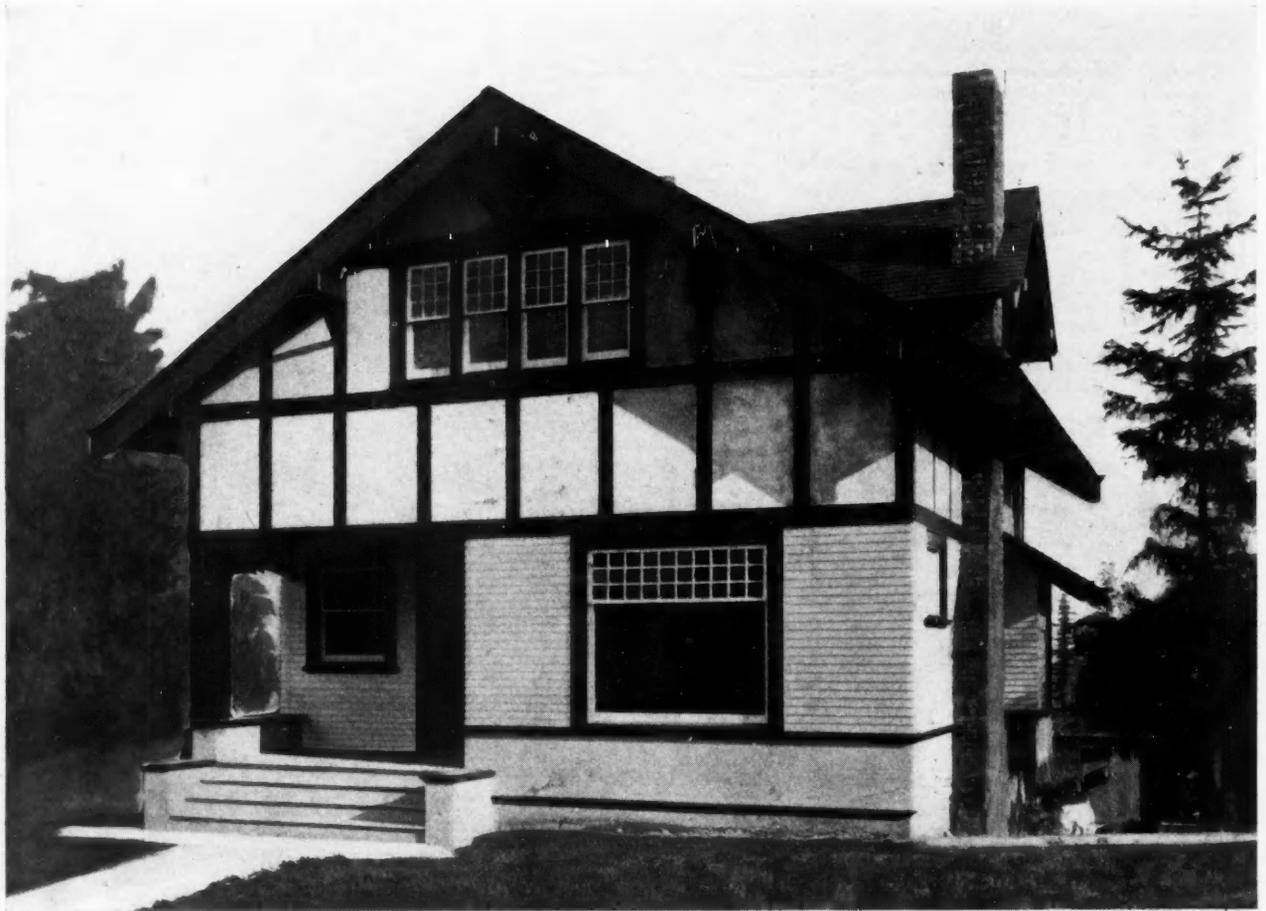


Rear View

work, so that the work may be divided up and yet when assembled every part will fit to its respective place. All this is made possible by the investment of a very small per cent of the cost of the building in having plans prepared by one that makes the business a special study. In short, the money invested in a good set of



Living Room Finished in White Enamel over Pine

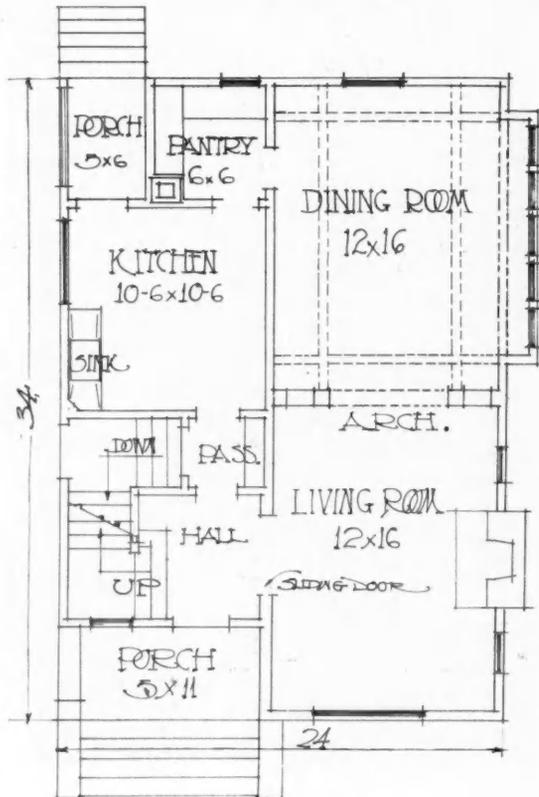


Cozy Bungalow Style House at Seattle, Wash.; Thos. L. West, Architect

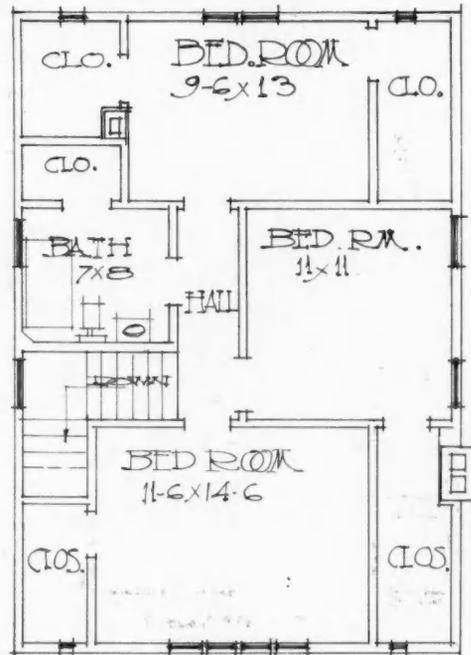
plans is the best investment in the building.

The house shown on pages 750 and 751 is a modern

adaption of the Colonial. The severe lines of the gambrel roof are broken by the introduction of numerous dormer windows, which, in addition to being attractive, help render the interior bright and cheery. The exter-



First Floor Plan



Second Floor Plan

ior finish is of shingle, stained gray, with white trim, and dark green blinds.

The front porch, distinctly Colonial in design, is covered with a peaked roof, supported by four columns, with trellis work arranged between to afford a foundation for vines. The entrance opens into a vestibule, lighted by side lights and this in turn connects with the central hall, from the farther end of which a staircase rises by low, broad treads to a landing, lighted by a great window, from which another flight of steps ascends to the upper hallway.

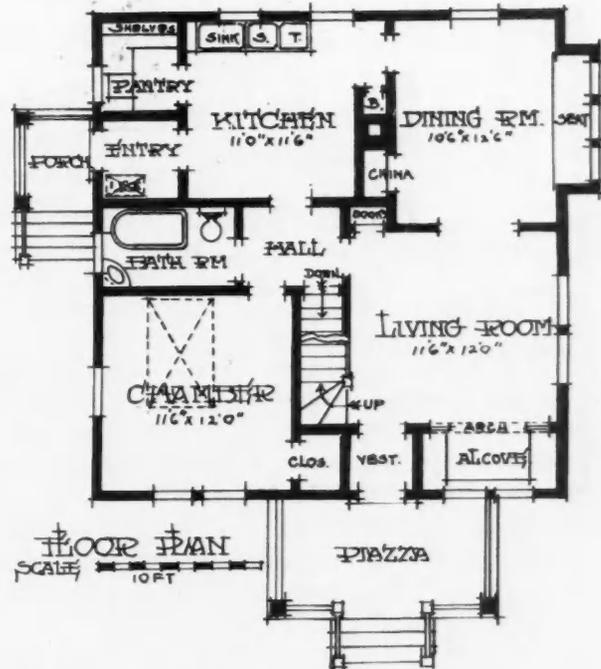
To the right of the hallway is the living-room, finished in pine with white enamel finish. Its walls are hung with paper of a striped pattern in tones of gray, pink and white, and its floor is of hard pine, polished. A large fireplace, constructed of pressed brick laid in white mortar, occupies a prominent place at one side.

Opposite the living-room is the dining-room, also finished in pine, but stained to represent old oak. A high wainscot extends around the sides of the room to a height of 8 feet where it is met with a frieze of field daisies, finished at the top with a cornice of oak-stained pine. A feature of this room is the large built-in china closet at one end, which possesses the advantage of being decorative as well as useful.

Five-Room Shingled Cottage

The five-room cottage (four down stairs and one in the attic) was erected at Brocton, Mass., last spring at a contract price of \$1,800, which included everything to make the house complete, ready to occupy. The floors are of hardwood stained and oiled. The finish in the living-rooms is cypress stained. Kitchen, entry and bath have North Carolina pine finished natural;

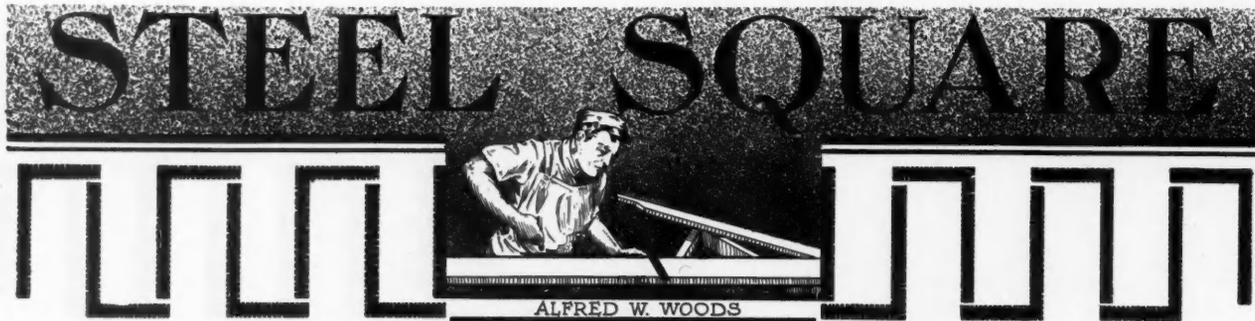
the chambers, white wood painted. The exterior is covered entirely with clear cedar shingles stained a warm brown on walls and moss green on roofs. Trimmings are painted a light cream.



The vestibule at front entrance keeps out the cold from living-room and the alcove with arched beam and seats with fancy ends make a cozy feature to the living-room. Book case and china closet have leaded glass doors with shelf and drawers under.



Neat Shingled Cottage Built at Brockton, Mass., for \$2000; W. F. Barlow, Jr., Architect



ALFRED W. WOODS

Problems of Roof Framing Solved

THIRD ARTICLE—THE BACKING OF THE HIP AND VALLEY AND THE EFFECT IT HAS IN THE FRAMING UNDER VARIOUS CONDITIONS

WE COME now to the next step of our work. In the previous illustration, we show how the lengths of the common and hip rafters are determined by the aid of the common steel square. Of course, there are other ways of getting the lengths with the square, but whatever figures are taken, they must be to the ratio of the full scale for one foot run of the common rafter, as shown in Fig. 3. In that illustration, the hip is shown in connection with the common rafter. The same

into consideration and the length and cuts of the rafter are taken at the proper place. This is a vexing little problem; 'tis true it does not amount to much, there is not one job in a hundred where the carpenter takes the pains to back his hips and valleys. Whether he does or not, allowance should be made in the depth of the seat cut; that is where they get off without his knowing

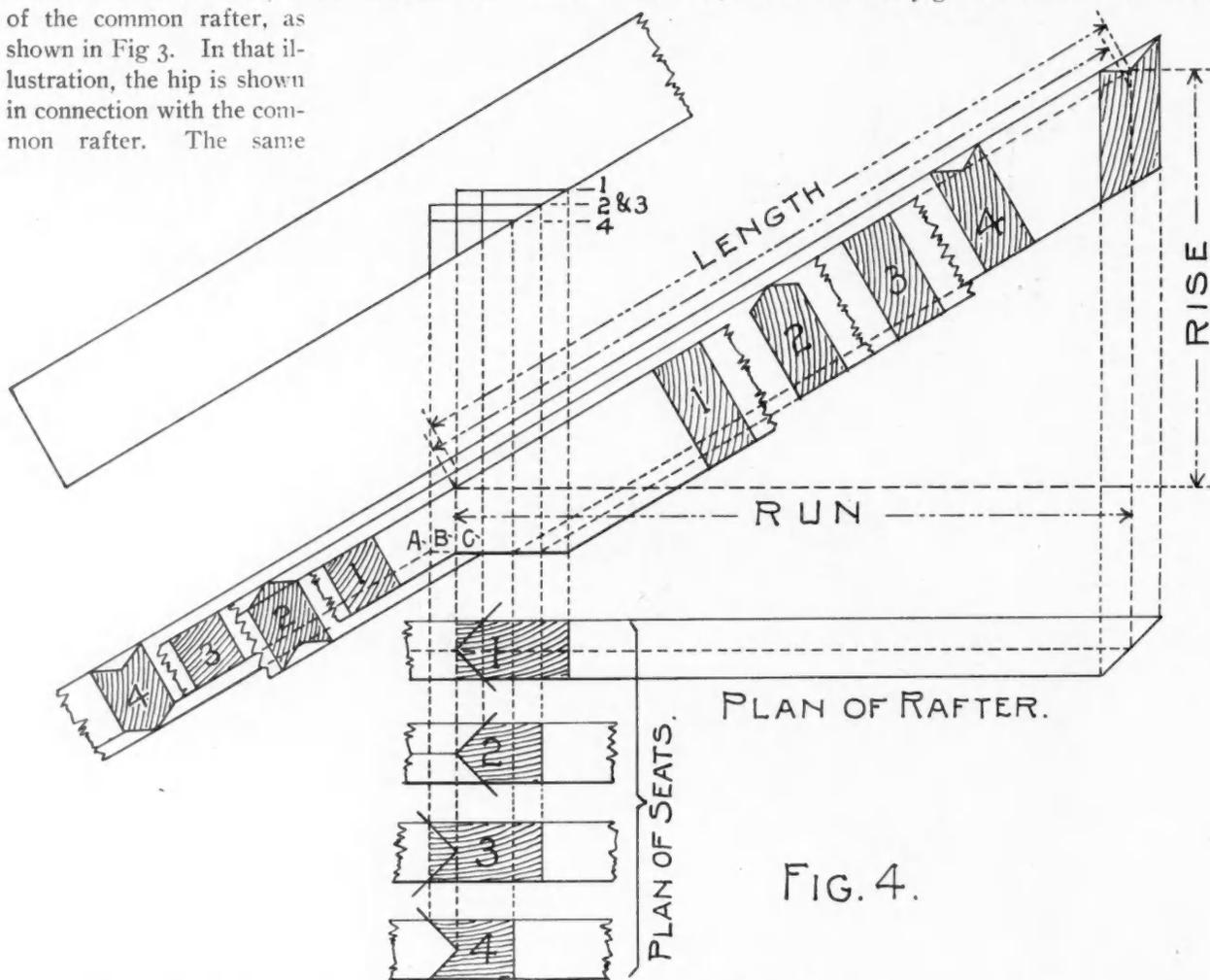


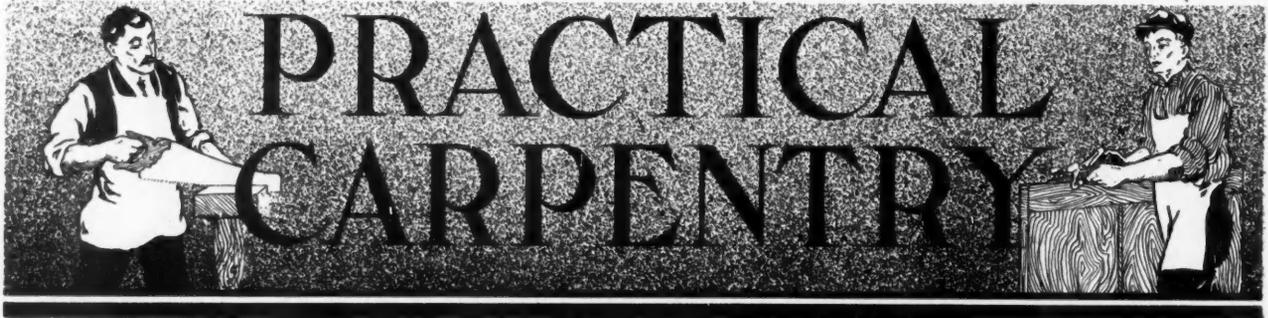
FIG. 4.

principle by which its length is determined, also applies to the valley rafter because it rests in the same position relative to the common rafters. Therefore, its length is the same as that of the hip.

Hark! Didn't we hear some one say, that isn't so? But it is so, as will be proven when the backing is taken

it and after they are cut and ready to set up in place, then he finds that something is wrong and they are either blocked or cut down as the case may be. Now isn't that so?

Have you not seen blocks or shingles under the seat cut to raise the rafter up in plane with that of the

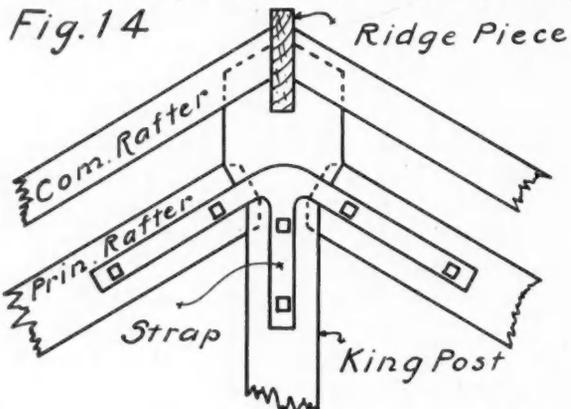


Joints in Heavy Timber Framing

SECOND OF A SERIES OF ARTICLES ON TIMBER JOINTS—THE SECURING AND STRENGTHENING OF KING POST, QUEEN POST AND RAFTER JOINTS

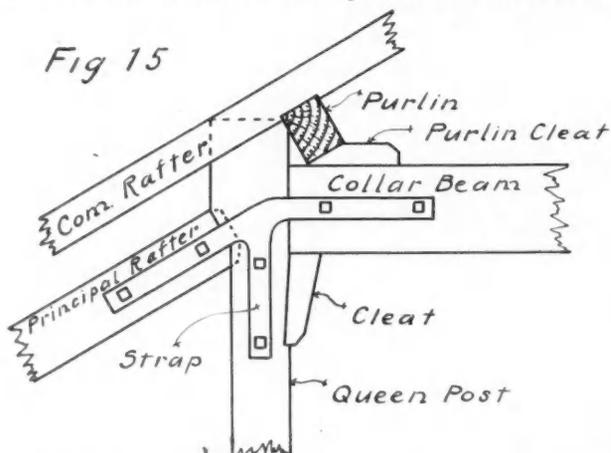
By T. B. Kidner

IN addition to the several forms of iron straps and other fastenings shown in the last article for use in holding the raking members and vertical posts of roofs in their positions on the tie-beam, face-straps



of iron are employed at other points of wooden roofs in heavy work.

The medieval carpenters who framed the wonderful open-timbered roofs of Europe, which remain today in perfect condition after the lapse of four or five hundred years, made large use of straps in their framing. The writer has examined and studied several of the finest and most famous examples of ancient wooden



roofs in existence at the present day, and in every case the aid of the smith had been enlisted by the carpenter in every important joint.

One of the commonest examples of the use of iron face-straps is found in the head of a king-post truss, such as is shown in the accompanying sketch, Fig. 14. The dotted lines indicate stub tenons, which serve to hold the joints in position while the members are being assembled, and also, of course, prevent lateral motion. The strap is, however, the chief thing to be relied on for strength and should be carefully forged of wrought iron to follow the rake of the timbers. The iron should be not less than $\frac{3}{8}$ by 2 inches for the ordinary

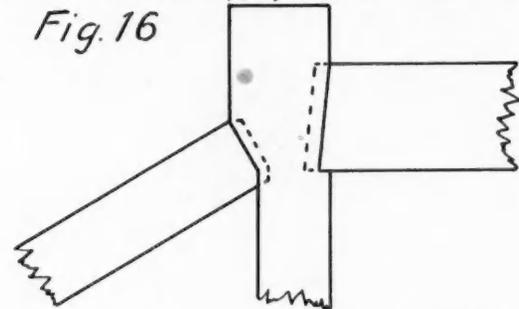
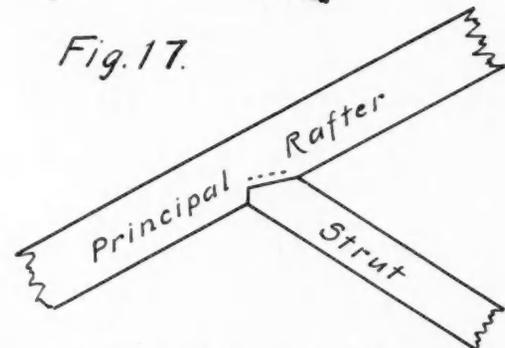


Fig. 17.



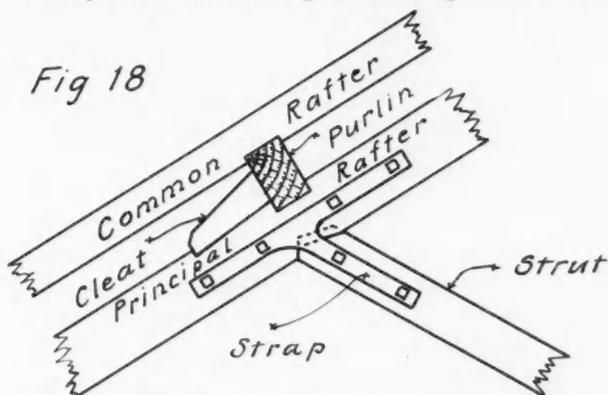
king-post truss, which is not used for greater spans than 28 or 30 feet.

For spans of 30 to 40 feet a queen-post truss is usually employed. Fig. 15 shows the joint at the head of the queen-post; the raking member being tenoned and shouldered very much as in the king-post truss, and the collar beam supported on a cleat let into the side of the post. Stub tenons are used for the purposes described above, and three-way straps, following the lines of the members, are used to hold and strengthen the joint.

Some roof framers prefer to support the collar beam

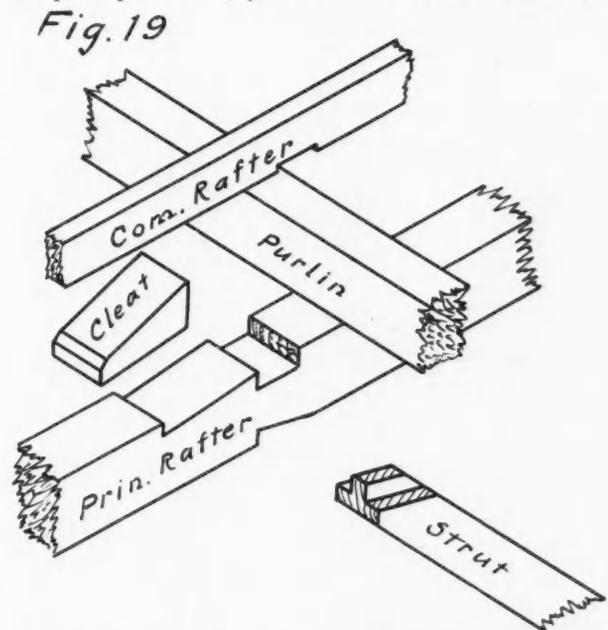
as in Fig. 16, where it is shown notched into the post with a raking shoulder. This weakens the queen-post at the neck and therefore the cleat shown in Fig. 15 is generally preferred. It should be said, in this connection, that the actual tensile (pulling) stress in a queen-post, set up by the weight of the tie-beam and the load transmitted by the raking strut, could often be carried by a smaller piece of stuff than is usually employed. It is necessary, however, to use a piece large enough to form the joints at the head and foot of the queen-post, where the abutments for the other members of the truss have to be provided.

The joint at the meeting of a raking strut and the



principal rafter or raking member of a truss is usually simply notched in and fitted with a stub tenon as in Fig. 17, but occasionally an architect of a first-class job will require that straps be used, as shown in Fig. 18.

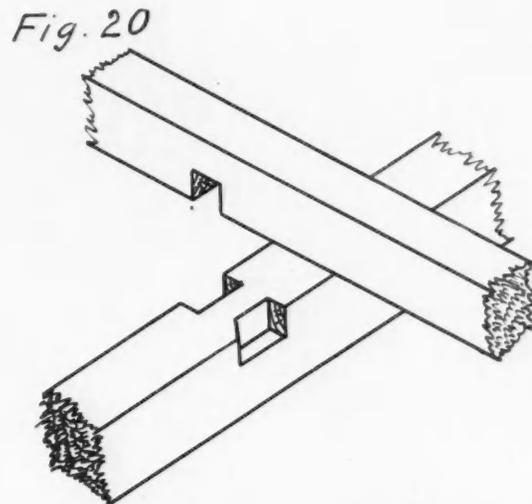
Fig. 18 also shows the purlin resting on the back of the principal rafter, just over the head of the strut.



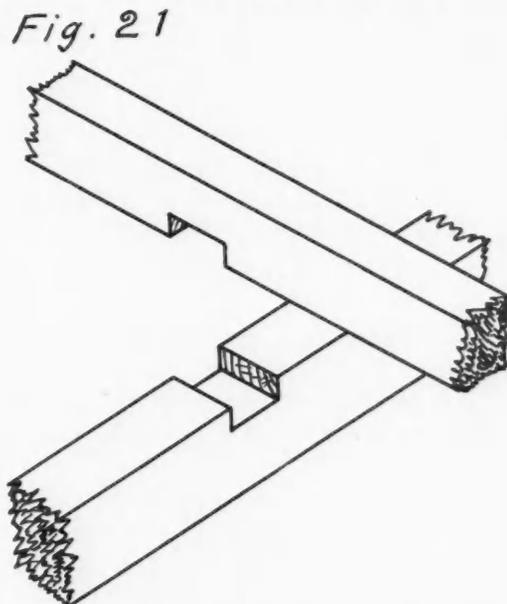
The joint between the purlin and principal rafter may be a simple notch, as in Fig. 19, a cleat being fastened on the lower side to resist the tendency of the purlin to overturn from the thrust of the common rafters which it supports.

A better method than the simple notch is the old-fashioned "cogged" joint, shown in Fig. 20. By its

means a good bearing is secured without materially weakening either piece, and a much stiffer joint results, although it may take a little longer to make than the simple notch.

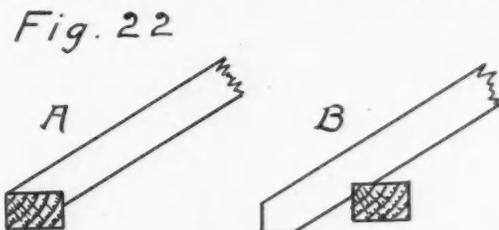


A third method is sometimes used in seating the purlin on the back of the truss; namely, the double notch, shown in Fig. 21. While this is better than the simple notch in which one piece only is cut out to re-



ceive the other, it is not nearly as good as the cogging.

It is seldom that one sees any form of joint for the bearing of a rafter on a wall plate other than the two well-known varieties of the bird's-mouth joint shown

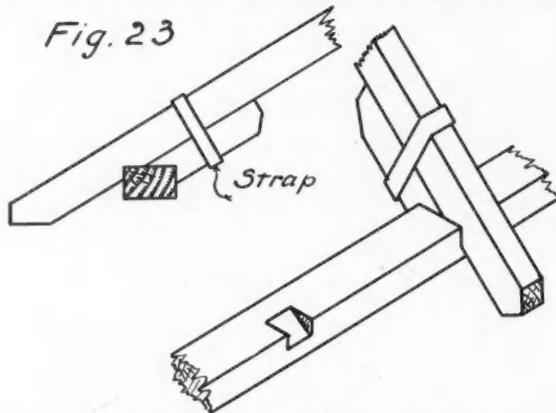


in Fig. 22. The writer has before him a detail drawing, made by a leading architect, providing for a rather elaborate substitute for the bird's-mouth. The draw-

ing is here reproduced (Fig. 23), more as a curiosity than because of any belief in its practical value.

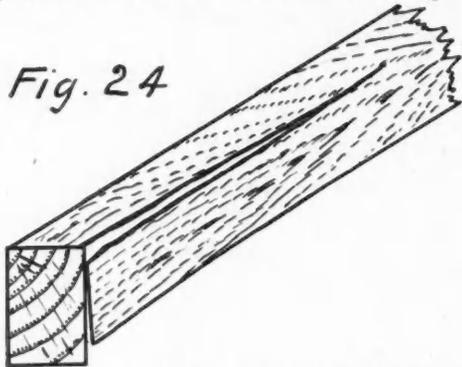
It should be noted, though, that carpenters often

Fig. 23



make the mistake of cutting the bird's-mouth too deep in the case of important bearing timbers, such as stair carriages, etc. A serious and fatal collapse of a

Fig. 24



crowded grand stand at a race track some years ago was found to have been caused wholly by the supports being so deeply bird's-mouthed that they split up as in Fig. 24.

“Sound-Killing” Wall

New York, Feb. 19.—The “sound-killing” wall between 50 and 54 East 59th street, which was built to protect the ears of the occupants of No. 54, has proved to be a success. The plans for the wall are the only plans for this type of construction ever filed with the New York City Building Department. They have been the object of great interest to the city's architects and builders, and it is thought that this “anti-noise” device may be adopted in other cities.

The second and third floors of No. 50 contain large printing presses. The upper floors of No. 54 are occupied by apartments. The roar of the printing machinery proved so disturbing to the flat-dwellers that they appealed to their landlord for relief.

The landlord called upon an architect, and the architect designed the wall. It is made of hollow terra cotta blocks stuffed with mineral wool. The blocks are of the kind used in fireproof floors and partitions. They have been known as good absorbers of sound waves, but this is the first test of them purely for that purpose. The mineral wool, in the hollow spaces, serves as a muffler. The wall also keeps the odor of printers' ink out of the apartments in No. 54.



Happy Outlook

Milton—Gibson doesn't seem to be getting rich at poultry raising.

Bilton—No; but he says his hens have taken to eating their own eggs, and he has hopes that they'll become self-supporting.—*The New Yorker*.

Not Far Wrong

Septimus—How is your little girl, Mrs. Smith?

Mrs. Smith—My little *boy* is quite well, I thank you.

Septimus—Oh, it's a boy! I knew it was one or the other.—*Brooklyn Life*.

From “Exam” Papers

The following answers were taken from a number collected by a teacher in the Topeka schools:

“A blizzard is the inside of a hen.”

“Oxygen is a thing that has eight sides.”

“The cuckoo never lays its own eggs.”

“A mosquito is the child of black and white parents.”
—*Indianapolis News*.

The Story of Esau Wood

Esau Wood sawed wood.

Esau Wood would saw wood.

All the wood Esau Wood saw Esau Wood would saw. In other words, all the wood Esau saw to saw Esau sought to saw.

O, the wood Wood would saw! And Oh, the wood-saw with which Wood would saw wood!

But one day Wood's wood-saw would saw no wood, and thus the wood Wood sawed was not the wood Wood would saw if Wood's wood-saw would saw wood.

Now, Wood would saw wood with a wood-saw that would saw wood, so Esau sought a saw that would saw wood.

One day Esau saw a saw saw wood as no other wood-saw Wood saw would saw wood.

In fact, of all the wood-saws Wood ever saw saw wood Wood never saw a wood-saw that would saw wood as the wood-saw Wood saw saw wood would saw wood, and I never saw a wood-saw that would saw as the wood-saw Wood saw would saw until I saw Esau Wood saw wood with the wood-saw Wood saw saw wood.

Now Wood saws wood with the wood-saw Wood saw saw wood.

O, the wood the wood-saw Wood saw saw would saw!

Importance of a Plan in Home Decoration

By Clyde E. Horton

NO undertaking ever met with success without having a definite plan. Whether in business, in society or in the home, a plan must first be conceived and executed with care before complete satisfaction is obtained. This truth is realized more frequently in business affairs than in those of the household, but it is nevertheless a fact in every case. It applies particularly to such an undertaking as the decorating of one's home. How many of us ever have a carefully prepared plan of decoration? In nine cases out of ten the home builder finds himself in the midst of his decorative details before he realizes it and without a plan at that, and furthermore so confused regarding woodwork, wall and floor color treatments, that he hardly knows which way to turn. The first question can be answered, therefore, by the two words, "Not many."

How many builders realize what can be accomplished by such a plan? This question can be answered by the same two words. The fact is that all those who have lived through the building of a home have realized to their sorrow just what more careful planning and careful buying might have accomplished. These questions apply to the entire building, but particularly to the interior decorating, the subject with which we wish to deal.

The importance of a general plan for interior decorating is first realized when one finds himself face to face with a desire for a mahogany finish on oak wood-

work to match valuable furniture, or some such unsurmountable obstacle. Then it is too late to go back and start over. It is too late to make the discovery that white enamel woodwork is better, for some one of the chambers, or that the green rug does not harmonize satisfactorily with the color effects applied to the dining room walls.

So work out a plan and then plan out the work—know just what kind of furniture, hangings, rugs, etc., are to be used in every room before the architect specifies the kind of wood for the woodwork, the color of brick for the fireplace, or, in fact, any of the details which bear directly or indirectly upon the final decorative effect. Know just how these various surfaces are to be treated, how many coats of stain or varnish are to be used on woodwork and floors—the exact color for walls and woodwork before your painting contract is signed.

There are many details, many pitfalls of this kind which might be mentioned in this connection, any one of which, when neglected, has caused many a pang of disappointment to the home-builder—all of which might have been eliminated.

Such a plan of action is not a difficult undertaking. It must naturally be based entirely on the style of architecture chosen for the house, and with this important point decided upon, the plan is built up around it. Very few of us are able to start with a clean slate, but rather it is necessary to use many pieces of old furni-



Living Room Showing Good Effect of Simplicity in Decoration

ture, some of them rare old pieces—heirlooms, possibly—the dining room table and buffet are comparatively new and their style is satisfactory; then, again, much of the chamber furnishing cannot possibly be changed, nor would be changed if possible. Let the plan of interior decoration start right here. Decide upon such furnishings as will be permanent, taking one room after another. Consider the relation of furniture to woodwork. If mahogany furniture has the

manufacturers have studied their products from an artistic standpoint—many of them are prepared to tell you just the kind and color to select under the conditions you are confronted with. The mantel manufacturer can give you suggestions for the style of your fireplace. The furniture manufacturer will assist you, as well as the paint and varnish manufacturer, who can tell just how to treat your woodwork, walls, floors, etc., in order to obtain the most artistic effect.



Bedroom in White Enamel with Tinted Walls and Stenciled Frieze

preference choose it also for the woodwork, or select white enamel, which is equally satisfactory. If, however, the furniture is oak, then let the woodwork be also oak, and stain it to match. Perhaps some objectionable pieces must be used. Don't let this interfere with the plan.

Part of the plan is to get rid of these objectionable features, these inharmonious notes in the scheme, by regulating all future purchases. Promiscuous buying is the bane of harmony in decoration. We buy too much on the spur of the moment. We buy in parts, too often, without thought as to whether these parts bring harmony or not.

So we must know just the kind of furniture, woodwork, floors, etc., desired before we decide on our wall treatment, as well as the kind and color of rugs, hangings and upholstery; turn these matters over in our minds, study them, confer with others regarding them, seek from those manufacturers who offer decorative assistance, and by such serious consideration acquire a better feeling for color and a knowledge of proper decorative treatments. Many progressive man-

In our progress from one room to another, working out a plan for each, building the schemes up around the satisfactory furnishings we already have, it is of vital importance that the relation of one room to another be considered. Avoid harsh contrasts between rooms just as much as between parts of one room. Let one scheme lead up to another like the notes of musical harmony. Don't lose heart if the first year doesn't bring complete satisfaction throughout the entire house. Little by little the undesirable pieces of furniture and inharmonious hangings will disappear and behold! a wonderful change has been wrought. All by means of the plan and without any extra expense.

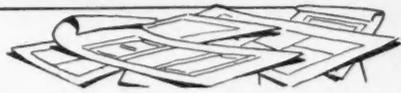
+

She Guessed Right

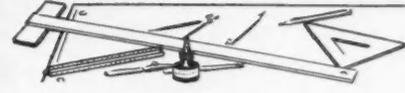
Mrs. Brooklyn—The idea of an educated man like Mr. Curious looking for a gas leak with a lighted candle. It is the last thing I would ever think of doing.

Mr. Brooklyn—The coroner says it was the last thing that Curious thought of doing.

DETAILS of CONSTRUCTION AND FINISH



CHARLES PRAWSON



We Want This Department to Be Very Valuable to Our Readers. If There Is Any Style of Finish, or Any Piece of Special Construction You Want to See Fully Detailed and Explained, Let Us Know. These Drawings Are All Made to Scale; They Can Be Easily "Taken Off" for Practical Use

WE HAVE devoted all of our space this month to the planning and detailing of a typical kitchen and pantry and their furnishings. A separate room for cooking purposes has long been recognized as an essential feature of every well-planned house, and is, except in some farm houses and dwellings of very low cost, a universal provision. The kitchen, its place in the house plan, its arrangement and general requirements, have received far less attention at the hands of house designers than their importance deserves; and even now, a great many kitchens are entirely unsuited for convenient use.

To properly plan a kitchen and its connecting rooms, an architect should necessarily know the scale of the work to be performed in it, and whether it is to be done with or without servants. The kitchen shown herewith is so planned that the work may be done conveniently by the mistress of the house alone, or with the aid of one servant. In large houses additional space for serving and many other subsidiary rooms and cases are required, which the more modest house-keeper must dispense with.

The kitchen must be well placed to secure proper light and air, and direct sunlight if possible, and should be a convenient and thoroughly comfortable room. Its furnishings must be sufficient and complete and so placed as to help, rather than retard the work, and its finish and equipment should be of a sanitary nature.

For great convenience in doing both the kitchen and dining-room work and to facilitate the serving of meals, the pantry should be placed between these rooms, which arrangement at once brings them into immediate relationship and yet gives them a necessary separation. The kitchen should be no larger than the scale of work, for which it is intended, absolutely requires.

The accompanying plan shows a good arrangement. The pantry contains a cupboard for dishes, "D," with movable shelves and with lower drawers for linen; a cupboard for supplies, "C," with a lower case for utensils and an upper case for storage of rarely used articles. Provision is made near the dining-room door for table leaves. A serving or work table, "B," is also provided close to the refrigerator, which is arranged

for outside icing. A broom closet and clothes chute to the laundry are placed in a position convenient to both kitchen and dining-room.

The kitchen contains a cabinet, "A," with provision for necessary supplies and utensils used in cooking. Sliding shelves, can racks, etc., add to its effectiveness. The top is covered with sheet aluminum, which is easy to keep clean and bright, does not tarnish or corrode like zinc, chip like glass, or stain like marble, and is therefore the best material known for table covering.

The drawers marked "Y" should contain a movable tin box with air tight cover, opening when drawer is half open. These are for the storage of flour, sugar, bread or cake.

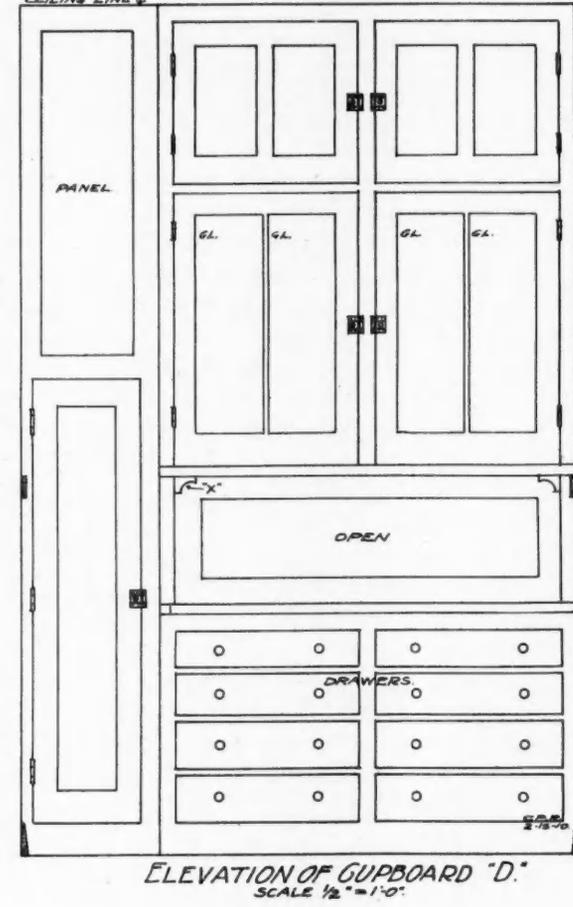
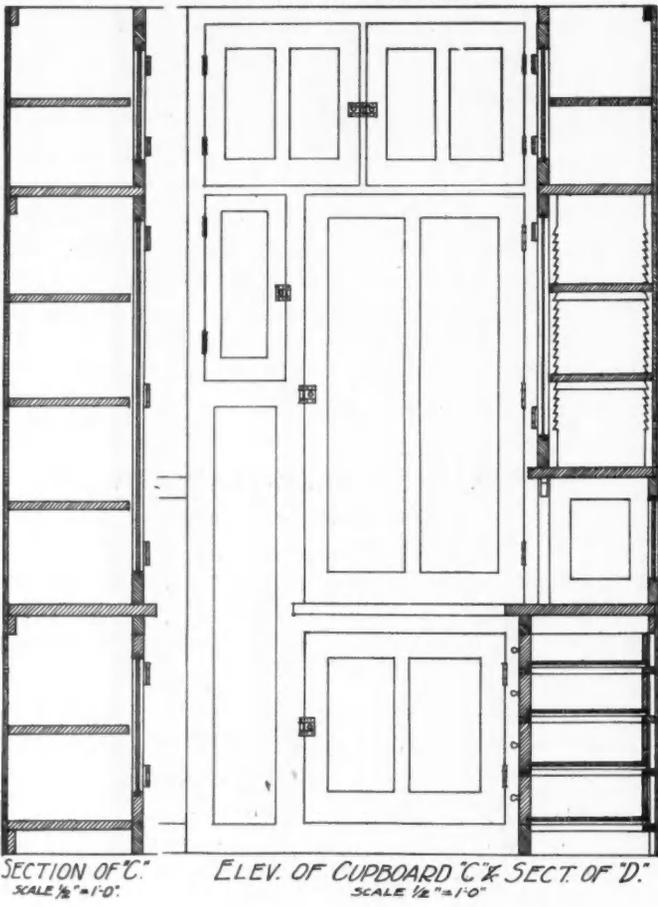
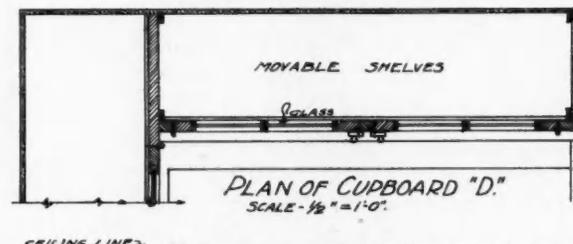
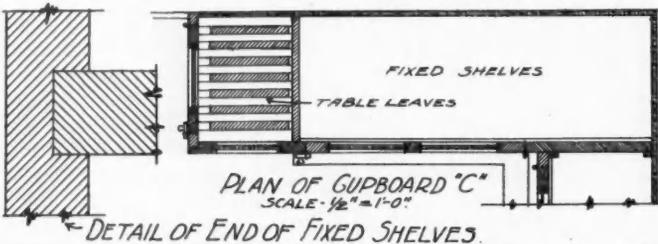
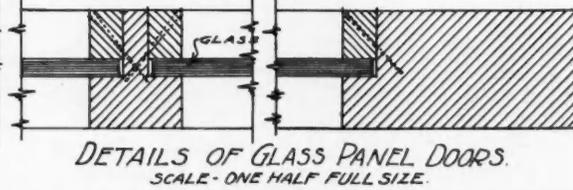
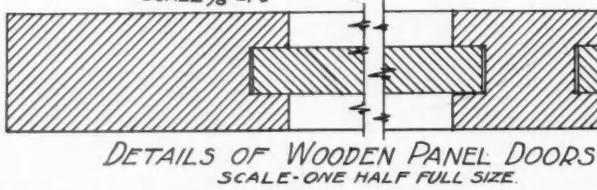
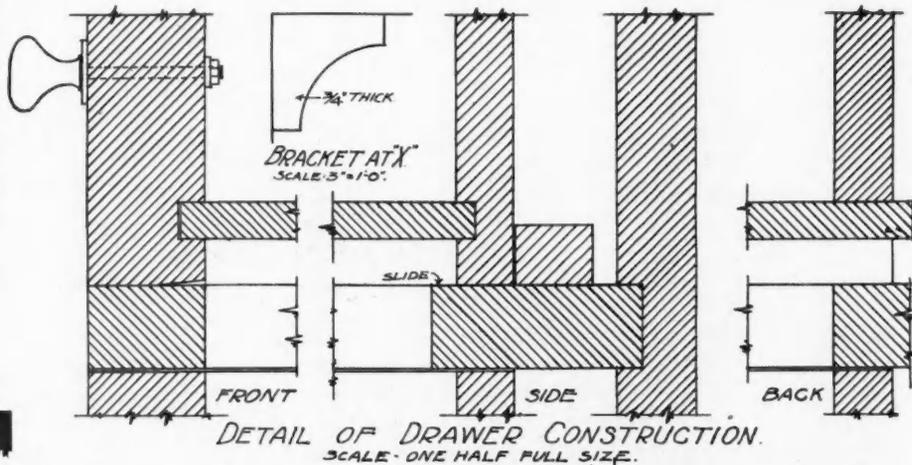
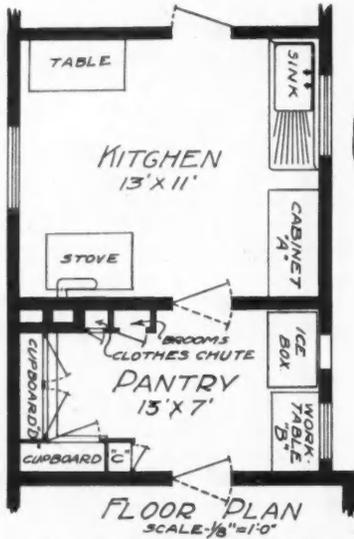
The kitchen and pantry should be plastered to the height of 4 feet with cement, marked with a vertical bead every 12 inches, and finished at the top with a chair rail and at the bottom with a low base. This wainscoting should be enameled either in white or some suitable tint. The walls above and ceilings should be painted in lead and oil of not too dark a shade and stippled. All woodwork should be of close-grained wood and finished natural and without polish. The floors should either be of white maple, oiled, or of pine covered with inlaid linoleum. Tiled floors are not advisable, but a plastic composition, laid on a wood lining and of various colors, is coming into use and makes a very desirable floor.

