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AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

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A handwritten signature in cursive script that reads "Chas Radford".

See pages
235, 236, 237, 238



An Edwards Metal Spanish Tile Roof—Rightly Termed the "Most Beautiful Roof in the World."

A good architect figures on the roof to give the proper tone and finish to the house, and no other material—regardless of expense—will do this as effectively as

Edwards Metal Spanish Tile

Wood Shingles are scarce—hard to get—and at best last only from eight to ten years. Then there is the danger of fire—statistics prove that in nearly every case fires are caused by flying sparks or embers being communicated from one building to another through the roof.

Slate makes a good roof, were it not for the fact that it will break, crack and slide off, besides weighing about eight hundred pounds to the one hundred square feet.

Tin is the natural covering for a roof. It has qualities possessed by no other metal or material which peculiarly fit it for roofing purposes. We have known of instances where buildings erected 75, and in some cases 100, years ago outlived their usefulness and had to give way to more pretentious structures; when it came to taking off the tin roof, it was found to be in as good condition, practically, as the day it was put on. The objection heretofore to the ordinary tin roof has been that it was dull, flat, lifeless, monotonous, possessed nothing except that it made a very excellent roof as to quality and durability.



"QUEEN ANNE"
METAL SHINGLE.
Size 10 x 14 inches

With our improved methods of manufacture, however, we are able to offer you in **The Edwards Metal Spanish Tile** the only logical solution to the roofing question of today. Using our own special brand of tin plate, the sheets are perfectly squared and cut to the required size; they are then fed into a powerful press, which stamps out the design, each tile being a perfect counterpart of the other, so that laying them on the roof is but a matter of following straight lines. They can be applied without soldering, the use of special tools, and by an ordinary mechanic, at a very moderate cost. The method of interlocking forms the only perfect system of expansion and contraction, so essential in securing an absolutely water-tight roof. While in the majority of cases our Shingles and Tile have been applied only on new buildings, they can just as readily be used on old buildings.

Descriptive Spanish Tile Booklet sent Free on Request.

THE EDWARDS MANUFACTURING CO.

"THE SHEET METAL FOLKS"

Largest Manufacturers of SHEET METAL BUILDING MATERIAL in the World

401 - 419 Eggleston Avenue, Cincinnati, Ohio



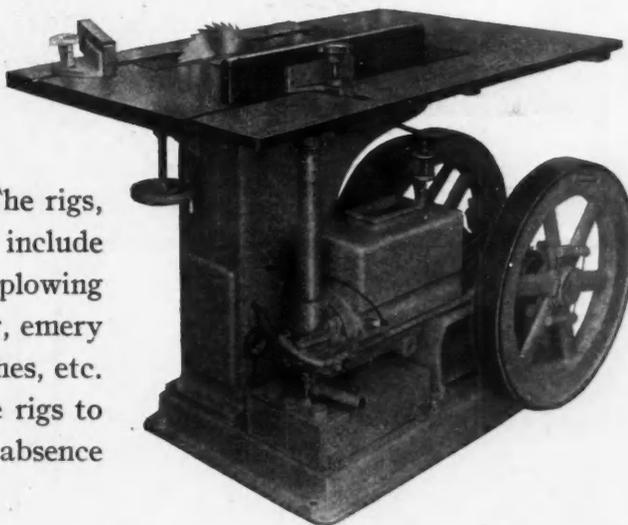
Please note construction of new lock on all Edwards Metal Shingles and Tile.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