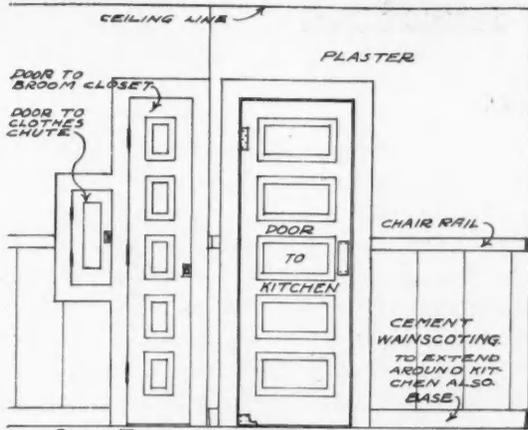


Fire-Resisting Paints for Woodwork

In discussing the question as to what sort of a paint is best adapted for use upon interior woodwork in order to render it as fire-resisting as possible, a recent issue of *The Painters' Magazine* presents the following: Experience has shown that paints consisting mainly of linseed oil, driers and pigment are not fire-resisting, let alone fireproof. However, repeated coating of water glass (silicate of soda) will serve the purpose. Apply to the wood three coats of silicate of soda, 33 deg. Beaumé, and before the last coat has set hard, apply a thin lime wash, which unites with the silicate of soda, forming silicate of lime, which is an insoluble substance.

DETAILS OF PANTRY AND KITCHEN CUPBOARDS.





SIDE ELEVATION OF PANTRY.

SCALE - 1/4" = 1'-0"

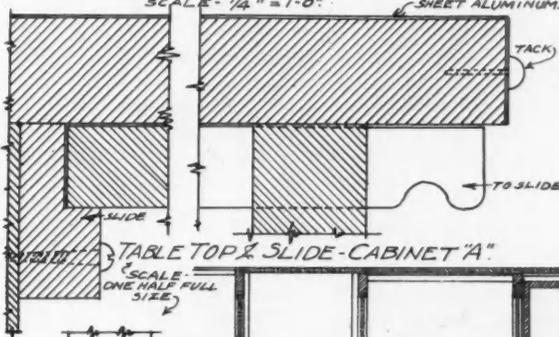
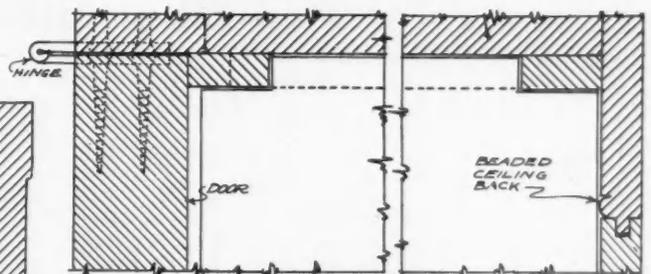


TABLE TOP & SLIDE - CABINET "A"

SCALE - ONE HALF FULL SIZE

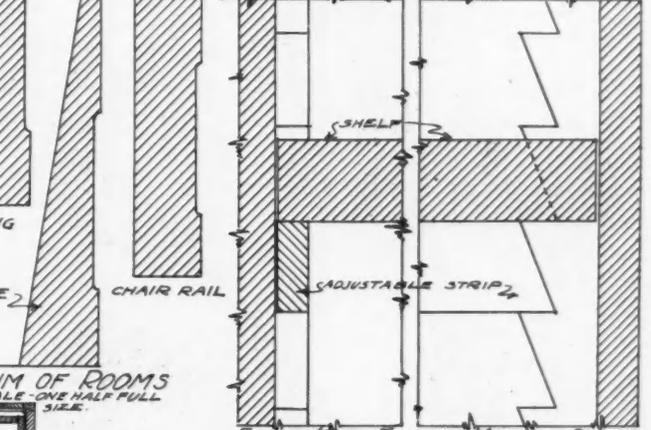
TRIM OF ROOMS

SCALE - ONE HALF FULL SIZE



PLAN OF MOVABLE SHELF CONSTRUCTION

SCALE - ONE HALF FULL SIZE



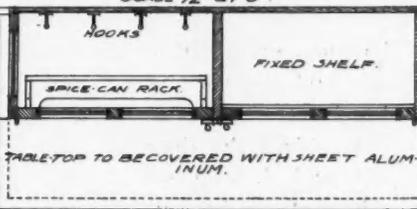
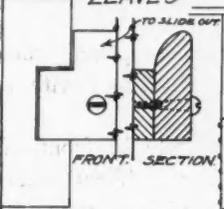
FRONT & SIDE ELEV. OF MOVABLE SHELF

SCALE - ONE HALF FULL SIZE



PLAN OF LOWER PART - CABINET "A"

SCALE 1/2" = 1'-0"

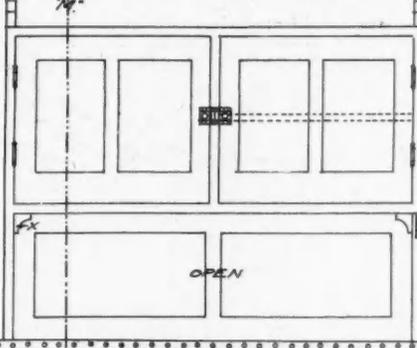
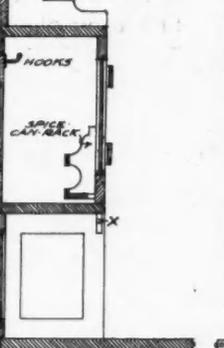


PLAN OF UPPER PART - CABINET "A"

SCALE - 1/2" = 1'-0"

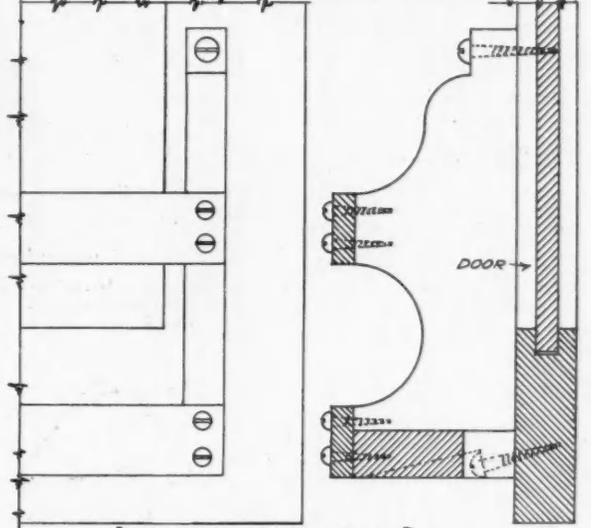
DETAIL OF SLIDING-SHELF

SCALE - 1/2" FULL SIZE



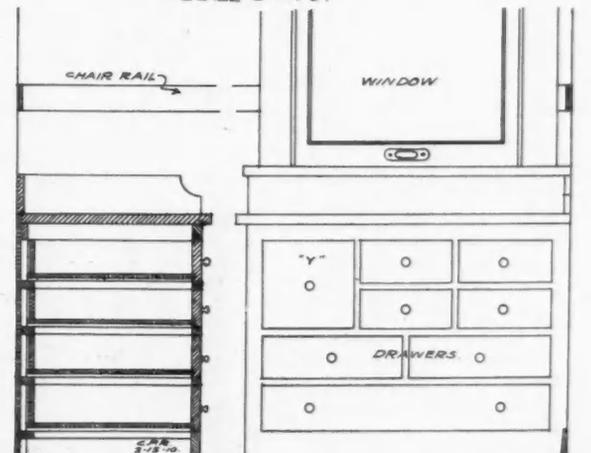
M-N SECTION & ELEVATION OF CABINET "A"

SCALE - 1/2" = 1'-0"



DETAILS OF SPICE CAN RACK

SCALE - 3" = 1'-0"



SECTION & ELEVATION OF WORK TABLE - "B"

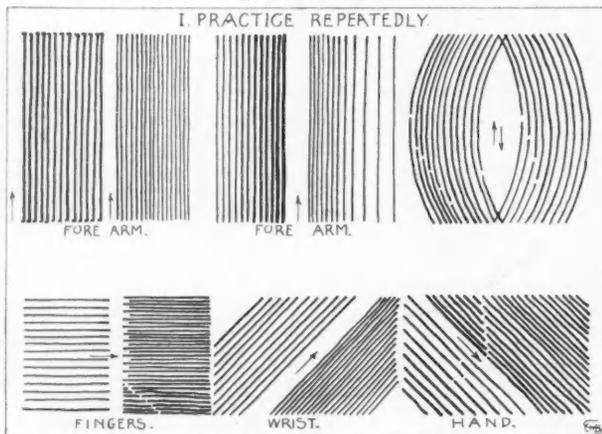
SCALE 1/2" = 1'-0"

Pen Sketching Simplified

THE FIRST OF A SERIES OF THREE LESSONS TEACHING THE ART OF SKETCHING IN SUCH A WAY THAT EVERYONE CAN PROFIT BY IT

By Conrad B. Schaefer

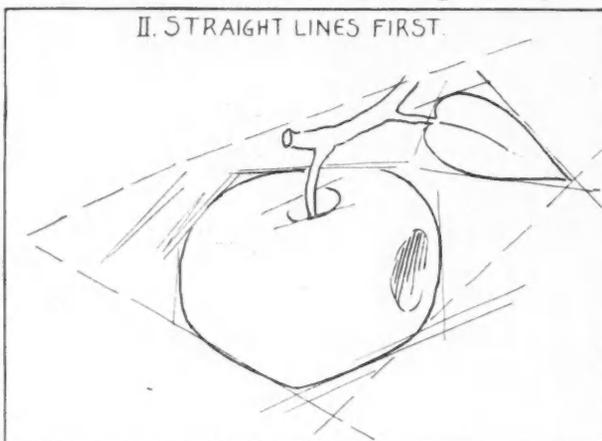
DRAWING and sketching as a useful accomplishment may easily be made of greater benefit than usually supposed. Besides its value in connection with any line of constructive work, it enables one to comprehend or explain a great many problems with greater ease than could be done in any other way. Sketching is the "shorthand" of art.



EXERCISE α.

Details in building and mechanical trades have to be sketched out in order to be considered.

Perspective views of exteriors and interiors of buildings are necessary in determining the various features and proportions before the building is erected. Decoration and ornament also require a trained eye as well as a practiced hand to develop. Fine and delicate work enables one to make pleasing drawings and



PROPORTIONS.

represent refined ideas. Above all, an artist must have a definite knowledge of his subject in order to make a good sketch.

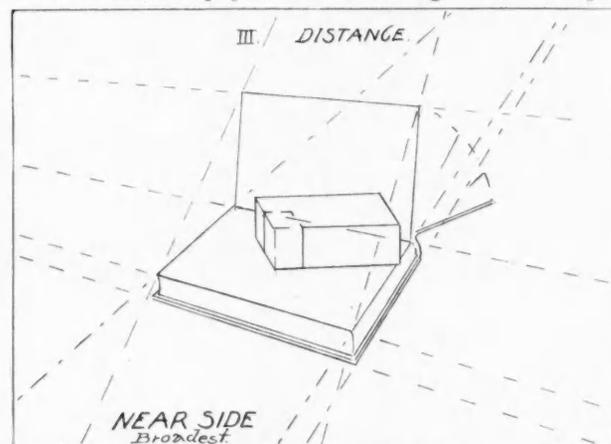
Those who make a beginning in freehand drawing will easily find the direction in which it is best to develop their study and practice.

The directions for pen and ink work may be applied to the use of pencil and brush with very slight modifi-

cations to suit the difference in the materials employed.

The practice of a fine art is superior in that it makes physical as well as mental training necessary. In entering upon a course of drawing one therefore has to exercise the muscles until they become skillful in action, as well as also to learn how drawings are made. Next in order is the value of one's subject and the pleasing manner in which it is rendered. The result will then be a sketch in good taste.

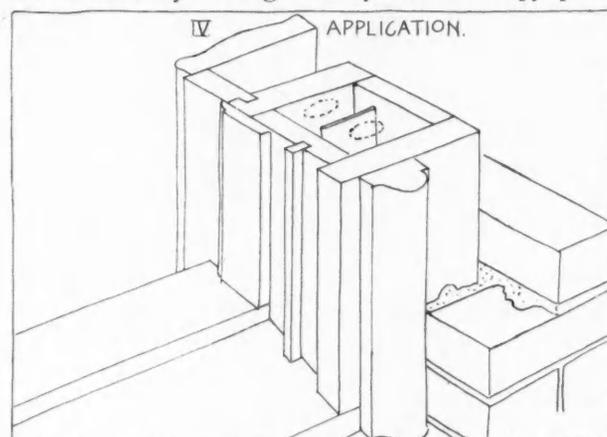
A common fine-pointed writing pen and plain, smooth-surfaced paper will do to begin with. Paper



PERSPECTIVE.

having a grain surface should be used for pencil practice and egg-shell paper for wash drawings with a brush.

I. Place the drawing paper squarely in front of you and draw a set of parallel lines. Then make other sets in different directions. Notice what movements are the hardest to make, and practice them repeatedly until ease is acquired. Do this carefully and deliberately. Be guided by the first copy plate,



WORKING SKETCH.

Fig. I, and the beginner will soon be able to make a great variety of lines wherever desired.

II. In drawing a group of objects or anything

round in shape, as in Fig. II, first indicate the proportions by straight lines lightly made. Then all the articles will be accurately placed and a guide secured for correctly drawing the curves.



BLACK AND WHITE

below converge upward. The latter view is illustrated in the plate, Fig. III. The book is below the eye. It is necessary to observe these rules carefully, for in drawing small objects one is apt to get these proportions reversed. It helps to hold the pen or pencil horizontally before the eyes and compare it with the object which is being drawn.

IV. One can apply these lessons to the making of an easy mechanical sketch in outline. Begin with some small object. After a little practice one will be able to sketch out details as it is desired to make them, like the window box shown in Fig. IV.



DORMER.

plain in this way and the result is artistic in appearance. Fig. VI. is a good example of this method of rendering.

VII. The pen drawing, Fig. VII, from an old-time

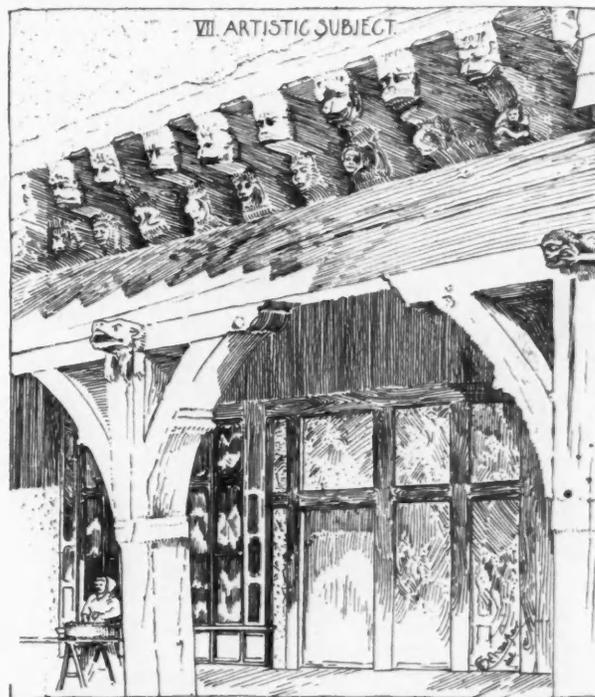
III. In regard to distances, the side farthest from one is always a little shorter, the lines running away from the point of view approaching a perspective point in the distance. This latter point may be in the middle of the picture or there may be two points on either side.

Lines level with the eye are horizontal. Lines above this horizon line vanish downward, those

market arcade, embodies all the principles of this lesson. It also shows how much may be gained by choosing an artistic subject. The massive timber, the ornamented construction and the faces peering out from under the warehouse—dogs, stevedores, merchants; young and old, watching for the coming ships—are from life of the olden times.

The lines are cleanly drawn. The perspective and the shadows behind the light, the construction and the nature of the materials, are all carefully represented.

It takes practice to be truthful. One must strive to be accurate, first in a general way and then in regard to details. In a broad front view there is little perspective work, but in an end view a great length may



SOLID TIMBER DETAIL.

be shown on a very narrow piece of paper. This is called foreshortening. The shadow should be natural. However indefinite a sketch looks, the artist must have mastered all these points.

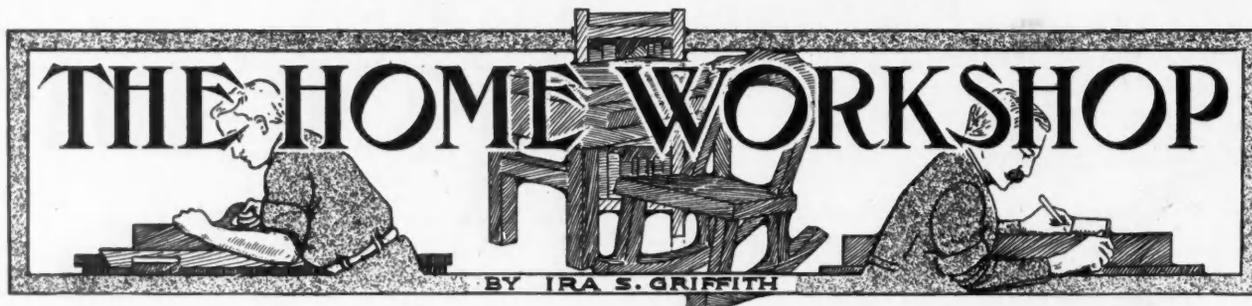


Solid Zinc Nails

Zinc shingle nails cut from the solid zinc is one of the new articles offered as indestructible so far as rusting is concerned and as affording extended life to a roof of zinc shingles or slats. The only wear on the nail arises from contraction and expansion caused by changes in the weather.

The nails are said to cost about three times as much as the iron commodity on a weight basis, but owing to the fact that zinc is not so heavy as iron the ratio of relative cost is less. The life of iron nails is placed at six years, while that of zinc is said to be indefinite.

It is thought that zinc shingle nails will have a large field in wood shingle roofing.



Hand-Made Furnishings for the Library

HOW TO MAKE A ROUND TOP LIBRARY TABLE, A COMBINED PICTURE FRAME AND PLATE SHELF AND A MISSION CANDLESTICK

THE picture frame shown in the illustration may, if desired, be used as a plate rail also. For this purpose there will need to be one or two small grooves cut along the top near the front edge. In this day of cheap but artistic reproductions of the masterpieces of the past there is no reason why even the humblest home should be without beautiful pictures

on the walls. The prints shown in the photograph cost but one cent apiece.

For the frame there will be needed the following material:

MILL BILL—PICTURE FRAME WITH SHELF

- Top, 1 piece, $\frac{1}{2}$ by $3\frac{1}{2}$ by 26 inches, S-4-S.
- Stiles, 2 pieces, $\frac{1}{2}$ by 3 by 11 inches, S-4-S.
- Mounting, 1 piece, $\frac{1}{2}$ by $1\frac{1}{2}$ by 7 inches, S-4-S.
- Rails, 2 pieces, $\frac{1}{2}$ by 2 by 18 inches, S-4-S.
- Brackets, 2 pieces, $\frac{1}{2}$ by 1 by $5\frac{1}{2}$ inches, S-4-S.
- Brackets, 2 pieces, $\frac{1}{2}$ by $2\frac{1}{4}$ by $5\frac{1}{2}$ inches, S-4-S.

This stock is specified exact as to width and thickness. To the length, however, there has been added one-half an inch extra. Secure quartersawed white oak if possible. Make certain that it is well seasoned.

Begin work by squaring the stiles to length. Next prepare the rails and the mounting. Lay out and cut the tenons on the rails and the mortises in the stiles and rails. Now rabbet the rails their full length on the inner edges. This can best be done by means of the rabbet plane. The rabbets of the stiles cannot be cut their full length. Because of their short length they may as well be cut with the chisel, being gauged first. It must be remembered in cutting the tenons of the mounting that the plowing of the rabbet on the rails will necessitate the cutting of the shoulders on one side, the back side, longer than on the other. After this has been done the mounting should be plowed. Scrape and sandpaper these parts thoroughly and with good hot glue put the parts together and clamp them.

While the glue is hardening square the top to length and put on the bevel.

Square up the ends of the brackets and shape their curves, using a small coping saw to cut them out and the scraper to smooth them.

When the glue is hard put on the top and place the brackets. Very small brads are to be used and the heads set and covered with putty colored to match the finish.

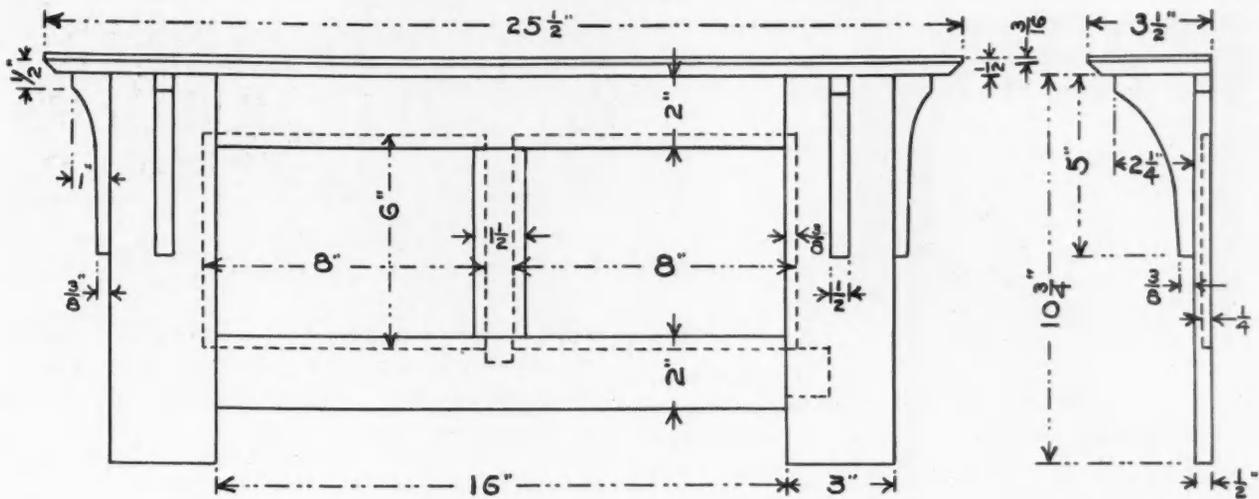
Pieces of heavy cardboard should be used to "back" the pictures, a piece of strong paper pasted over the back of all so as to exclude dust.

How to Make the Round Top Table

The table may also be made of quartersawed white oak. The pieces, like those of the preceding article,



Some Attractive Pieces for the Home Shop



PICTURE FRAME WITH SHELF.

are specified exact as to thickness and width. There will be needed the following pieces:

MILL BILL FOR ROUND TOP TABLE

- Top, 1 piece, 1 by 16 inch radius, S-2-S.
- Legs, 4 pieces, 2 1/4 by 2 1/4 by 29 1/2 inches, S-4-S.
- Bottom stretchers, 2 pieces, 1 by 3 by 26 inches, S-4-S.
- Top stretchers, 2 pieces, 1 by 1 7/8 by 24 inches, S-4-S.
- Side rails, 4 pieces, 1 by 1 7/8 by 24 inches, S-4-S.

If possible get the top glued and in one piece at the mill, this will be more satisfactory than to try to do it at home. The gluing with the necessary jointing of the edges is not so much to be avoided but the surface smoothing after the gluing can be done so much easier and with such great saving in time that one should have it glued at the mill if at all possible.

If a band saw is at hand, the way to cut the circular top is to fix a center at a distance from the saw equal to the desired radius of the top. By revolving the top on this point the wood will be fed to the saw in such a way as to make the circle desired. Scrape and thoroughly sandpaper the top after having taken off the sharpness of the arrises.

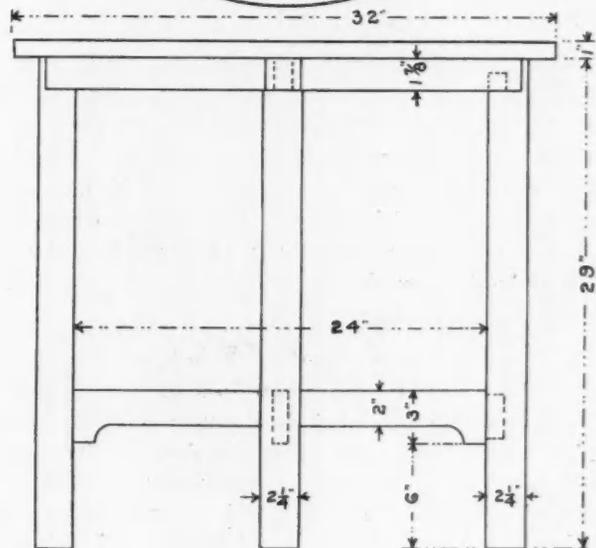
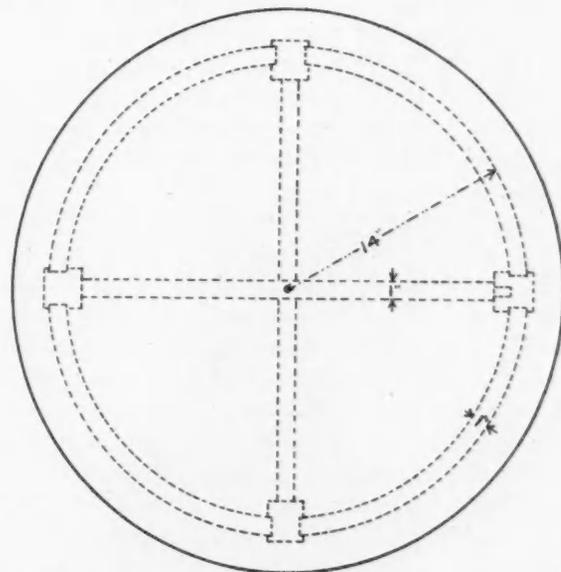
Prepare the four legs next, cutting them to length and squaring the ends. The lower ends should be chamfered a good sixteenth of an inch to prevent splintering.

The top and bottom stretchers should be cut to size and the necessary joints laid out and cut. It will be noted on the drawing that the tenons on the lower rails or stretchers are to be shouldered on the four sides. On the top rails, however, they are to be shouldered on three sides only. The tenons in the lower stretcher might be made 5/8 by 2 1/4 by 1 inch long. Those on the top stretcher may be of the same thickness and length but with a width of 1 inch, gauged from the under side.

Lay off and cut the mortises in the legs. The gains which are to receive the ends of the curved rails that form the facing under the top are best cut after the rails are shaped.

These rails may be formed in two ways; they may be

1-inch stock steamed and bent to shape over forms previously prepared or they may be made by veneering a piece of thin quartersawed oak over pieces of pine



ROUND TOP TABLE.

cut to the desired curvature from solid pieces. The second method is probably as easy and satisfactory for the beginner. The veneer should be cut long enough to let into the posts with the pine. Three-sixteenths-inch veneer should be used.

The table shown in the photograph has lower stretchers straight on both edges with a width of 3 inches throughout. The drawing shows a variation that will serve to lighten the effect should one so desire.

The Mission candlestick shown in the photograph is easily made, a drawing is hardly necessary. The base should be made $\frac{3}{4}$ inch thick by $5\frac{1}{2}$ inches square. The vertical should be $1\frac{1}{4}$ inches square by $4\frac{1}{2}$ inches high. The top is to be $\frac{3}{8}$ inch thick by 2 inches square. The handle, $\frac{3}{4}$ of an inch thick with a 1-inch hole in it. The hole in the top for the candle is to be $\frac{7}{8}$ of an inch. A thin piece of brass fastened over the top will keep the tallow off the wood.

A very appropriate finish for the picture frame, and for the other pieces, too, is obtained as follows: After having removed all the surplus glue and having scraped and sandpapered all the parts thoroughly, apply a coat of Dutch Brown water stain. Allow this to stand over night, then sand it smoothly, using number 00 paper held on the finger tips, to remove the grain raised by the water in the stain. Again apply a coat of the same stain diluted with an equal volume of water. Again sand lightly when dry and put on a thin coat of shellac. This is to keep the coloring matter in the filler from discoloring the highlights of the wood. Upon this put a coat filler. Use light filler and mix it in the proportion of 12 ounces burnt umber, 4 ounces Venetian red and 20 pounds filler. When the filler has hardened apply a thin coat of shellac. Sand the shellac when it has hardened. Two methods of proceeding from this point are possible. The easier is to apply a coat of floor wax and rub to a polish, following the directions that will be found upon every can of wax. Two or three coats of wax should be applied, each coat being allowed to harden over night.

The second method requires more care and experience as it necessitates the use of copal varnish. Upon the shellac coat apply a coat of good varnish. When this has dried hard, rub with hair cloth or curled hair. In like manner put on one or two more coats. The last coat should be rubbed with pulverized pumice and crude oil or raw linseed oil. This gives an eggshell gloss. If a polished finish is desired, rub the last coat with pulverized pumice stone and water and then with rotten stone and water.



Hint on Pipe Fitting

"In screwing pipe fittings together spread a thick mixture of graphite and oil on the threads. This will help make the joints steam or water tight. White lead is used when the pipe is not to be taken apart again. It hardens, while the graphite does not, and makes it almost impossible to unscrew the pipe fittings when they have been connected for a long time."

COURT DECISIONS AFFECTING BUILDERS



PERSONAL INJURY THROUGH DEFECTIVE SCAFFOLD.—That an employee on a scaffold used a beam thereof for a purpose not contemplated by the parties, and was injured by its breaking, is not evidence that the platform was unsafe, under New York Labor Laws (Laws 1897, p. 467, c. 415), Section 18, forbidding unsafe scaffolding.—*Connolly vs. Peterson, New York Supreme Court, Appellate Term, 116 New York Supplement 11.*

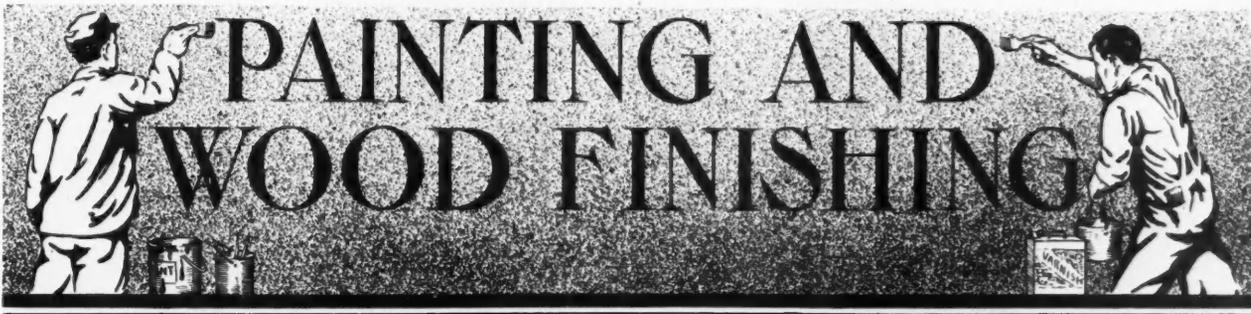
CONTRACTORS' LIABILITY FOR INJURY TO THIRD PERSONS.—A contractor, making excavations for the laying of a walk to a side door of a dwelling, entered by steps nearly 3 ft. high, removed the steps and excavated there. The dwelling was occupied by a tenant, who was away the day the work was done. It was not shown that the contractor had any reason to believe that the tenant was away that day, or that she was ignorant of the removal of the steps; and had the tenant remained at home she could not have failed to see the conditions. Held that the contractor was not negligent in failing to prevent persons from opening the side door from within and stepping out, and he was not liable for injuries to the tenant opening the door from within and falling to the ground. Where work is done by an independent contractor, who is proprietor of the business he is conducting, he alone is responsible for the care in doing it.—*Carey and Baxter, Massachusetts Supreme Judicial Court, 87 Northeastern Reporter 901.*

A CONTRACTOR CANNOT RECOVER FOR PERSONAL INJURY.—For several years before being injured in a railroad accident, plaintiff was a carpenter and building contractor, and took entire contracts, though sometimes he furnished labor only. At other times he furnished material only, and sometimes both labor and material. He had a horse and employed men. Held that his income before the accident must be regarded as uncertain business profits proceeding from invested capital, which could not be considered in ascertaining the loss caused by the injury.

Gombert v. New York Central & Hudson River Railroad Company. 88 Northwestern 382.

PUBLIC BUILDINGS NOT SUBJECT TO MECHANIC'S LIEN.—A public school building, title to which is vested in a Board of Trustees, is not subject to a mechanic's lien for material furnished for its construction; the statute not showing an intention to extend the lien to public property.

Morgantown Hardware Company v. Morgantown Graded School. Supreme Court of North Carolina. 64 Southeastern 764.



How to Get a Good Job of Painting

IMPORTANCE OF DEFINITE SPECIFICATIONS FOR HOUSE PAINTING—SPECIFY GOOD MATERIALS AND SEE THAT THEY ARE FURNISHED—TEST THE LEAD

By R. I. Cuyler

WHEN an outside painting job goes wrong these days, we often hear house owners unreasonably exclaim: "Good painters are scarce and paint is not as good as it used to be."

Now, as a matter of fact, the real trouble is not because of a shortage of either good paint or competent painters. Trouble and dissatisfaction of this sort can usually be traced to lack of attention to the important details of choosing the paint and the painter. The property owner, himself, is largely to blame for these conditions.

It is true that a decade or two ago a poor painting job was the exception, while good painting was the rule. Those days, pure white lead and pure linseed oil were applied straight, by practical mechanics. That was before mixtures of chalk, clay, barytes, benzine and water began to pose as paint—before the "Every man his own painter" idea. Property owners were not compelled to be so careful then as at present. If you wish, however, it is still possible to secure a satisfactory and durable painting job, but you must exercise more care and reason in choosing your paint and your painter. These days the markets are flooded with cheap, shoddy and adulterated paint mixtures, while "the woods are full" of incompetent daubers, who know nothing about paint or painting.

How the Ordinary Job Is Arranged for

How does the average man go about having his house painted? Let us consider, for example, the man who is building a new house—a home to shelter himself and family. He engages an architect to draw up the plans and specifications and leaves all details to the architect.

Now, many architects, for fear they will be accused of being unduly influenced by manufacturers, have gotten into the habit of merely specifying "best paint." Some may go so far as to specify "best white lead," but either phrase is useless. They mean nothing.

The specifications are turned over to several painters and bids are requested. As no particular brand of paint is specified, one painter may make an honest estimate, figuring on using the best standard brand of pure white lead and pure linseed oil, the paint to be properly

mixed and applied. Another painter has a different idea of "best paint," and submits a low figure, determined to secure the work at any price. The proper application of paint is given no consideration whatever.

Relies Too Much on the Architect

The property owner takes it for granted that an estimate based on the architect's specifications will assure him a satisfactory painting job, and the lowest bid, nine times out of ten, is accepted. The paint may look all right at first—chances are it will. In a few months' time, however, when this so-called "best paint" begins to crack, scale and fade, the house owner realizes that something is wrong, and when he investigates the matter, he will be given a dozen or more excuses. The architect will blame the painter and the painter will get behind the specifications. No one will assume the responsibility, and the house owner is soon confronted with the bother and expense of burning and scraping off the old paint, and applying a new coat.

Had the architect specified a standard brand of pure white lead by name, to be mixed with pure linseed oil and the desired colors at time of painting, and made it clear that each coat should be thoroughly brushed out and plenty of time be given between coats, for thorough drying; had reason been exercised in choosing a competent painter, the house owner would have been ahead considerable money and would have been saved a lot of trouble and dissatisfaction.

What the Sensible Man Will Do

Next consider the man who has decided to have his house repainted. What does he do? Four men out of five will ask several painters for bids and accept the lowest figure. The fifth man will be sensible enough to inquire of the painter who submits the lowest bid what paint material he will use. Then he may further investigate the painter's record and ascertain where he has worked before, and look into his reputation for good results.

Having satisfied himself that the painter will use a standard brand of pure white lead, pure linseed oil and colors, that he is capable of properly mixing and applying paint, and has a reputation for good work, he then executes a contract in writing, which alike pro-

fects the painter and himself. This is the logical and reasonable way of proceeding.

The property owner who goes no further into the painting subject than the color scheme very often pays for paint which he does not get. When the paint goes wrong, he then blames the painter and says, "There is no more good paint." This is not only unreasonable, but unjust—unfair alike to good painters and good materials.

To be certain of satisfactory painting, you should proceed as follows: When building a new house, be sure that your architect specifies a standard brand of strictly pure white lead, to be mixed with pure linseed oil, pure turpentine and pure colors at time of painting. Then, when it comes to letting your contract for painting the new house, or repainting the old one, let only painters of known ability and integrity do the work. Do not accept any bid until satisfied the painter can properly mix and apply pure white lead. Next, make it your business to see that the brand of pure white lead, the pure linseed oil and other materials, as specified, are used.

Do not compel your painter to unduly rush the work. Having engaged a good painter, and being sure of his using the best materials, then give the painter an opportunity to properly apply the paint. Plenty of time should be allowed between coats to insure perfect drying and hardening of the paint film. Some surfaces require more care than others. The competent painter knows how to mix and apply paint to fit the conditions of different surfaces. Give your painter a chance—do not rush the work.

Examine the Brand, Test the Lead

It will be well to examine the brand on the lead keg. You trust the bank cashier, who cashes your check, but you count the money just the same, and he takes no offense. Neither will a good painter resent your checking him up—if he does honest work, and uses high-grade materials he will welcome the closest scrutiny.

It will do no harm to test the white lead for purity. The test is very simple, as follows:

Take a small piece of lead from a keg—about the size of a pinhead. Place this lead on a match, about 1 inch from the head, and light the match. With one or two other lighted matches held directly underneath the lead, sufficient heat is obtained to reduce the white lead, if pure, to its original metallic state. You will note a number of very small globules of metallic lead formed. Necessarily they must be small because the quantity of lead tested is small, but they are easily discerned. Lead that is adulterated will not reduce in this manner or in any other way and is unfit for use.

There are no good reasons why you should not be certain of a first-class and durable job of painting, even in this day of adulteration and of cheap, flimsy paints, if you will simply use care and reason in choosing your paint and painter.

Board Lock or Clamp

Mr. H. H. Seeley, of Webb City, Mo., sends to the editor a description of a simple device for stiffening board partitions, which is worthy of consideration. He says it is the invention of the Hon. L. W. Motley, of Prosperity, Mo., who is now past the seventieth milestone in life's fitful journey and who desires to submit this little device to his fellow workmen, through the columns of the AMERICAN CARPENTER AND BUILDER, so that it may have the widest publicity possible, believing that it possesses real merit. Mr. Seeley's description is as follows:

The device may be used in a number of ways as the clamp tends to reinforce and strengthen anything where its use is desired, as for partitions or side walls where square-edged boards are used. The clamp is of $\frac{3}{4}$ -inch hoop iron cut in $3\frac{1}{2}$ -inch lengths with small holes punched near the ends to start the nails or tacks for holding same.

The accompanying sketch will give an idea of how they are applied. First, shows the iron inserted; sec-



ond, shows the iron bent on one side; third, shows the iron bent on both sides; fourth, shows two clamps together, reversed. These irons should be spaced as the stiffness of the wall requires.

The boards will be perfectly locked. This will be useful in building mortar boxes, wagon beds, or anywhere where boards are of even thickness. It is especially useful where box buildings have been erected without girders or wall stays or where battens are depended on to hold the boards in place; especially is this true where the boards have warped past each other. The holding power of this device when the boards are pressed to place is such that old walls badly out of shape can be made to look fairly smooth and straight.

If the hoop iron is not readily available, small wire does almost as well. Cut in desired lengths and with pliers make eyeholes at each end to receive the nails and insert as above described.



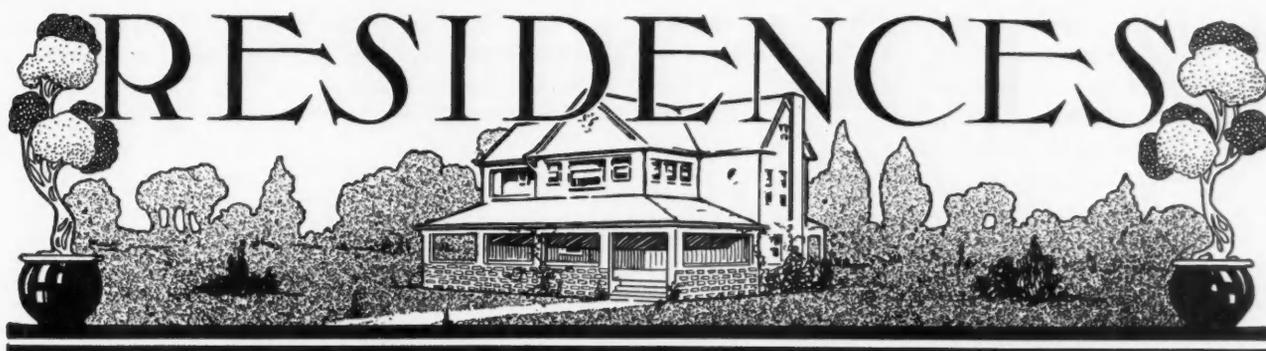
Such Profanity

"The engineers find Gatun dam safe," read Mr. Jones from his newspaper headlines to grandma, knitting at the other side of the table.

"Well," she said, looking up over her glasses in pained surprise, "I don't know anything about the safety of Gatun, but I think a family newspaper oughtn't to use such language in print."—*Emporia Gazette*.



Tell the truth and your customers will rise up and bless you.



Plans for Modern Brick House

COMPLETE SET OF ARCHITECT'S DRAWINGS FOR A SUBSTANTIAL, WELL-DESIGNED BRICK HOUSE OF LIBERAL DIMENSIONS—ADVANTAGES MENTIONED.

THE eight-room brick house, full working drawings for which are presented herewith, was designed recently for Mr. H. W. Griggs and is to be built this spring at Pleasantville, Ohio.

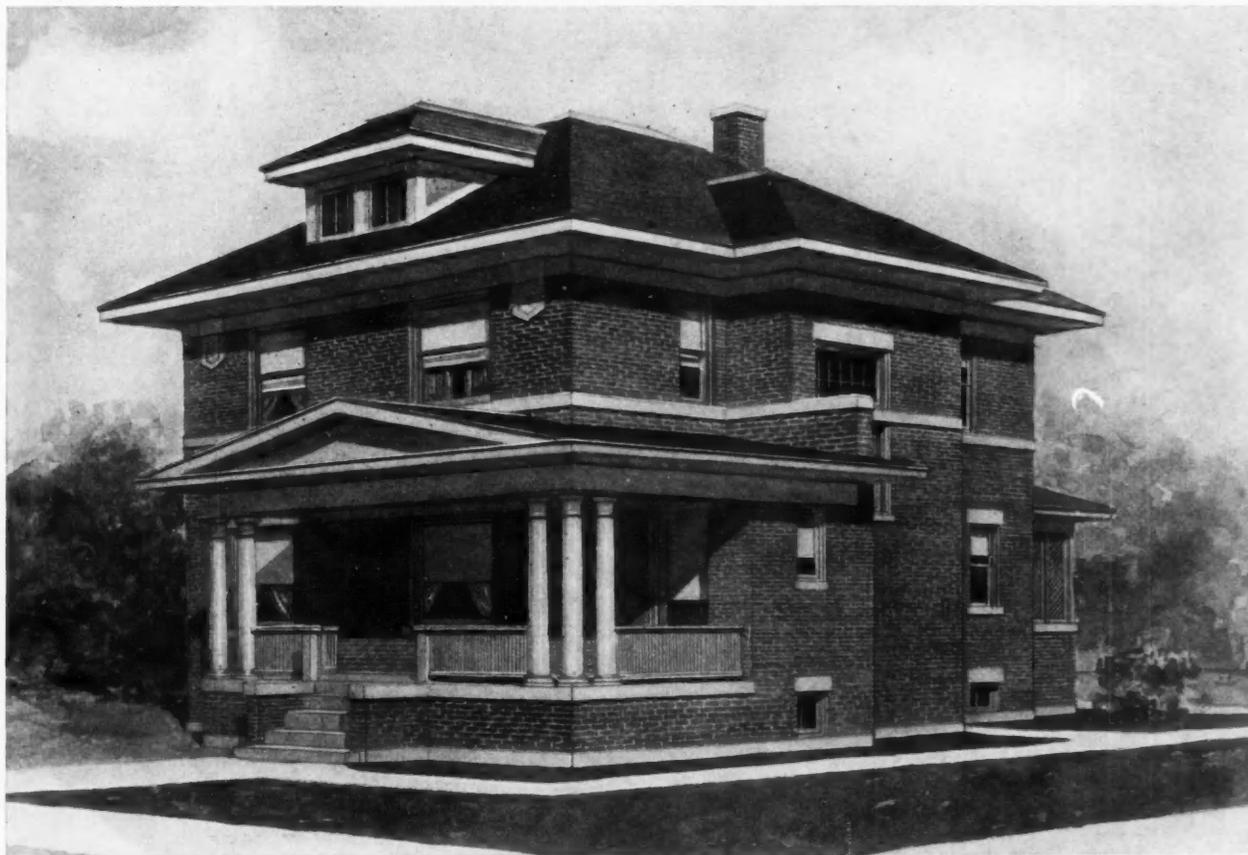
In construction, this house is standard brick masonry; 13-inch wall on a 17-inch foundation. First and second floor joists are 2 by 10 inches, set 16 inches on centers. Foundation walls are concrete, made waterproof with an application of hot tar on the outside and

The floor plans show four large well arranged rooms on the main floor and three bedrooms, bath, dressing or sewing room, and an abundance of closets on the second.

+

Points on Warm-Air Heating

It is fast becoming a fact that the correct furnace job is the exception rather than the rule, and some remedy should be applied very soon. The fault is not



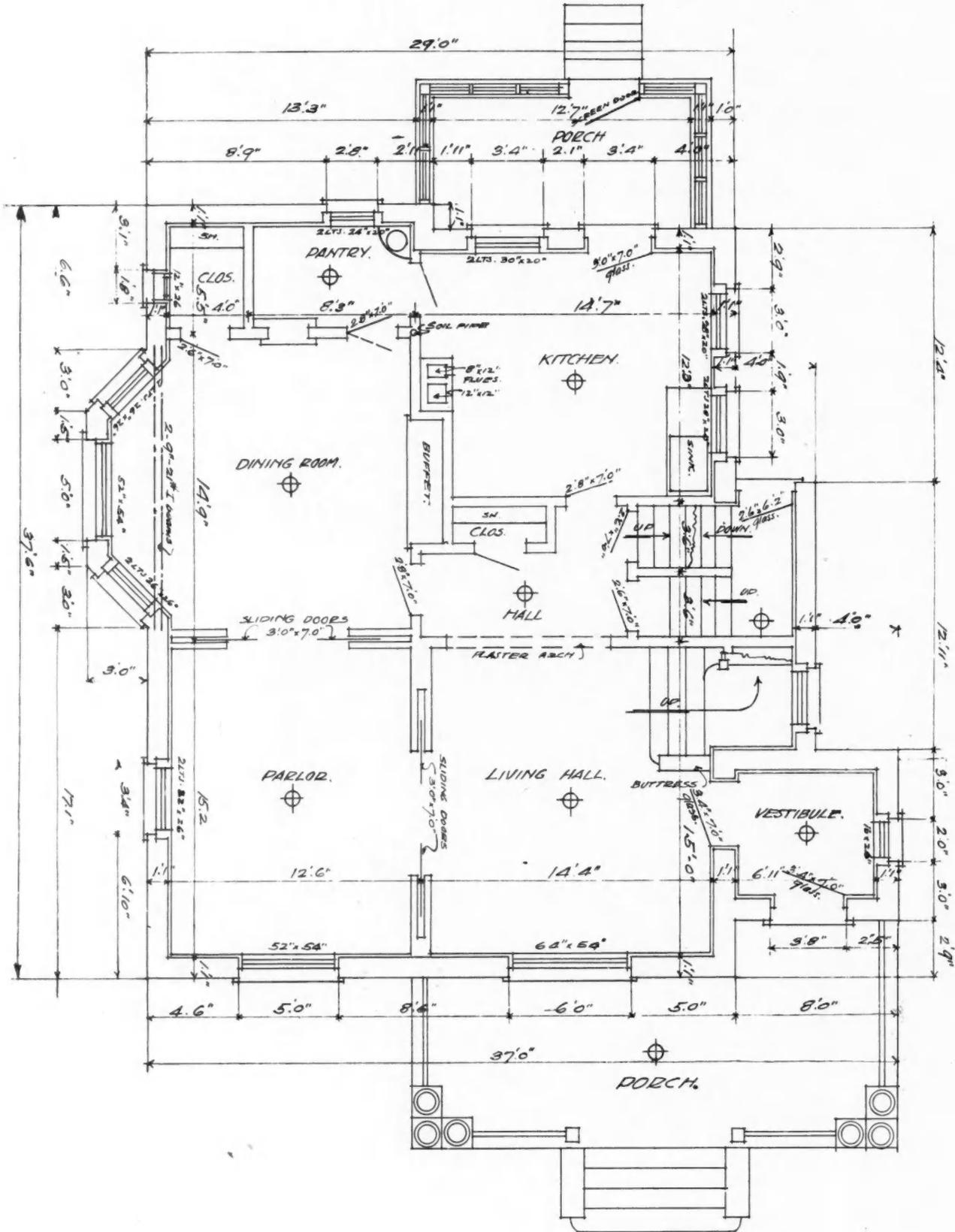
Modern Brick House Designed for Mr. H. W. Griggs, Pleasantville, Ohio

a quarter-inch neat cement finishing coat on the inside. A slate roof tops this house off in a substantial and appropriate way.

in the system. Furnace heating, if properly installed, is healthful, cheap and scientific. Neither can it be said that the fault all rests with the manufacturer.

The purchaser is to a certain degree to blame, in that he is willing to let the contract go to anyone who cuts to the lowest price regardless of the quality of the man who takes the contract or of the apparatus which he

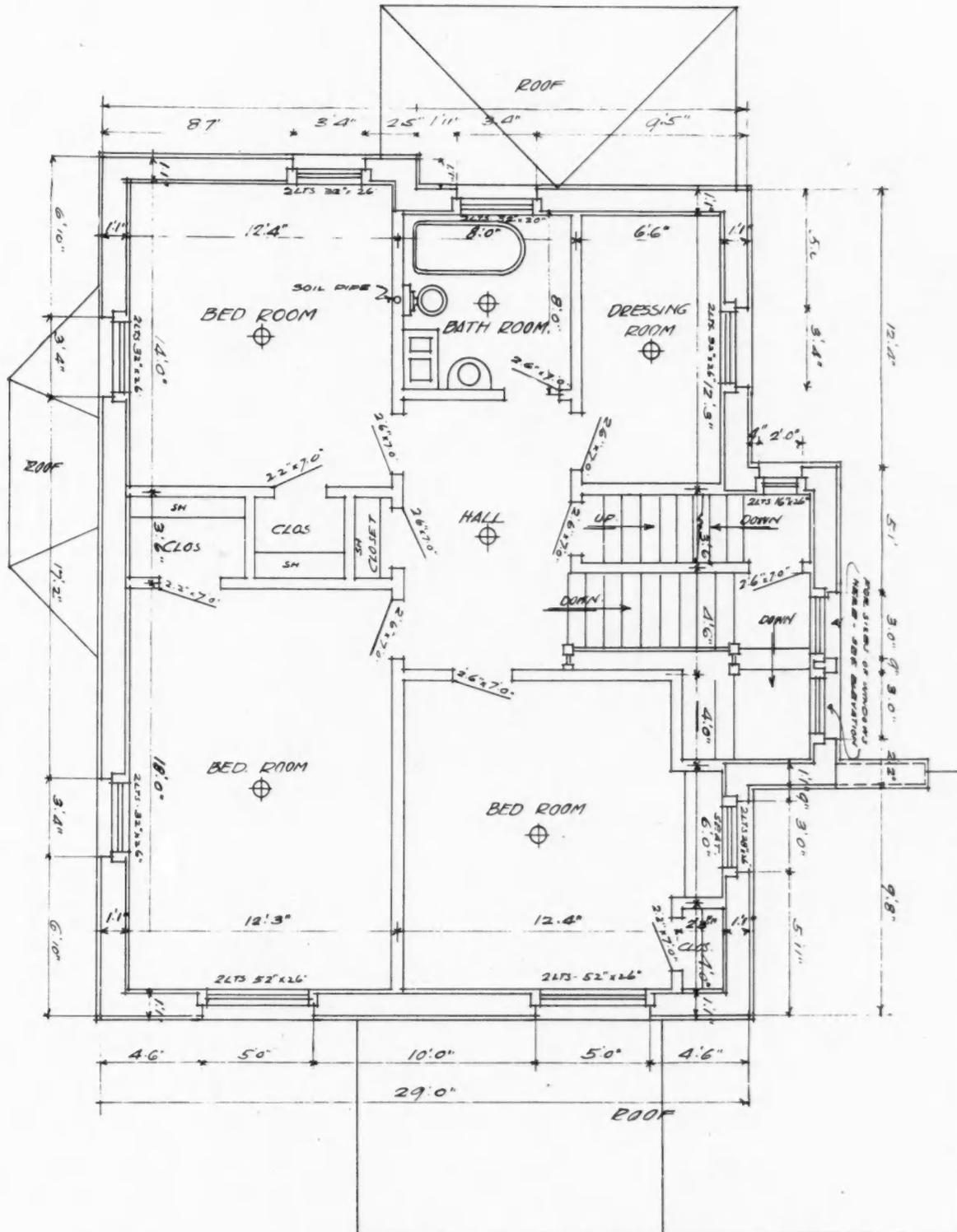
represents. Another frequent source of annoyance and error is the relation of the heating expert or contractor to the architect. To be just to both, the system of heat should be first selected and allowances made in the



FIRST FLOOR PLAN OF HOUSE—PAGE 771

plans for its installation. Some of the chief points to be considered are: First, the size and location of the chimney; the running of the cellar partition walls to accommodate the location of the furnace and the coal

the planning of the walls to avoid horizontal runs of heat ducts in the second floor to reach a room otherwise inaccessible; and other points not necessary to mention.



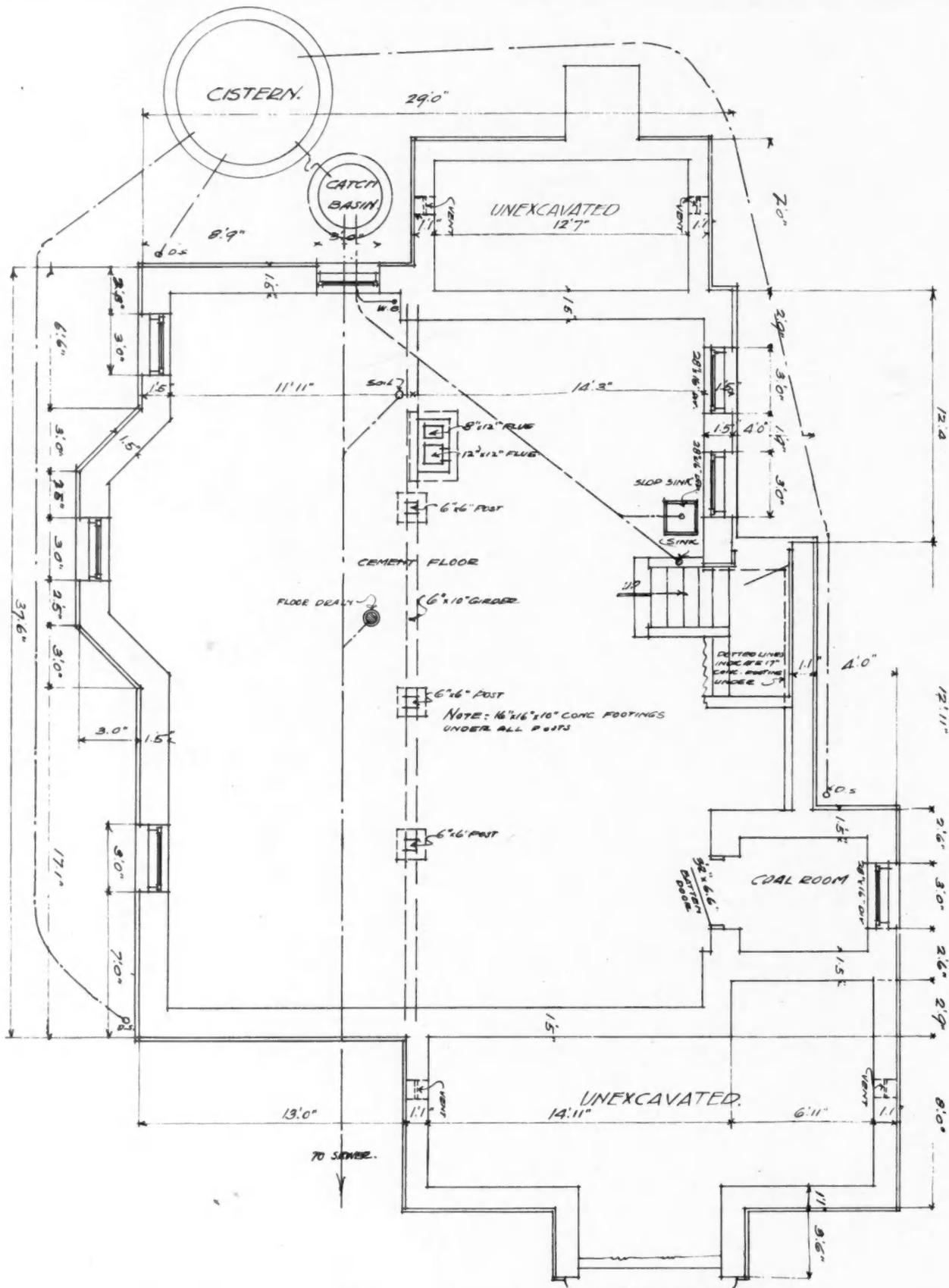
SECOND FLOOR PLAN OF HOUSE - PAGE 771

bin; the height of the basement ceiling to allow sufficient inclination of the leader pipes; the construction of the partition walls between the rooms to allow for riser pipes of sufficient size to heat large upstairs rooms;

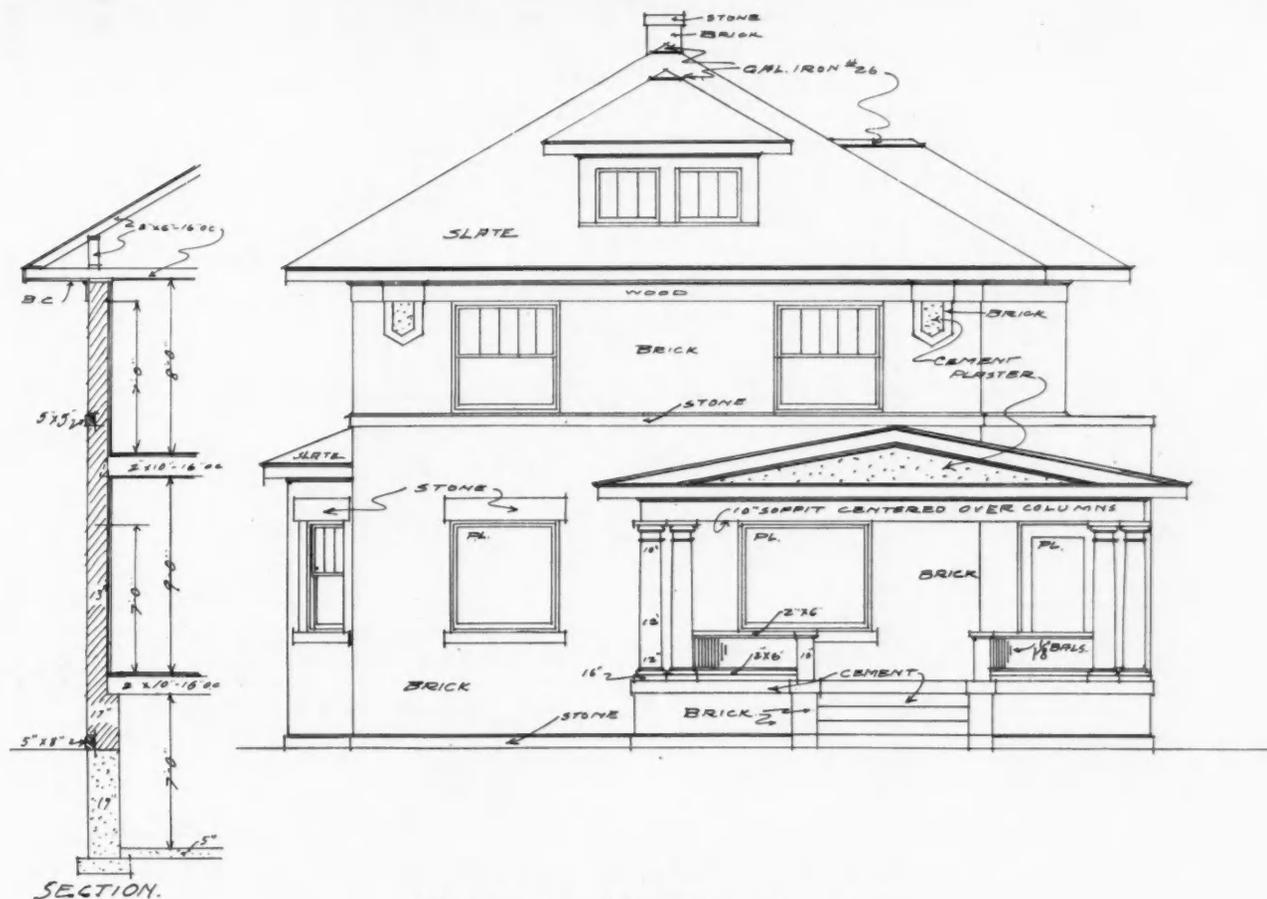
All heating engineers know that the range of location of a furnace relative to the house plan is very limited, and that in many cases it is an absolute necessity, after the house plan is completed, to set the fur-

nace out of this desired location, thus compromising the efficiency of the system; also, that the basement ceiling in many cases is so low that the leaders require

to be run nearly horizontal, thus reducing the draft in them; also, that a 6-inch studded wall in many cases could easily have been substituted for the 4-inch, with



BASEMENT PLAN OF HOUSE, PAGE 771.



FRONT ELEVATION

little additional cost, and have improved the system immensely; also, that certain walls absolutely prohibit the running of stacks to the desired spot in the rooms, and that, with a slight change, this could have been arranged without in any way injuring the architect's

plans. Such, in brief, are some of the troubles that the conscientious heating engineer or contractor faces when he proposes to do his work after the building plans have received the O. K. of the architect.

Finally, however, the purchaser himself occasionally



REAR ELEVATION—HOUSE, PAGE 771

offers objections to the proper design of the system because of the desire to economize, although false economy it may prove to be in the end. Occasionally one hears the advice, "Don't heat the chamber rooms

who installed it are both censured. How much better to have made the job right at first and permit the owner to regulate the damper to suit his needs, even to closing it entirely.



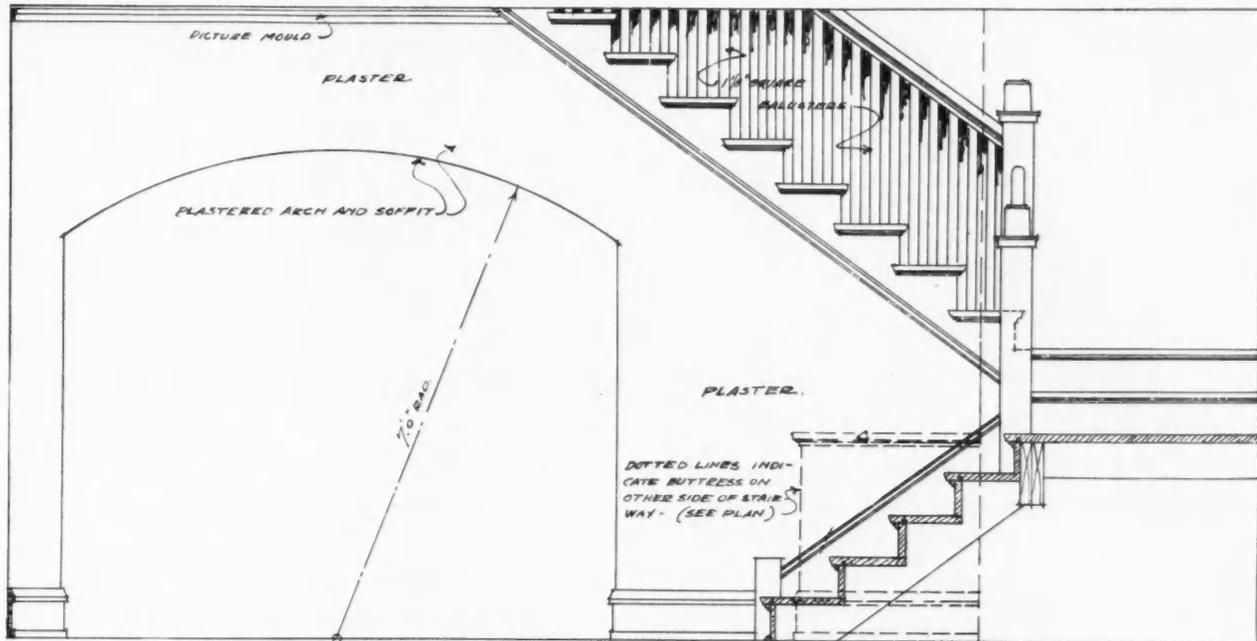
RIGHT SIDE ELEVATION



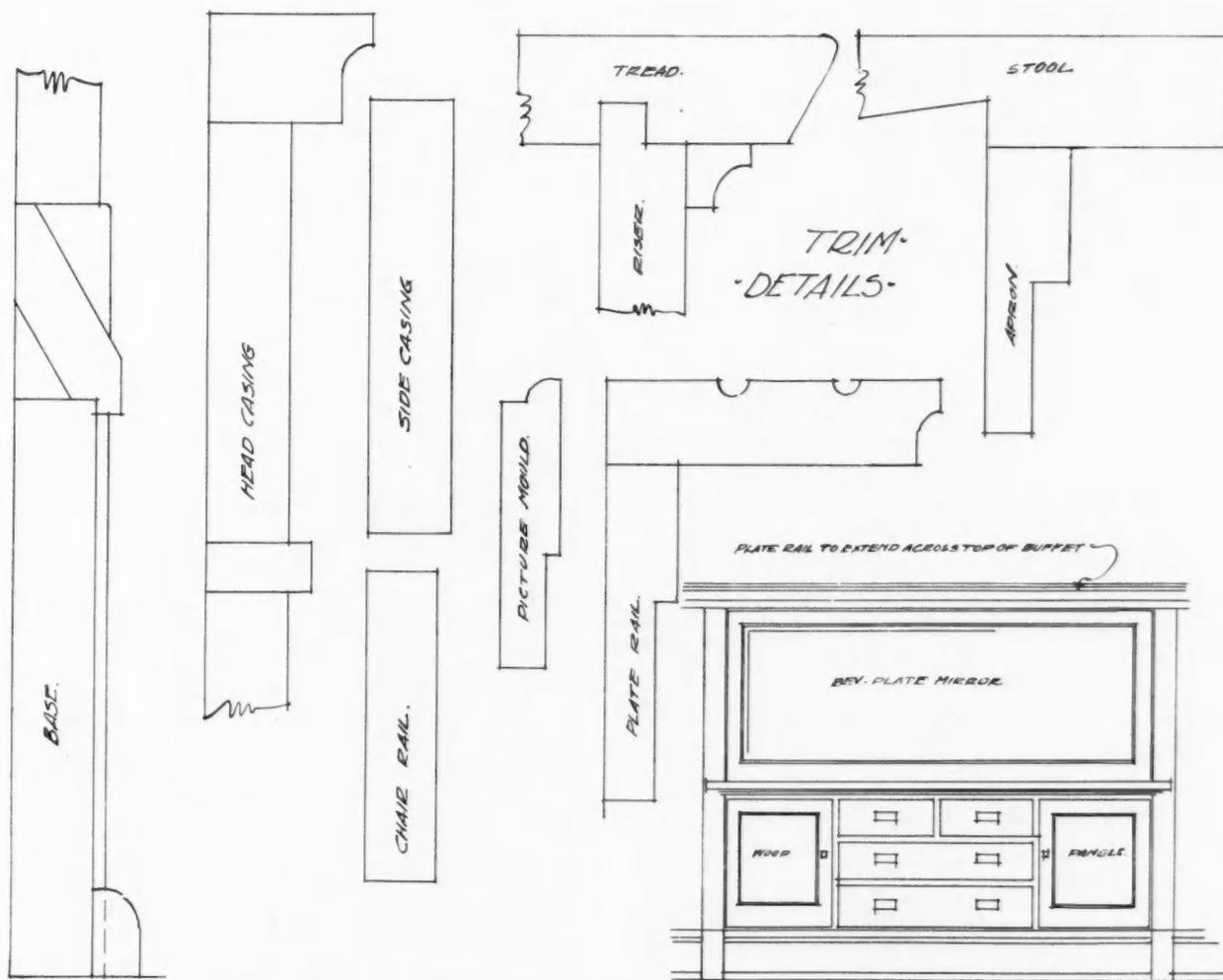
LEFT SIDE ELEVATION—HOUSE, PAGE 771

on the second floor very warm, because I like a cold sleeping-room." Advice which, if heeded, would be good nine times in ten, but the tenth time when it is needed, it is needed badly, and the system and the man

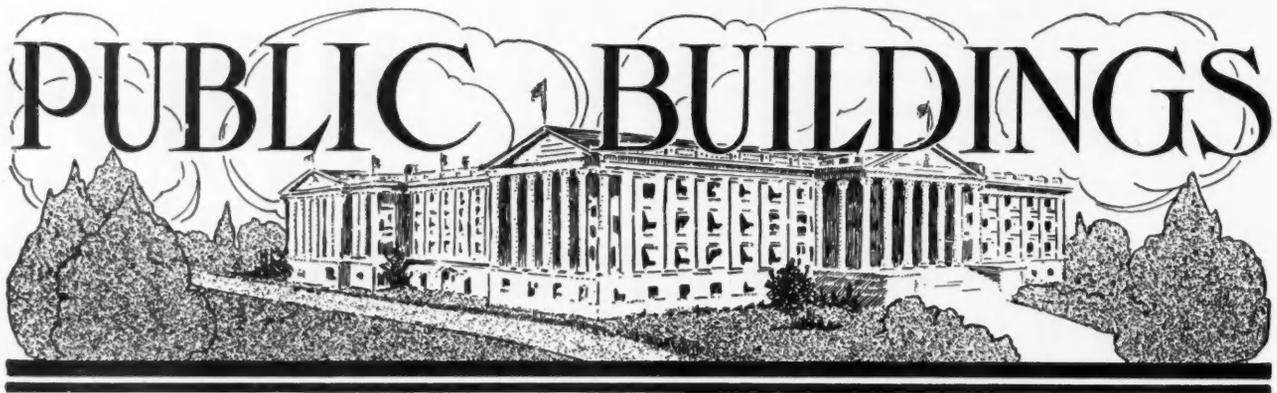
Good advice to all men installing residence heating systems is, "Heat every room as though it were to be used as a living-room, and let the owner regulate to suit his needs."



DETAIL OF MAIN STAIR HALL



DETAILS OF INTERIOR FINISH—HOUSE, PAGE 771



A Fireproof City School Building

PERSPECTIVE AND FLOOR PLANS OF A CITY SCHOOL BUILDING DESIGNED TO MEET THE REQUIREMENTS OF THE OHIO STATE LAW

THE accompanying plans should prove interesting to everyone connected in any way with the construction or designing of public school buildings; since they embody the very strict regulations imposed by the Ohio state law concerning fireproofing arrangements to prevent panic, etc. The provisions of this law were adopted soon after the terrible Collingwood fire disaster and are calculated to prevent another horror of that kind in future. It would be well if all the other states would pass laws equally as

strict for the protection of their school children.

If space permitted we would reprint this building code in full. It can be obtained however in pamphlet form from the State Department of Building Inspection.

From the plans the required arrangement for stairs halls and doors will be seen. The width of door openings and the width of halls and stairs is fixed by the number of persons to use them, and every room must have exits into more than one hall.

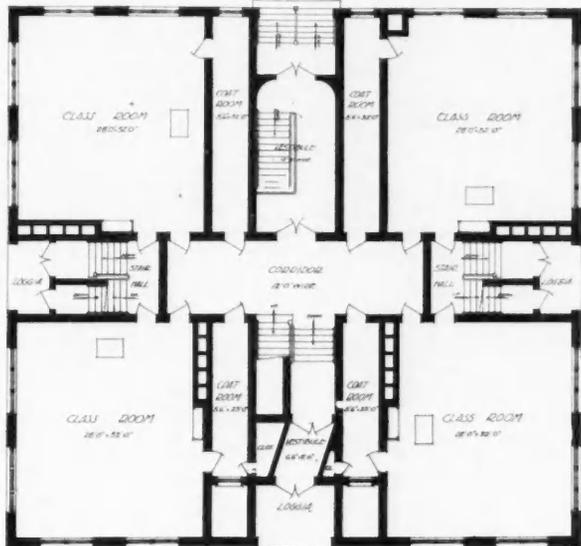


Fireproof City School Designed by G. W. Ashby, Architect, to Meet the Requirements of the Ohio State Law

Artistic Rendering of Drawings

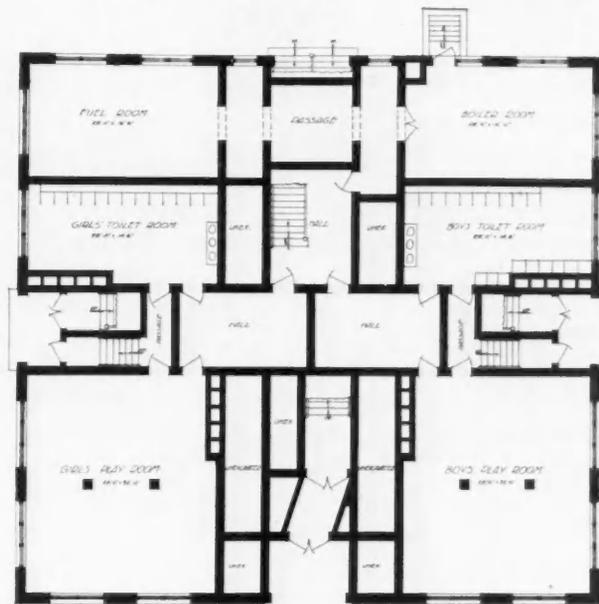
It is surprising what a number of architectural drawings—especially perspectives—are spoiled for want of artistic treatment, by bad judgment in the management of light and shade, figures drawn badly and out of

how to do this. One has only to see the exhibition of architectural drawings at the Academy any year to see how insipid and wanting in artistic treatment most of the perspectives appear. The general average is



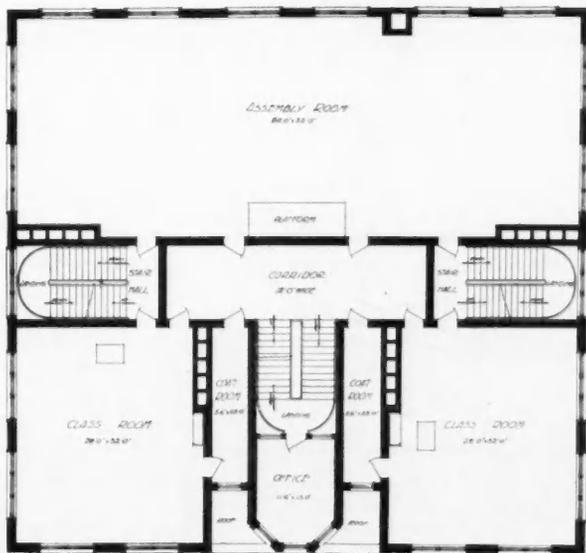
FIRST FLOOR PLAN

scale, impossible trees and general accessories all wrong, says a writer in a recent issue of the London Studio. Some architects, whose work is otherwise splendid, will put in absurd little figures, apparently with an idea to enhance the height of their buildings. And when the building is completed, one often notices a chance natural effect of light and shade, whereas,



BASEMENT PLAN

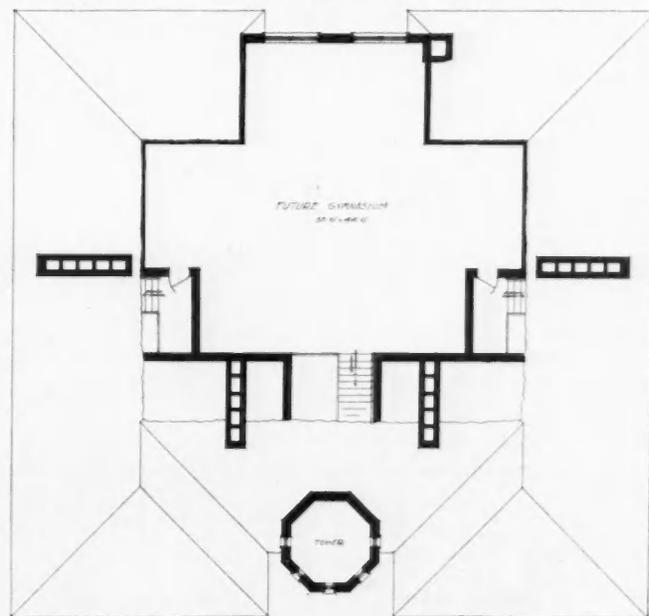
“stodgy,” with what is known as the “Academy treatment.” There are a few architects who treat drawings very finely, but they are the rare exceptions. It seems a pity that many excellent designs are spoiled or fail to have justice done to them for want of artistic management. Architects generally suppose that an



SECOND FLOOR PLAN

had the perspective been drawn by an artist familiar with these effects, a fine result would have been obtained, as well as a drawing worth keeping as a work of art.

Special “features” of a building often require prominence, and this can only be done by keeping the surroundings quiet; but only an artist will understand



THIRD FLOOR AND ROOF PLAN

artist would spoil their details, but this is not so where proper judgment is considered and an artist of proved ability given the work to do. It is to be hoped that the subject will receive the careful attention which its merits would seem to deserve to the end that better results will be reached.

FARM BUILDINGS

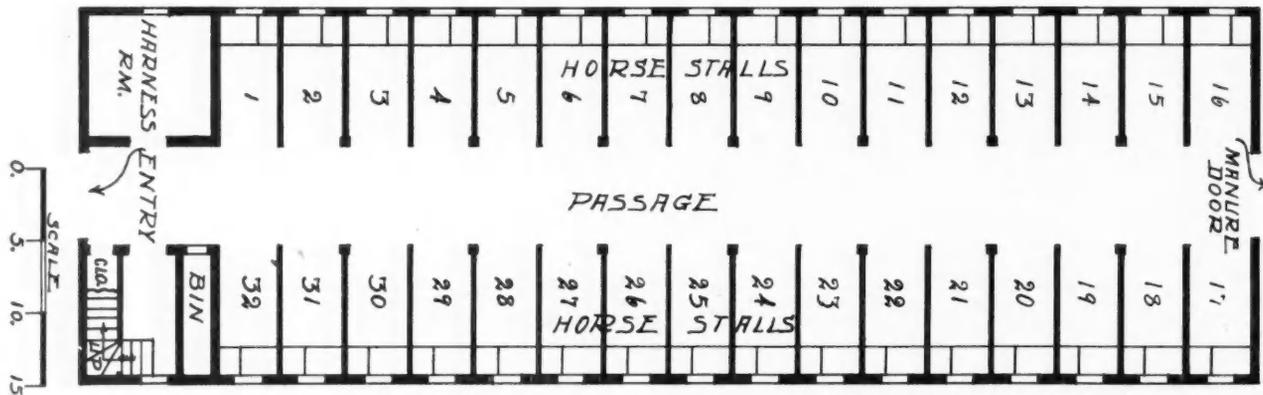
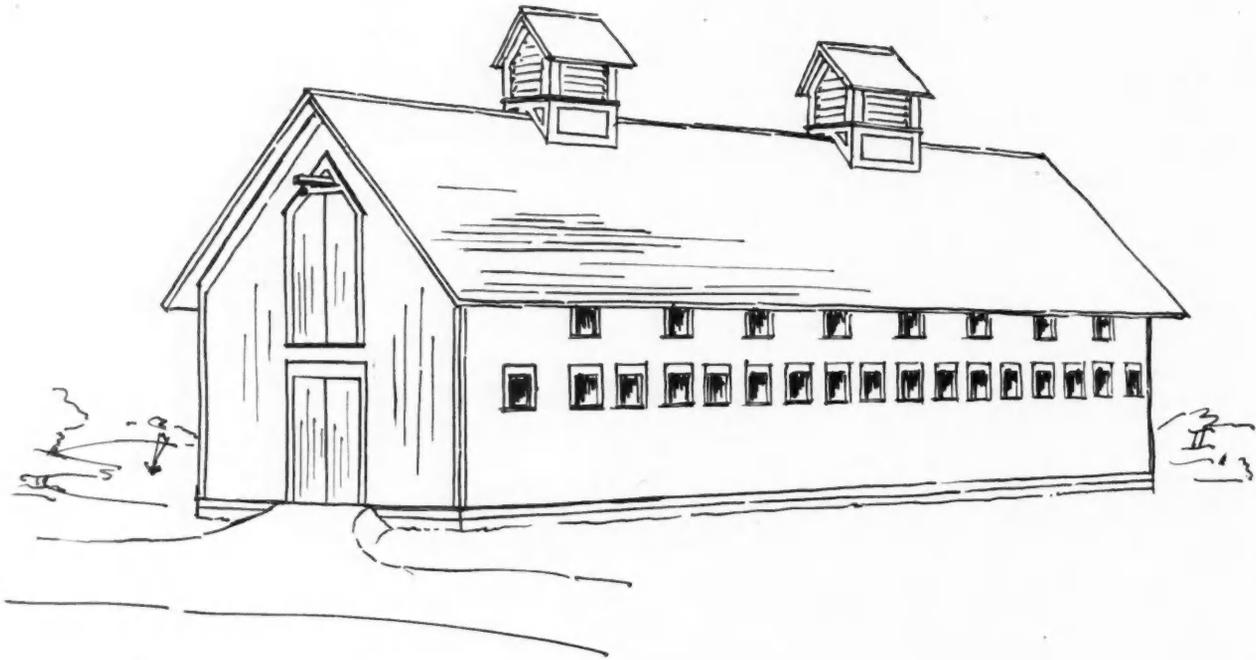


Two Horse Barns—Round and Oblong

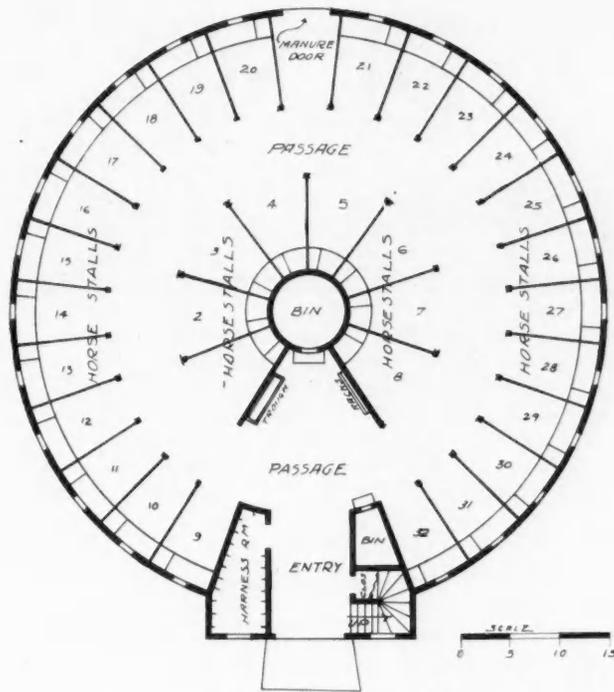
TWO DESIGNS PRESENTED, ONE THE ORDINARY GABLE BARN, THE OTHER A CIRCULAR BARN, EACH ARRANGED FOR THIRTY-TWO HORSES—A COMPARISON

WE HAVE received numerous requests of late for suggestions, advice, etc., concerning round barns, their design, arrangement and construction. One reader has asked specifically in regard to a circular barn to stable 32 horses. We have made this the basis of the accompanying designs, though they may serve equally as well for other barns of similar nature.

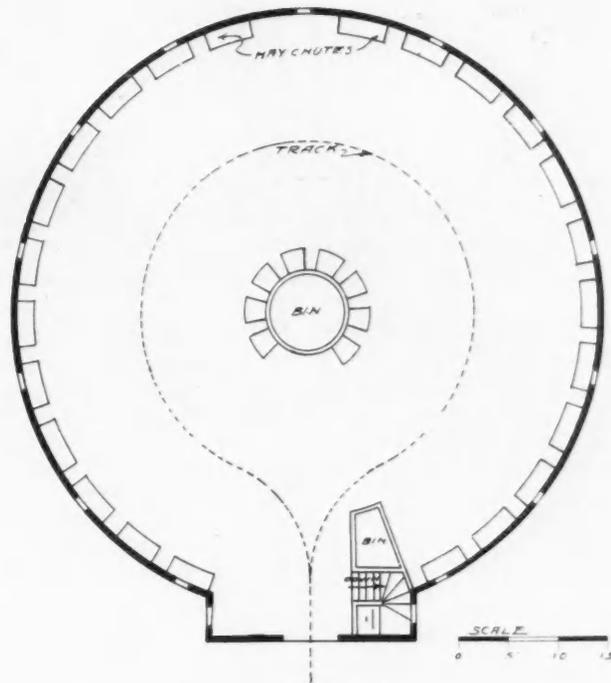
Round barns have been urged during the past few years by the experiment stations and others and have attained considerable popularity for large dairy stables, the idea being that the silo is built at the center, a place equally near to all the feeding racks. This reduces to a minimum the labor of carrying feed. It is also claimed that the cost of the round barn is less than that of the rectangular containing the same amount of



PERSPECTIVE AND PLAN OF OBLONG GABLE BARN ARRANGED FOR THIRTY-TWO HORSES



MAIN FLOOR PLAN



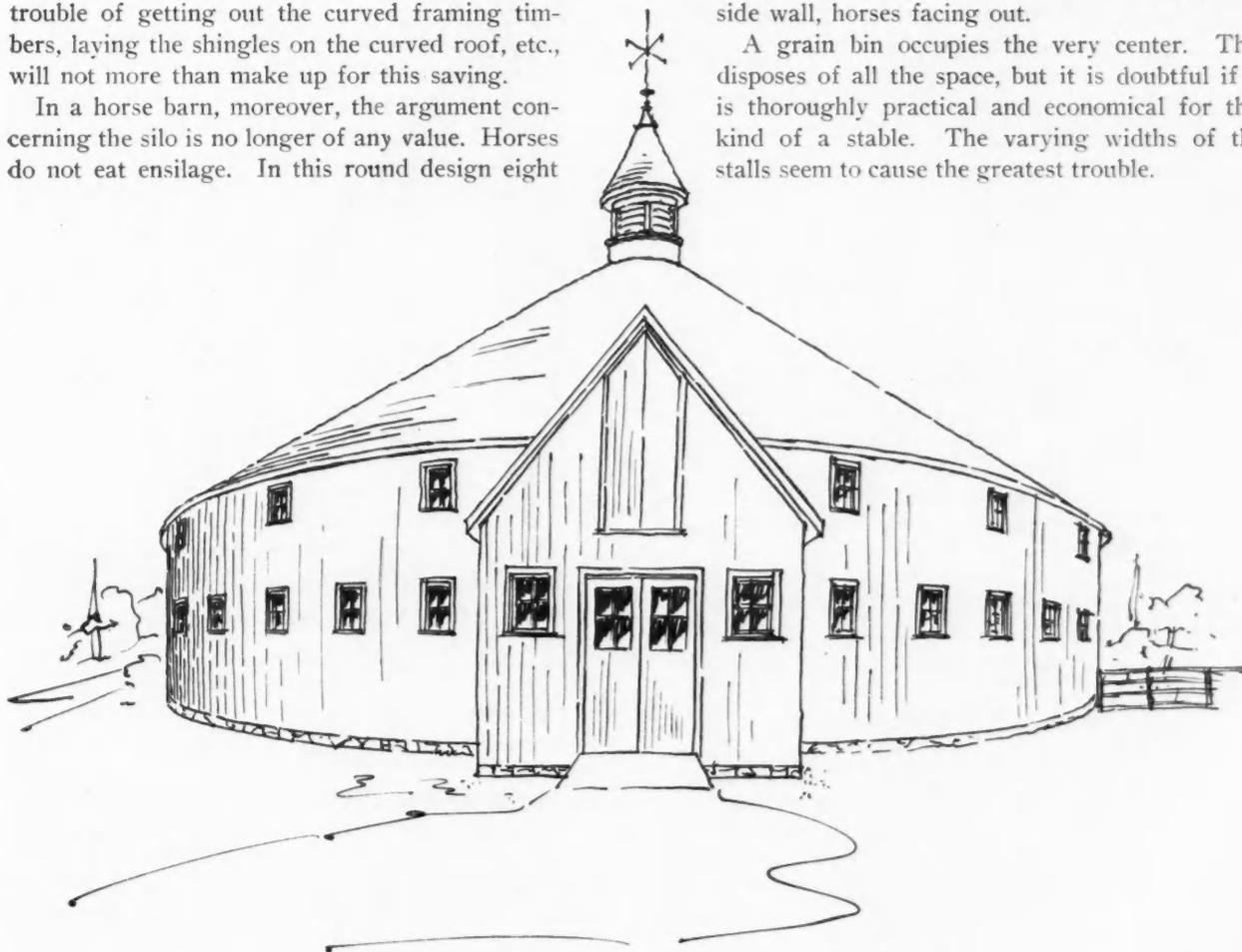
PLAN OF LOFT

space, due to its less amount of wall surface. It is doubtful, however, if the extra labor and trouble of getting out the curved framing timbers, laying the shingles on the curved roof, etc., will not more than make up for this saving.

In a horse barn, moreover, the argument concerning the silo is no longer of any value. Horses do not eat ensilage. In this round design eight

stalls are provided at the center, the horses facing in; twenty-four stalls are arranged along the outside wall, horses facing out.

A grain bin occupies the very center. This disposes of all the space, but it is doubtful if it is thoroughly practical and economical for this kind of a stable. The varying widths of the stalls seem to cause the greatest trouble.



ROUND BARN ARRANGED FOR THIRTY-TWO HORSES



Framing for Door with Side Lights

To the Editor:

Grand Ridge, Ill.

Would like your expert advice in regard to the following:

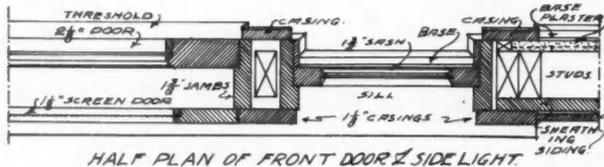
Have some windows, single sash, opening 30 by 25 inches, mitre cut glass, to be hinged at the bottom and to act with weights and chains. Would like to know the best method of frame construction and sash fitting for such a place.

Also have a front door 3 by 7 feet with side lights 14 inches by 7 feet. Is it best to make individual frames or all three frames solid together. What is the best construction for side light frames?

My "Cyclopedia" is worth many times the price paid. It gives me great satisfaction.

R. M. Crosby.

Answer: It would not be possible to balance on weights a window hinged at the bottom. As the window opened out, the center of gravity of the same would, of course, move



farther from the point of support and the weight of the window would be increased in a proportionate ratio. A window of this kind should be hinged at the top rather than at the bottom and should not be balanced at all, but provided with transom lift or other adjuster.

The accompanying drawing is a detail made for your front door with side lights. The entire frame should be made in one piece rather than three separate frames. Jamb should be rabbetted for doors and sash, and stops inserted to secure the sash.

EDITOR.

Which Wood Is Best?

To the Editor:

Milwaukee, Wis.

In your magazine I have never found an article recommending and discouraging the use of different kinds of wood for the different parts of frame dwellings, stating reasons for using or avoiding each.

This would certainly be a valuable and interesting subject for discussion, and I would like to hear from the experienced men of the craft concerning it.

L. S. EDISON.

Corner Post Framing

To the Editor:

Blandinsville, Ill.

In the December number I took special notice of Mr. Geo. H. Rieveley's article, "Good Corner Post for Houses." To this I have an objection. The method shown in this figure will apply only when two of the studs being placed together flatwise will give a combined thickness equal to the width of one of the studs. Now of all the stock that I have ever handled, practically none of it will do this.

For example, take what we call 2 by 4 stock. Now this

material ranges from 1½ to 1¾ inches in thickness and from 3½ to 3¾ inches in width. This makes a difference of from ¼ to ¾ inches between the combined thickness of two of them placed together flatwise and the width of one of them.

The method of making a corner post that I prefer is that of taking what we call a 4 by 6 and spiking what we call a 2 by 4 against one side of it.

ROSCOE F. METCALFE.

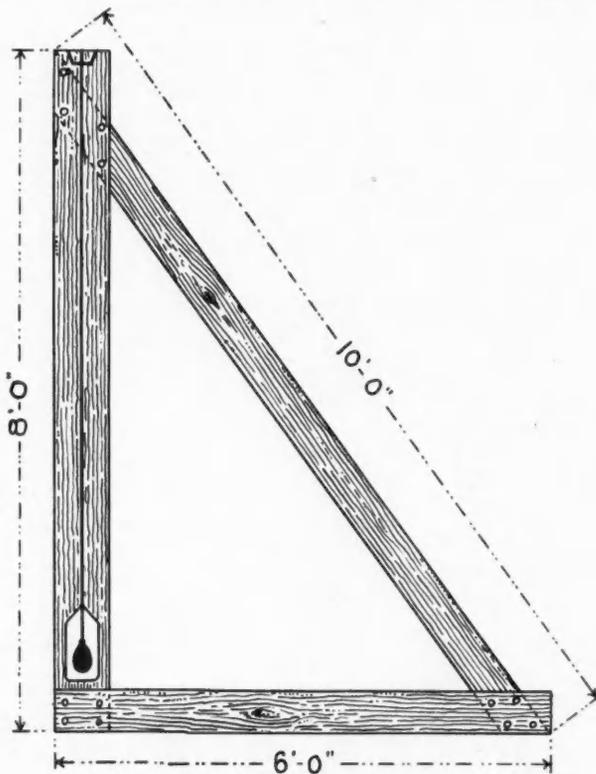


A Leveling Device

To the Editor:

Donaldsonville, La.

I desire to present to the readers of the AMERICAN CARPENTER AND BUILDER a device for leveling without the use of a level. Construct a plumb bob on a straight-edge, 8 feet long, and form a triangle with a 6-foot base and a 10-foot hypothe-



nuse, as shown. This may seem like a foolish suggestion, but I think some of the readers will appreciate it, especially when a level is not at hand.

JAS. W. MONTECINO.

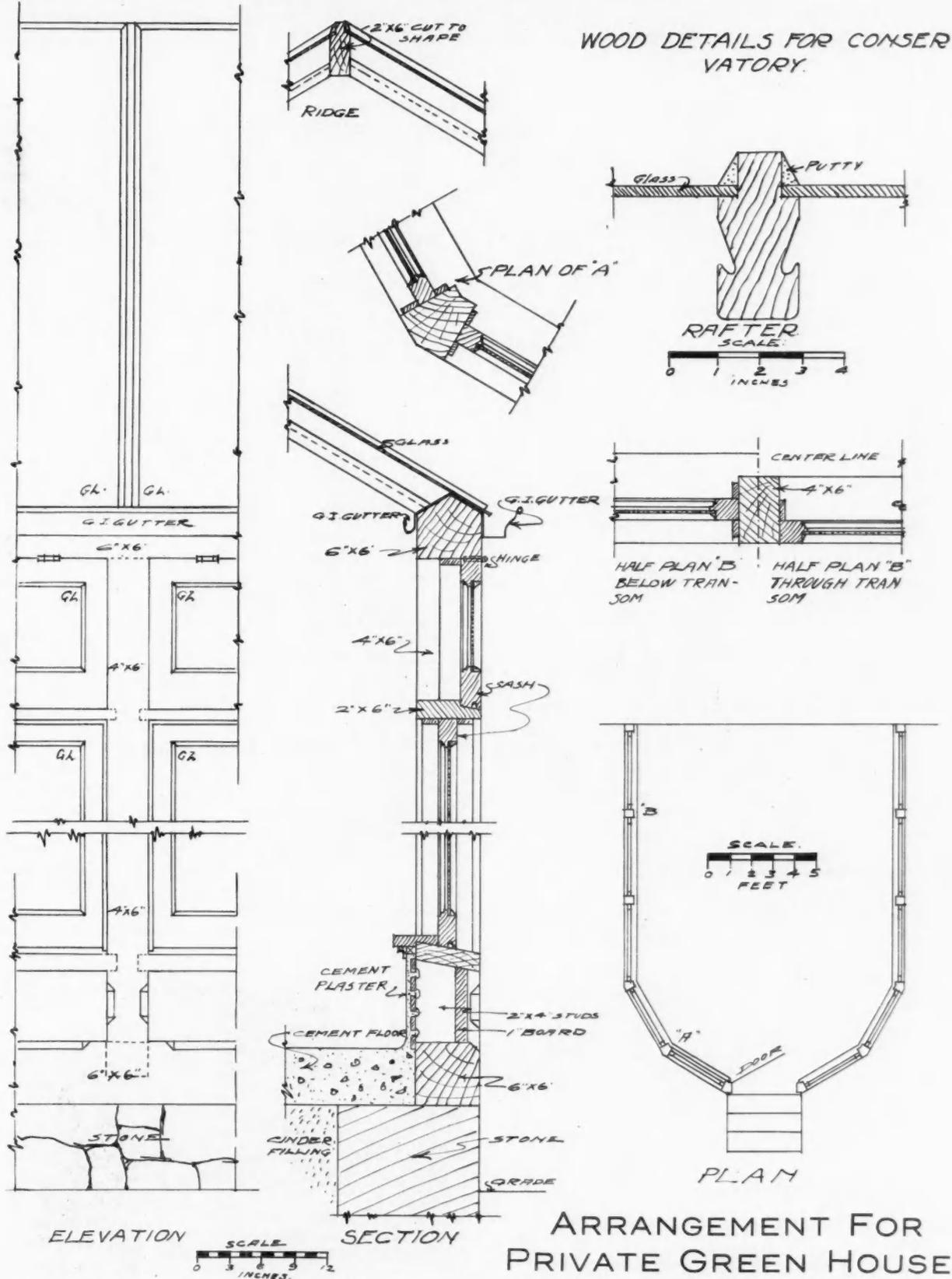


Details for Private Green House

To the Editor:

St. Marys, Pa.

We are enclosing a blue print for a conservatory and as you are giving much valuable information pertaining to the building and construction business of all kinds we would ask you to advise how we can construct this work of wood, and what dimensions of wood will be required? How can we con-



ARRANGEMENT FOR PRIVATE GREEN HOUSE

Answer: The accompanying detail drawings show the proper sizes of all the various parts and their best arrangement for good construction. Cypress is to be recommended for all work of this kind.

EDITOR.

To Stop the Creosote

To the Editor: Fowlerville, Mich.
Tell W. E. S. of West Concord, Minn., to leave the draft

struct the roof from wood and provide a ventilator on each side as shown?

We would also like to have you explain how you would frame for the ventilators in sides so as to open, also how would you fasten the sides together; the roof will be glazed with ribbed skylight glass and the sides with P. P. glass.

This is our first work of this kind, and all the information you will give us will be greatly appreciated.

SCHAUT BROS. MFG. Co.

at the top of stove near the bottom of pipe open night and day. It may take a little more wood, but I think it will help the creosote.

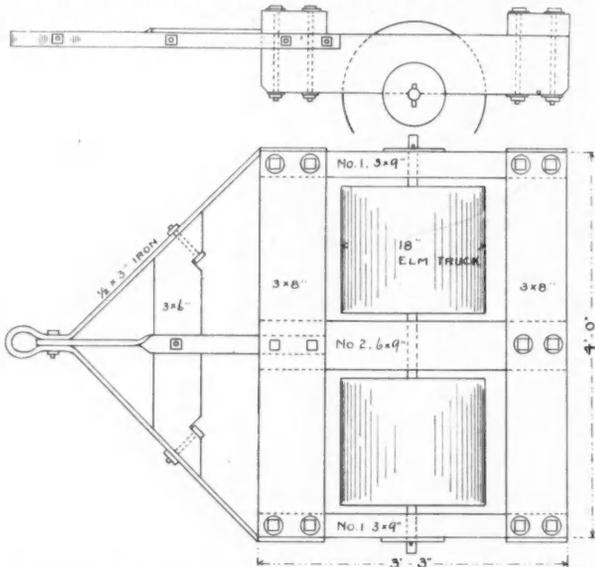
We have a round oak and it has three 7/8-inch holes in the top of stove at bottom of pipe which we leave open all the time. If you should close the damper in pipe the draft should be closed. This winter we have not used the damper in pipe.

I have no remedy for the range unless it would be a brick chimney.

C. H. HILL.

Wants House Moving Outfit

To the Editor: Farley, Iowa.
I am sending you a sketch of a house-moving truck on which I want some information. I would be pleased to have this referred to the readers of the AMERICAN CARPENTER AND



BUILDER. The sketch will show what I have in mind and would like to know whether there is a better plan.

W. W. GLEW.

Transparent Tracing Paper

To the Editor: Oneonta, N. Y.
In your issue of February, 1910, appears an article showing the construction of a blue-printing frame, together with a short description of the method of making ordinary blue prints. We have used a much simpler method of making blue prints, which was suggested to us by a friendly architect.

Make pencil drawings on Imperial linen ledger paper, size 17 by 22 inches. Ink them in with India ink, and when you wish to make the blue prints, moisten a cloth with kerosene oil and rub over your drawing while the same is still on the board. This will make it transparent and as nice a blue print can be made as if tracing cloth were used.

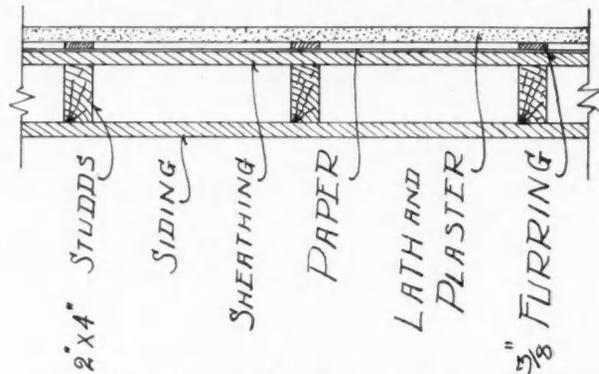
N. H. BRIGGS & SON.

Sheathing on the Inside

To the Editor: Crawford, Neb.
Recently I saw a house under construction and the sheathing was being put on the inside of the studs, for the purpose, I was told, of making it warmer. The boards were stripped up and down with lath and then lathed and plastered. Kindly tell me the advantage, if any.

Answer: Forty to fifty years ago, it was not the custom to sheath the building at all. The people were content to have clapboard siding on the outside and lath and plaster on the inside, which is largely the case with the cheaper class of buildings today. As time went on and a better class of houses were in demand, they began to sheath on the inside and some on both sides and then building paper

came into general use. As this could be used more effectively, and more easily applied, on the outside, custom has, we believe, about settled down to placing the sheathing on the outside. True there are localities where the sheathing is pre-



ferred on the inside, but it can be no better, in fact, not as good, because the bracing is not as effective, and besides it takes more work to put it on. Some claim that the dead air space formed by the stripping has its advantages, but unless the strips are at least an inch thick, so as to leave a clear space back of the mortar clinches, it does not amount to much and even then in most cases, the lost space caused by the stripping would hardly justify it.

Several years ago we were called on to furnish plans for several residences in a distant city. It was the fad then to sheath on the outside and also sheath on the inside with a grooved sheathing (called Byrket's lath) which made a good solid job, but it was a fad. They wanted it because "Pa's house was built that way," and so long as it was all right, we wanted them to have it as they wanted it. See!

A. W. WOODS.

A Well-Built House

To the Editor: Vineland, N. J.
The accompanying is a picture of the residence of Mr. D. W. Sigafo, erected in this place. It was designed by Mr. H. T. Heaton. It is 32 feet wide and 40 feet long; the cellar is 7 feet deep with concrete foundation. The first story is 9 feet in the clear; the second story is 8 feet 6 inches. This house has white-oak floors on first story and comb-grained yellow pine on second floor, and is finished in cypress throughout. The outside walls are, first story Winslow buff



brick, and second story asbestos shingles; the roof is tin. The first floor rooms are: reception hall, 12 feet 6 inches by 15 feet 6 inches; parlors 11 feet 6 inches by 13 feet 6 inches; living-room 14 feet by 17 feet 3 inches; dining-room 12 feet by 12 feet 6 inches; kitchen 11 feet 6 inches by 13 feet; pantry 5 feet 6 inches by 6 feet 6 inches. The second story has six rooms. The building has a hot water heating plant, gas and electric lights.

P. P. ACHENBACH.

Thinks it Contains too Much Red Tape

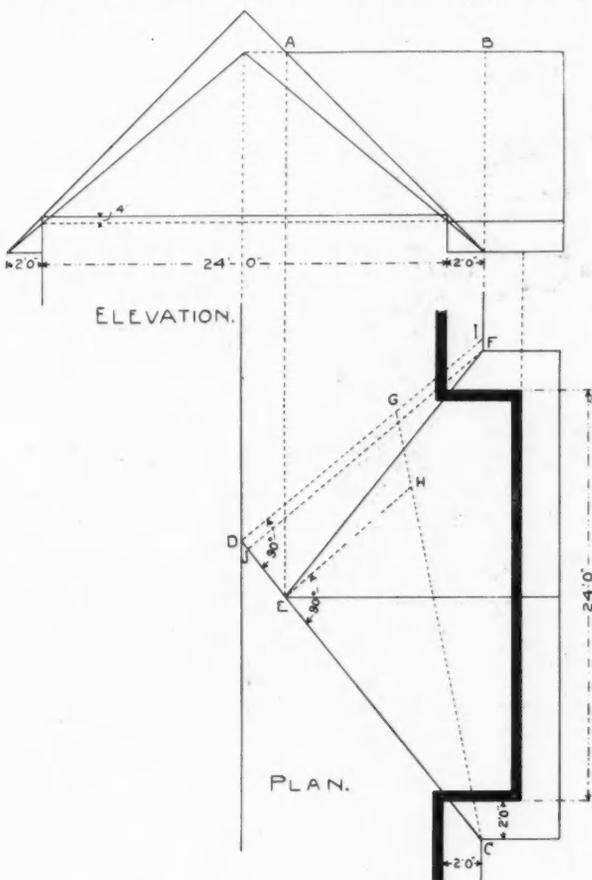
To the Editor:

Upton, Wyo.

What figures on the square give the cuts for the valley rafter when the two pitches are, say one cut on 12 and 10, and the other on 12 and 12 and level at the corner (cornice). Think the answer in the November number contains too much red tape.

B. A. BOOTH.

Answer: In referring to the above number of the magazine, we fail to find a problem of this kind pertaining to



unequal pitches, though the same rule or principle applies in even pitches of which there is an illustration. The joining of unequal pitches is the more difficult, however, because the run of the valleys does not rest at 45 degrees, thereby requiring more care in arriving at the point of intersection of the gable ridge and the main roof. This is more easily found by a diagram, as shown in the illustration.

The upper part of the diagram shows the elevation of the two pitches. Squaring over from the rise of the lower pitch to the intersection of the steeper pitch, as at A, gives the intersection of the ridge and the steeper pitch. A-B will represent the horizontal distance from the intersection to the cornice line of the rafters, from which the reckoning for the layout of the rafters and cuts may be had, as shown in the plan below the elevation. C-D represents the run of the long valley and E-F the same for the short valley. Now, since the long valley rafter must run to the ridge of the steeper pitch, its rise must be equal to that of the steeper pitch, which is at right angles from C-D, as at D-G. Then C-G will represent the length of the long valley and C-H the same for the short valley. The run and rise of either of these rafters will give the seat and plumb cuts. For the side cut to fit against the ridge board, take the length of the valley C-G and D-I on the square and the cut will be found on the side of the square representing the length. The cut of the short valley to rest against the long valley where the pitches are of the same incline is simply a square cut across the back; but

in this case one of the pitches being steeper than the other, the cut will not be square across the back. The parts to take on the square are C-H and E-J and the cut will be on the latter.

This explanation may fail to eliminate the red tape complained of, but as Mr. Booth asks for the figures to use, we have endeavored to give it that way along with the reason why they give the results.

Another point we wish to call attention to, is that this calls for an equal projection of the cornice with a level plancher. To do this, it is necessary that the plate for the steeper pitch to be higher than that for the lower pitch, the difference being governed by the difference in the rise in the two pitches and in the width of the cornice. Also as the valleys must run to the intersection of the cornice, they will not rest directly over the internal corner of the plate but veer to one side, as shown in the plan.

A. W. WOODS.

A Waterproof Glue Wanted

To the Editor:

Stevenson, Ala.

I write to ask you how to make a water-proof glue. I have a violin that does not seem to want to stay no matter what kind of glue I try on it. I would appreciate it if some of the brothers can give me the information.

H. A. CRAWFORD.

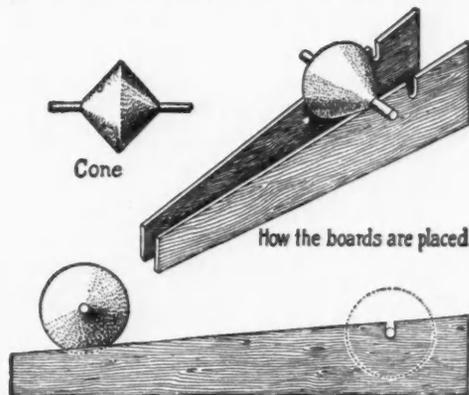
Uphill Rolling Illusion

To the Editor:

New York, N. Y.

In a recent number of one of the popular magazines I noticed an entertaining little illusion, or trick, that can easily be made by anyone having access to a wood-turning lathe. A solid, similar to two cones placed base to base, is accurately turned in a lathe, the sides sloping to an angle of 45 degrees. The spindle can be turned out of the solid at the same time as the cone; or, after turning the cone, drive an iron or wood shaft through the center, making a tight fit.

The boards for the track are made with a sloping edge, on which the cone is to roll. This slope will depend on the diameter of the cone, which can be any size from 3 to 12 inches. The slope should not be too flat, or the cone will not roll, and it should be such that the one end will be higher than the other by a little less than half the diameter of the cone. Thus it will be seen that the diameter of the cone determines the length of the slope of the tracks. A notch should be cut



The Illusion

in the tracks, as indicated, for the shaft to drop into at the end of the course.

The lower end of the tracks are closed until the high edge of the cone rests upon the inside edges of the tracks and the high ends spread sufficiently to take the full width of the cone and to allow the shaft to fall into the notches. When the cone and tracks are viewed from the broad side the deception will be more perfect, and will not be discovered until the construction of the model is seen from all sides. JOHN KNOX.

As They Build 'Em In Kansas

To the Editor:

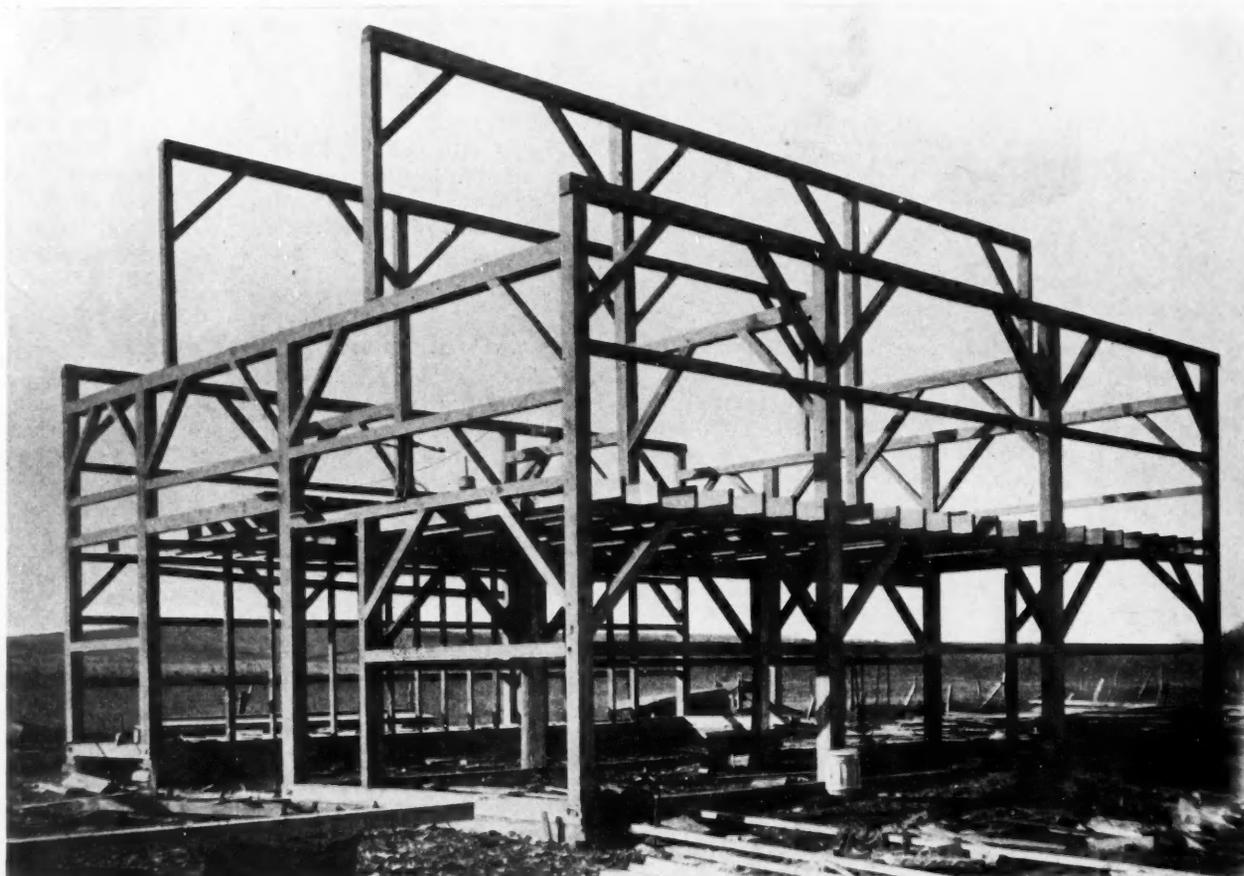
Hamilton, Kan.

I send under separate cover picture of barn frame, as they are built in Greenwood county, Kansas. The picture is of

Do timbers placed in walls of stone work, brick or concrete have a tendency to rot from the effects of the mortar?

GEORGE NOVOTNY.

Answer: We do not believe that the little dampness resulting from contact with mortar would have any effect upon the



frame 30 by 34 feet. It is the smallest barn I have built in 2 years—a total of 12 barns.

M. F. BRASHEAR.

Rafter Lengths by Figures

To the Editor:

Barkerville, N. Y.

After wishing all a merry Christmas, you ask us to be friendly and write occasionally. Although a charter member I have never written before; but I can say I think this the best paper published for the carpenter. I advise all who do not take it to subscribe at once. They can learn something from every issue.

In the correspondence of January, Mr. Robt. F. Hoffpauir asks how to find the length of a common rafter of 1/3 pitch by figures. By your permission I will give the rule.

To the square of the run add the square of the rise and the square root of their sum will be the length sought. To square a number is to multiply it by itself.

Extracting the square root is a simple problem of arithmetic. Nevertheless the practical worker very seldom takes the trouble to figure it out. All the "hand books" contain tables of squares and cubes which he uses instead.

This rule applies to any pitch or odd run, if there is a fraction of a foot in run or rise reduce all to inches.

EDWARD M. BARTON.

Moisture from Masonry

To the Editor:

Browns Valley, Minn.

In house construction we make a box-sill and fill in between the joist, flush with the top, with lime, mortar and stone.

Some builders say this practice is not good, as the timbers absorb moisture from the masonry which tends to rot them.

There is a possibility that in ordinary masonry work the timbers placed in such a manner might be occasionally subjected to dampness through the absorption of moisture by the brick work or masonry during a heavy rain. This condition has been known to result in some cases. A precaution which it would be well to take in such construction where direct connection to the outside face of the wall is obtained would be to place timbers which rest upon the masonry work on a suitable plate of cast iron, leaving a slight air space all around on other sides of the timber.

EDITOR.

What Is Best Way to Raise a Barn?

To the Editor:

Varna, Ill.

I am a reader of your valuable building paper and am very much interested in same. I am sure that it is a great help to all that read it. No one who wants to be a practical mechanic should be without the AMERICAN CARPENTER AND BUILDER.

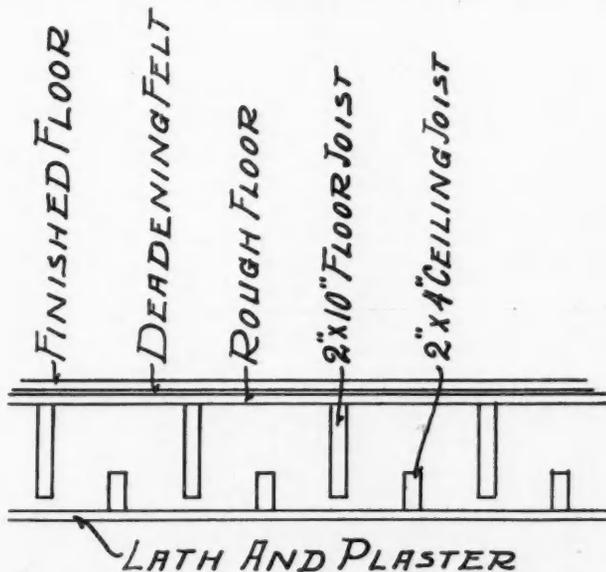
Now if you will allow me a little space, I would like to have someone answer the following questions through the columns of the correspondence department. Which is the best and most practical way to raise heavy timber-framed barns; a frame made out of 8 by 8's for instance? What kind of a derrick or pin pole should be used if one wants to use a team with block and tackle in raising? How heavy rope is required for 8 by 8 frame?

I have raised several, and went at it in several different ways, none of which has been quite satisfactory to me, and I know I can learn some better way through this paper. Will someone kindly give the necessary information?

OLIVER B. EXTROM.

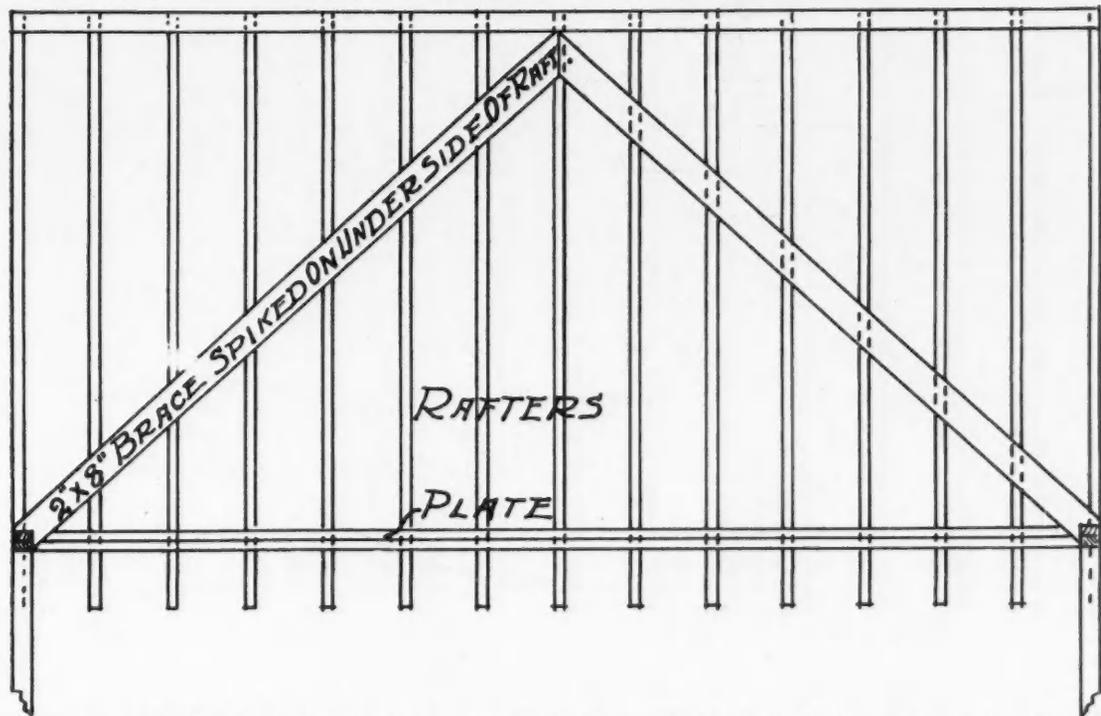
Floor Deadening and Roof Bracing

To the Editor: Rochester, N. Y.
I send a rough sketch of floor showing my way of deadening a floor, by not plastering on the floor timbers. There is



no connection between the floor and the ceiling plaster.
I also send a sketch showing my way of staying up a roof.

THE BRACE WILL KEEP THE RIDGE STRAIGHT AND THE PLATE FROM BULGING OUT



The brace will keep the ridge straight and the plate from bulging out.
A. N. HIETZ.

Good Big Request

To the Editor: Howbert, Colo.
What I wish to be printed in the AMERICAN CARPENTER AND BUILDER is: How to build a wind-mill tower and how to erect same and all about it. Also a tank on a tower all of wood, same as in windmill.
How to make a headgate for irrigation ditch, also a flume.
How to make or frame a penstock for water wheel.
How to make or build bridges of various kinds for country roads.

How to make or build wagon bodies. And bodies similar to a trolley car used in cities.
How to frame for green houses.
How to build a silo.
How to make a dam, with heavy lumber.
How to make a pile driver frame.
How to make an elevator used in buildings, (freight and passenger).
How to frame for heavy mill work similar to flour mill.
The above, you well know, some carpenters are called on to do.
I am called on to erect a windmill, 40 feet high, all of wood, with 4 by 4-inch corner posts, and am at a loss to know how to go about it. Have no directions to follow.
I have set up a pair of wagon scales and it requires skill on the part of the carpenter who is putting them up.
I am liable to be called on to do all the above that I have mentioned.
In writing on the subject, it should be well illustrated with scale drawings. This would be of interest to your readers; and it would be well if the readers would help out on the subjects.
D. J. DADRILL.

To Retard Setting of Plaster

To the Editor: Malad City, Idaho.
Will you kindly send me receipt for formula to keep cement

plaster from setting too quickly while being put upon the walls?
J. H. EVANS.

Answer: Mix as wet as possible to handle; but cracks are liable to occur with too wet a mixture.
The addition of a little lime paste will retard setting somewhat, but weakens the strength of the mortar.
The addition of salt in the amount of about 10 per cent the weight of water used, will not only prevent mortar from freezing, but will cause it to set more slowly.
Another method sometimes used is to allow the mortar to stand in the box for a couple of hours and then use. This form of mixing will cause the setting to be slower, but the adhesive strength is lessened.
EDITOR.

How to Lay Out the Stairs

To the Editor:

Des Moines, Ia.

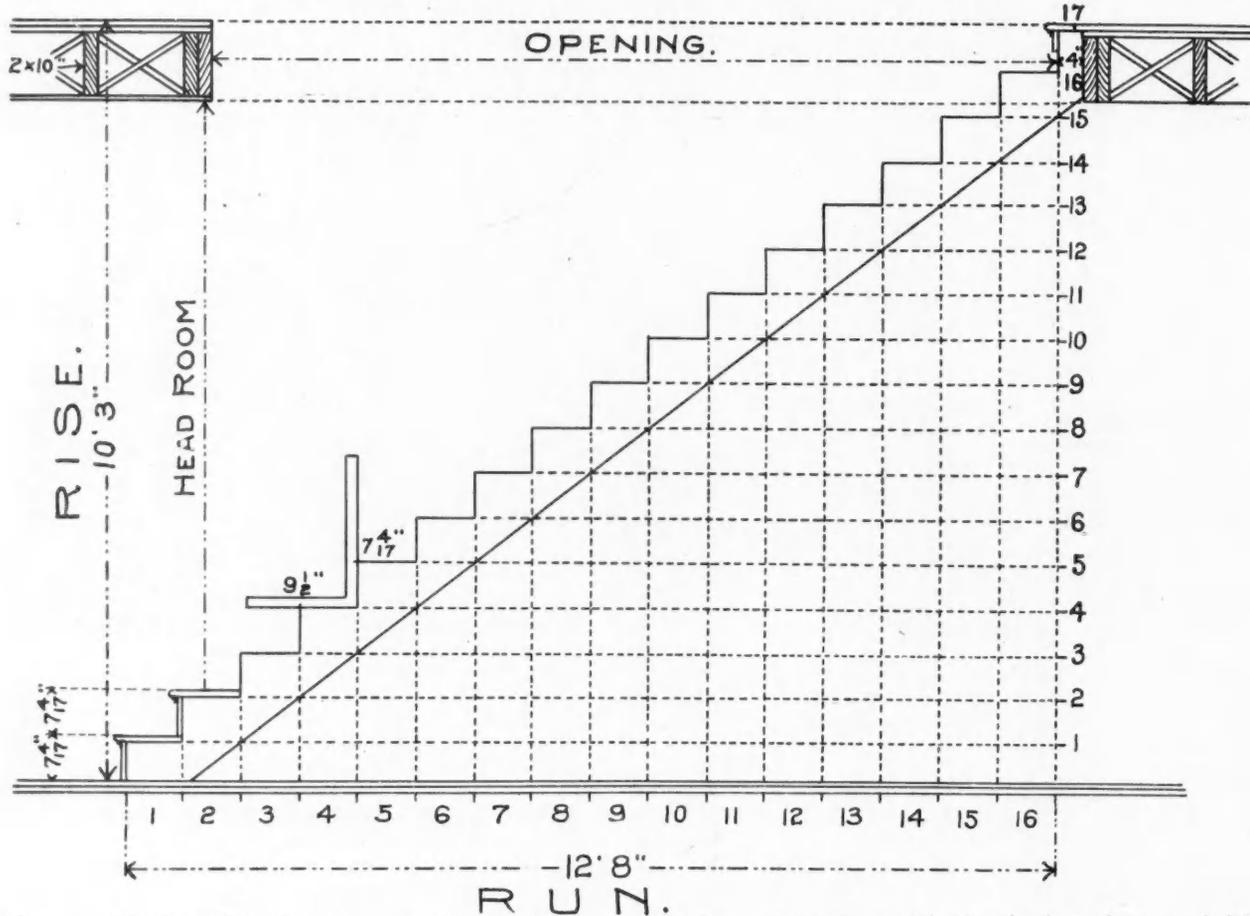
Will you please republish the method you presented about two years ago explaining how to lay out a common flight of stairs, giving head room and the horizontal stretch required for the stairs.
C. E. PARTCH.

Answer: Stair building is a branch of carpentry that is well-nigh in a class to itself. In the larger cities there are men who make a specialty of stair building, from the plain, straight run to the more complicated platform and winding stairs. It is the latter class of work that taxes the ingenuity of the men to work out the railings, newels, etc., so as to rest in the proper planes with the pitch given the stairs. To successfully do this, requires one well up in detail drafting and

ially is this true in making the allowance for the proper head room—the house practically finished, even to the plastering. The finished stairs are usually left until the last, and then it is found that there is not sufficient head room. In many cases it is allowed to go, to be forever regretted. We have known cases where it was absolutely necessary to make a change, and usually an expensive one, because it meant the taking out of partitions, and the cutting of principal joist, which necessarily weakens the structure, since others could not be substituted in as substantial a way without removing floors and plaster. Naturally this resulted in a patched job at the best.

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

Lay out the stairs first, allowing ample space, and plan the rooms accordingly. The accompanying illustration shows a



with a practical knowledge in geometry to lay out the turns and easements on the rough timbers, so as to be able to work them out in the finished product.

However, we take it that it was not the intention of the questioner to enter into the winding stair problems, and we are glad to steer clear of such work, because the old-fashioned winding stairs, with their ever winding rail, is no longer considered from an architectural standpoint to lend to the beauty of the interior of the house, saying nothing of the added expense that must necessarily follow in the construction of circular stair work. Of course, there are times when winding stairs conform to certain space better than those with square turns, but even then in most cases it would be better to allow the room for a good easy stair with square turns and make the rooms and hallways conform to it.

How often have we seen, and in fact it is a common mistake, crowded stairways, unevenness in the width of treads and the height of risers, low head room, etc., all because of a lack of proper calculation in laying out the frame work. Oftentimes, the work is allowed to progress to a point where it is hard to make changes to allow for ample space. Espec-

straight run of stairs, and is the simplest of any to build. Here the starting point to the level of the floors above is 10 feet 3 inches or 123 inches; and as there are 17 risers, this makes 7 4/17 inches to each rise. Now as the treads are one less than the risers, we multiply 16 in this case, by the desired width of the tread (9 1/2 inches) and we have 152 inches, or 12 feet 8 inches in the run of the stairs.

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

rises make up the desired head room. In this example all but two steps are so used, so we deduct the height of two risers, which is practically 1 foot 2½ inches, from 9 feet and ½ inch, the room height, leaves 7 feet 10 inches, or safe head room, above the second riser. It is safe then to place the trimmer above, a little further forward, as shown in the illustration. It must be remembered when the well-hole is lathed and plastered it still reduces the height accordingly.

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

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

Now look in the next column to the left. In this, the risers are 7⅝ inches, and for 17 risers, the total is found to be 10 feet 5⅜ inches, which is just ⅛-inch short. Thus the risers will be 7⅝ inches plus 1/17 of ⅛-inch.

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

STAIR TREADS AND RISERS.

NUMBER OF RISERS	RISE OR RUN.																	
	6½	6¾	7	7⅛	7¼	7⅝	7¾	8	8¼	8½	9	9½	10	10½	11			
1	6½	6¾	7	7⅛	7¼	7⅝	7¾	8	8¼	8½	9	9½	10	10½	11			
2	1'1	1'1½	1'2	1'2¼	1'2½	1'2¾	1'3	1'3¼	1'3½	1'3¾	1'4	1'4½	1'5	1'6	1'7	1'8	1'9	1'10
3	1'7½	1'8¼	1'9	1'9¾	1'9¾	1'10½	1'10½	1'10¾	1'11¼	1'11½	2'0	2'0¾	2'1½	2'3	2'4½	2'6	2'7½	2'9
4	2'2	2'3	2'4	2'4½	2'5	2'5½	2'6	2'6½	2'7	2'7½	2'8	2'9	2'10	3'0	3'2	3'4	3'6	3'8
5	2'8½	2'9¾	2'11	2'11½	3'0¼	3'0¾	3'1½	3'2½	3'2¾	3'3¾	3'4	3'5¼	3'6½	3'9	3'11½	4'2	4'4½	4'7
6	3'3	3'4½	3'6	3'6¾	3'7½	3'8¼	3'9	3'9¾	3'10½	3'11¼	4'0	4'1½	4'3	4'6	4'9	5'0	5'3	5'6
7	3'9½	3'11¼	4'1	4'1¾	4'2¾	4'3¾	4'4½	4'5¾	4'6¼	4'7½	4'8	4'9¾	4'11½	5'3	5'6½	5'10	6'1½	6'5
8	4'4	4'6	4'8	4'9	4'10	4'11	5'0	5'1	5'2	5'3	5'4	5'6	5'8	6'0	6'4	6'8	7'0	7'4
9	4'10½	5'0¾	5'3	5'4½	5'5¼	5'6¾	5'7½	5'8¾	5'9¾	5'10¾	6'0	6'2¼	6'4½	6'9	7'1½	7'6	7'10½	8'3
10	5'5	5'7½	5'10	5'11¼	6'0½	6'1¾	6'3	6'4¼	6'5½	6'6¾	6'8	6'10½	7'1	7'6	7'11	8'4	8'9	9'2
11	5'11½	6'2¼	6'5	6'6¾	6'7¾	6'9¾	6'10½	6'11¾	7'1¼	7'2¾	7'4	7'6¾	7'9½	8'3	8'8½	9'2	9'7½	10'1
12	6'6	6'9	7'0	7'1½	7'3	7'4½	7'6	7'7½	7'9	7'10½	8'0	8'3	8'6	9'0	9'6	10'0	10'6	11'0
13	7'0½	7'3¾	7'7	7'8¾	7'10¼	7'11¾	8'1½	8'3¾	8'4¾	8'6¾	8'8	8'11¼	9'2½	9'9	10'3½	10'10	11'4½	11'1
14	7'7	7'10½	8'2	8'3¾	8'5½	8'7¼	8'9	8'10¾	9'0½	9'2¼	9'4	9'7½	9'11	10'6	11'1	11'8	12'3	12'10
15	8'1½	8'5¼	8'9	8'10¾	9'0¾	9'2¾	9'4½	9'6¾	9'8¼	9'10½	10'0	10'3¾	10'7½	11'3	11'10½	12'6	13'1½	13'9
16	8'8	9'0	9'4	9'6	9'8	9'10	10'0	10'2	10'4	10'6	10'8	11'0	11'4	12'0	12'8	13'4	14'0	14'8
17	9'2½	9'6¾	9'11	10'1½	10'3¼	10'5¾	10'7½	10'9¾	10'11¼	11'1½	11'4	11'8¼	12'0½	12'9	13'5½	14'2	14'10½	15'7
18	9'9	10'1½	10'6	10'8¼	10'10½	11'0¾	11'3	11'5¼	11'7½	11'9¾	12'0	12'4½	12'9	13'6	14'3	15'0	15'9	16'6
19	10'3½	10'8¼	11'1	11'3¾	11'5¾	11'8½	11'10½	12'0¾	12'3¼	12'5¾	12'8	13'0¾	13'5½	14'3	15'0½	15'10	16'7½	17'5
20	10'10	11'3	11'8	11'10½	12'1	12'3½	12'6	12'8½	12'11	13'1½	13'4	13'9	14'2	15'0	15'10	16'8	17'6	18'4
21	11'4½	11'9¾	12'3	12'5¾	12'8¼	12'10¾	13'1½	13'4½	13'6¾	13'9¾	14'0	14'5¼	14'10½	15'9	16'7½	17'6	18'4½	19'3
22	11'11	12'4½	12'10	13'0¾	13'3½	13'6¼	13'9	13'11¼	14'2½	14'5¼	14'8	15'1½	15'7	16'6	17'5	18'4	19'3	20'2
23	12'5½	12'11¼	13'5	13'7¾	13'10¾	14'1½	14'4½	14'7¾	14'10¼	15'1½	15'4	15'9¾	16'3½	17'3	18'2½	19'2	20'1½	21'1
24	13'0	13'6	14'0	14'3	14'6	14'9	15'0	15'3	15'6	15'9	16'0	16'6	17'0	18'0	19'0	20'0	21'0	22'0
25	13'6½	14'0¾	14'7	14'10½	15'1¼	15'4¾	15'7½	15'10½	16'1¾	16'4¾	16'8	17'2¼	17'8½	18'9	19'9½	20'10	21'10½	22'11
26	14'1	14'7½	15'2	15'5¼	15'8½	15'11¾	16'3	16'6¼	16'9½	17'0¾	17'4	17'10½	18'5	19'6	20'7	21'8	22'9	23'10
27	14'7½	15'2¼	15'9	16'0¾	16'3¾	16'7½	16'10½	17'1½	17'5¼	17'8½	18'0	18'6¾	19'1½	20'3	21'4½	22'6	23'7½	24'9

mathematical problem that usually runs into fractions which are hard to figure.

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

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

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

it will be found that the run will be 12 feet. If the treads are 9½ inches wide then the run will be 12 feet 8 inches, and so on for any desired width of tread. Usually there is some leaway in the run, that is, it is not confined to a certain space like the rise from floor to floor. Therefore, a few inches in the run of a straight flight of stairs does not usually make any difference, making it possible to leave it to the builder to select the width of tread desired. When this cannot be done, then the allotted space must be arrived at in the same manner as that given in the above for the risers. But after all, it should be remembered that while the measurements can be accurately found by the aid of this table, its greatest utility is as a quick reckoner, as we said before, in laying out the space and proper openings for the finished stair work. In that case it is not necessary to calculate down to the minuteness required in the actual building of the stairs.

A. W. Woods.

How to Frame Hewn Timbers

To the Editor:

Highland, Mich.

I have been a reader of the AMERICAN CARPENTER AND BUILDER for about three years and have read therein many good things pertaining to nearly all branches of carpentry, but as yet I have not seen anything about marking or laying

face side of the stick, unless it is being worked from lines, in which case there may be boxing on both sides.

Fig. 2 shows my method of laying out the framing on square timbers, the witness marks showing the parts to be cut away.

Fig. 3 shows the framing done and also the way to mark the tenon for draw boring. Timber framing is interesting work

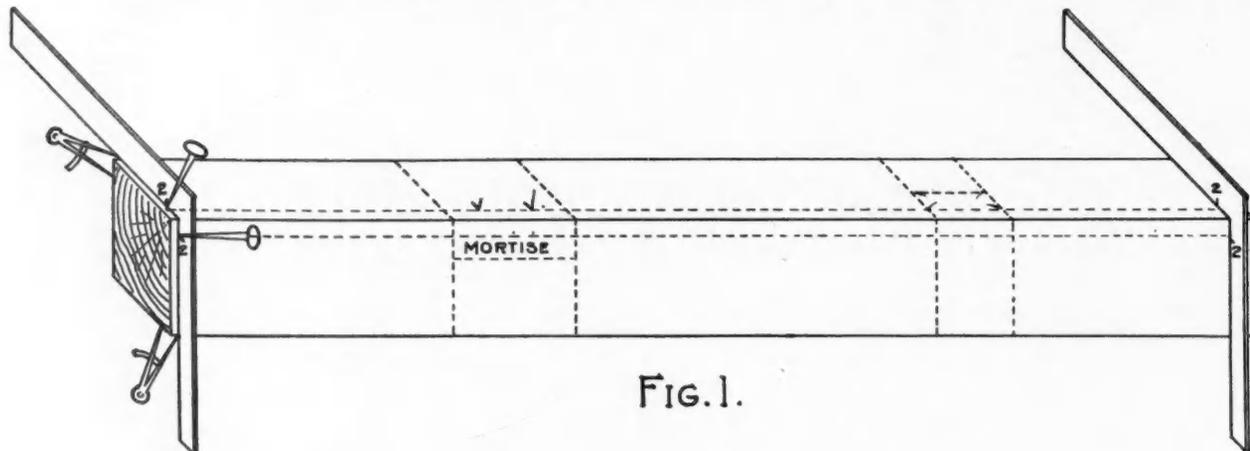


FIG. 1.

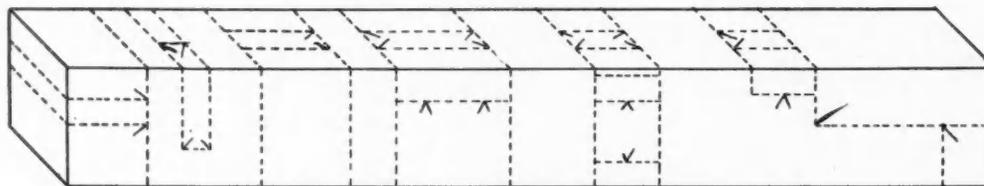


FIG. 2.

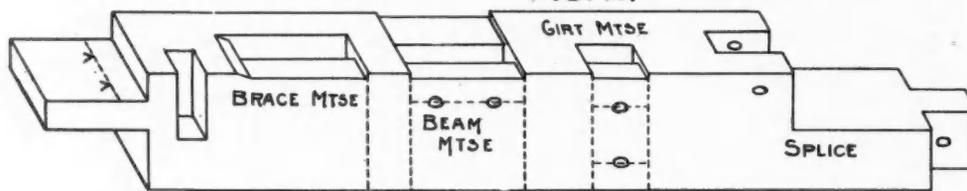


FIG. 3.



out timbers for framing. I think there must be lots of carpenters who have not had experience in timber framing and would like to learn something about it.

Before sawmills became general, timbers for heavy frames were hewn, and because of their rough and uneven condition, it was not possible to mark them for the framing until they were "taken out of wind" and lined. Taking a stick out of wind was done by placing a square on each end, as in Fig. 1, and sighting across the tops of them from one to the other. If they were not in line, they were made so by furring up one end of a square with a chip, or by adzing off the ends of the stick a little. Next after the two squares were lined up, marks were made at 2 inches on the inside of both the blade and tongue of each square, then with dividers set off 2 inches on the other two sides of the stick were marked from the inside of the squares (see Fig. 1). Lines were then struck from the marks on one end to the corresponding marks on the other, and all the laying out was done from these lines. With straight and square-sawed timbers it is not necessary to go to all this trouble, but it often happens that we are obliged to use a crooked or twisted stick, and in order to get the framing straight and square, we "take it out of wind." As rough timbers are not exactly uniform in size we have to box them down, and this boxing, or sizing, is always opposite the

and I have wondered why some of the able writers have not given us more along this line, as I am sure it would be instructive to a good many carpenters. ALBERT GONNE.

Wants Incubator Plans

To the Editor:

Boise, Idaho.

Am a recent subscriber to your unexcelled paper and would like to see published a complete set of drawings and specifications for an incubator and brooder, also a wall bed.

ARTHUR WITHERS.

Plans for Grand Stand

To the Editor:

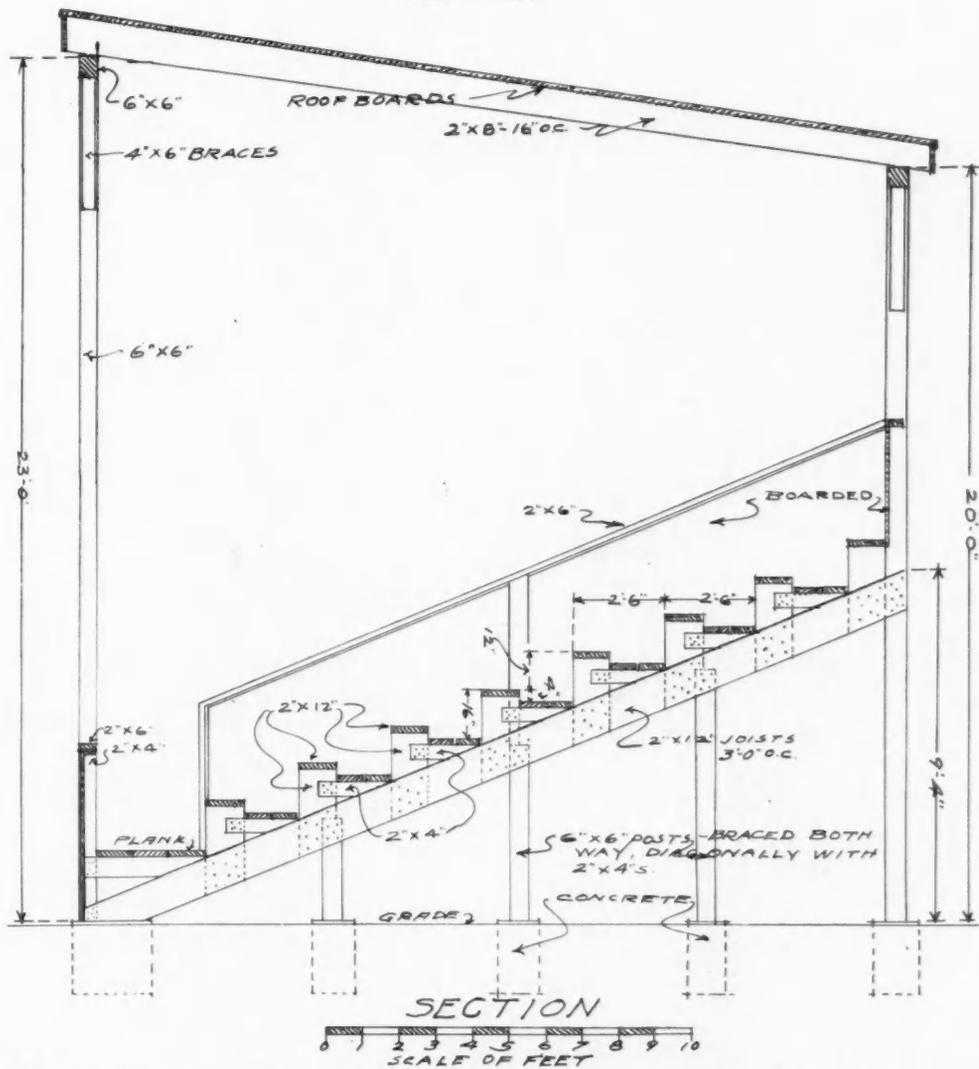
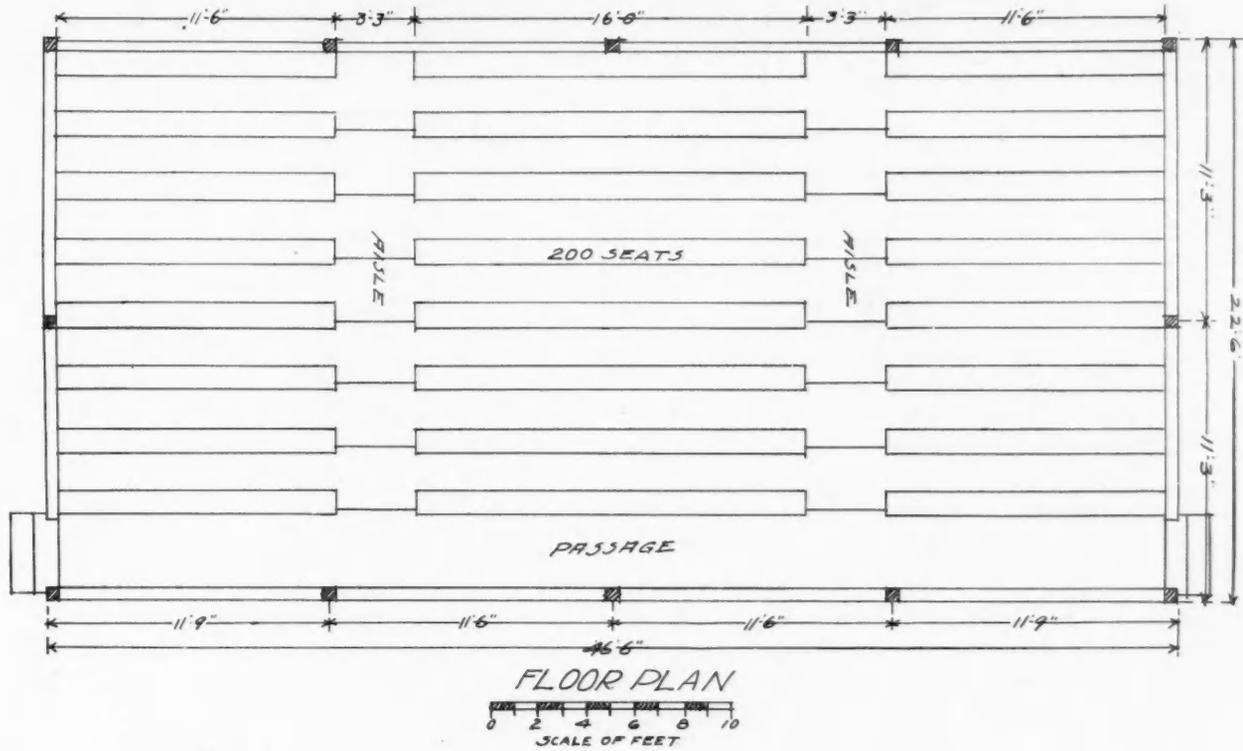
Columbia Falls, Mont.

I would like to get your idea of how to build a grand stand for a base ball ground, to seat two hundred people handily; to be neat in appearance and not very expensive.

Would like to see the plan and elevation. The front of the stand to be covered with wire netting.

LOUIS ELWIG.

Answer: The accompanying drawings show an arrangement that should answer very well. It is about as cheap as such a structure can be made, yet is strong and of good appearance. EDITOR.



WORKING PLANS OF SMALL GRAND STAND

Valuable Table for Right Triangles

To the Editor: Pottsville, Pa.

Although I am not a house carpenter, nor am I on your subscription list, yet I get the AMERICAN CARPENTER AND BUILDER regularly from a local dealer, and enjoy reading the articles it contains and derive much benefit from it: Hand-spike, etc.

I do woodwork, however; am a templet maker. In your September number I have seen that Mr. H. E. Clare inquires concerning length of hypotenuse of right-angle triangles.

I enclose a table which might interest him, containing length of hypotenuse and rise; for bevels from 1/4 to 12 inches, on one foot as a base.

Using any length base, multiply by figures in second column to get rise.

Or multiply by figures in fourth column to get the hypotenuse (of course using the figures corresponding to the given bevel).

The third column contains degrees and minutes equivalent to the corresponding bevels in the first column. This part is supplementary to your article on the steel square in your October number.

Inches rise to Foot run	Multiplier for rise	Pitch by Degrees	Multiplier for Hypothenuse	Inches rise to Foot run	Multiplier for rise	Pitch by Degrees	Multiplier for Hypothenuse
1/4	.0208	1° 12'	1.00022	6 1/4	.5208	27° 31'	1.12755
1/2	.0417	2° 23'	1.00087	6 1/2	.5417	28° 27'	1.13730
3/4	.0625	3° 35'	1.00196	6 3/4	.5625	29° 21'	1.14726
1	.0833	4° 46'	1.00346	7	.5833	30° 16'	1.15783
1 1/4	.1042	5° 57'	1.00542	7 1/4	.6042	31° 9'	1.16847
1 1/2	.1250	7° 8'	1.00780	7 1/2	.6250	32° 1'	1.17940
1 3/4	.1458	8° 18'	1.01058	7 3/4	.6458	32° 51'	1.19034
2	.1667	9° 28'	1.01381	8	.6667	33° 42'	1.20198
2 1/4	.1875	10° 37'	1.01742	8 1/4	.6875	34° 31'	1.21365
2 1/2	.2083	11° 46'	1.02147	8 1/2	.7083	35° 19'	1.22554
2 3/4	.2292	12° 55'	1.02595	8 3/4	.7292	36° 6'	1.23767
3	.2500	14° 2'	1.03085	9	.7500	36° 53'	1.25020
3 1/4	.2708	15° 9'	1.03601	9 1/4	.7708	37° 37'	1.26244
3 1/2	.2917	16° 16'	1.04171	9 1/2	.7917	38° 22'	1.27542
3 3/4	.3125	17° 21'	1.04767	9 3/4	.8125	39° 6'	1.28862
4	.3333	18° 26'	1.05408	10	.8333	39° 48'	1.30141
4 1/4	.3542	19° 30'	1.06085	10 1/4	.8542	40° 30'	1.31509
4 1/2	.3750	20° 34'	1.06807	10 1/2	.8750	41° 11'	1.32872
4 3/4	.3958	21° 36'	1.07552	10 3/4	.8958	41° 51'	1.34247
5	.4167	22° 37'	1.08330	11	.9167	42° 31'	1.35670
5 1/4	.4375	23° 38'	1.09154	11 1/4	.9375	43° 9'	1.37067
5 1/2	.4583	24° 38'	1.10011	11 1/2	.9583	43° 47'	1.38508
5 3/4	.4792	25° 36'	1.10885	11 3/4	.9792	44° 24'	1.39964
6	.5000	26° 34'	1.11805	12	1.0000	45°	1.41421

This table I have gotten up and have used it myself for some time, finding it very convenient in figuring out the dimensions of steel roof trusses, etc.

After getting accustomed to it, it is easier and shorter to use than figuring out the "sum of the squares" every time.

Anyone who understands decimals can use this table.

LEWIS I. BAST.

Questions Concerning Staging

To the Editor: Spokane, Wash.

I also wish to say a word about the AMERICAN CARPENTER AND BUILDER. I take a very great interest in it, am a charter member, and have them all from the first number to the last, and I would not like to part with them. I often refer to them for ideas and proofs. I like the indexing, especially of the last volume, as in it I can find what I am looking for without going through them. I also note that the mechanical work on them is being done better, my last twelve or more numbers have come this long distance with the covers in fine shape, and one would think by looking at them on my table, that they were printed and bound nearby, not in Chicago. I read them from cover to cover.

The last number was a good one; I liked the new detail department. I also like the letters from the fraternity, especially the ones of practical use. But, let the cows and the

ropes and the timber balancing have their space, as we must have some spice!

I would like to see something about staging, building of same, strength, etc., breakage of same, accidents, causes, prevention, etc. My experience is that it takes a very good mechanic to properly build staging, and many have very little idea how to do it. I would like to hear from the brothers on this subject.

J. V. LEYDIG.

Wants Heavy Timber Estimating

To the Editor: Lawrence, Ind.

I have seen and read several articles in AMERICAN CARPENTER AND BUILDER on estimating cost of house construction but I have never seen anything on the estimating of heavy timber barn framing and building. Will you or some of the readers of AMERICAN CARPENTER AND BUILDER give us some practical way of estimating such work?

C. C. LYLE.

How to Fix the Floor

To the Editor: Meadville, Pa.

I have been a reader of your magazine for some time. It is all right. With your permission I will say a word in answer to the inquiry of Louis H. Doyle in the January number regarding the warping of floor in the school building of which he speaks.

The trouble with the floor is quite common under similar circumstances, and you will never be able to put it in good condition, though it can be made, by considerable hard work, so that it can be used.

You find your floor in its present condition, of course. Now for the cause, as no conditions exists without a cause. The cause of your floor curling, as it is called among some of the older of us belonging to the craft, is this:

Your concrete floor is built upon the ground, with joists imbedded to lay a wood floor upon. These joists are brought even or nearly so with the top of the concrete floor, with scarcely any air space between the wood floor and the top of the concrete, with no provision for ventilation whatever.

Now, as every man of experience with concrete and wood floors in basements knows, the concrete constantly absorbs dampness from the earth below, and the wood floor absorbs dampness from the concrete, which causes the boards to expand on the under side and curl up at the joints, leaving unsightly cracks and a very uneven floor. Your flooring, to begin with, is entirely too wide, 4 inches you say. It should not have been over 2-inch face at most and 1 1/2-inch face would have been much better. You may ask what difference that could make. Well, the difference is this. In laying 1 1/2 or 2-inch flooring you are able to get from 2 to 4 times as many nails in as you can get in 4-inch flooring, and in building floors of the kind you speak of your joists should be at least 2 1/2-inch face and not over 16 inches on centers, and double nailed in every joist. Then, if your flooring is very narrow you will have a much better chance of holding it down.

However, upon the whole, a basement floor built in this way is very unsatisfactory, as the constant absorption of dampness soon rots the wood floor and joists. I know one in this city that did not last 3 years, and there are others that will rot in about the same length of time. Concrete and wooden combination floors are all right for first or second floors, but no good for basements, and not very good for first floors unless there is furnaces or other heating apparatus in the basement.

Now, how to fix your floor, lest I forget to tell you how I would do it. Plane your floor down to as good a surface as possible. Fill the cracks with some good crack filler. Then scrape and sandpaper to make a surface. This is all that you can do with it, but it will not last long at best, as it will soon rot.

J. R. KIGHTLINGER.

Cuts for Gambrel Roof Rafters

To the Editor:

Mandan, N. D.

I have a book on the "Steel Square" but I find nothing in it pertaining to what we call elbow rafters, or a rafter with two pitches. Can you give me the correct and proper way to lay them off with the square. If so, let me hear from you.

CHARLES CESSNA.

Answer: The kind of roof referred to is what is known among builders as a gambrel roof, and the length of the rafters is found exactly in the same way as if the two pitches were reckoned individually, as for separate roofs. The only thing unusual is the cut at the junction or joining of the two rafters. This should be at the bisecting line of the angle, and is more easily found by laying out a diagram than by trying to reckon it on the square alone.

As to the shape of the roof, that is largely a matter of taste. Probably as good a proportion as any is shown in the accompanying illustration. In this, the pitches are 60 and 30 degrees and the knuckle is at the halfway place. The pitches can be had with one set of figures on the square, as 12 and 20 19/24 or 12 and 6 15/16. Either of these will give the seat and plumb cuts. The angle of the cut at the knuckle is at 75 degrees,

had anything to do with before were tinned, and so I am at a loss with the shingle proposition on bell roofs.

J. A. KUSTER.

Answer: We know of no effective way of shingling the ovolo of the bell without nailing through the exposed part of the shingles near their butts to keep them from gaping. This of course injures the life of the roof, but if zinc nails are used for the exposed parts and the shingles are dipped in hot linseed oil before putting on, and then given a good coat of paint, their lasting qualities may be quite as long if not longer than those not so treated for an even plane roof. A. W. Woods.

Estimating Terms Explained

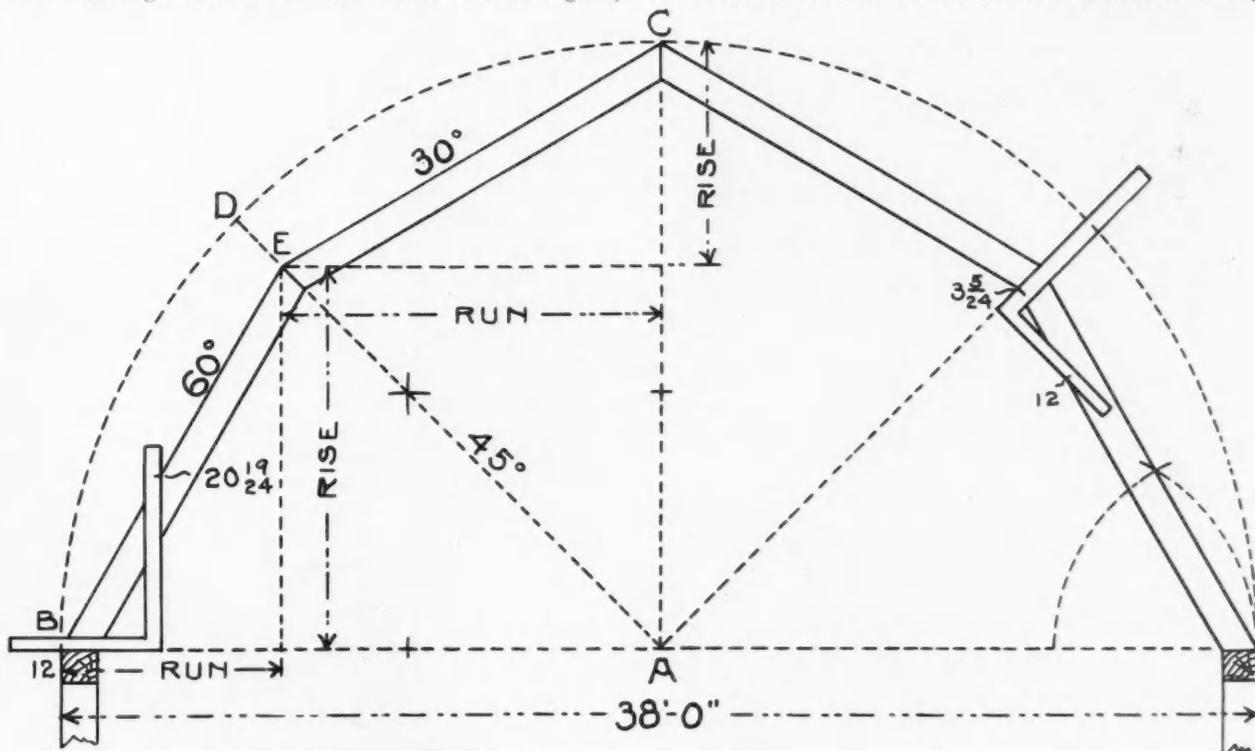
To the Editor:

Burlington, Vt.

In a new book on estimating that I have there are several terms used that I do not understand, although they seem to be in common use. They are "lump sum," "unit price," "cost plus a fixed sum" and "cost plus a percentage." Now what is a unit price and what are these unit quantities?

W. W. LAMOUREUX.

Answer: A *unit* is simply the fundamental quantity or dimension on which an estimate of cost is calculated. It may



which is the same as 12 and 3 5/24 on the square; the cut being on the latter.

A roof of this proportion can very easily be laid out with the compass alone, as shown by the bisecting arcs and the lengths and cuts may be found by scale and level.

A. W. Woods.

How to Shingle a Bell Roof

To the Editor:

Plymouth, Wis.

I am a charter member to the AMERICAN CARPENTER AND BUILDER and read it with great interest, especially the correspondence department. In your December number, the question of how to lay out a hip for a bell roof is asked and the answer is correct as far as laying out the rafters. But how is a bell roof shingled? I have a plan before me now which has a bell roof dormer. The detail shows the cornice with several courses of shingles in the hollow of the roof. But when you get up to where the curve turns the other way, how is it possible to make a shingle lie down? All the bell roofs I ever

be a cubic yard, a square foot, a bushel, a gallon, a pound, a ton, or any other single definite quantity, and the unit price is simply the price per unit. For example, if a man contracts to do the excavation work of a basement 10 yards wide, 20 yards long, 4 yards deep, the number of cubic yards that he would have to remove would be 10 times 20 times 4, equals 800 cubic yards; and in this case, if he agreed to do the work at so much per cubic yard, then the cubic yard would be the unit, and the price at which he would excavate one cubic yard would be the unit price. But, if on the other hand, he should say: "I will do the whole job for a certain figure," then the contract would not be a unit price contract but a *lump sum* contract, the parties naming an amount to be paid for the job as a whole. But again the man might say: "I will go ahead and do this work for you and charge you just \$100 in addition to the actual cost." In that case you would have a *cost plus a fixed sum* contract. And again, if he should say: "I will charge you for the job only 15 per cent above its actual cost to me," you would then have a *cost plus percentage* form of contract.

EDITOR.

One Machine

The "Famous" Uni

COMBINES THE FOLLOWING TWELVE WOODWORKING MACHINES IN ONE

- | | |
|---|--------------------------------|
| 1—A 12-inch Jointer | 6—Pony Planer |
| 2—Saw Table with Saw Arbor that may be raised and lowered | 7—Power Feed Sander |
| 3—Two-side Power Feed Molder and Edger | 8—Boring Machine |
| 4—Band Saw | 9—Hollow Chisel Mortiser |
| 5—Complete Single Spindle Shaper | 10—Standard Single End Tenoner |
| | 11—Emery Grinder |
| | 12—Disc Sander |

The cut below shows the Universal Wood Worker being operated as the **Disc Sander**. With this arrangement you can do all kinds of circle or odd sanding which cannot be done with the sand drum.

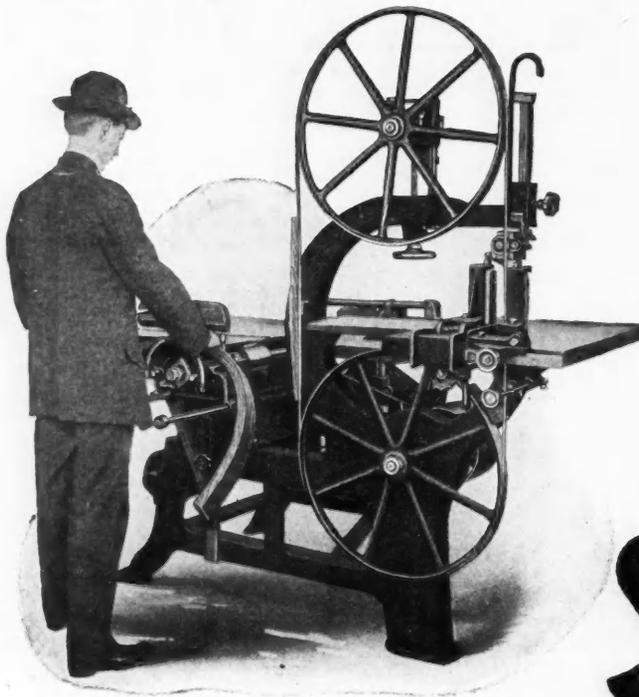
This Disc Sander fits right on the spindle on the boring attachment, and can be put on and taken off without any trouble whatever. It is so arranged that the user can recover same with very little trouble.



Disc Sander

The cut below shows our new **Resawing Attachment** arranged so you can resaw boards up to twelve inches wide. This is a great saving in lumber, and the attachment can be taken off and placed on the machine very easily.

The same cut shows the Universal Wood Worker being operated as the **felloe or rim rounder**. This attachment sets right on the boring attachment shaft, and can be put on and taken off within a half minute's time. You can round felloes or rims of all sizes and any circle.

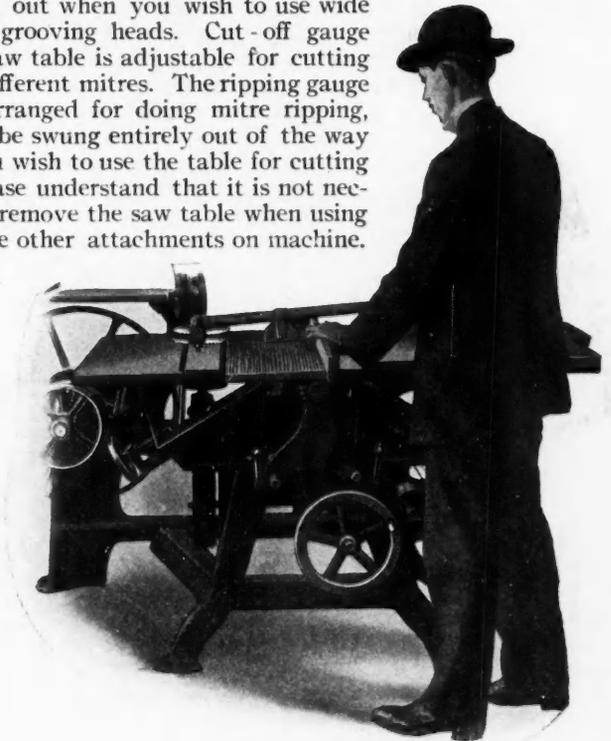


Resawing Attachment

Herewith are shown seven different illustrations photographed *direct* from one and the same machine—the "**Famous**" **Universal Woodworker**. The pictures show the machine as equipped for various operations.

After years of experience and experimental work, we have finally been able to produce a machine which will do all the above-mentioned work perfectly without the inconvenience of making the changes that are *necessary* on any of the other so-called *universal woodworkers* on the market.

The saw table is arranged with a wooden throat which can be taken out when you wish to use wide dado or grooving heads. Cut-off gauge on the saw table is adjustable for cutting all the different mitres. The ripping gauge is also arranged for doing mitre ripping, and can be swung entirely out of the way when you wish to use the table for cutting off. Please understand that it is not necessary to remove the saw table when using any of the other attachments on machine.



Single End Tenoner

The above cut shows the Universal Wood Worker being operated as the **Single End Tenoner**. It is not necessary to make any changes of any consequence in order to use this tenoner. You need not take off any table, but merely set the tenoning attachment on the regular table, place on the tenoning head, and you are ready for work. With this attachment you can do all kinds of tenoning, either large or small, and will do it perfectly.

SIDNEY TOOL CO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Instead of 12

Universal Woodworker

UNEQUALED IN DURABILITY, ECONOMY, CONVENIENCE AND QUALITY OF THE WORK PRODUCED

TWO SPECIAL FEATURES.—Two very important and special features about this machine are: *First*—The Saw Table has raising and lowering arbor and carries a 14-inch blade, which can be lowered entirely out of the way of the operator when the saw is not in use or wanted. *Second*—The Special Boring Spindle that we furnish on this woodworker enables the operator to do all kinds of boring, routing and hollow chisel work without running the complete machine, as this spindle is driven separately from the other attachment.

The day you install a "Famous" Universal Woodworker you discount competition and will be able to *make profits* you cannot earn without one.

A strong statement that, but a true one. Why? Because the *earning capacity* of you and your help is *vastly increased* by a saving of from 25 to 50 per cent. in the time (real money) required on every job, and in addition *your reputation for quality work* will be quickly *advanced*. The last is an asset you can't measure in actual money. The purchase of one of these machines *does not* mean a big investment in money for machinery and additional shop space.

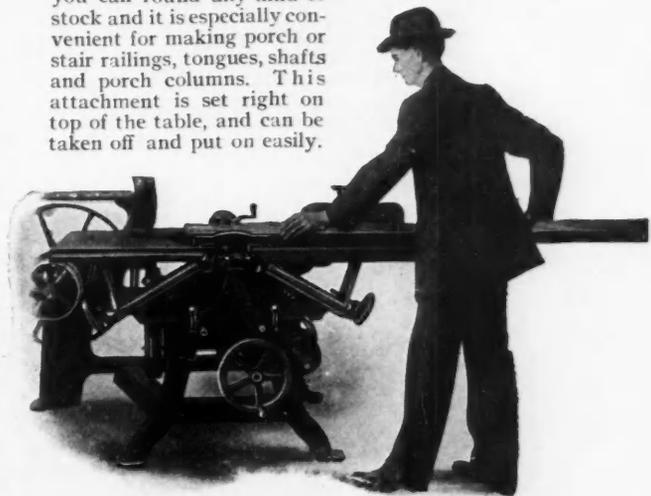
The claims we make *are not* merely extravagant statements, set forth to induce you to buy. *We stand ready to prove every claim* and back each sale with a good *guarantee*. All we ask you to do is to send *now* for additional information and get our special premium, good only for sixty days. (Use the coupon.)

The "Famous" Universal Woodworker is a machine of real durability.

Every inch of every part is *built right*. It will not require tinkering or repairing after a few years of service. Each machine can be equipped with every attachment necessary and can be *quickly* and almost instantly changed to perform the woodworking operations described.

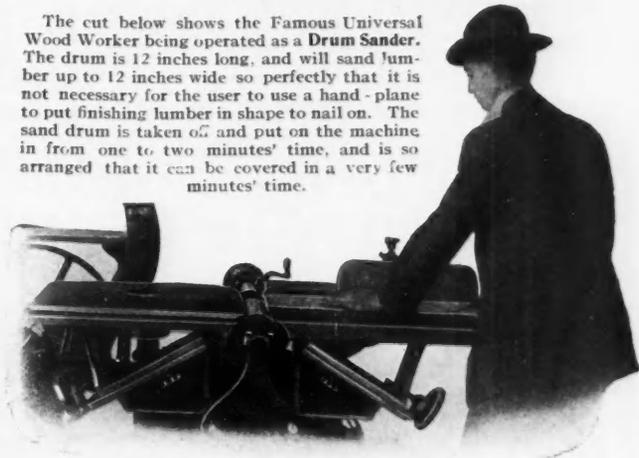
In the April issue of the American Carpenter and Builder we will show a number of other attachments of this wonderful machine. Look for them.

The cut below shows the Universal Wood Worker being operated as a **Pole, Tongue and Shaft Rounder**. With this attachment you can round any kind of stock and it is especially convenient for making porch or stair railings, tongues, shafts and porch columns. This attachment is set right on top of the table, and can be taken off and put on easily.



Pole, Tongue and Shaft Rounder

The cut below shows the Famous Universal Wood Worker being operated as a **Drum Sander**. The drum is 12 inches long, and will sand lumber up to 12 inches wide so perfectly that it is not necessary for the user to use a hand-plane to put finishing lumber in shape to nail on. The sand drum is taken off and put on the machine in from one to two minutes' time, and is so arranged that it can be covered in a very few minutes' time.



Drum Sander

Mail This Coupon

Special Premium

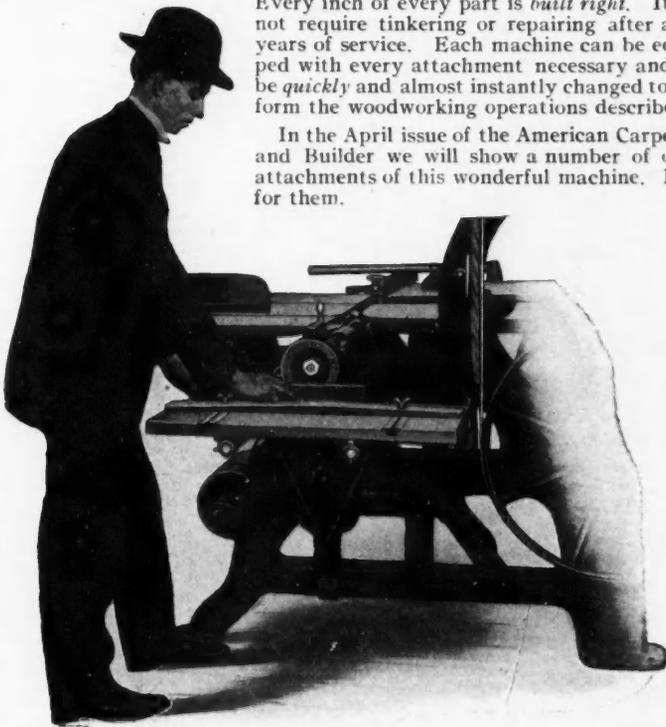
Sidney Tool Co.,
Sidney, O.

Please send full details and information regarding the Special Premium you are making, good for sixty days, on the "Famous" Universal Woodworker.

Name

Town

State



Knife Grinder

The above cut shows the Universal Wood Worker being operated as the **Knife Grinder**. With this attachment you can grind all of your own knives, and in this way save this expense, and at the same time keep your knives in perfect shape. With the same attachment there can be a straight emery wheel put on for all miscellaneous grinding. This is one of the most essential attachments on this famous machine.

SIDNEY, OHIO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



A Gentle Hint

We desire to call our readers' attention to the special premium offer which The Sidney Tool Company, Sidney, Ohio, are making in this issue, exclusively to the readers of the AMERICAN CARPENTER AND BUILDER. We are not at liberty to state what this is, as we understand it is the intention of the above company to spring a little surprise upon our readers. However, we are taking this opportunity of passing along a gentle hint, that it will be well for our readers to investigate this opportunity. You will find their advertisement on pages 796-797 of the AMERICAN CARPENTER AND BUILDER.

Money and Success in Correct Estimating

The Bradt Publishing Company emphasize this month in their ad. that only accurate estimating can bring success, and they offer a few pointed suggestions on this subject of vital interest to every builder. They point out the importance of simple, reliable, practical, systematic methods, together with rapidity in their use. The builder who does an average amount of business must sacrifice a great deal of time from his work if he employs the old tedious methods of estimating, or else he must utilize all his time after the regular day's work is over. The question is, "Can he afford to do it?"

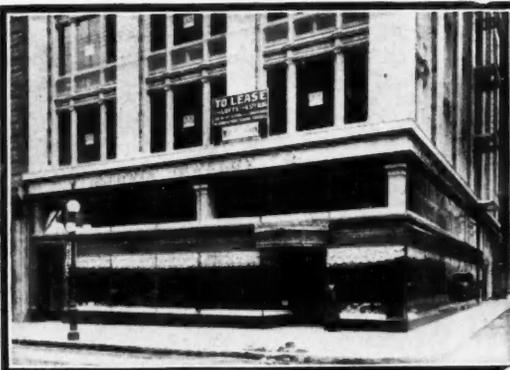
The worried and sleepless nights put in by many builders are chiefly due to their not being sure of their ground when tendering a bid on a job.

For mastering this important part of the builder's work the Bradt Publishing Company have recently placed upon the market the sixth edition of the "Lightning Estimator." It is written by a successful contractor from experience, not from theories. It shows the labor and material required for each part of the work, as well as the prices; so that the methods can be made to apply to any scale of prices in any locality. It not only covers carpentry for house work but also walls, brick work, plastering, concrete work, cisterns, chimneys, etc.; so that the carpenter builder can learn to estimate these branches of the work and be able to handle them the same as the carpentry work—thus saving several sub-contractors' profits. This edition has many valuable pointers for the concrete block builder and setter. The book is bound in cloth and handsomely illustrated.

The Bradt Publishing Company conclude their ad. this month by asking if any builder can afford to do himself the injustice of longer being without their methods of estimating. We might add that this concern has advertised in every issue of this journal, and we know them to be reliable.

Keep The Business Growing
Give your client a new attractive
Trade Winning Store Front

It Stays and Pays



You can feel assured that in specifying a "Kawneer System" store front construction, you render your client not only valuable service as an Architect but show that business foresight which he may not himself possess. A brief investigation on the part of the Architect reveals all the superior qualities of Kawneer System products.

The "Kawneer Principle," the high architectural standard attained in its development and the practical application of this principle throughout the entire construction renders the "Kawneer System" thoroughly adaptable to your own originality of design.

Merchants large and small recognize good store front construction as

the shortest road to increased sales and profits. The "Kawneer System" of ventilation and drainage reduces the frosting, sweating and drainage troubles to the minimum—the provisions for expansion and contraction of glass and the cushion friction spring grip gives the lowest rate of plate glass insurance. The compact and inconspicuous yet slightly and durable parts creates the all-glass effect without sacrificing a single advantage to be found in all-metal construction. So good, so superior that more than one million four hundred thousand lineal feet were installed in 1909.

To specify the "Kawneer System" Construction is to render your client a most profitable service.

Kawneer System

Book of Details No. 2 is ready for distribution. Address nearest office for prompt response.

Kawneer Manufacturing Co. Home Office Niles, Mich.

BRANCH OFFICES

CHICAGO
MINNEAPOLIS
SEATTLE
MILWAUKEE
INDIANAPOLIS
LOS ANGELES
SALT LAKE CITY

NEW YORK
ST. LOUIS
ATLANTA
SPOKANE
DENVER
HOUSTON

KANSAS CITY
PORTLAND
PITTSBURG
CINCINNATI
LONDON, ONT.
SIOUX CITY, IA.
DES MOINES, IA.

SAN FRANCISCO
PHILADELPHIA
DETROIT
VANCOUVER, B. C.
LINCOLN, NEBR.
SYRACUSE, N. Y.
WASHINGTON, D. C.

SEE SWEET'S INDEX.



Get Good Results in the Finishing and Decorating of Your Buildings

You are looking for products to use in the finishing and decorating of your buildings which will give satisfactory results at an economical cost. S-W Products have been marketed for over forty years and include a finish for every surface. With the experience gained through all these years, we are in a position to help you in your interior and exterior decorating.

SHERWIN-WILLIAMS PAINTS AND VARNISHES

not only mean a finish for every purpose, but several finishes for the same purpose, varying according to the quality of the work to be done. If you have a high grade piece of work to undertake, either on the exterior of a building or on walls, ceilings, floors or woodwork, we can give you just the proper finishes. The same also applies in the case of medium grade and low priced exterior painting or interior decorating.

Let us Solve Your Problems for You

If you are at a loss just how to finish the particular work which you have on hand, fill in the coupon at the bottom of this advertisement. This coupon designates three classes of finishing materials, high grade, medium grade and low priced for floors, woodwork, walls and ceilings and exteriors.

Put a check against the surfaces which you want to finish and the grade of work specified, and sign your name. We will send you complete specifications covering just the proper finishes for these particular surfaces corresponding to the grade of work indicated. Of course, this places you under no obligation whatever; we simply wish to demonstrate our ability to be of assistance.

I am interested in the particular finish as indicated by check below.

High grade
Medium grade
Low-priced Work

EXTERIOR

Frame Buildings
Roofs Shingles
Metal Structural Work
Concrete

INTERIOR

Walls Ceilings Floors
Woodwork

Name
City State



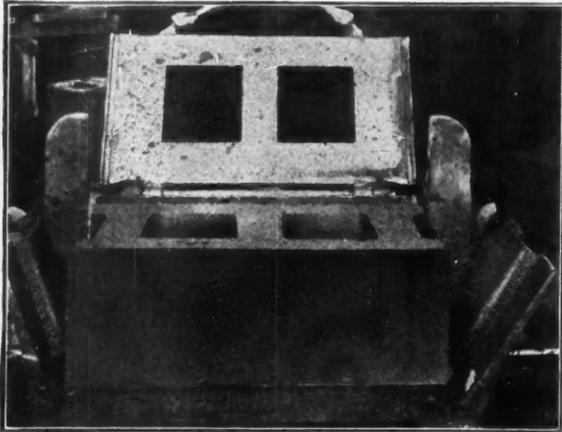
THE SHERWIN-WILLIAMS CO.
612 Canal Road, Cleveland O.



S-W Specialties for the Contractor and Master Carpenter. Send for Color Card.

A Plain Talk to Concrete Block Men

During the last decade the manufacture of concrete blocks has grown to such an extent that to-day the progressive man has been compelled, owing to the universal demand, to equip himself with the machinery for their manufacture. A good



many builders, not having thoroughly looked into the situation or through misrepresentation, have been induced to install machines that are entirely inadequate to produce good blocks. Through these misrepresentations, a good many have become discouraged. Then again, owing to the very keenest of competition, many have been compelled to go out of business.

What the builder of today needs is a machine that will build blocks at a reasonable cost,—an unlimited machine,—one that makes all styles of blocks,—a machine with just the equipment that you require to start and a machine that you can add to as the occasion demands; a machine that gives a variety of designs, sizes and lengths; one that is simple, practical, strong and quick to operate; a machine with a reputation back of it, made by a reputable firm.

It is a fact that the best concrete blocks are made with a mixture of crushed stone or coarse gravel, sand and Portland cement mixed with plenty of water. Concrete blocks made after these specifications will not crack or crumble, are impervious to water and will withstand the heaviest crushing strain.

The photograph above shows a block made on a face-down machine with a vertically movable core. At a glance, one can see that there is no possibility of the block breaking, no matter how wet the mixture may have been. In fact, the photograph shows a block made with an extremely wet mix; it was taken while the machine was in operation.

Many types of machines are offered for the making of concrete building blocks, but few of them are so designed as to allow for the use of a coarse wet aggregate. Purchasers of such machines are therefore handicapped at the very start. They cannot make a concrete block because their machines are not correctly designed. As a result, they produce sand-cement blocks which they endeavor to sell as concrete blocks in competition with some real concrete block maker, and the result is failure.

In purchasing a machine, the future must be considered as well as the present. As your business succeeds and grows, you will find it necessary to add to your equipment new sizes, designs, etc. You cannot do this unless the manufacturer of your machine is still in business. Therefore, when you buy, profit by the experiences of others and get a machine built along correct lines—a machine that will make a concrete block—a machine that will make all heights, widths, lengths and designs—a machine that expands as your business grows—a machine built by a reliable firm.

All parties interested in the making of good concrete blocks should address Century Cement Machine Company, 279-289 St. Paul street, Rochester, N. Y. They will send complete information.



African Scented Mahogany

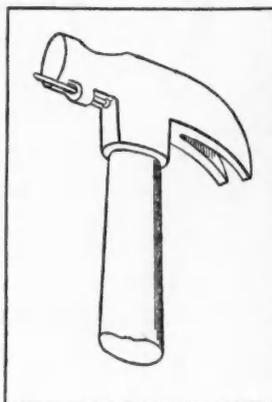
Have any of our readers ever purchased any of this wood? It has a scent remarkably like that of cedar, the texture being not dissimilar, though, generally speaking, it is harder. We have lately seen some very handsome veneers cut from this wood, and understand that it shows up very well under polish, one merchant having sold quite a number of logs cut into knife-cut veneer lately.

It is astonishing how much uncertainty still attaches to the botany of the trees that are sold in England as mahogany and cedar. This African scented mahogany would seem to stand midway between the true mahogonies and the scented cedars, and it is worthy of note that the diffusion of this kind of tree is restricted to each side of the South Atlantic ocean. We believe it is still an unsettled problem of geology and botany whether these species are so old as to have been in existence when South Africa and South America were either joined together or approximated more nearly to one another than they do at present, or whether the seeds have been carried the many thousand miles across the waters of the South Atlantic ocean now separating the two continents.—*London Cabinet Maker.*



Hammer Holds Nails

Who has not pounded his thumb in place of a nail while trying to hammer the latter into some place difficult to reach or some corner where it was hard to get both hand and hammer? A North Dakota man has gotten around this difficulty with an ingenious in-



vention of an attachment for the heads of hammers which holds the nail just beneath the head and drives it into place without difficulty.

The attachment consists of a loop of metal and a slight groove and recess under the hammer head. The nail fits in this, and all that need be done is to give one blow as if the nail were held in position with the fingers.

This blow will suffice to fix the nail in place, and the hammer can then be withdrawn, the loop in the head being large enough to permit of the passage of the head of the nail, and the nail can be pounded all the way in with no trouble at all. In this way the thumb and fingers of the carpenter are in no danger.

There's Money In Making GOOD CONCRETE BLOCKS

Because they are coming into universal use

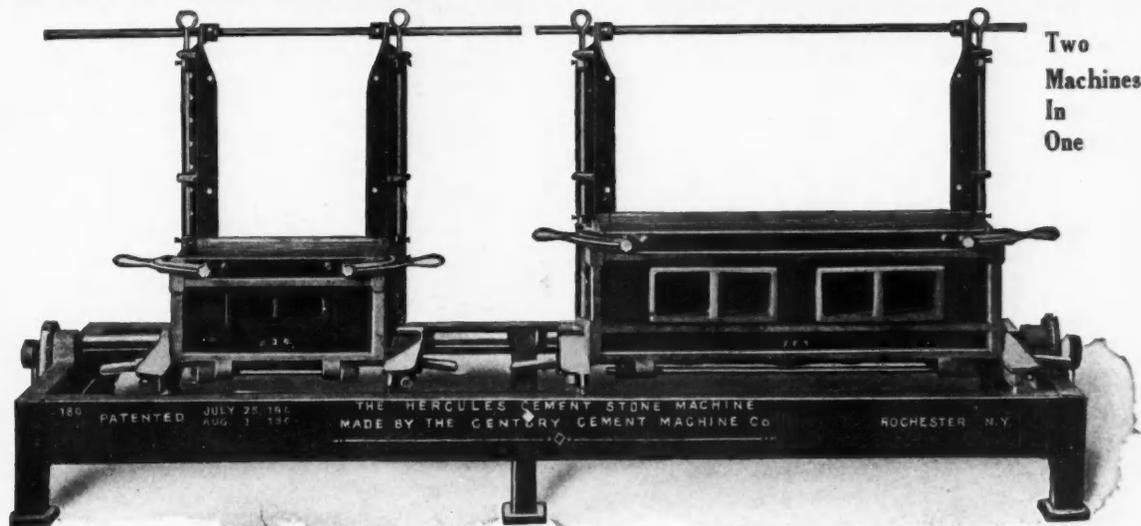
Hercules CONCRETE BLOCK MACHINES

are used by the most successful and reliable manufacturers of concrete blocks **because**

- A superior quality of stone is produced.
- Blocks can be made more rapidly.
- Blocks can be made cheaper and better.
- Blocks are made with unlimited variety of sizes and designs.
- HERCULES BLOCKS are made FACE DOWN with a Vertically Movable Core.

This method allows the use of a **really wet mix**, combined with a fine facing for front of block and a **coarse aggregate** composed of gravel or crushed stone for the back, resulting in block having perfect finish on **face** and **strength** and **durability** throughout.

It is the ONE machine without limitations. It is the ONLY machine that expands to meet every requirement of the user



Two
Machines
In
One

SEND FOR OUR CATALOG TODAY

Century Cement Machinery Co.

279-289 St. Paul St., Rochester, New York.

HERCULES

BLOCK MACHINES

ARE THE FASTEST, SIMPLEST, STRONGEST AND

BEST MACHINES BUILT

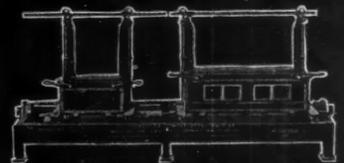
AND WE CAN PROVE IT.

THEY EXPAND TO MEET EVERY DEMAND

THE ONLY machine making any size of stone from a 3 inch block to a 6 foot water table.

THE ONLY face down machine that allows for a really coarse WET mixture with fine facing.

THE ONLY machine on which four 16 inch stone can be made at ONE time, or two 20 inch, 24 inch or 32 inch stone at one time.



THE HERCULES IS AN OLD ESTABLISHED MACHINE

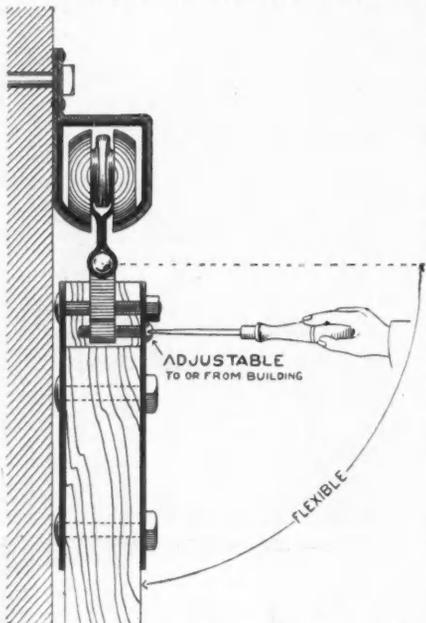
built along correct lines and endorsed by the leading contractors and builders. They are used in all parts of the world.

Improved Barn Door Hanger

The Wagner Manufacturing Company, Cedar Falls, Iowa,



are offering the building world what they claim is the latest



idea in door hanger construction; the Wagner "Leader" barn door hanger and track, illustrated here-with. One of these cuts shows the general arrangement, the other the adjustable and flexible features, the adjusting of the door to or from the building being accomplished with only a screw driver

The claim is made for this hanger that there is no needless weight in wheels and no waste tread surface on wheels running over slot in track, all desirable features being combined in this hanger.

The tubular track seems to be bird proof and weather proof.

The "Celebrated" Scaffold Bracket

The Celebrated scaffold bracket is offered by A. W. Guthat and Son, Chicago, Ill., as being a perfectly safe and reliable appliance for scaffolding frame buildings. These are the first and most important points every contractor must consider in scaffolding. In the construction of this bracket great care has been taken



as to the angle at which it rests to the building, so shifting the weight that a thousand pounds is easily carried at the extreme outward end of the bracket, making a scaffold as safe for the carpenter to work on as though he were upon the ground.

The bracket is built of the best grade of yellow pine and hangs on the sheathing by a $\frac{3}{8}$ by $1\frac{1}{2}$ inch tested steel hook, impossible to bend or break. This hook

is notched, making it possible to use the bracket in repairing old buildings or for putting on rustic siding by hanging the bracket by the notched hook on a lagg-screw turned into the studding. The self-locking device is made of malleable iron so that it is positively unbreakable. One light tap of the hammer upon the lock folds this bracket into a very compact bundle of 15 pounds, 4 by 6 inches by 4 feet in dimensions. Whether you figure on handling, cartage or storage, the fact that "it folds" will mean much to every carpenter contractor. A small safety lug is placed at the extreme end of the arm to keep scaffold planks and material from being pushed out over the end of the bracket. This small feature will give you an idea of how everything tends toward making this the safest possible scaffold.

The points of advantage over building ordinary scaffolding are many: You save eighty per cent on material and labor. There are positively no nails to contend with in scaffold lumber. There is no interference with lathing and plastering, leveling of lots or delivering and carrying of material about the building. There is no swing or sway to the scaffold. The entire bracket is given a good coat of paint before being assembled, the parts of wood being brown, while all the steel and iron parts are finished in a dead black, not only protecting the bracket from the weather but giving it a finished appearance, an essential found in every good tool a carpenter uses. Full information concerning the Celebrated scaffold bracket may be had from A. W. Guthat and Son, 1536 West Adams street, Chicago.

Caldwell Vertical Door Holder

The Caldwell Manufacturing Company, Rochester, N. Y., have added a new article to their extensive line of hardware specialties, the new Caldwell vertical door holder.

This appears to have great merit; and it possesses one feature which is original—distinguishing it from all other vertical door holders. It has no side ears and only one screw is visible. A bracket affixes the holder immovably to the door, and gives symmetry, simplicity and beauty to its lines.

The Caldwell holder is made in two sizes. The small size is furnished in grey iron and bronze metal. These are for use on all ordinary doors, which open out over horizontal floors. The special large size with $4\frac{1}{4}$ -inch drop is furnished only in bronze or brass metal, and is for use upon parquet doors, which open out over floors laid at an angle.

The rubber cushion is hollow in the center, which construction tends to create a suction and holds better than a flat surface. Accordingly this vertical holder is warranted to hold any door on the smoothest floor.



An Improved Pipe

Many of our readers who are lovers of the pipe will be interested in a new invention—a pipe claimed by the maker to be absolutely sanitary and free from the objections of ordinary pipes.

The bowl is made with the inner walls vertical and the bottom flat—like a pan, so to speak. The shape of the bowl prevents the tobacco from becoming packed solidly. Consequently, there is a free circulation of air through all parts of the tobacco when smoking. That is what makes a fine cigar



Boring into the end of Lignum-Vitae with the Irwin Auger Bit

PROFITS are already beginning to pour in, big, on the *bit business*, of dealers who are ready with full stocks of



Dealers order from your Jobbers quickly now, to get full profits on our enormous 1910 Advertising Campaign to the consumer everywhere, already started in leading National Magazines and Newspapers.

If your Jobber won't supply you, write at once to

THE IRWIN AUGER BIT COMPANY

(Largest in the World)

STATION C-18

WILMINGTON, OHIO

FREE Sample Package of Johnson's Plasto-Filler

Let Us Mail to You—Absolutely Free—Postage Paid—This Working Sample and Text Book

WRITE today for *your* free package of Johnson's Plasto-Filler. Thousands of other Painters and Decorators have accepted our offer and are now saving money and time, doing better work, more completely satisfying their trade. Let us start *you* right.

Johnson's Plasto-Filler is a perfect non-shrinking, non-cracking, adhesive filler, ready for use by mixing with a little water, and dries rock hard in two hours. Made in two shades, light and dark. Applied with a putty knife.

Far superior to putty, plaster of paris and all other preparations for cracks in floors or walls, nail holes, crevices, etc.

Used by prominent decorators for preparing surfaces for Johnson's Wood Dye, Johnson's Under-Lac, and Johnson's Prepared Wax.



Johnson's Plasto-Filler

goes twice as far as ordinary crack fillers.

Put up in one and two-pound packages, at 20c a pound. Also in bulk at 15c a pound

But try it at *our expense*. We'll gladly send you a free package—also our valuable text book—

The Proper Treatment of Floors, Woodwork and Furniture—Edition A. C. B. 3.—FREE

Cut out coupon now to remind you. Or write us a postal if more convenient.

S. C. Johnson & Son, Racine, Wis.

"The Wood Finishing Authorities."

S. C. Johnson & Son, Racine, Wis.

I accept your offer of a sample of Johnson's Plasto-Filler; also a copy of your text book—"The Proper Treatment of Floors, Woodwork and Furniture."—Edition A. C. B. 3.

Name.....

Address.....

.....

.....

FREE Working Sample of Johnson's Under-Lac

Every Painter and Decorator Is Asked To Accept This Free Offer—Mail Coupon or Postal Now



EVERY man who now uses Varnish and Shellac can better his work, better his profits, better his reputation, by using Johnson's Under-Lac. Because Under-Lac is better than Shellac or Varnish. We want to prove this to you beyond the shadow of a doubt, so we ask you to try it *at our expense*.

Johnson's Under-Lac

gives "that hand rubbed finish"—brilliant and lasting. It dries hard in half an hour, forms a hard, thin, elastic, protecting surface that will not scratch or show heel prints. It can be used wherever shellac or varnish can be used with much finer, more permanent results.

Learn for yourself that it dries in just the right length of time—not like shellac which dries so quickly that a novice cannot apply it, because it laps, pulls and crawls. Not like varnish either which dries too *slowly*.

As First Coater or Finish

Under-Lac has no equal for use either over bare wood, over worn, scratched varnish, or new finishes. It never spots white under water or becomes slippery. It is the only preparation which gives satisfactory results as a preservative and beautifier of linoleums, oil cloths, etc.

Send for Sample and Text Book—FREE

Mail coupon, or postal if more convenient. Make the test at our expense. Read our valuable book—"The Proper Treatment for Floors, Woodwork and Furniture"—Edition A. C. B. 3. Book printed in colors, illustrated from life, full of helpful suggestions. Just send your name and address to

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

"The Wood Finishing Authorities."

S. C.
Johnson
& Son
Racine, Wis.

I accept your offer of a sample of Johnson's Under-Lac; also a copy of your text book—"The Proper Treatment of Floors, Woodwork and Furniture"—Edition A. C. B. 3.

Name.....

Address.....

.....

.....

smoke so pleasantly.

Then again, the bottom of the bowl has a series of holes angling through solid Vienna meerschaum to a point at the apex of the bowl. The construction assists in the free circulation of the air through the tobacco. The result is a very pleasant, cool smoke, equal to that of a fine cigar.

The bowl of this new pipe is said never to get wet or soggy, as other pipes do. This is altogether reasonable owing to the air chambers in the briar part of the pipe between the stem and the meerschaum bowl.

Persons who desire one of these pipes can obtain same by addressing The Acme Pipe Company, Station M, Cincinnati, Ohio. See their advertisement on page 832.

The Miles Simplex Mixer

The Miles Simplex continuous concrete mixer might rightfully be termed a continuous-batch mixer, because the feed is continuous and the mix is had in the large drum which revolves.

Continuous mixers are now preferred by all contractors for the reason that with them their men can work to best advantage and with most economical results. This is evident from



the fact that batch mixers are being made as near continuous as it is possible to make them. Often objections have been raised regarding continuous mixers, due to the unreliability of many, both as to feed and mix.

Profiting by the experience of others, the Miles Manufacturing Company, Inc., Jackson, Mich., have developed the Simplex mixer. The principle is very simple, yet it is absolutely positive. They claim to have eliminated all complicated attachments. In construction, the best grade of iron and steel are used, which insure strength and durability. The large revolving drum is of heavy boiler iron. Skilled labor is employed and all work done in a thorough workmanlike manner. The charging hoppers are at a very convenient height and the materials may be discharged nicely into wheelbarrows. The construction is such that only a small amount of power is necessary. All gearing is fully protected with steel aprons.

A three-compartment hopper feed is employed. Cement enters through the center and sand, crushed rock or gravel from either or both sides. A constant stream of materials is fed simultaneously into the mixing drum, thereby insuring a steady, uniform mix. Any desired proportion may be had, and the adjustment for the same made quickly and positively.

The feed is controlled by individual gearing and may be stopped or started regardless of the rest of the machine. Often for various reasons, the shovelers stop for a minute or two. In such cases the feed is thrown out of gear by a small lever.

The mixing drum revolves about 20 times per minute. And as there are attached to the same in the forward end a set of blades which run parallel to the drum, the materials are carried well up the side, then roll back. This method insures the covering of every particle with cement, especially, too, as the drum is set on an angle, thereby giving a gravity mix at the same time. After thus being thoroughly mixed and carried by gravity towards the rear of the drum, the materials

strike a set of agitators, which revolve in the opposite direction to the drum and at a higher rate of speed. At this point water is added in any quantity desired and thoroughly incorporated.

To insure the agitators against clogging, the shaft to which they are attached is hung in a slot, thus allowing it to raise and lower. The materials are in full view at all times.

As to the capacity of the Miles mixer, seven yards per hour may be turned out. For some concrete block plants and other work where this output may not be required, the machine can easily be adjusted for any intermediate output.

For work where it is not necessary to operate the machine to its fullest capacity, a 1½ H. P. engine is sufficient. Otherwise, we recommend a 2½ H. P., which insures an abundance of power.

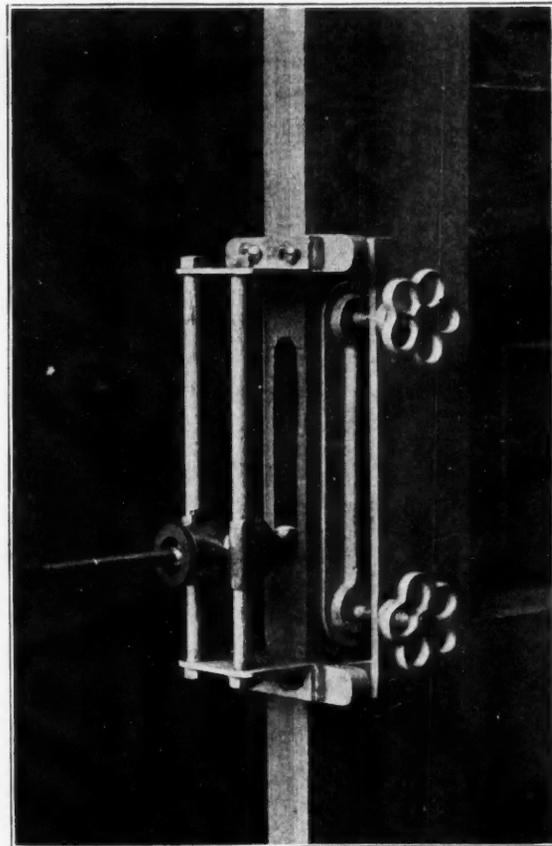
The weight of this machine complete on trucks without power is 1,600 pounds; complete with 1½ H. P. gasoline engine, 1,800 pounds; complete with 2½ H. P. gasoline engine 1,950 pounds.

The progressive concrete worker or contractor cannot afford to be without a mixer. Certainly to mix by hand is very expensive and slow. Get a mixer, have one of some kind. It means larger profits, better concrete and more satisfied customers.

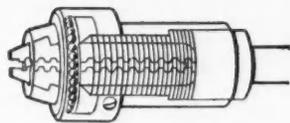
Simplex mixers are especially desirable for paving, sidewalks, concrete block and general contract work. Their weight is a desirable feature, allowing for their being moved readily from one job to another.

A New Lock Mortiser

A new low-cost yet practical door mortising machine, one that will do the business and will not get out of order, is now obtainable from the Sax-Nicholls-Cohn Company, Inc., Fair-

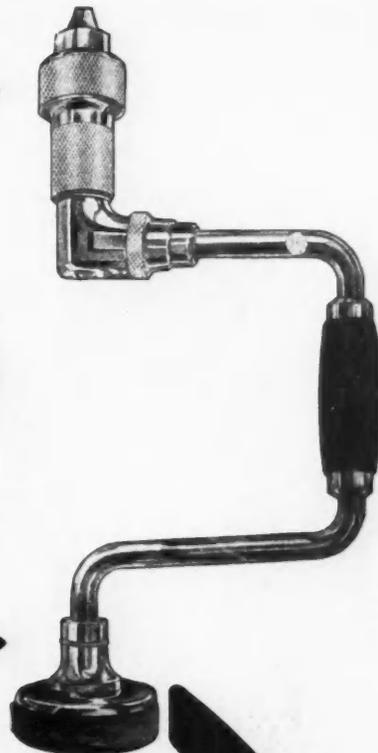


field, Iowa, sole manufacturers of the Nicholls lock-mortising machine. This, we are informed, will mortise hard, soft, veneered, cross-grained or end wood perfectly, with slight exertion. It requires very little care, being easily understood



The Ball-bearing Chuck is found only on the P. S. & W. SAMSON BRACE. It can be tightened with the bare hand to a firmer grip than any other chuck with a vise. The weakest wrist can release it.

The Steel-clad Head with dust-proof ball-bearings is another strong feature of the SAMSON.



It pays to buy good tools

When you buy a brace, you ought to know how it is made and who made it. The large line of high-grade P. S. & W. Braces is backed by the Trade-mark that stands for quality and ninety years of business ability, experience and progress. Look for

The MARK of the MAKER on every P. S. & W. SAMSON BRACE

It's one of the top-notchers among hundreds of P. S. & W. Guaranteed Tools for Carpenters.

Send for this 165-page book

SECOND EDITION NOW READY FOR DISTRIBUTION

Our "Mechanics' Handy List," shown at the left, contains over 30 pages of tables and valuable information, and a catalog of over 200 tools for Carpenters, Machinists, Electricians and Tinsmiths.



The Peck, Stow & Wilcox Co.

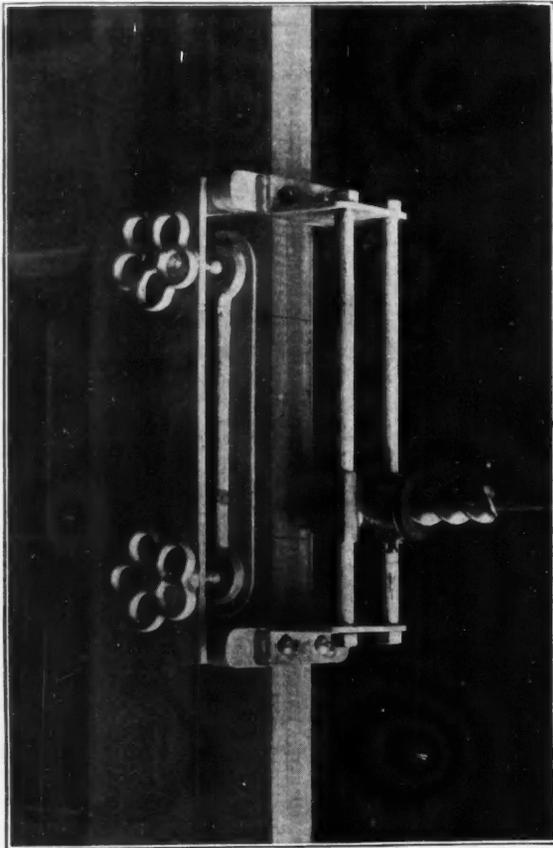
MANUFACTURERS of the Largest Line of Mechanics' Hand-Tools Offered by Any Maker

Address Correspondence to 22 Murray Street
NEW YORK CITY

Established 1819

Five Large Factories

and operated by apprentices, and cannot get out of order. It



will take any thickness door—cuts any length—will stand

strain. A new feature in this clamp makes it absolutely impossible to scratch, mar or split a door. It cuts true and is simple to operate. Is made of malleable iron and is very light, taking up little room in chest. Stands use, and even abuse, for a lifetime.

With this clamp it is stated that there is absolutely no expense for future repairs. It requires no oiling and is always ready for instant use. It is the cheapest mortiser on the market.

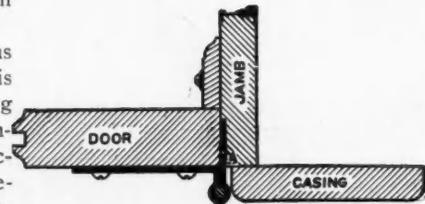
The construction of this lock mortiser is extremely simple, as may be seen in the illustrations; the arrangement consists of a screw-clamp, having two metal guide rods on which slides a bushing. The workman places his auger bit (of the proper size for the width of the mortise) into this bushing, which holds the bit absolutely square with the work and true to the gauge lines. The mortise is thus quickly and easily bored out. Extra bushings of various sizes are furnished with the clamp.

Every carpenter and building contractor should investigate this machine.

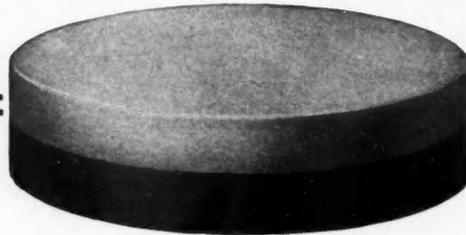
“National” Ornamental Butts

A few years ago the National Manufacturing Company, Sterling, Ill., placed the “National” ornamental butts on the market, predicting that they would eventually displace the old style or common butts.

Present conditions indicate that this prediction is coming true. We are informed that contractors, who at first regarded them skeptically, have since given them a trial and will now use nothing



will take any thickness door—cuts any length—will stand



Have you seen the new

CARBORUNDUM SHARPENING STONES?

Made especially for carpenters and workers in wood. Note the shape, it is **round**—You use the whole surface, 12 square inches and sharpen the tool evenly and quickly— It is a combination stone, coarse on one side, fine on the other— And it's made of carborundum, the greatest sharpening agent in the world—

*Ask your Hardware Dealer
or send \$1.00 to*

THE CARBORUNDUM COMPANY
NIAGARA FALLS, N. Y.

BISHOPRIC WALL BOARD

Cheaper and Better Than Lath and Plaster

YOU DON'T HAVE TO WAIT for good building weather when you use Bishopric Wall Board. This substitute for lath and plaster is made of kiln-dried, dressed lath, imbedded in hot Asphalt Mastic under pressure of 500 pounds to the square inch, surfaced with sized cardboard and cut at the factory into 4x4 ft. sheets, of uniform thickness ($\frac{3}{8}$ inch), which are easily and quickly nailed to studding, ready for immediate application of wall paper, paint, burlap or other decoration.



Applied Dry, Winter or Summer

It is applied dry; is guaranteed not to swell, shrink, warp, crack, flake or blister; is clean, sanitary and odorless; is proof against moisture, cold, heat, and vermin; saves fuel in winter and keeps out summer heat; also deadens sound. Is suitable for dwellings, factories, new partitions in old buildings, finishing attics, porches, laundries, cellar ceilings, garages, etc.



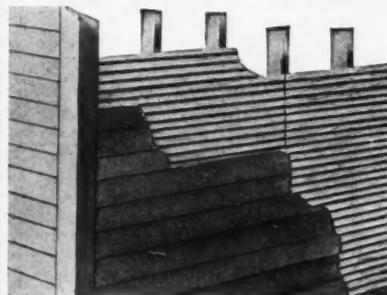
Importance of Lath The lath forms a perfect binder—a guarantee against warping or twisting out of shape. Furthermore, insures perfect adhesion when nailed to studding. Beware of cheap imitations. Bishopric Wall Board is protected by U. S. patents. Prosecution will follow infringement.

PRICE AND SHIPMENT FROM NEAREST POINT: Crate of 16 sheets, covering 256 sq. ft. of surface, \$6.40 or \$2.50 per 100 sq. ft., f. o. b. New Orleans, La., Cincinnati, O., or Alma, Mich.

Saves labor. Does away with building paper. Cheaper than lumber.

BISHOPRIC SHEATHING

Proof against heat, cold, moisture and vermin. Patented.



Made of the same materials used in Bishopric Wall Board and same way, though finish is not necessarily so smooth, therefore costs less. It is nailed to studding on outside of the building, with lath and Asphalt Mastic exposed. Over this you nail weather-boarding. This gives solid sheathing with dead air space between Sheathing lath and siding. Ideal material for cement exterior or stucco work. Cement firmly adheres to lath and Asphalt Mastic, making a solid, smooth exterior. For factory or residence, this form of cement construction is the cheapest and best known.

Bishopric Sheathing is cheaper than lumber; is free from holes and rough spots; is nailed to studding in half the time required for lumber; does away with expense of buying and applying building paper; is proof against heat, cold, dampness, frost, wind and vermin. Being a non-conductor, it keeps the building cooler in summer and saves fuel in winter. It is used with excellent results as a lining for dairy barns, poultry houses, driving stables or other outdoor buildings.

PRICE AND SHIPMENT: Crate of 16 sheets, covering 256 sq. ft. of surface, \$5.12, or \$2 per square of 100 sq. ft., f. o. b. New Orleans, La., Cincinnati, Ohio, or Alma, Mich. We ship from nearest point.

Requires No Paint or Other Coating. Handsome and Durable.

BISHOPRIC ROOFING

Standard Quality, Bishopric Asphalt Mastic Roofing will not dry out; therefore requires no paint. The asphalt composition is toughened and perpetuated by an exclusive process, which converts asphaltum into Asphalt Mastic. May be exposed direct to weather in any climate without danger of softening, drying out, cracking or crumbling. The only asphalt roofing with successfully stands the direct exposure test.

Made of pure woolen felt, coated on both sides with pure Asphalt Mastic and flaked mica, making a neat, clean, artistic, durable roof, which never needs paint. Absolutely proof against cold, heat, moisture, wind and weather; will not crack, curl or break; wholly unaffected by climatic conditions. Will reduce fire insurance. Easily laid.

PRICES: Freight prepaid East of the West Line of Minnesota, Iowa, Missouri, Oklahoma and Texas:

- 3-ply . . \$2.50 per square of 108 sq. ft.
- 2-ply . . \$2.25 per square of 108 sq. ft.
- 1-ply . . \$1.75 per square of 108 sq. ft.

Write for descriptive booklet and samples of Bishopric Wall Board, Bishopric Sheathing, and Bishopric Roofing—all sent free.



The Mastic Wall Board & Roofing Mfg. Co., 24 E. Third St., Cincinnati, O.

else. Others are bound to follow when they learn of the labor-saving features and artistic merit.

Neither time nor expense has been spared in making these butts the standard of perfection in butt construction, and a careful consideration of their construction can not fail to convince the thoughtful reader of their practicability, time and labor-saving features and artistic merit.

One point to which we would call your attention is the saving of labor attending their use. Wherever they have been introduced contractors have found that their carpenters of ordinary ability can hang twice as many doors with the ornamental butts as their first-class men can hang in the same length of time with the old-style or common butts. Heretofore it has always fallen to the lot of the best mechanic to hang the doors. The second-rate carpenter, as a rule, bungled the job. With the ornamental butts it is stated that there is no possibility of going wrong, and the work is accomplished in one-half the time. This great saving of labor is easily understood when the method of hanging a door with ornamental butts is noted. The method of procedure is as follows: The end which is attached to the jamb is first mortised in. Then the door is set in place and wedged into position. Now, all that remains to be done is to insert the screws in the ornamental leaf of the butt, which is attached to the surface of the door, and the work is done. Note, there is but one side mortised, which makes the operation exceedingly simple.

The ornamental butts and hinges give to a job an individuality of finish not otherwise obtainable. When plated to match the finish of the wood on which they are used they give a harmony of detail which is assuredly most desirable.

Disston Extensions

Henry Disston and Sons, Inc., Keystone Saw Tool Steel and File Works, Philadelphia, Pa., have recently opened branch houses in Seattle, Washington; Portland, Oregon; and Vancouver, B. C., to better facilitate the filling of orders and to take care of the constantly increasing trade.

These branches will devote their attention exclusively to the mill goods business, such as inserted and solid tooth circular saws, bandsaws, crosscut saws, cylinder saws, mill saws, stove saws, saw tools, machine knives, files, steel, etc., etc.

The Disston factory at Toronto, Canada, though established but a few years ago, has already been outgrown. This branch of the business has recently acquired four acres of ground upon which two new and up-to-date buildings have been erected; one of two stories, 250 by 60 feet, the other of one story, 170 by 55 feet. These buildings have been equipped with the latest improved machinery for the manufacturing of mill goods such as circular saws, band, gang, and crosscut saws. The machinery will be motor driven in groups, the building heated with an improved hot air apparatus, driven by a fan

A Few Points on Estimating

Upon estimating the cost correctly depends your success. If you guess, nine times in ten you are too high or too low. If you sit down and take off every item separately it takes too much time. It means a great risk of omissions on account of interruptions or overlooking something because you have so many items and figures to handle. The need of a system in taking off quantities is one cause of omissions also. Do you neglect your business many times because you have a job to figure? Do you worry and lie awake nights? Most builders bid too low for fear of losing the job. If they knew just what the job was worth they would not want it for any less. If you want to adopt a system that is easy, simple, accurate, reliable and practical, the **NEW SIXTH EDITION of The Lightning Estimator** will teach you.

You Need the Lightning Estimator

This method shows you the actual time and material involved in each part of your work, but so cleverly combined and systematized that a large job may be estimated in a very short time and omissions are almost impossible. Shows you how to dissect and analyze unfamiliar work in order to get at the cost. By showing time and material required as well as prices you may adjust this method to any scale of prices in any part of the country. Written by a successful builder from actual experience, not theory. Valuable hints for the concrete block maker and setter. The carpenter builder who sublets everything but the carpenter work can learn how to estimate the walls, brickwork, concrete work, chimneys, plastering, etc., so that he can handle this work by the day himself and save the subcontractors' profits.

Now is the Time to Become a Master Builder

If you are a journeyman here is your opportunity to become a master builder and if an old timer, a chance to get new ideas and become more proficient; if you know it all, pass it along.

This edition is bound in cloth and is amply illustrated, a feature that has been overlooked in most books on this subject. Can you afford to hesitate? Will you do yourself justice and send one dollar today and get on the road to success?

BRADT PUBLISHING COMPANY

1260 Michigan Avenue

JACKSON, MICH.



Unbreakable LIGNINE (WOOD) CARVINGS Unbreakable

SAVE YOU MONEY

We prove this — Send for free sample and catalogue of Capitals, Pilaster Capitals, Heads, Shields, Scrolls, Etc.

ORNAMENTAL PRODUCTS CO., West Fort St., DETROIT, MICH.



BEAVER BOARD Walls and Ceilings — a New Field for the Carpenter



BEAVER BOARD takes the place of lath, plaster and wall-paper for the walls and ceilings of every type of building, new or remodeled.

It is already well established by years of successful usage, and is coming more into favor every day. A big field is open to the carpenter who knows what it is and how to put it up. One BEAVER BOARD job, well done, leads quickly to another.

Read what follows. It tells how BEAVER BOARD is used, and how it can become a source of good steady work for the carpenter, summer and winter.

How BEAVER BOARD is Put Up

BEAVER BOARD is made in panels of convenient sizes. It is nailed directly to the studding of new walls, or right over the plaster of old ones.

Beaver Flathead Nails are used for edges, and Beaver Bunghead Nails for centers of panels.

Very little cutting or fitting is necessary, the panels being of standard widths.

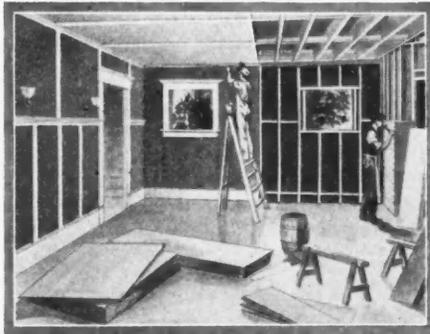
The seams are covered with battens, and other battens may be nailed over centers, or diagonally, according to the design. It is easy to make a nicely finished job.

What BEAVER BOARD is

BEAVER BOARD is made of selected woods, reduced to fibrous form and pressed into panels of uniform thickness with pebbled mat surface. It is a great sound-deadener, and makes a house warmer in winter and cooler in summer.

It stands a pressure of 440 lbs. on studding centered at 16 inches. You can center at 24 inches with perfect safety.

BEAVER BOARD is sold by hardware, lumber, paint, wall-paper and builders' supply dealers and decorators everywhere. For your protection, every panel is stamped on the back with the BEAVER BOARD Trade-mark. Look for it.



This picture shows how BEAVER BOARD is put on the walls and ceilings of a new room. It can also be put on over the lath and plaster of old rooms.

How BEAVER BOARD is Used

BEAVER BOARD is used for walls and ceilings of all kinds of buildings as well as for remodeling single rooms.

A big business can be done by a smart workman in finishing up attics, dividing cellars into rooms, etc.

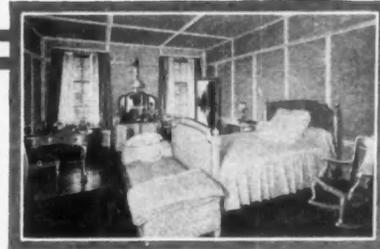
Old out-buildings can be fixed up for children's playhouses, billiard-rooms, garages, etc.

BEAVER BOARD is used for making many useful or ornamental household articles. Our free booklet gives plans and specifications with cost. Send for it.

One Good Job Means Another

When a man sees a good piece of BEAVER BOARD work, he's pretty apt to want another like it. Then his friends catch on, and every one wants to know who put it up.

We can tell you experiences of this sort that would open your eyes. *Just write us for the BEAVER BOARD BOOKLETS.* Sent free if you give your dealer's name.



These three pictures show how fine-looking a good piece of BEAVER BOARD work is in an office, club-house or bedroom. The best of it is, it's all clean, inside work, isn't hard, and is sure to give satisfaction and bring steady work to the man that can put it up right. If you want more information about this proposition, drop us a line on a postal card.

The BEAVER COMPANY of BUFFALO

GENERAL OFFICES AND WAREHOUSE, 114 BEAVER ROAD
Mills and Factory Beaver Falls, N. Y. Canadian Factory
Ottawa, Ontario

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



See Here! Mr. Carpenter,

That trademark is something for you to remember, for every good live man wants and will have first-class tools, and experience has proved that the Simonds is the world's best hand saw.

If you're more than an *average* man, you're looking for the best saw. Every hustler wants a saw *with an edge that holds*, and that's the Simonds and you'll always know it by the trademark.

That trade-mark means that this saw is

MADE OF SIMONDS STEEL

made especially for the Simonds Saw in Simonds Mills.

By our patented process, we get the most evenly and correctly tempered saw on the market. No one else can quite make it, they don't know how. We are advertising, so *you* won't forget the Simonds trademark.

If you will only try the Simonds Saw, you will agree with us, and the hundreds of Carpenters already using them, that

Simonds Saws are The Best, And They ARE The Best.

Each Simonds Saw comes packed in a separate case. Remember the trademark when you buy. Every saw absolutely guaranteed free from imperfections in workmanship or material.

When you need a saw buy a Simonds. Let us know the kind and size you want and we will tell you the name of our nearest dealer and will also send you a free copy of "Simonds Carpenter Guide," a useful and instructive booklet.

Simonds Mfg. Co.

Fitchburg, Mass.

Chicago
San Francisco

New York
Portland

New Orleans
Seattle

Lignine Unbreakable Carvings

The Ornamental Products Company of Detroit, Mich., manufacturers of Lignine (wood) carvings, have just moved into their new and modern factory.

We do not hesitate to speak a good word for Lignine (wood) carvings, as they are a meritorious and wonderful product. They are made in three woods: oak, mahogany and walnut.

We are informed that the Ornamental Products Company are not only enjoying a fine business in this country, but are also shipping their goods to all parts of the world. A postal card will bring you their complete catalogue and sample of this product.



419

"Union Dandy" Builders' Derrick

In the building world at the present time it is necessary to make use of the most modern methods and processes for handling the work on an economical and profitable basis. Quickness and ease of handling material is a vital element,



and so there is an increasing demand for builders' derricks that will do the work that was formerly done by laborious and costly hand work. In this connection we would direct

"RICHMOND" *Efficiency*

THAT element which distinguishes the "RICHMOND" Heating System from all others is the efficiency with which all parts, from boiler to radiator, faultlessly perform the work for which they are intended. The specification of "RICHMOND" fixtures precludes any suggestion of an error in your judgment.

And, after installation, you will understand why the owners and users of "RICHMOND" goods join with us in proclaiming that "RICHMOND" means superiority.

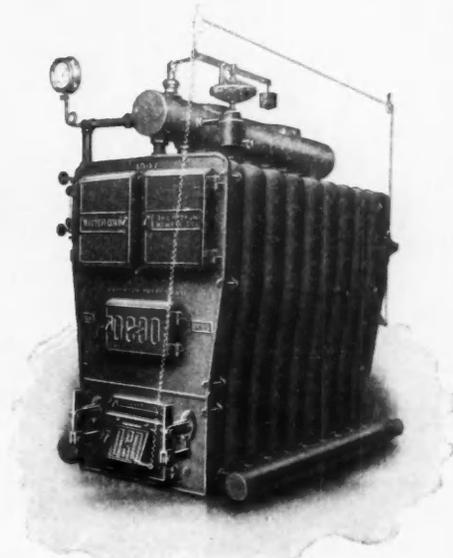


PLATE 42-9-S
"RICHMOND" Square Sectional Waterbase Steam Boiler. (Also made for Hot Water Heat.)

"RICHMOND"

Steam and Hot Water Boilers Radiators

"RICHMOND" Boilers, in every detail, embody the requirements of the perfect house-heating boiler. The heating surface is so placed that both the flame and heated gases strike it at right angles, thereby utilizing the maximum amount of heat. In the interior surface all parts are so arranged that they are easily accessible for cleaning, thus securing the highest efficiency of the heating surface. Every inch of fire surface in "RICHMOND" Boilers is so backed by water that it readily absorbs the full heat and circulates it through the hollow double walls of the boiler and on through the piping to every part of the system. Because water surrounds every portion of the surfaces with which fire or heated gases come in contact, and because the construction is such that the greatest amount of surface is so placed as to be in contact with the fire or heated gases, the "RICHMOND" Boiler is the most economical on the market in fuel consumption, easiest to operate, and of the highest heating efficiency. It is also practically indestructible.

Send for Catalogue BR

THE M^CCRUM-HOWELL Co.

Two Factories at Uniontown, Pa.
One at : : Norwich, Conn.
One at : : Racine, Wis.

Park Ave. and 41st St., New York City

Address in the West Cameron Schroth Cameron Co. 189 Michigan St., Chicago, Ill.



The Best Training School FOR Carpenters and Builders

The pictures shown above represent the more important buildings of the International Correspondence Schools, of Scranton, Pa. They are the best training schools in the world for carpenters and builders because: (1) The I. C. S. Courses are first prepared by practical men and then rewritten by experts to suit the particular needs of the man having to get his technical training in odds and ends of time. (2) Each Course is prepared to qualify students for a particular branch of work; students study only what is necessary to equip them for the work they want to follow. (3) The I. C. S. Courses are easy to learn, easy to remember, and easy to apply.

The International Correspondence Schools are teaching carpenters and builders in every part of the world—helping them to advance to higher and better-paid positions in their work. Not a month goes by in which the Schools do not receive upward of 300 voluntary letters telling of positions bettered and earnings increased through study of the I. C. S. Courses. During December the number was 409.

In a single year the increases in salary reported by students of the Schools have amounted to more than Two Million Two Hundred Thirty Thousand Dollars.

The I. C. S. can better your position, increase your pay, brighten your future. To find out all about it will cost you nothing and place you under absolutely no obligation whatever. Just mark and mail the attached coupon. Don't wait until tomorrow. **Mail the coupon NOW.**

International Correspondence Schools Box 910, SCRANTON, PA.

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

Architect	Estimating Clerk	Foreman Machinist
Arch'l Draftsman	Bridge Engineer	Sh.-Met. Pat. Drfts.
Contractor & Build.	Civil Engineer	Mining Engineer
Building Foreman	Surveyor	Textile Expert
Building Inspector	Mechanical Eng.	Bookkeeper
Structural Eng.	Mechan'l Drafts'n	Stenographer
Struct'l Draftsman	Stationary Eng.	Ad Writer
Plum. & Heat. Con.	Electrical Engineer	Window Trimmer
Supt. of Plumbing	Electrician	Illustrator
Form. Steam Fitter	Elec.-Light. Supt.	Civ. Service Exams.
Plumbing Inspect'r	Elec.-Rail'y Supt.	Chemist

Name _____
 Street and No. _____
 City _____ State _____

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

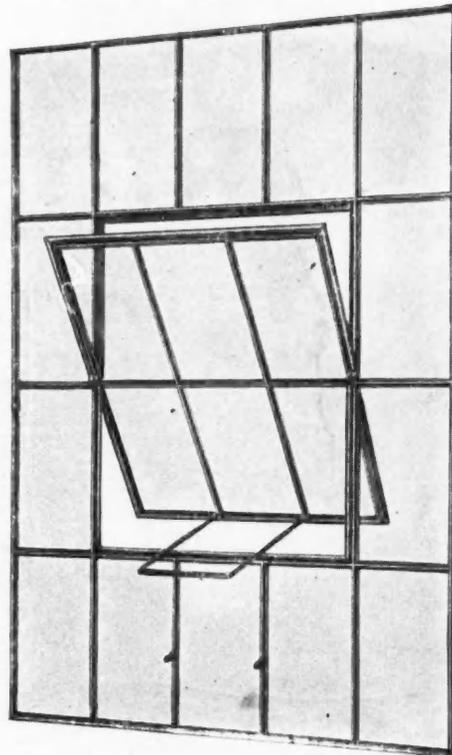
and costly hand work. In this connection we would direct special attention to the "Union Dandy" builders' derrick, which has met the enthusiastic approval of many contractors because of its many strong points.

In the first place it is light, portable and easily moved and set in place. It is strongly built of select Georgia pine timber and the best iron work. It is intended for hand power and may be operated by one or two men. It is on the circular swing principle, the boom swinging to 135-degree angle and may be raised or lowered as found necessary. It has a geared winch with ratchet and pawl. It is adapted for hoisting stone, iron, timbers, joist, flooring, door and window frames and other material used in building operations. The Union Dandy is manufactured by the Union Elevator & Machine Company, 215 West Ontario street, Chicago, Ill., an old-established and well-known concern that has long been a factor in its field of operations. It manufactures derricks, winches, tackle blocks, etc., of all sizes, and a general line of contractors' supplies; also a line of steam, electric, hydraulic, belt power and hand elevators for all purposes. They solicit correspondence with the readers of the AMERICAN CARPENTER AND BUILDER who are interested in equipment of this kind.

United Steel Sash

One of the most attractive steel sashes recently placed on the market is the United Steel sash, manufactured by the Trussed Concrete Steel Company of Detroit.

This sash consists of special rolled steel sections, so de-



signed as to give the greatest strength and maximum light. The joints are so formed as to avoid the cutting away or punching of any of the metal with the consequent weakening of frame.

The United Steel sash is machine-built, which assures absolute accuracy and particularly attractive finished appearance.

All joints are perfectly tight, shutting out draft and rain. The double contact surfaces around the ventilator make all openings thoroughly weather-proof.

The glass is held in place by a special spring-steel clip and the putty retained securely by the continuous ledge extending along the length of the steel section.

The United Steel sashes are particularly suited for the construction of windows in factories, warehouses, industrial



THE quality of the New Rambler is rare in that it manifests itself in unexpected ways, giving to every little detail of the car the mark of careful workmanship and added efficiency.

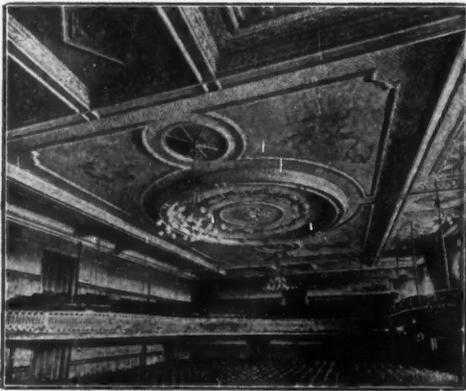
This individuality is the product of broad Rambler experience intelligently applied by skilled Rambler workmen.

To this is due the development of those distinctive Rambler features—the Offset Crank-Shaft, Straight-Line Drive, Spare Wheel and new Expanding Clutch.

Rambler automobiles, \$1,800 to \$2,500

Thomas B. Jeffery & Company
Main Office and Factory: Kenosha, Wis.

Branches: Chicago Milwaukee Boston Cleveland San Francisco



There's Money for You in Steel Ceiling Work

And you can easily handle it. Our construction is planned to simplify erection and reduce number of pieces to handle, thus saving time, labor and expense. Any good mechanic with the aid of our working drawings can easily do the work and secure a neat, snug-fitting, workmanlike job.

We help you by preparing free suggestion drawings and estimates. Send sketch and dimensions of room or rooms to be covered and we will submit suggestions and quote exact prices on the material delivered at your depot.

Berger's "CLASSIK"

is the most complete line of artistic Steel Ceilings in existence AND OUR CATALOG PROVES IT.

Write for it TODAY. Ask for No. D-55.

THE BERGER MFG. CO., Canton, O.

New York Philadelphia Boston Chicago
Atlanta Minneapolis San Francisco St. Louis



AN EDWARDS METAL SPANISH TILE ROOF

COSTS NO MORE THAN A GOOD TIN ROOF

Artistic and Ornamental in appearance and is positively guaranteed to be Fire, Lightning, Rain, Storm and Wind proof.

Its extreme lightness (about one-eighth that of slate), durability and moderate cost commend it to those wishing something out of the ordinary in roofing.

Manufactured from best quality Worcester Grade Terne Plate, furnished painted or galvanized (galvanized after being formed) size 10 x 14 inches.

Descriptive Booklet sent free on request.

The Edwards Manufacturing Co.

"THE SHEET METAL FOLKS"

401-417 Eggleston Ave., CINCINNATI, OHIO

buildings and fireproof structures of all kinds.

Complete information, estimates, etc., will be furnished by the Trussed Concrete Steel Company, Detroit.

Wood Finishing Book Free

The tenth edition of booklet, "The Proper Treatment for Floors, Woodwork and Furniture," issued by S. C. Johnson and Son, Racine, Wis.,

"the wood-finishing authorities," is now ready for distribution. It is profusely illustrated in color and the entire subject is very fully treated. This booklet gives full instructions for finishing and re-finishing all kinds of wood—natural or in color—and gives many suggestions for finishing inexpensive soft woods so they are almost as beautiful as the hard

wood. It also gives many particulars regarding the care and treatment of highly polished woodwork and floors.

S. C. Johnson and Son have made a specialty of wood finishing for the past twenty-three years. Their line is entirely different from anything else on the market. Their announcement will be found on another page of this issue. Among the articles they are advertising are:

Johnson's Prepared Wax, a complete finish and polish for furniture, woodwork and floors, Johnson's Kleen Floor, for cleaning floors and woodwork and keeping them in perfect condition; Johnson's Wood Dye (made in fourteen shades), for the artistic coloring of wood; Johnson's Under-lac, better than shellac or varnish, used wherever a high glossed finish is desired; Johnson's Plasto-filler, for filling cracks and crevices in walls and floors; Johnson's Electric Solvo, the best paint and varnish remover on the market.

Samples of any or all of these preparations and copy of the new booklet will be sent upon request to readers of AMERICAN CARPENTER AND BUILDER.

Architectural Sheet Metal Work

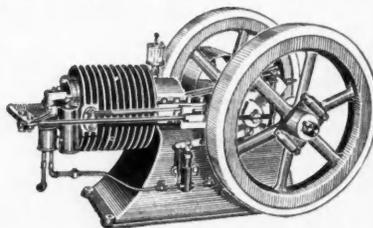
We have received Catalogue No. 11 of the St. Paul Roofing, Cornice and Ornamental Company, Inc., St. Paul, Minn. It is a beautifully gotten up book and is arranged in a way to be particularly valuable to carpenters, building contractors, architects, etc. It shows the complete line of this company in cornices, skylights, ventilators, ridgings, crestings, pediments, hip shingles, finials, vanes, conductor heads, columns, capitals, brick bonds, door and window caps, shutters, etc.

We understand that in addition to this general catalogue special catalogues are issued on steel ceilings, stamped and spun ornaments, store fronts, roofings and sidings, tanks, eaves, trough and conductor pipe.

All those interested will do well to get into touch with this progressive architectural sheet metal concern.

Gasoline Engines on Approval

"Your Word Is Good With Us," heads the new advertisement from Gade Bros. Manufacturing Company. Special emphasis is put upon the fact that the Gade gasoline engine is sold under more liberal trial than most other engines. There are no strings tied to the free trial of the Gade. You are not asked to sign any contract blanks or specially worded order blank. All



SUCCESSFUL DRAFTSMEN

Draw Good Plans Draw Good Money

**If You are Tired Being
— a Hard Working —
Carpenter or Builder
then Make Yourself the
Highest Grade and Highest
Priced Man in Your Place**

To do this you must be a good *Draftsman*, not one of those "would be" ones, no, but a first-class man, with actual, practical *drafting room experience*.

It will pay you well to learn this right from a practical man with twenty years' experience who will instruct *you* personally —individually on high-class *architectural* drawing, complete building designing and detailing in all branches;

Who will qualify you at home in a few months to double your earning capacity

Don't waste time and money trying to learn from books or printed lessons made for all alike, the same as patent medicine; you can only learn this right on *practical work* from a practical man.

Free This Month A high-grade Complete Drawing Outfit, including a \$13.85 Set of German Silver Tools.



If you want to be the "BEST MAN" write me to-day. Address—

Chief Draftsman

Div. 17 Eng's Equip't Co. (Inc.) Chicago





This great pier was roofed nine years ago with **Granite Roofing**. At the present time it shows no signs of wear, and is expected to give excellent satisfaction, without attention or repairs, *for at least ten years longer*. Unlike the ordinary ready roofing, which is adapted only for temporary buildings and sheds, **Granite Roofing** may be economically used on all kinds of structures. Its unusual weight, 140 lbs. to the roll, give to this roofing *unparalleled durability*. It can be laid by anyone who can handle a hammer. **Granite Roofing** has a surface of sea-grit, thoroughly imbedded into its composition, which makes it fireproof and takes the place of the paint or coating.

Send for free Sample and Booklet, and learn about this best of all roofings.

EASTERN GRANITE ROOFING CO.
1 Hudson St., NEW YORK CHICAGO ST. LOUIS

HESS MEDICINE SANITARY LOCKER

The only modern **Sanitary Steel** Medicine Cabinet or Locker.

Handsome beveled mirror door. Snow white, everlasting enamel, inside and out.

FOR YOUR BATHROOM

Costs less than wood and is better. Should be in every bathroom.

Is dust, germ and vermin proof and easily cleaned with warm water.

Made in four styles and three sizes. **Price \$7.00 and up.** Send for illustrated circular.

HESS, 920L, Tacoma Bldg., Chicago

Makers of the Hess Steel Furnace.
Sold on Approval. Free Booklet.



HANDY LAMP Gasoline Lighting System

DRAWN TRADE TO YOUR SHOP



Gives a 300 Candle Power Shadowless Light the instant you move the lever. Turns up or down like gas, burns dim when not in use, or can be turned up instantly when more light is needed. It floods a 30-foot space with a brilliancy like daylight. Far cheaper than gas, kerosene or electricity, and so simple that anyone can use it. You can depend on it for years for any purpose demanding a big, strong light. Catalogue A. C. B. tells why: Send for it now.

BRILLIANT GAS LAMP CO.
Dept. 20, 42 State Street Chicago, Ill.



you have to do is simply drop them a postal or letter stating what size you want and the engine will go forward without any red tape. Use it for 30 days free, putting on rated horsepower, and if not satisfactory return at end of 30 days and they will pay freight both ways.

This company states that it can stand back of its goods, and is not afraid to let the engine talk for itself. It is cooled without the use of fans or water. This wonderful invention has revolutionized gas engine construction. All our readers will do well to investigate this engine, addressing Gade Bros. Manufacturing Company, 80 Main street, Iowa Falls, Iowa.

Phillips Screens

The custom made fly screens of A. J. Phillips & Company, Fenton, Mich., are made in a large, finely equipped factory, open all the year, by mechanics of long experience. A large stock of well seasoned, selected lumber, wire cloth and materials are carried at all times. These facilities and extensive product enable them to produce excellent work, claimed to be much better in pattern and finish than that of the ordinary shop or planing mill. They can deliver the goods at your railroad station at very reasonable prices, which they will gladly quote to AMERICAN CARPENTER AND BUILDER readers. They will make complete estimates, if lists and sizes of openings are submitted.

Two general grades or types of screens are made by them; the "Suburban," the highest grade, and the "Apartment House," a cheaper grade. In the "Suburban" the top and side rails are regularly 1 3/4 by 13/16; bottom rail 2 3/4 by 13/16. Rails extend full width of frame. Frames "O. G." and cope construction. Water-proof coped joints, with vertical hardwood dowels. The screen frame slides up and down on oiled hardwood guides reaching to the top of the window. The guides are bored for nailing to the window stops, and the nails are furnished. The screen is held in place by flat steel springs in the groove at the edge. These are brass plated to prevent rust. Pushing the screen to one side, it is easily removed from the guide strips. The springs also hold the screen at any desired elevation. Bronze flush lifts are furnished on all "Suburban" sliding screens. Each screen has a brass disc bearing its number in black, and a duplicate is furnished for attaching to the window sill. Each screen of this grade also bears a tiny bronze plate with the manufacturer's name. The wire cloth is fastened to top and bottom rails by the "Welt" or "Spline" process. The moulding covering the wire cloth edges is sunk level with the face of the frame, is carefully mitred at the corners and secured by brass nails. The frames may be re-wired if necessary. The frames are waterproofed by dipping in a linseed oil filler which penetrates and protects the wood, the joints and grooves, and gives a hard foundation for the paint, enamel or varnish. Outside screens are usually made from clear kiln dried Michigan white pine, finished similar to the outside of a Pullman car. Inside screens are made from various woods to match interior finish.

The apartment window screen is plainly but smoothly and well made from the very best materials—the same that is used in the highest grade work. By making these screens in large quantities and omitting some of the details of the highest grade of finish, they claim to be able to make the lowest price ever made on a durable first class screen.

The frames are of white pine, weatherproofed in linseed oil dip and painted one coat of dark green, best lead and oil paint. Best twelve mesh black wire cloth, edges covered with flat, round edge mouldings, mitred at the corners, is used.

Hand hole lifts, brass plated flat steel springs, frame numbers and brass numbered tacks for sills are furnished.

Metal Frames for Cellar Windows

One of the great objections to a wooden cellar-window



Asbestos "Century" Shingle Roof — Residence of Rufus Choate Porter, Dallas, Texas; J. E. Flanders Dallas, Architect; Wm. F. Nicholls, Dallas, Superintending Architect; George Dodson, Dallas, Contractor

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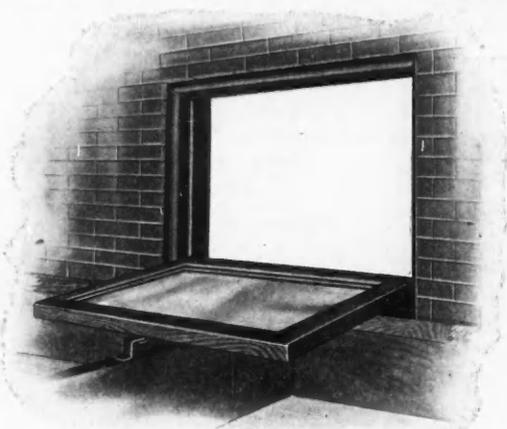
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frame is that not being able to secure them firmly, they often become loose and get out of place and the sill very often be-



comes rotten and has to be replaced. This emphatically is not the case with the "Sectional" metal window-frame made by the Majestic Furnace and Foundry Company, Huntington, Ind. This window frame is urged especially for the window used for putting fuel into the cellar.

Mr. W. D. Smith, the inventor and patentee of the "Sectional" metal window frame, has been a building contractor for years, and being thoroughly familiar with the many disadvantages found in common wooden cellar window frames, was inspired to invent, design, and patent this now famous "Sectional" metal window frame, of which we shall give a brief description.

The frames are made in four sections and bolt together at the corners, using two bolts at each corner. The bolts are furnished with the frames. When the frame is placed in the

foundation the bolts are entirely concealed, and nothing but the clean, smooth surface of the frame appears. Both outside and inside edges of the frames are rounding and smooth. The material used in the construction of these frames is the best quality of No. 1 gray cast iron. They are 5/16 inches in thickness and 7 inches wide.

One of the principal features is that the sides being made in a curved shape leaves a hollow space between the outside edges and the foundation proper, which space gives the mason an opportunity to fill in with mortar or cement, and when the masonry hardens the frame becomes a part of the foundation itself, and cannot possibly get loose or out of place as is the case with the wooden frame; neither can it shrink away from the foundation and allow the wind and cold to find its way into the cellar.

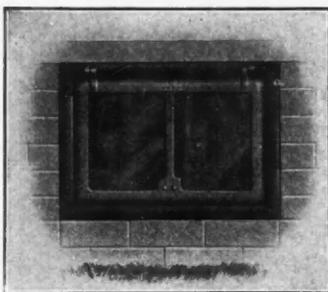
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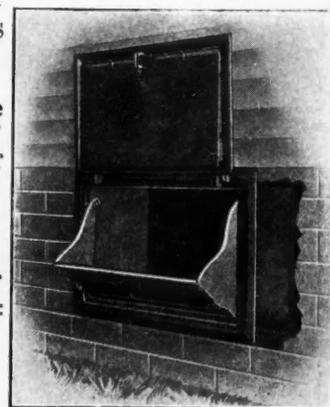
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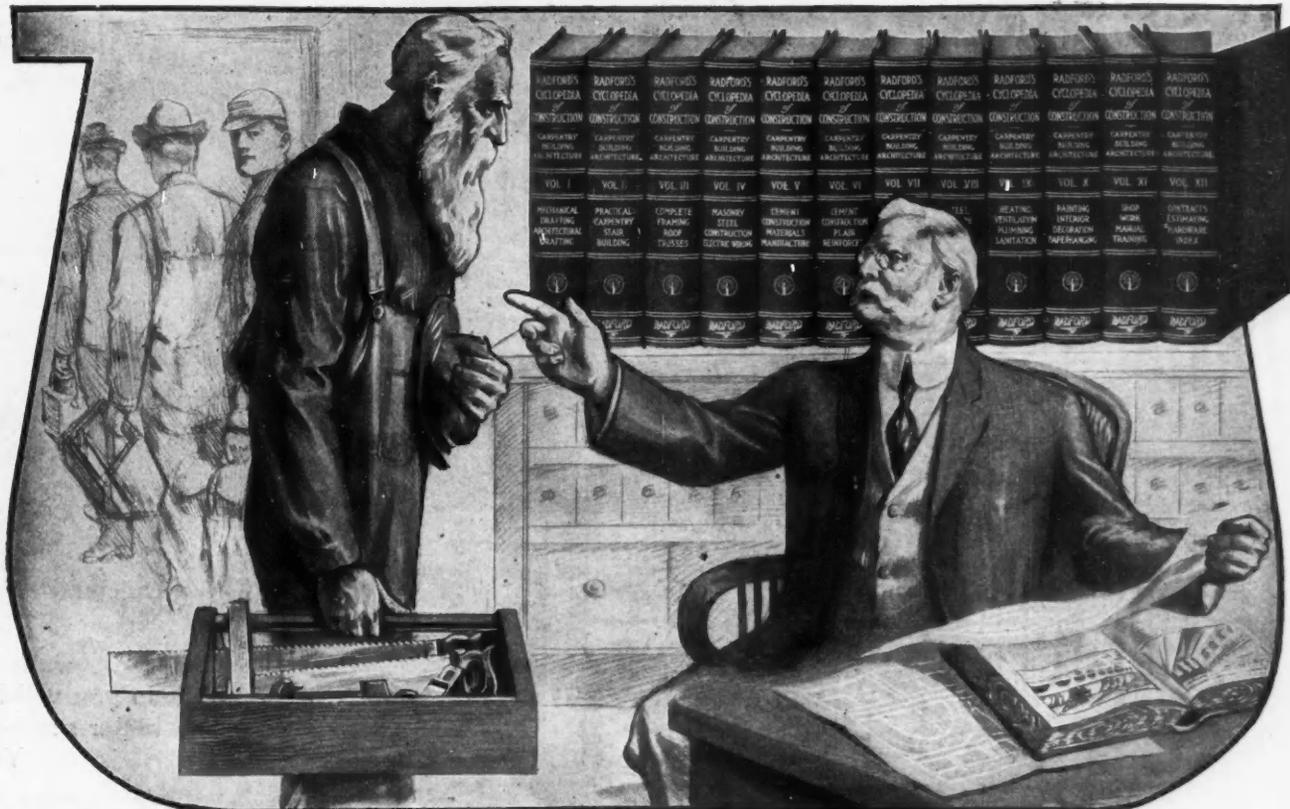
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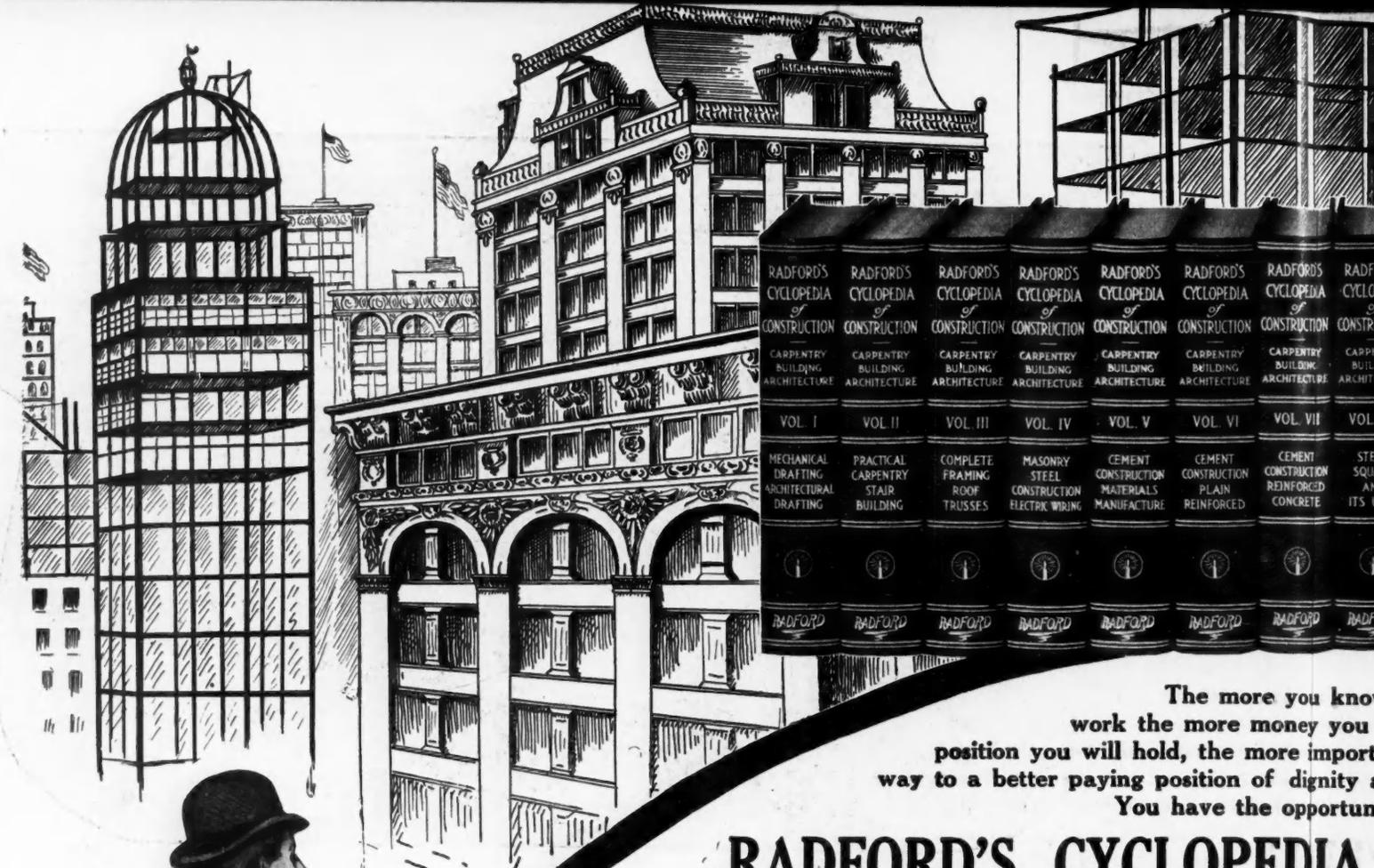
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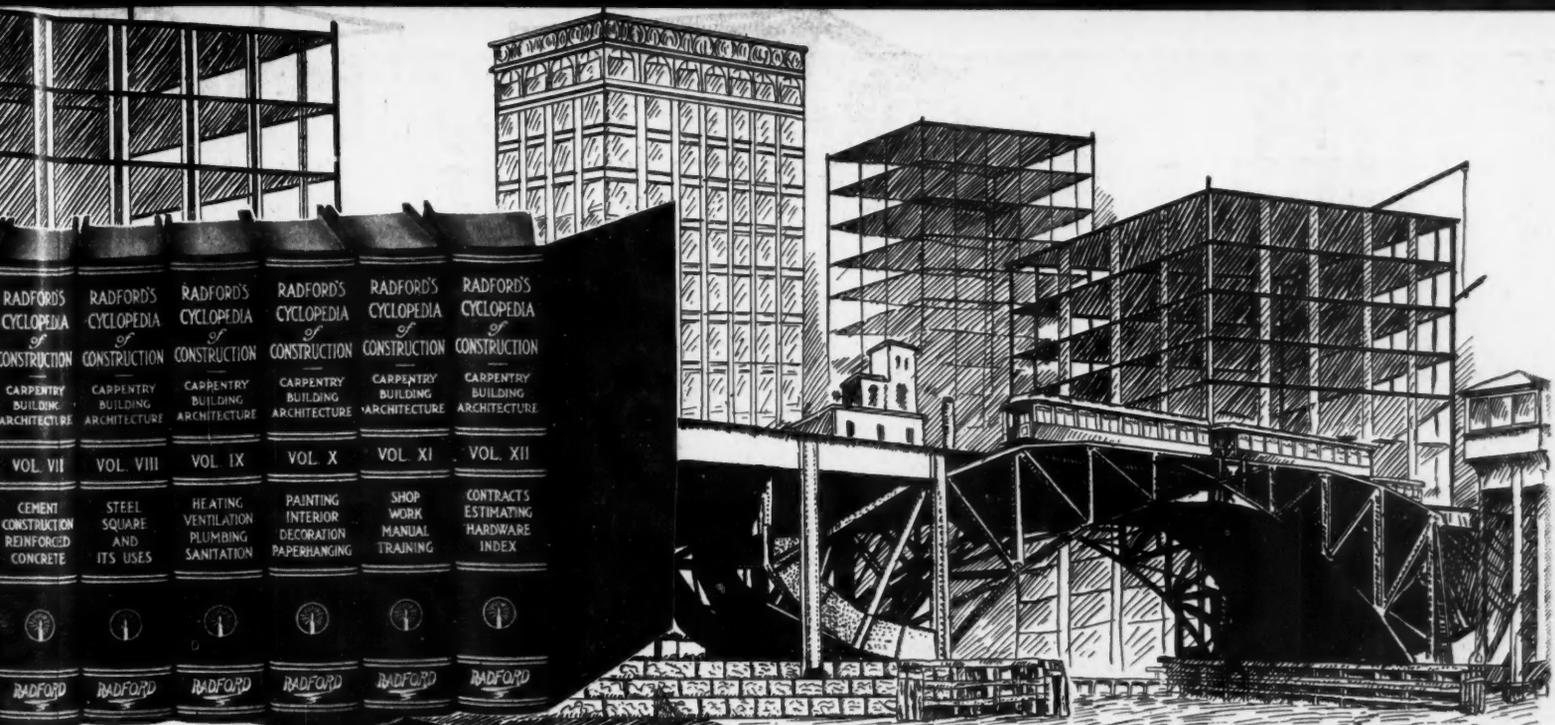
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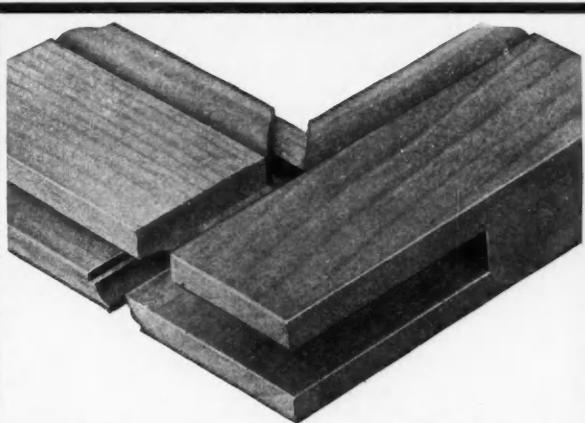


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MR. CARPENTER, BUILDER or CONTRACTOR, write for FREE copy of our 1910 illustrated catalogue.

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SHULTZ'S Modern Store Fronts
of Steel and Brass CORNER BEADED
CORNER POSTS, MULLIONS AND TRANSOM BARS

A-STEEL B-GLASS C-CORK D-GRASS E-SLOT SECTIONAL VIEW PATENTED APR. 23, '07

Soundest, Strongest and Most Practical Bar on the Market. Long life—nothing to rot out. Glass bedded on Spanish Cork, preventing cracking or crushing of glass. No putty, yet ABSOLUTELY WATER AND DUST PROOF.

Simply incomparable with old fashioned styles. They add immensely to the Beauty, Utility and Real Value of Buildings.

ARE LOW IN COST. Architects, Contractors and Owners are invited to write me for descriptive literature, prices or estimates.

Also Shultz Patent Burglar Proof Coal Chute. All Steel Cork Bedded and Ventilated Bottom Bar

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ALL-STEEL BURGlar-PROOF COAL CHUTE



The Neatest, Strongest and Most Convenient Coal Chute Made. Prices also Lowest. No modern residence complete without it. Locks itself when closed up. Can only be opened from inside. Architects, Contractors and Owners are invited to write for descriptive circular.

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Genasco Ready Roofing

Put it on the roof of every building you construct and you'll have solid satisfaction, and real economy; you'll have absolute and lasting weather-protection.

Genasco is made of Trinidad Lake asphalt — the natural and only perfect waterproofer. It will not crack, rust, rot, or catch fire. And it does not leak.

Ask your dealer for Genasco, and be sure to look for the trademark. Mineral or smooth surface. Guaranteed by our thirty years' experience and large organization. A written guarantee also, if you want it. Write for samples, and the Good Roof Guide Book.

THE BARBER ASPHALT PAVING COMPANY

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

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Gravel
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are better than ever. The enormous amount of building which is going on and the increasing demand for better and more up-to-date structures gives the man with actual drafting-room experience splendid opportunities for steady income at high prices — besides a chance for advancement.



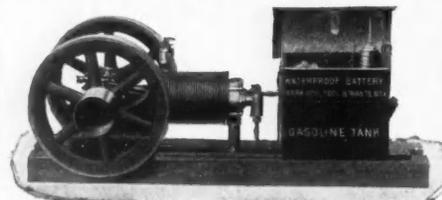
Mr. F. V. Dobe

There is no class of men who make better architectural draftsmen than carpenters and contractors. The experience gained by actual work on all kinds of building makes it much easier in studying and also in obtaining responsible good-paying contracts or position afterwards. No employer cares for diplomas — neither does he care to pay big wages to just a mere copying man. What the people or your employer wants today is originality, and practical ability, and this requires practical training. The quickest and best way to know how to do practical drafting-room work — and to get the required practical experience, is to receive personal and individual instructions from a high-grade practical man at the trade. This man, or instructor, must have a reputation as the most experienced in training men to become competent and successful draftsmen. An ordinary draftsman, even the best draftsman, can't teach this trade unless he has had a good many years' experience as an instructor, and has the ability to impart knowledge so that it will be understood and will stick forever.

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and your cast iron will be brazed and mended just the same as had it been steel or brass.

\$1.00 per pound 12 pounds \$10.00

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Insures Most For Your Money

Let us quote you prices on your next roofing job. Let us send you samples and show you what the users of our different roofings think of them. No matter what style of building you have in hand — from skyscraper to barn or shed. You will find the right roofing at the right price among these styles:

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have made an enviable reputation in all parts of the country for richness of color, uniformity and durability. Our factory prices for highest quality will surprise you. **Unito Metal Roofing Tile** is another one of our products you ought to know about.

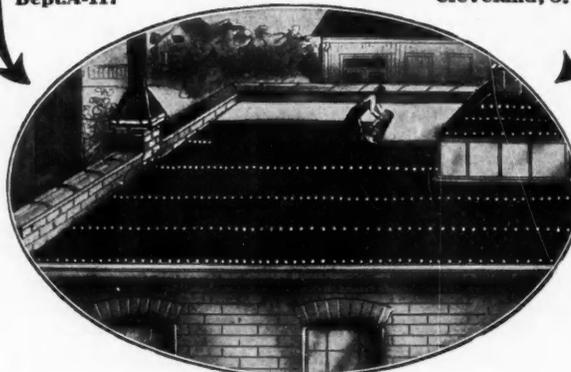
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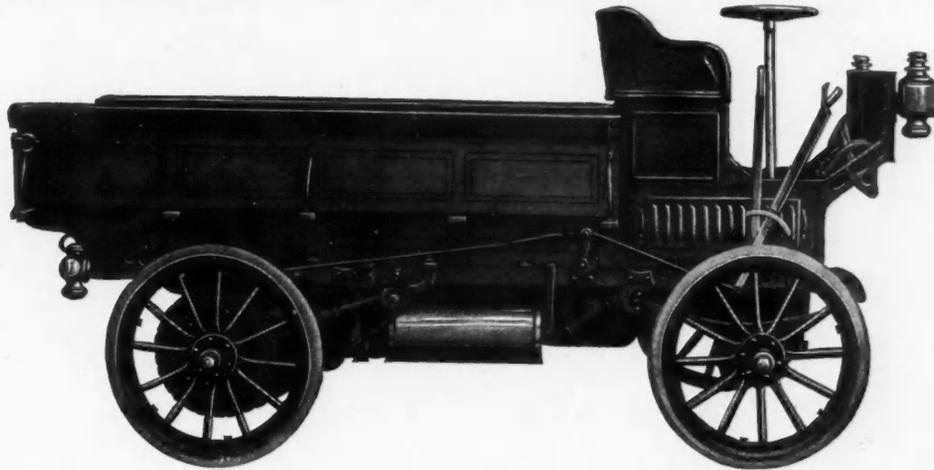
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Our agent in your locality will do your hauling at a fixed cost per month



We maintain a service department whose business is to advise you on any delivery problems you may have. This service is free and if you have a problem communicate with us, and get full details as to how we guarantee continuous service at a fixed cost to you.

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Send for other Combination Offers.

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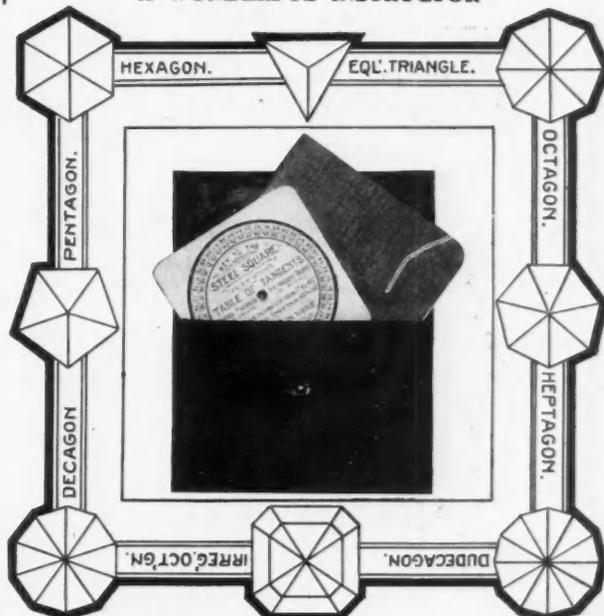
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It should be in the possession of every carpenter, or those having work in angles. It tells the whole story of how to use the common steel square, to obtain the cuts in degrees, or by inch rise per foot run for all kinds of framing.

Price \$1.50, Postpaid

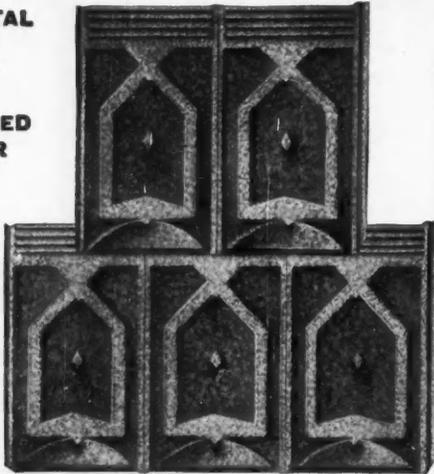
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*We can save
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THE LADIES ALL APPROVE IT



This window can be washed outside and in, the cleaner standing on the floor

It is dust-proof, also air-tight and water-proof.

There is no danger to life or limb in cleaning this window, as the cleaner stands on the floor inside the building.

This is the window people have been looking for, for years.

It can be made both in sheet steel and wood.

It is cheap and durable.

This window slides up and down the same as any ordinary window.

Estimates submitted for any building
 Write for circular and descriptive literature.

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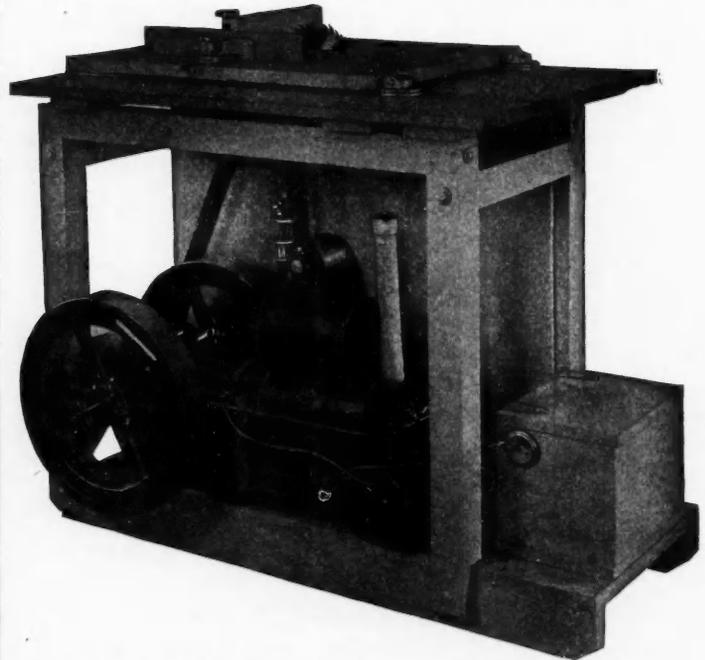
training and handling men has for a good many years given personal draftsmanship instructions by mail. That his individual methods are deserving of the success which they have merited is proven by the increasing number of successful men who today lay their start in life to Mr. Dobe's individual draftsmanship instructions on practical work.

The "knowing how" to be a first class draftsman and the ability to secure a good position can be had by applying one's self to Mr. Dobe's instructions. These instructions consist of actual drafting room work. He teaches each student according to the student's ability and with his individual and personal methods does away with unnecessary study of work on subjects which the student may already be well versed in.

Mr. Dobe issues a prospectus on Successful Draftsmanship. His advertisement appears on page 2 of this paper. Those interested can get full particulars by writing to him direct.

Let This Rig Do Your Millwork

The main problem with the carpenter contractor today, is how to get his labor done in the most efficient manner and at a minimum cost. Two contractors might take the same job, at the same price, under the same conditions, pay the same rate of wages to their help, and one make money on the job while the other may lose money, all due to the different methods of management. Many contractors are able to carry work through with much less expense than others, all due to their system of management and the use of improved labor saving machines, etc., which accounts for the difference in figures in nearly all cases. It is to save the contractor this



waste of time and labor, which is overlooked when they submit figures on the job, that the No. 1, "C. H. & E." portable saw rig was put on the market. This movable saw rig is one of the best time and money savers put before the building trade in a good many years, being exceptionally handy to move from job to job.

This rig has been a long felt want and a glance at the illustration will be sufficient to convince that it is an exceptionally handy outfit.

This rig contains a 3-horsepower water-hopper-cooled engine, and will saw 3-inch thick lumber. The iron table is fitted with gauges, accurately planed, with screw adjustment for raising and lowering table.

This portable saw rig is sold by the Inter-State Equipment and Engineering Company, 1775 Old Colony building, Chicago.



HOLLOW-WIRE

LIGHT FOR HOMES, STORES, FACTORIES AND STREETS
 The best light under the sun is produced by the STANDARD AND SIMPLICITY LIGHTING SYSTEMS. Better than electricity or city gas, cheaper than kerosene or candles, with none of their objections. No smoke—no soot—no odor—no work filling lamps or trimming wicks. A light that does not befoul the air. Suitable for the cottage or for the mansion, for the city or country home. Anyone can operate them and be entirely independent of gas and electric companies. Produces a Hydro-Carbon Light—white, brilliant and penetrating. Does not change or affect colors at night nor cause eye strain. Endorsed by insurance underwriters, recommended by users.

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For Permanency, Appearance & Economy's Sake—Use Slate

Any building with a solid foundation, staunch construction—*deserves* a roofing equally as good.

The first cost of wood shingles and artificial roofing preparations is less, but in efficiency and final cost they are more expensive and less satisfactory than the handsomest roof of slate you, as a builder yourself, ever saw or admired.

For extreme durability, economy and lasting satisfaction, there is but **one** roofing you can safely recommend to prospective builders of homes, barns, factories, churches or public buildings—and it is

The Only Roofing that

- Won't burn
- Won't wear out
- Won't rust
- Won't crack
- Won't require paint or repairs.

The only kind you CAN SAFELY recommend to YOUR people.

Sea Green and Purple Roofing Slate

For, unlike *artificial* roofing, *Slate will never wear out*—rust, warp, crack, tear or decay. Being of solid rock—Sea Green or Purple Slate cannot burn—requires no paint or repairs. For all practical roofing purposes, it is absolutely *imperishable*.

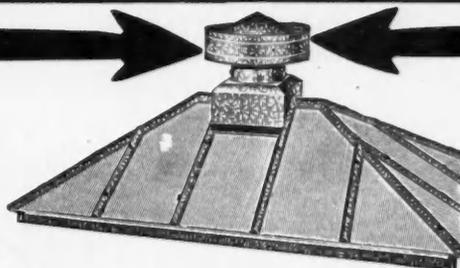
There will be a big demand in your neighborhood for slate roofing this season. Prepare *now* to take advantage of such *new* business.

Write today for free booklet "Roofs" and prices of *your* kind of Slate—*delivered*

American Sea Green Slate Company

125 Clark Street, GRANVILLE, N. Y.

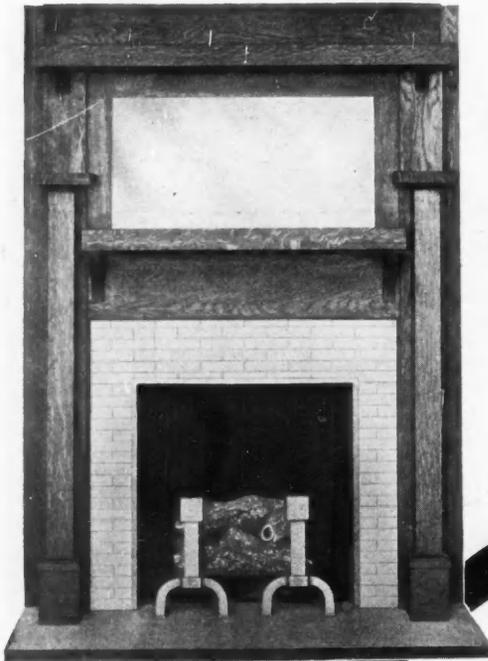
WILLIS PERFECT



Skylights AND Ventilators

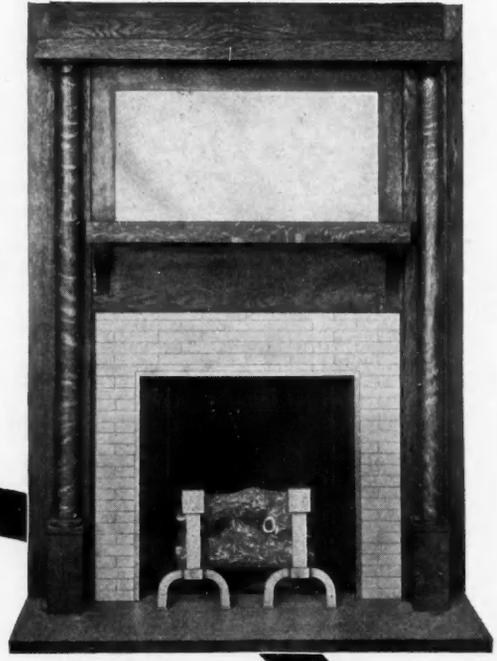
Manufactured by **THE WILLIS MANUFACTURING CO., Galesburg, Ill.**

Write for our General Catalog No. 5, showing a complete line of Cornices, Skylights, Ventilators, Crestings, Finials, Roofings, Sidings, Metal Shingles, Steel Ceilings, Hip Shingles, etc. Fireproof Windows and Doors. *Send us your plans for estimates.*



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 Complete with
 Tile and Grate

OUR new 1910
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 high-grade
 mantels will be ready
 for distribution in
 a few days.
 Write for *your* copy.



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HERE are a
 few of the
 many ex-
 ceptional values we offer in

Strictly High-Grade Mantels

— a line in which we have always specialized with very great success.

Note the illustrations carefully. They are photographic reproductions of the goods themselves. *And then note the prices. See what you save by buying "from manufacturer direct."*

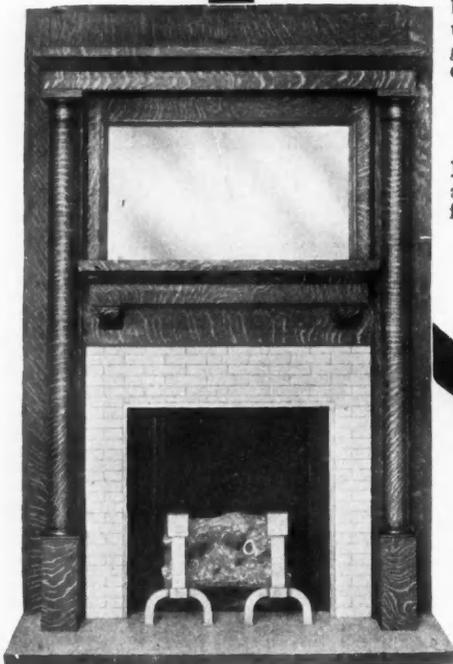
The prices quoted are for mantels exactly as shown—complete with tile and grate—all ready to install. Their rich simplicity of design is equalled only by the strikingly beautiful piano-finish—a finish imparted by processes covering a period of from 12 to 14 days.

No matter where you live or what price you pay, you cannot get better quality of material or better workmanship than we offer in our unusually complete line. In every particular these mantels are *fully guaranteed to be absolutely right*. Your money back quick if you find one that is not exactly as represented.

Handsome Catalog Sent for the Asking

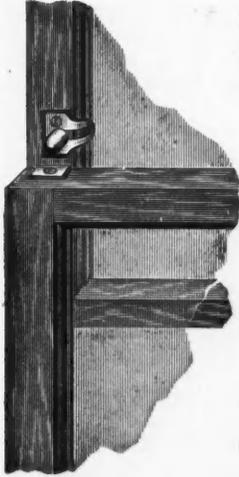
Just drop us a line to-day, and we will send you a copy of our new Mantel Catalog—an attractive book illustrating and pricing the most artistic line of mantels manufactured. Write a letter or a postal for this book—right now.

Chicago Millwork Supply Co.
 20th and Sangamon Streets
 CHICAGO, ILL.



No. C. 2452
\$35.85
 Complete with
 Tile and Grate

**FROM
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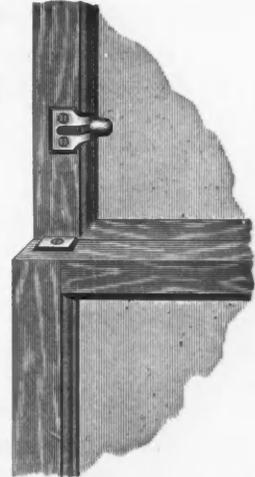
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IVES PATENT VENTILATING LOCK

A safeguard for ventilating rooms, allowing windows to be left open at the top, the bottom, or both top and bottom with entire security against intrusion, a permanent fixture easily applied and quickly operated, affording three times more protection to the window than the ordinary sash fastener.

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88-page Catalogue Hardware Specialties mailed free



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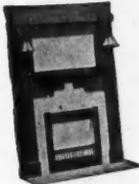
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In decorative value, character of design and fireproof qualities **The Lorenzen Line** of Mantels and Fireplaces is unequalled. Our new "Faience Effects" are the latest creations and mark an advanced step in mantel and fireplace construction.

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Imported and Domestic Wall and Floor Tiles

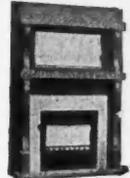
We are National Headquarters for Imported and Domestic Wall and Floor Tiles, Ceramic Mosaics and Art Mosaics for Floors and Mural Decorations and make a specialty of Encaustic Floor Tiles in all Patterns and Colors. We make quick shipments. Estimates and designs furnished.

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Write today for Catalog before the Edition is Exhausted.

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CHICAGO



Send for this 100 page catalog, size 14 1/2 x 11 1/2 in. Shows many full page illustrations. Each copy cost us \$2.50. Is a complete mantel and fire-place exposition on paper.



OUR SPECIAL LEADER

Our Catalog will tell you about our NEW COMBINATION CONSOL and PARLOR LIBRARY CABINET. A useful, compact, serviceable, handsome piece of furniture, which should adorn every modern home.

Nothing like it in the market at present

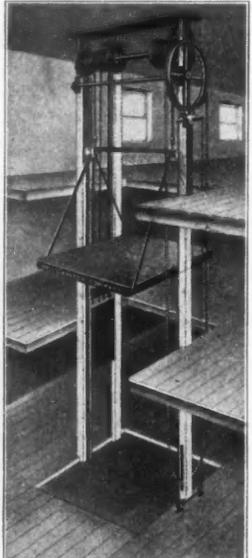
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The New Otis Metal Hand Power Elevator

FOR STORES



WORKS EASIER AND LASTS LONGER THAN OLD STYLE WOODEN ELEVATOR

\$75.00 TO \$95.00

SEND FOR FOLDER 26

OTIS ELEVATOR COMPANY
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GRILLES



Design No. 500

Our 1910 Catalog contains 16 pages of column openings.

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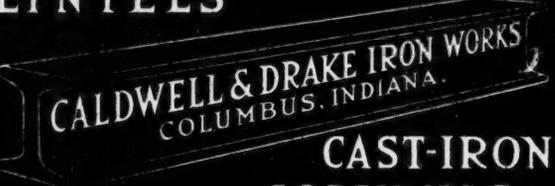
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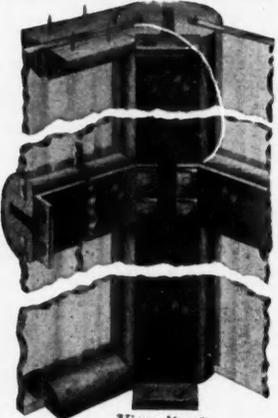
CAST-IRON COLUMNS · SIDEWALK LIGHTS



COULSON Patent Store Front Construction

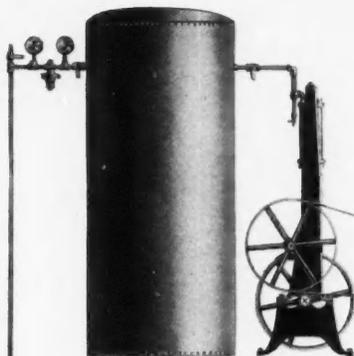
Of course you have heard of it, but let us tell you more about it. We will be glad to send you our complete illustrated catalogue, upon receipt of request. Brief description given on pages 643-645 in Sweet's Index for 1909. When writing for catalogue, ask for D-800.

J. W. Coulson & Co.
 Sole Owners and Manufacturers
 234 North 3rd Street - - COLUMBUS, OHIO

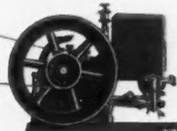


Front View
View Rear

A WATER SYSTEM WITHOUT A WATER TANK



Air Compressing Equipment may be located at any distance from the well.



Don't use an immense tank, either elevated or buried, for storing water. Water tanks are insanitary. Water in these tanks often stands for weeks before it is used, and the tanks are rarely cleaned. Stored water is unhealthful. "Aeration" does **not** purify the sediment and slime that accumulate in water tanks.



Don't Use Stored Water. Supply the home with water pumped fresh from the well by using the

PERRY PNEUMATIC WATER SYSTEM THE ONLY SYSTEM THAT STORES NO WATER

With the Perry System the water stays in the well until it is needed. Continuous pressure in the pipes at all times, same as city supply. The Perry system forces the supply to the faucets by direct air pressure. It stores compressed air, which is the power that forces the water from the cylinders of the pneumatic pump. This stored air is **reserve power**, making it necessary to operate the compressor only occasionally; therefore, the motor, engine, or whatever the power employed, may, in the meantime, be used for other purposes. Equipments furnished for any capacity.

In the entire Perry System there is not a lodging place where a cupful of water can stagnate. If you have a compression system, change it into a **fresh water system** by using the tank for an air reservoir. Let us tell you how.

One air-compressing outfit and an air reservoir will supply both hard and soft water, if desired. The Perry System is adapted for open or driven wells, lakes, rivers or springs. Economical in operation and easy to install. Endorsed by architects and engineers and is fully guaranteed. Write for descriptive catalog.

United Pump & Power Co., 468 Old Colony Bldg., Chicago, Ill.

Berry Pneumatic Pump No. 14, capacity 40 gallons per minute

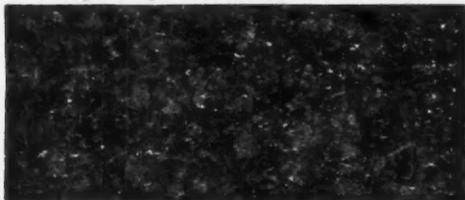
MASTIC ROOFING



Prepare For A HEAVY

NOW SPRING BUSINESS

Hundreds of contractors, carpenters and builders have met with success selling Mastic Roofing during the spring and summer. Most of them were our selling agents. To these, and to every man interested on the subject of good roofing, we say:



The above cut is an exact reproduction of a piece of Mastic Roofing 21-2x11-16 inches and shows the slightly surface finish.

The success of Mastic Roofing will be **doubled and trebled** during the coming year. Orders are pouring in and our manufacturing facilities have been extended to meet the **increased demand**.

The contractor is the man who **knows** good roofing and who is in a **natural position** to impart his knowledge, consequently it is through him that roofing **should be sold**. Therefore:

We will appoint contractors and builders as our selling agents. We have appreciated their co-operation and now offer our further appreciation in **more concrete form**. Every reader of this paper should at **least** send for details about our proposition.

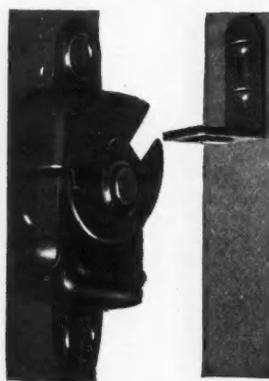
We offer **special inducement** to contractors and builders putting on the first Mastic Roof in every locality where it has not yet been introduced.

Send for Free Sample. We will send a free sample of Mastic Roofing when you send for the booklet. Write today.



NATIONAL ROOFING MATERIALS CO.
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The No. 21 Watrous Screen Door Catch

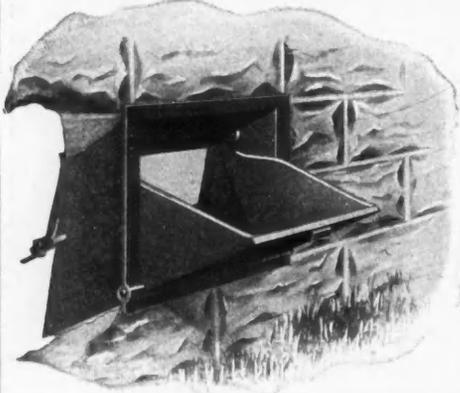
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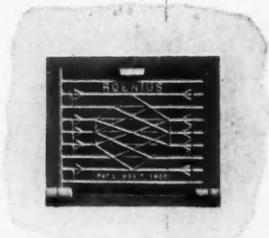
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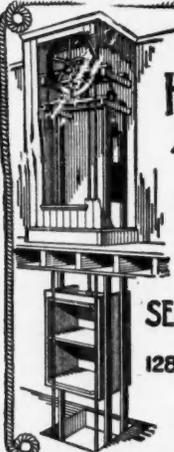


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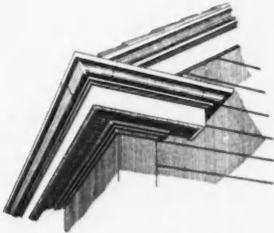
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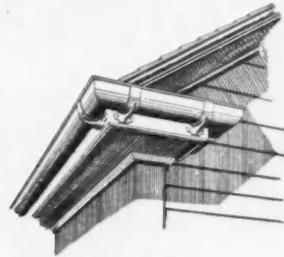
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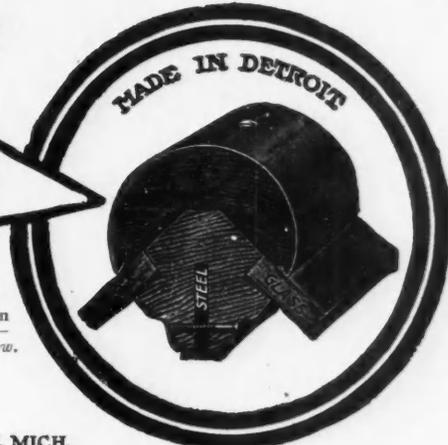
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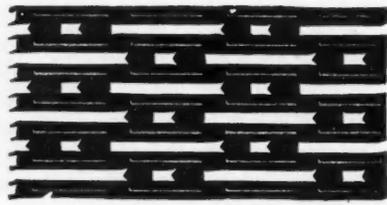
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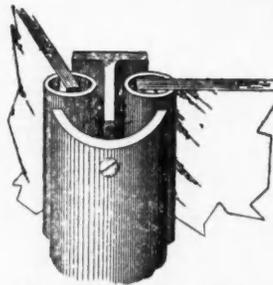
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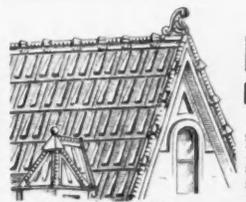


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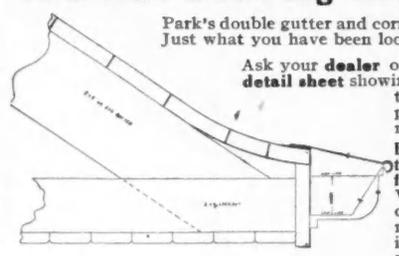
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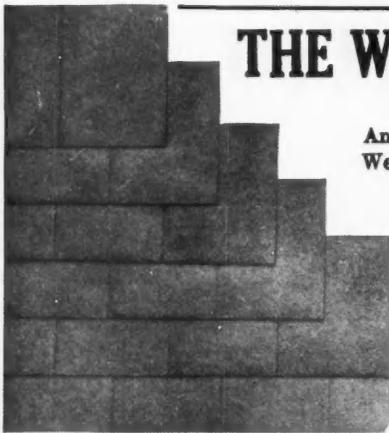
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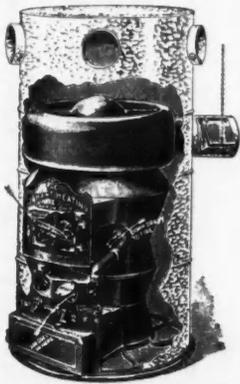
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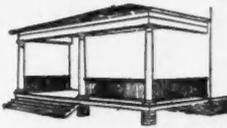
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Lot 10 A-100. Everything complete, outside casing 1 1/2x4 1/2 inch, main sill 1 1/2x3 1/2 inch, sub sill 1x5 1/2, jamba including stile and blind stops 5 1/2 in. wide, parting strip, etc. Made from sound selected clear face Yellow Poplar, Cypress and White Pine. Price complete in the K. D. with pulleys.....\$1.65



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Lot 10 A-99. Outside door frame, everything complete, outside casing 1 1/2x4 oak sill, 1 1/2x7 1/2 rabbetted jamba, 1 3-8x5 1/2. Made from the same woods as above. Price complete in the K.D. \$1.85

\$8.10 BUYS BEAUTIFUL FRONT DOOR.

Lot 10 A-13. Soft Pine double A quality glass, size 3x7 ft., 1 3-8 in. thick.....\$8.10
 Over 2000 other sizes and styles of doors shown in our Mammoth Catalog.

INSIDE DOORS.
 Lot 10 A-1000. Quality strictly first-class, and at this price is a decided bargain.
 2 ft. 8 in. x 6 ft. 8 in. 1 3-8 in. thick-4 panel O. G. "A" quality, clear redwood doors, each.....\$1.75
 2 ft. 8 in. x 6 ft. 8 in. 1 3-8 in. thick-5 cross panels O. G. "A" quality, clear redwood doors, each.....\$1.95

SPECIAL OFFER IN WINDOWS
 Lot 10 A-71. All the sash made of a special quality Soft Pine primed in oil.
 This regular 2 light, 1 3-8 inch check rail window, size 24x28 glazed.....\$1.05
 Lots of other good bargains in Windows in our Mammoth Catalog, copy of which every shrewd buyer should have.

INTERIOR TRIM.
 The best quality of kiln dried stock, thoroughly sanded.
 8 inch Y. P. Base, price per 100 lin. ft.....\$2.45
 4 1/2 inch Y. P. Casing price per 100 lin. ft.....\$1.60
 3 1/2 inch Y. P. Window Stool price per 100 lin. ft. \$2.25
 1/2 inch Y. P. 1/4 Round price per 100 lin. ft.....\$0.28

Hardware

All brand new perfect goods, quality will suit the most exacting owner or architect. Illustration shows the popular Wilmette design.



"WILMETTE" INSIDE DOOR SETS.

Lot 4 A-1662. Made of wrought steel, antique copper finish plated. Complete set each.....\$0.47.
 Per dozen sets.....\$5.00

"WILMETTE" OUTSIDE DOOR SETS.

Lot 4 A-01658. Genuine wrought bronze, antique copper finish. Set complete in every way.....\$1.60

UPRIGHT RIM KNOB LOCKS.

Lot 4 A-699. Japanned iron case, 4x3 1/4, each 10c

HORIZONTAL RIM KNOB LOCKS.

Lot 4 A-700. 3 1/2x4 1/2 in. each.....10c

DOOR KNOBS.

Lot 4 A-713. Mineral Rim Knobs, each.....6c
 Per dozen.....70c

WROUGHT STEEL BALL TIPPED LOOSE PIN BUTTS

Lot 4 A-719. Platinised antique finish. Size 2x2, per pair.....13c
 Size 2 1/2x2 1/2, per pair.....15c
 Size 3x3, per pair.....16c

SASH LOCKS.

Lot 4 A-753. Antique copper finish. Price each 5c
 Per dozen.....48c

HOOK SASH LIFTS

Lot 4 A-762. Wrought steel, complete with screws, antique copper finish, each.....2c

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Made of selected long fibre cotton.
 Lot 4 A-0779. No., 7-32 in. diameter. Per 100 ft. bundle.....50c

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We can furnish you a complete Hot Air, Hot Water or Steam Heating plant at 30 to 50 per cent saving. Send for our special heating booklet, and if you now have any jobs on hand, send us a sketch or diagram of building or home and we will make you an estimate. Anyone can install them with the aid of our Blue Prints and free instructions.

RAWHIDE RUBBER ROOFING



The greatest bargain in the world. Fire, hail and weatherproof. Not affected by heat or cold. Used in any climate. Made from pure asphalt. A strictly high-grade lasting covering. Recommended by fire underwriters. 108 Sq. ft. to a roll, with large headed nails and cement for laps. Requires no coating. Samples free.
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 2 ply " " 9 " 1.49 per roll
 3 ply " " 12 " 1.71 per roll
 At above prices, freight prepaid to Ill. Ind., Ia., Ohio, Wis. and Mich. Write for prices prepaid to other states.

STEEL ROOFING, pr.100 ft. \$1.60

100,000 Squares of new Steel Roofing which we are selling at the following prices, freight prepaid:
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 Corrugated, V Crimped or Standing Seam.....\$1.85
 At these prices we prepay freight to all points east of Colorado except Oklahoma and Texas. Quotations at these points on application. Our high grade Galvanized Rust Proof Roofing at prices ranging from \$3.00 per square up. Write today for free sample and Great Book on Roofing

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 Send me your "Free Book of Plans".....
 Send me your free Mammoth "Price Wrecking Catalog".....
 Send me free your "Great Book on Roofing".....
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Send Us Your LUMBER BILL For Our Estimate
Chicago House Wrecking Co., CHICAGO 35th & Iron Sts.

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MULLINS METAL TILE ROOFING

is simple in construction — secure — durable—absolutely storm and water tight. As expansion and contraction are provided for, it is guaranteed, when put on according to directions, to remain perfect for years.

This handsome metal tile roofing is used on many of the finest buildings in the United States. It is beyond question the most attractive and satisfactory roofing made.

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are made with the idea of turning fire. They are entirely of metal, lock-seamed throughout with no soldered joints in frame, sill or sash. Heat does not affect them in any way, and a Mullins was never known to warp, buckle, contract or expand. Mullins Windows are famous for durability, and will outwear any other feature of the building.

Mullins Fireproof Windows are manufactured under supervision of *Underwriters' Laboratories, Inc.*, according to the latest specifications of the *National Board of Fire Underwriters*, and *every window is inspected, approved and labeled* with their *official label*.

We have catalogues showing our various lines of product. Please specify the particular class of sheet metal work you are interested in and we will send you the proper catalog for same.



W. H. Mullins Company

214 Franklin Street,

Salem, Ohio.

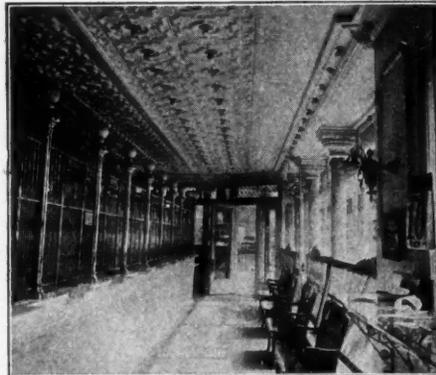
A PROFITABLE WINTER BUSINESS FOR A CONTRACTOR OR BUILDER

We want you to get Metal Ceiling orders for us.

The building season is about closed so far as outside work is concerned for the contractor and builder, so we want to ask you to look after inside work this winter.

We have made plain in our new catalogue the measuring and erection of metal ceilings and explain in special drawings just how you shall do it. This puts you into a position to go after metal ceiling business in your town this winter.

Send us a postal card or letter for our complete catalogues on metal ceilings and other sheet metal building material. We want a man in every town. We make expanded metal lath and Spanish tile roofing. Write us a card to-day.



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Wire & Iron Works
(Incorporated)

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Large Facilities, Prompt Deliveries

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An average house or barn requires at least one small size car of lumber, 12,000 to 15,000 feet board measure. Put yourself on the same footing as the lumber dealer. Get our free Wholesale Lumber Price List and buy your lumber direct from us at the lowest wholesale prices.

We Ship from Our Own Mill at Mansfield, La., Directly to You

You pay the freight the same as your local lumber dealer does. The freight amounts to very little compared to what we save you. We will be glad to quote you a price delivered to your station if you request it.

Do not order a dollar's worth of lumber without first getting our Wholesale Lumber Price List, giving you wholesale prices on 175 different sizes and kinds of the very best factory grades of lumber, one grade higher than is sold by the average dealer.

Here are a few items picked at random from our Wholesale Lumber Price List. Compare these prices with the prices asked by your local dealer and see how easy it is to save \$100.00 on an average carload of lumber.

	Price, each piece	Price, per 1,000 feet board measure
2x 4— 6 feet long, No. 1 grade Pine.....	6c	\$14.00
2x 4—12 feet long, No. 1 grade Pine.....	12c	14.50
2x 4—16 feet long, No. 1 grade Pine.....	15c	14.00
1x 6—10 feet long, No. 2 grade Pine.....	6c	12.50
1x12—10 feet long, No. 1 grade Pine.....	17½c	17.50
1x12—10 feet long, No. 2 grade Pine.....	13½c	13.50
1x 6—No. 3 Sheathing.....		8.80
No. 1 lath, ¾ inch by 1¾ inches, 4 feet. Price, per bundle of fifty pieces.....		.09

These prices guaranteed until March 25, 1910.

WRITE TODAY. Simply say, "Mail me your Wholesale Lumber Price List No. 69C23," and we will send it by return mail.

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Everything in Plumbing and Steam Goods at Cut Rates to Everybody

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\$8.50 and up
This Magnificent Enamel one piece Sink. Latest design.



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Artistic Lavatories. Various designs.



\$10.95 and up
Luxurious Enamel Bath Tub of guaranteed quality. Will wear forever.



Superb Bath Room Outfit. None better, at any price... **\$35.00**



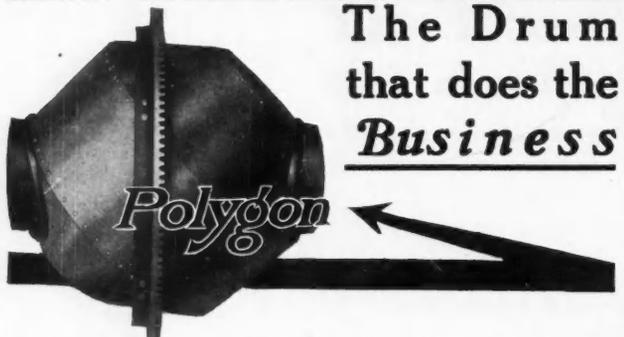
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Laundry Tubs, all styles and sizes.



Low-down and high Combination Closets. Guaranteed to be equal to the best in the market. Used in the most palatial homes. **\$11.50**

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Let us make you an expert on a heating plant. With instructions from our engineering department, you can install it yourself. Simple and safe as a stove. No expense after once installed. The only healthful economic method of heating your home. Plans free. Tools loaned. Boiler only **\$65.00 and up**

JOHN HARDIN CO., One-Quarter Century at **4549 Cottage Grove Avenue, Chicago**
Send for Catalog A, Dept. 13



The Drum that does the Business

Protect your reputation by the excellency and the permanency of your work.

The Polygon Concrete Mixer

is your insurance. It mixes more thoroughly, more quickly, less wastefully than any other concrete mixer.

The POLYGON possesses the good points of all other mixers. Its distinguishing feature lies in the shape and movement of the drum. It combines every mixing motion and makes the one perfect, unassailable mixture—either concrete or mortar.

The Polygon is the mixer of quickest action, biggest earning power, smallest maintenance and is most simple in construction.

Portable—durable—incomparable. Approved—authorized—used in government works. It's the drum that does the business.

Send for descriptive catalogue and prices

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WATERLOO, IOWA

THE "LEADER"

The simplest, most compact, most practical and economical brick machine made. Makes plain and ornamental bricks. Requires no experience—Easy and speedy.

\$28.00 Starts you in business making concrete building materials. The "Leader" brick machine is the fastest on the market. One man can successfully operate the machine and make from 2,500 to 3,000 brick per day.

We also manufacture larger machines. Write for our general catalog describing our entire line of concrete machinery.

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LACROSSE WISCONSIN

ESTABLISHED 1852

A ROOFING SLATE

with a Record

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Uniformity and Durability Unexcelled

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SLATINGTON - - - PENNA.

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GUARANTEES

UNIFORMITY OF PRODUCT

THE SOMERS

uses the "wettest" mix of any block machine on the market.

The Somers Makes Money

We can prove it

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2 Blocks Per Minute

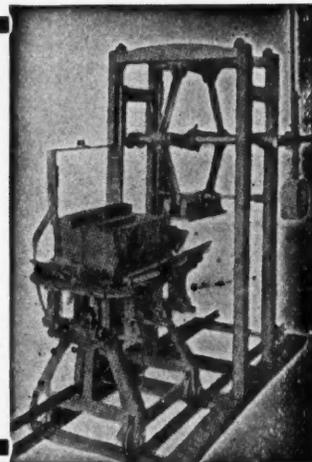
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The machine does the work, not the man

It makes an absolutely damp-proof wall

You can guarantee it

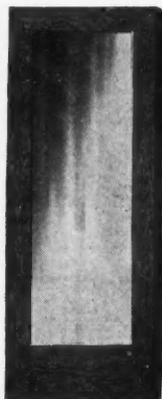
SOMERS BROS., Urbana, Ill.



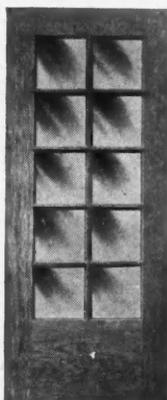
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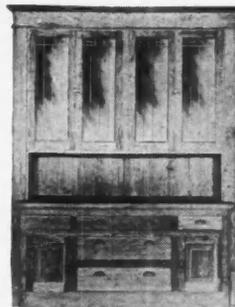
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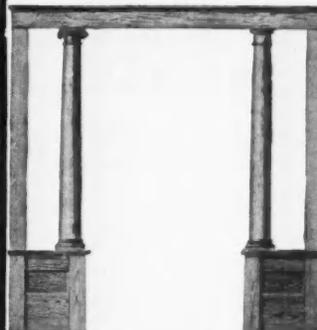
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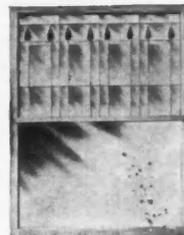
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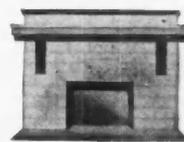
New China Buffet, \$25.92



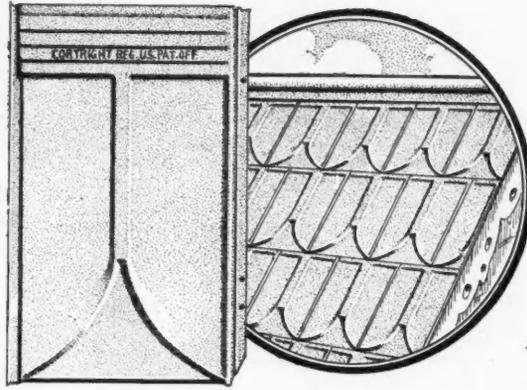
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If he gets more than he bargained for—he’s got no kick coming.

Time tests the bargain.

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were first handled by contractors twenty-four years ago.

We promised to stand back of those contractors.

The roofs are performing their work as well today as when put on, and have never needed repairs.

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The Mogul Invincible Block Machine
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IT IS RIGHT

It is 48 inches long and will make three 16" or two 24" blocks at one operation. It makes sills, caps, copings, rails and steps, faster and better than a special sill machine. It has every adjustment that any other machine has and many that no other machine has.

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

MYERS
Glass Valve

MYERS Stayon Flexible Door Hangers
with steel roller bearings, easy to push and to pull, cannot be thrown off the track—hence its name—“Stayon.” Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.
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PUMPS
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of all kinds
Write for circulars and prices.

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STEADY POSITION for a temperate, competent, reliable, good-natured carpenter. Capable of working from architects' plans, laying out framing and finishing, handling a crew of men, planning and making all kinds of concrete forms. State wages and give references. ARMIN & WALTON, Castlewood, S. D.

DOUBLE HOUSES Send for free booklet of designs, MAURICE P. CARNEY, 18 C. Street, Battle Creek, Michigan.

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SATISFACTION GUARANTEED IN QUALITY AND PRICE

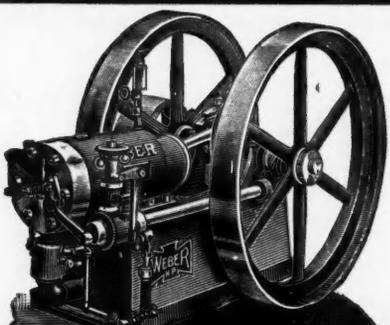
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Roofing Slate for Houses, Barns, Sheds and Railroad Stations. Clean and ornamental, rain, wind and fireproof. Blackboards for Schools, Colleges, etc., are being used all over the World, need no better commendation, "it is just the thing." Structural and Electrical Stock, Steps, Sink Tops, Wash Tubs, Window Sills, etc., superior to all other stone for such purposes. Slaters' Supplies, Hand-made Slaters' Tools, Snow Guards, Slaters' Cement, Nails, Felt, Slate Punching and Cutting Machines, etc. Write for prices and I will tell you all about Slate. D. McKenna, Slatington, Pa., U. S. A. JAMES CRAIG, Manager



The Engine of Reliable Records

Getting the most engine for your money, Mr. Carpenter, does not mean buying the cheapest. It is securing an engine that will give reliable results year in, year out—speed must be steady and uniform—absolute interchangeability of parts assured—actual power must equal rating. Every requirement of the man who wants a simple, reliable, powerful engine is met by the

Weber Gas or Gasoline Engine

Some of its special features are—underground gasoline reservoir for main gasoline supply—gasoline pump, pumping supply to engine; surplus returning to reservoir—electric igniter—heavy and rigid construction (see cut)—a perfect control governor by which the operator can change speed instantly—all parts easy of access and guaranteed interchangeable.

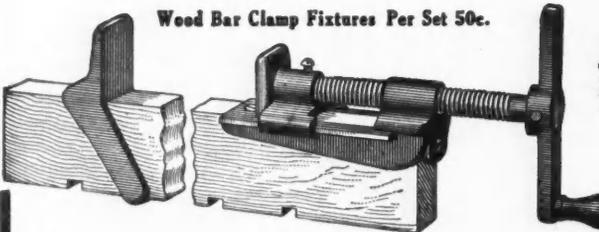
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Sheffield Gas Power Co.
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Let it Furnish Power for You

Wood Bar Clamp Fixtures Per Set 50c.



Patent Malleable Clamp Fixture

E. H. SHELDON & CO., Chicago, Ill.
Gentlemen:—We are pleased to state that the 25 dozen Clamp Fixtures which we bought of you a little over a year ago are giving excellent service. We are well satisfied with them and shall be pleased to remember you whenever we want anything additional in this line.
Yours truly,
CURTIS SASH & DOOR CO.
Mouz City, Iowa.

22,000 Sheldon Steel Rack Vises

Sold on approval, an unconditional money back guarantee.



STEEL BAR CLAMPS

Guaranteed Indestructible

We solicit privilege of sending samples and our complete catalogue.

E. H. SHELDON & CO.
84 N. May St., Chicago



The Peerless Brick Machine

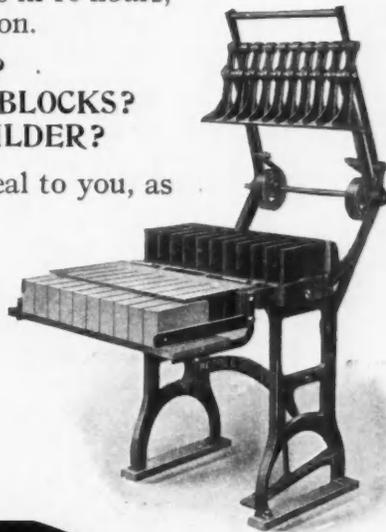
has been proven times without number to be
**The most SUCCESSFUL and
 ECONOMICAL MACHINE**

THE PEERLESS tamps (does not press) every brick and will turn out 12,000 perfect bricks in 10 hours, making 10 bricks at each operation.

R { DEALER IN CEMENT?
 U { MAKER OF CEMENT BLOCKS?
 A { CONTRACTOR OR BUILDER?

If you are, our machine will appeal to you, as it *makes perfect brick at minimum cost.*

OUR 1910 MODEL IS A WONDER



Write us so we can tell you more about it

Peerless Brick Machine Co.

19 North Sixth Street

Minneapolis, Minn.



Adjustable Step Cap and Sill Molds

Often you wish some Cap, Sill and Step stones. You haven't the time or there's too much expense to get the stone.

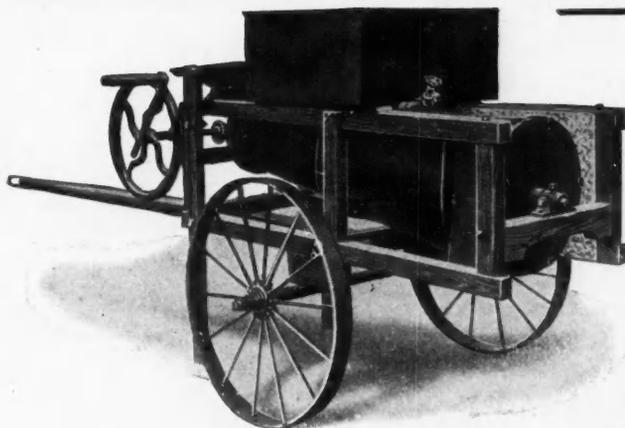
You can make any size and any widths. You can make quickly and with little cost with this **Adjustable** mold.

Send for a Catalog. Different designs for this mold and also other molds are illustrated. Don't forget to send for the catalog, for you will be interested to know all about these handy serviceable molds.

W. E. Dunn & Company

1332 Grand Avenue,

CHICAGO



HERE IT IS Perfection Hand Concrete Mixer

(Can be run by power if desired)

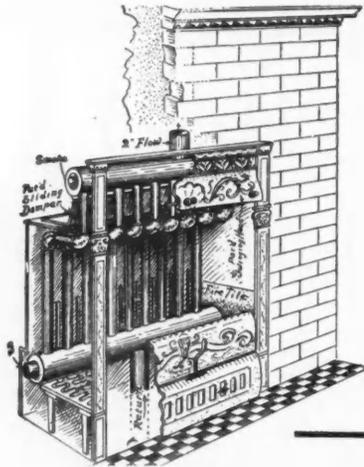
A Time, Labor and Money Saver

This machine will compete with many of the larger machines, and will do work the larger unwieldy machine cannot do. **Easily transported.** It is simply indispensable to the small contractor as well as the large contractor.

Used for Sidewalk Construction, Building Foundations, making Cement Posts, etc.

Used by Telephone and Railway Companies in setting their poles, etc. **Handy wherever used.** Write to-day. Mention this paper.

Sidney Elevator Mfg. Co., Sidney, Ohio



Mantels of Wood, Brick or Tile

furnished direct from factory at attractive prices, *freight paid*

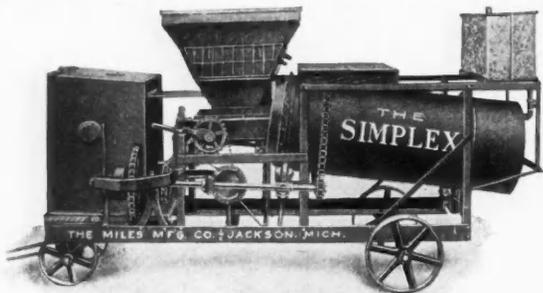
TILE and GRATES of every description

Our No. 51 Grate is guaranteed to heat from 8,000 to 10,000 cubic feet of space in zero weather.

CATALOGUE FREE

Contractors and Architects, send us the names of your clients requiring Mantels, Grates and Tile for same, as well as Tile Floors and Wainscoting of every description. We will make it interesting for you. Send plans for estimates.

HEITLAND GRATE & MANTEL CO.
No. 127 South Fifth St., QUINCY, ILL.



THE MILES SIMPLEX MIXER

Continuous Feed, Batch Mix, Low Down Steel Frame, 3 Hoppers, Positive Feed. Attractive Price



"The Miles" No. 5, Down Face, Wet Concrete Block Machine

Makes Stone in Lengths, 4", 6", 8", 10", 12", 16", 18", 20", 22", 24"; in Width, 4", 6", 8", 10", 12"; in Height, 4", 6", 8". Also Angle Stone, Circle Stone, Gable Stone, Hollow or Solid Stone. The Contractor's Friend, Simple, Strong and Rapid. Lowest in Price.

WRITE FOR NEW 1910 CATALOGUE
THE MILES MFG. CO., Inc. 109 Cortland Street JACKSON, MICHIGAN

Anchor Machines Make Continuous Air Space Blocks

The wall that's guaranteed frost and moisture proof.



A perfect dead air space from cellar to garret. Standard Machine makes blocks 8x24 in.—any width from 8 to 12 in.

Junior Machine makes blocks 8x16 in.—any width from 8 to 12 in. All blocks tied together in construction by four quarter-inch galvanized iron rods 8 in. long and turned 1 in. at each end, guaranteed rust proof and everlasting.

Write for Catalogue and Special Prices. All Machines sold direct to the trade.

Anchor Concrete Stone Co., Rock Rapids, Ia.



WANTED—RIDER AGENTS IN EACH TOWN

and district to ride and exhibit a sample 1910 Model "Ranger" bicycle furnished by us. Our agents everywhere are making money fast. Write at once for full particulars and special offer. **NO MONEY REQUIRED** until you receive and approve of your bicycle. We ship to anyone, anywhere in the U. S. without a cent deposit in advance, *prepay freight*, and allow **TEN DAYS' FREE TRIAL** during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle you may ship it back to us at our expense and *you will not be out one cent.*

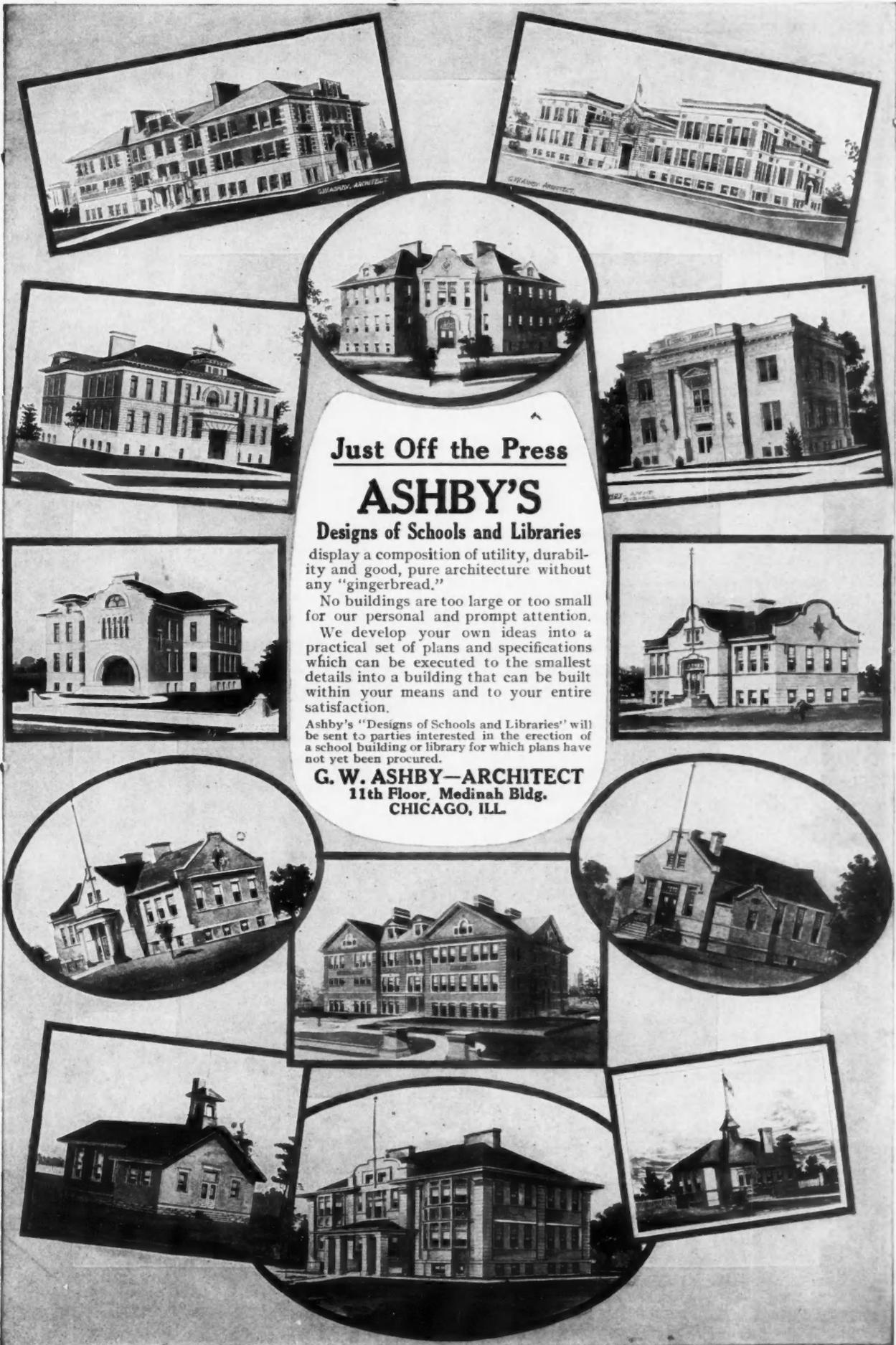
LOW FACTORY PRICES We furnish the highest grade bicycles it is possible to make at one small profit above the actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. **DO NOT BUY** a bicycle or a pair of tires from anyone at any price until you receive our catalogues and learn our unheard of factory prices and remarkable special offer.

YOU WILL BE ASTONISHED when you receive our beautiful catalogue and study our superb models a bicycle at lower prices than any other factory. We are satisfied with \$1.00 profit above factory cost. **BICYCLE DEALERS**, you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

SECOND HAND BICYCLES—a limited number taken in trade by our Chicago retail stores will be closed out at once, at \$3 to \$8 each. Descriptive bargain list mailed free.

TIRES, COASTER BRAKE rear wheels, inner tubes, lamps, cyclometers, parts, repairs and everything in the bicycle line at half usual prices. **DO NOT WAIT**—but write today for our Large Catalogue beautifully illustrated and containing a great fund of interesting matter and useful information. It only costs a postal to get everything. Write it now.

MEAD CYCLE CO. Dept. A-122, CHICAGO, ILL.



Just Off the Press
ASHBY'S
Designs of Schools and Libraries

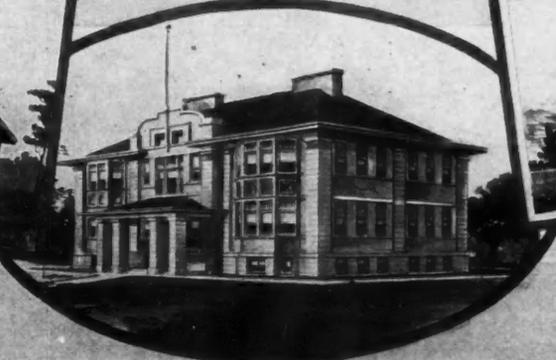
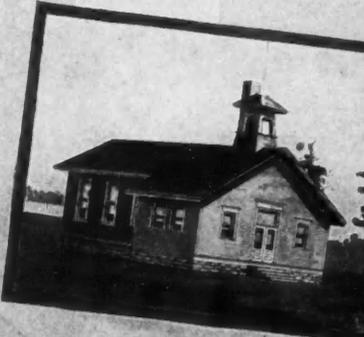
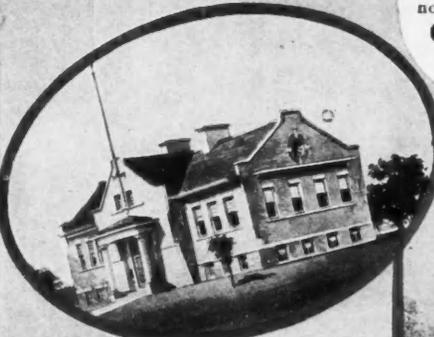
display a composition of utility, durability and good, pure architecture without any "gingerbread."

No buildings are too large or too small for our personal and prompt attention.

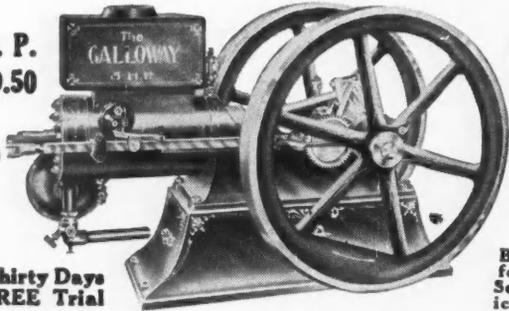
We develop your own ideas into a practical set of plans and specifications which can be executed to the smallest details into a building that can be built within your means and to your entire satisfaction.

Ashby's "Designs of Schools and Libraries" will be sent to parties interested in the erection of a school building or library for which plans have not yet been procured.

G. W. ASHBY—ARCHITECT
 11th Floor, Medinah Bldg.
 CHICAGO, ILL.



5 H. P.
\$119.50



2-28
H. P.

Thirty Days
FREE Trial

Built
for
Service

The Galloway Gasoline Engine

Owned and made exclusively by the
William Galloway Co., Waterloo, Iowa.

will run your shop at several times its present capacity and enable you to take lots of jobs that you have to turn down now because you have not the capacity.

Only four things to do:
Turn on the switch, turn on the oil, turn on the gasoline give the fly wheel a start, and the Galloway will go right along all day without further attention. It is ideal power for a small shop, and it's got the capacity to take care of your growing needs.

The Galloway has been classed as a standard, high-grade engine for fifteen years. Over 4,000 in use in Iowa alone. Thousands in every other State and Territory.

If you try the Galloway engine, you will find that it is not oversped. Remember, the bore and stroke count, and you don't have to drive your engine faster than you ought to drive it to get the rated horse power. Rated by actual brake tests.

On the larger sizes, if it is not entirely convenient for you to pay all cash, we will take your note for the balance at the regular rate of interest for six months.

The price given is for the five-horse power only, but we make these engines in seven sizes.

Ask for free information on stationary and portable gasoline engines from two to twenty-eight horse power. We make the best, and we price them at a reasonable figure. Write today.

The William Galloway Co.

1145 Galloway Station

WATERLOO, IOWA



\$25.85

For this elegant, massive selected oak or birch, mahogany finished mantel.

"From Factory to You"

Price includes our "Queen" Coal Grate with best quality enameled tile for facing and hearth. Gas Grate \$2.50 extra. Mantel is 82 inches high, 6 feet wide. Furnished with round or square

"Reputation and Quality Count"

columns, full length or double as shown in cut. Dealer's price not less than \$40.

CENTRAL MANTELS

are distinctive in workmanship, finish and style. Twenty years' experience enables us to know and satisfy the needs of those who want mantels of quality, different from the rest. We build all styles—Colonial to Mission.

CATALOGUE FREE—Will send our 112 page catalogue, the finest ever issued, free, to carpenters, builders, and those building a home

CENTRAL MANTEL COMPANY,

1247 Olive Street,

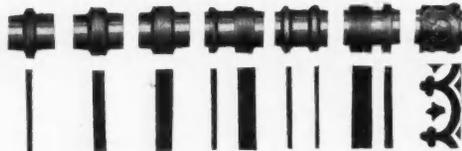
St. Louis, Mo.

Saves
TIME

STRIPING SO EASY

When You Use

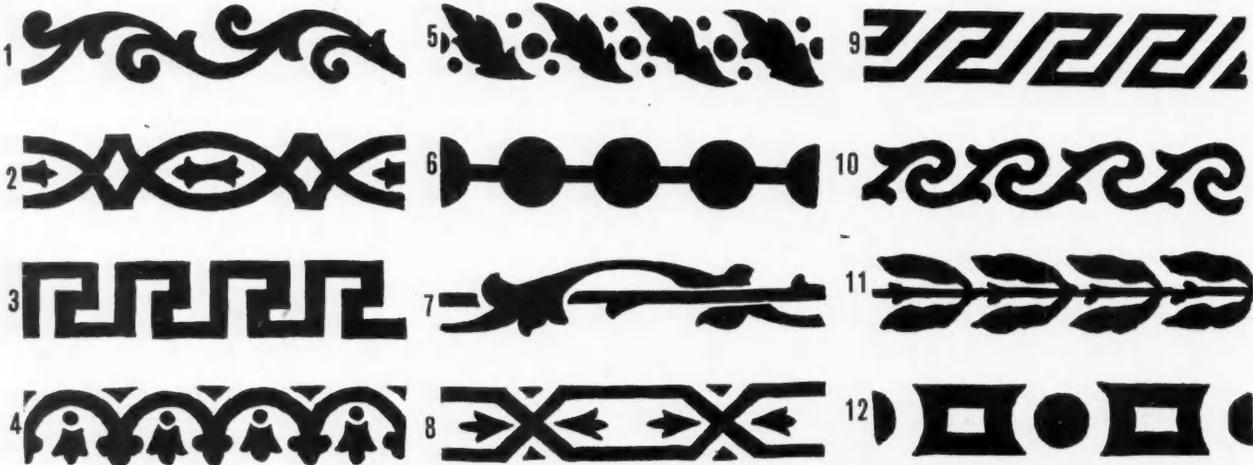
Painters' and Decorators' Striping and Stencil Wheel



Saves
MONEY

Price of complete outfit consisting of machine and 10 plain and ALL the here illustrated designs one to twelve Ornamental Roller Designs

\$5.00
And 25c postage



CHAS. R. UEBELMESSER CO. BAYSIDE, NEW YORK CITY, N. Y.

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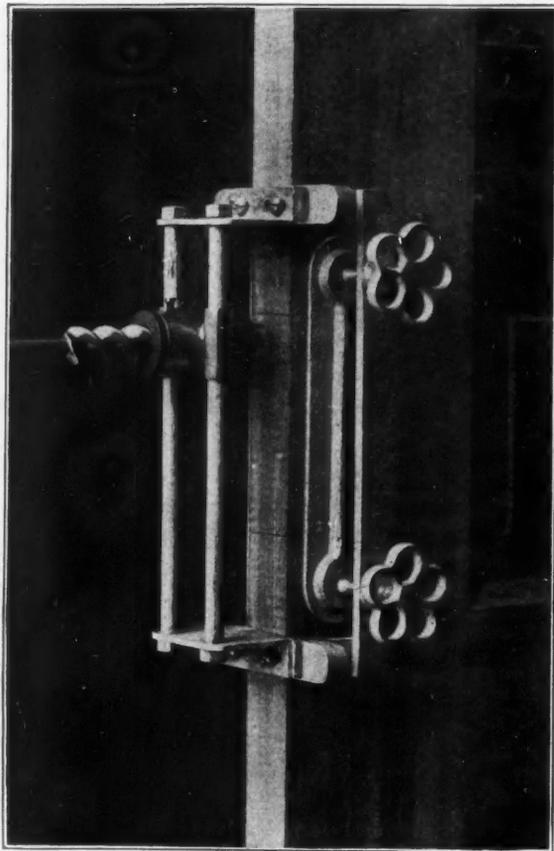
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Gade Bros. Mfg. Co.....	726	Otis Elevator Co.....	826	Winthrop Asphalt Shingle Co.....	834
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NOTICE TO ADVERTISERS

New copy, changes and corrections for advertisements must reach office of American Carpenter and Builder, 185 Jackson Boulevard, Chicago, not later than March, 20 in order to insure insertion in April number.



NICHOLLS LOCK MORTISER

The **perfect** mortiser, weighing only **3½ pounds**, will **not scratch or mar** the **finest door**. Makes a **clean** mortise. **Simple** to operate. Can not get of order. Quickly adjusts to any thickness door. **The best and the cheapest**. Will last a lifetime. Requires no oiling. Always ready for instant use. Absolutely no expense for repairs. Made for all standard size bits.

Easily understood and impossible to make mistakes in operating :: :: ::

MORTISE MADE AND
LOCK FITTED IN
3 MINUTES

Guaranteed to do the work as good if not better than any other mortiser on the market or your money refunded.

PRICE \$4⁵⁰

Write for Circulars and Information

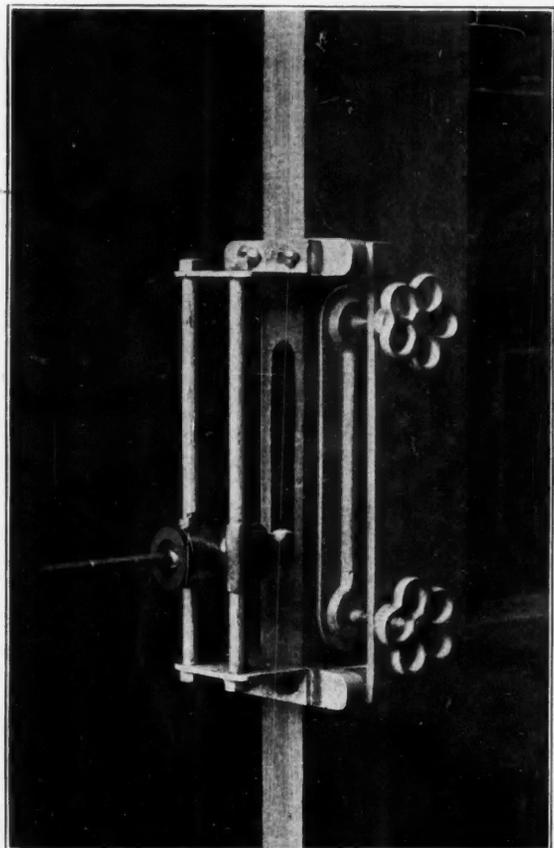
ADDRESS ALL ORDERS TO

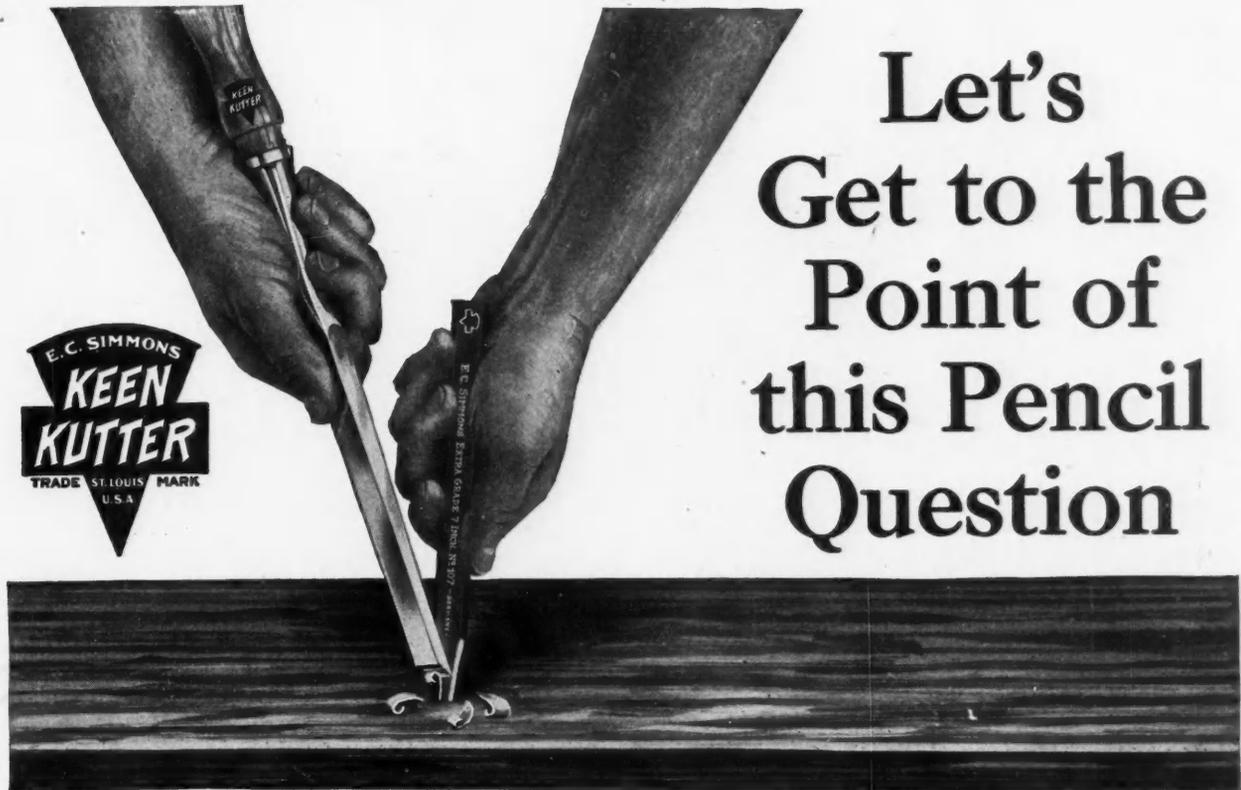
SAX-NICHOLLS-COHN CO.

(INCORPORATED)

SOLE MANUFACTURERS

FAIRFIELD IOWA





Let's Get to the Point of this Pencil Question

A carpenter pencil is a tool—as much so as a chisel or a hammer—and it should be selected with the same care. A carpenter pencil that will make easily-seen marks on any wood—rough or smooth, hard or soft—wet or dry—that will hold its point under these conditions—that will not split in halves or break in two—that kind of a pencil certainly is a good tool. It's the kind you should use and can get from most dealers if you call for

E. C. S. Carpenter Pencils

These pencils are built for the work, just like our famous line of Keen Kutter Tools. The lead is of finest quality, entirely free from hard spots and specially processed to give extreme toughness. An actual test proved that one of these pencils could be driven through ½ inch of soft wood without injuring point or pencil. The wood used is straight grain cedar, entirely free from knots or soft spots.

To introduce these high quality pencils to carpenters and builders we will send one free on receipt of the attached coupon properly filled out. If not at your dealer's, write us.

“The Recollection of Quality Remains Long After the Price is Forgotten.”
Trade-Mark Registered. —E. C. Simmons.

SIMMONS HARDWARE COMPANY, Inc.,
St. Louis and New York, U. S. A.

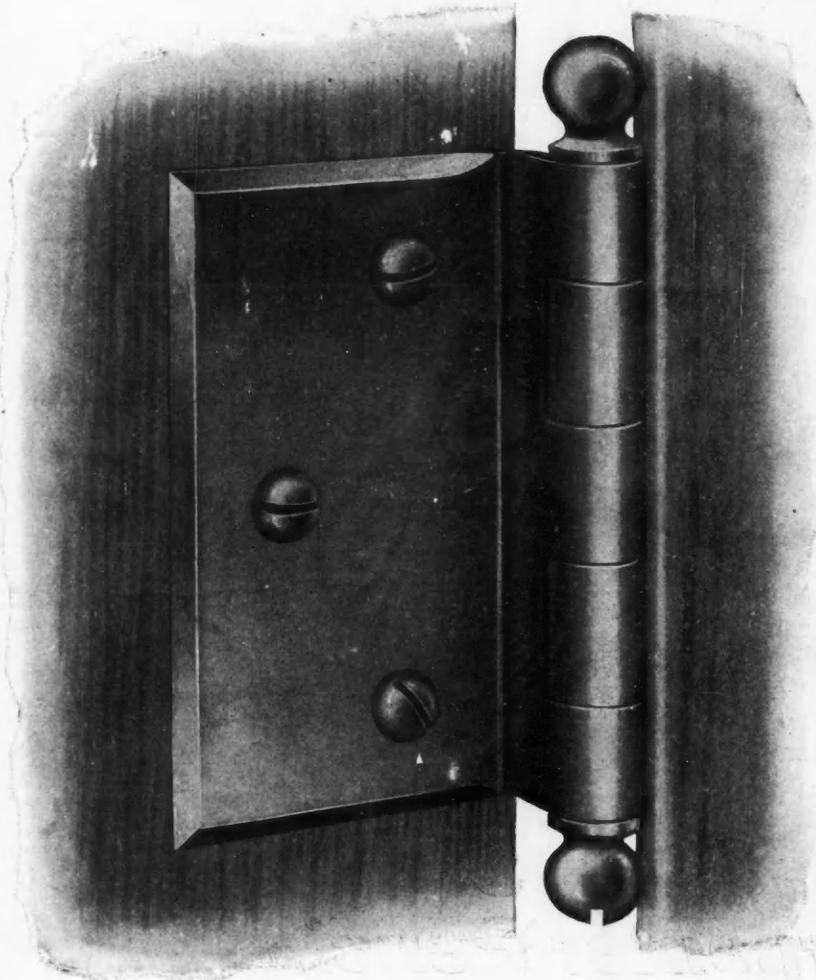
(Coupon)
**SIMMONS
HDW. CO.,**
(Div. A. C.)
St. Louis, Mo.

Dear Sirs:
Please send me
FREE, Charges Prepaid—
1 E. C. Simmons Carpenter
Pencil, as per your offer, with
the understanding that I am under
no obligation to buy.

NAME _____
ADDRESS _____

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

WE INITIATE — NEVER IMITATE A-BIG-HIT



No. 450B

Is the new tip with which "National" Butts are now equipped, both common and ornamental.

The **Tip** is threaded and screws into the butt in both the Japped and Plated finishes.

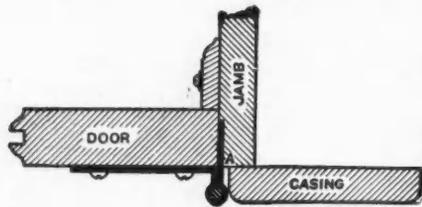
It is also **Slotted** for a screw driver, making it easy to remove the tip and affords ready access to the pin.

The **Slot** also indicates which is the bottom of the butt—a point greatly appreciated by the carpenter.

These are exclusive "National" features.

Style No. 450B

here illustrated is a very popular design and can be furnished in all sizes from 1½" to 4" inclusive. These Butts are highly polished, have beveled edges and are double plated. They match the escutcheon plates with beveled edges.



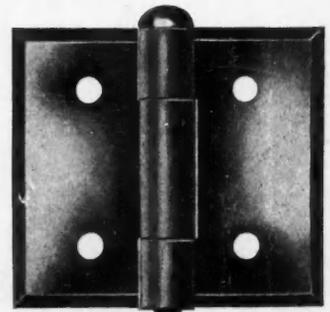
Ask for Booklet, "Ornamental Ideas," and give us your dealer's name.

Directions—Attach butt part "A" to jamb first, then set and wedge door into position and attach Ornamental Leaf to surface of the door. Simple, isn't it?



Trade-Mark

Be sure to look for the flag—it's stamped on all "National" Butts.— It stands for quality.



Surface Hinge

National Manufacturing Co., STERLING, ILLINOIS