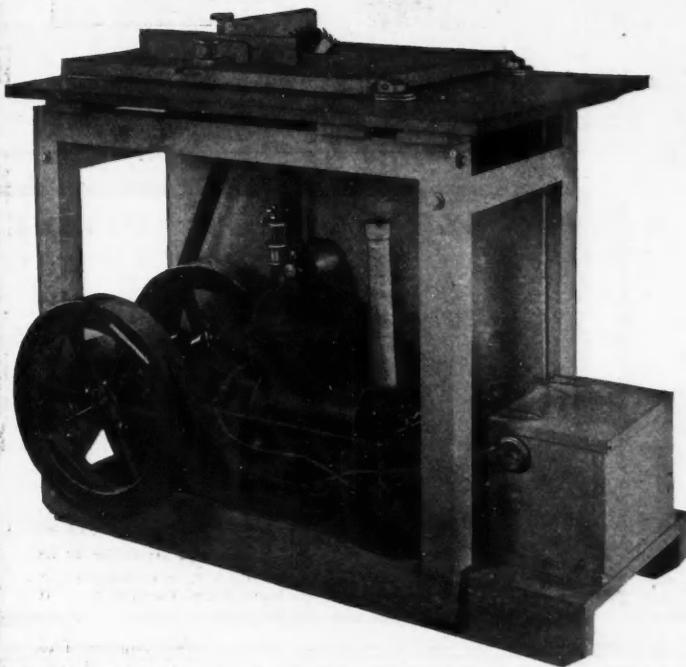
ON THE JOB OR IN YOUR SHOP

THESE portable saw rigs will do all of your millwork and can be moved from job to job with ease.

The engines furnished with these rigs are strong and water-hopper cooled. The rigs, ready to start when they reach you, include cross-cut and rip saws, dado head for plowing window and door frames, belt tightener, emery wheel for sharpening your tools, wrenches, etc. Two years were spent in getting these rigs to balance perfectly, and there is a total absence of vibration.



The All-Iron Rig, as shown here, weighs 1150 pounds, crated—the Engine being a strong six-horse, and pulls 14-inch saws



The All-Wood Rig, with Iron Table, as shown here, weighs 520 pounds, crated—the Engine being a strong three-horse, and pulls eight-inch saws :: :: :: :: :: ::

These two Rigs are strong and will stand the very hardest kind of usage. They make you independent. We absolutely guarantee these outfits or return at our expense.

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FOLDER AND
ATTRACTIVE
PRICE**

Inter-State Equipment & Engineering Co.
Old Colony Building :: :: :: :: :: CHICAGO, ILL.

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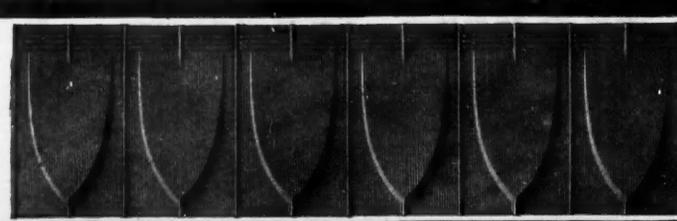
WATER-FIRE AND LIGHTNING PROOF **TITELOCK** METAL SHINGLES MAKE THE BEST ROOF COVERING

NOTE THIS LOCK-JOINT!



LAYING SHINGLE

SHINGLES LAID IN PLACE



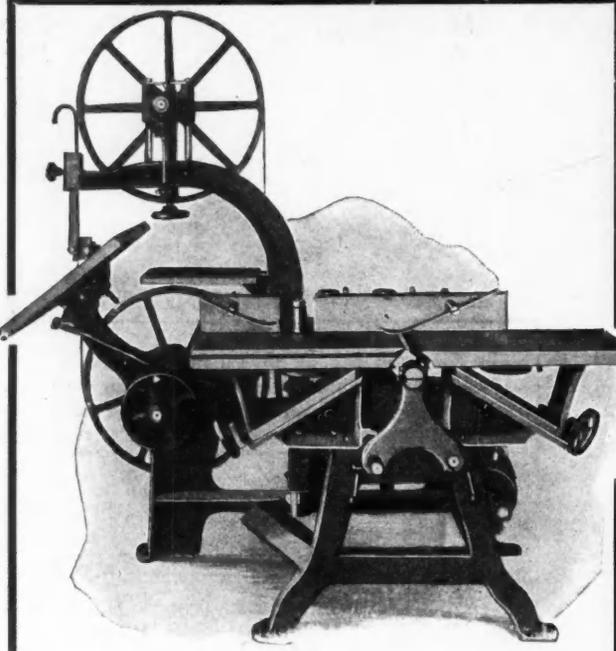
The nature of embossing and the crimping lengthwise of the plates insure rigidity and strength, also provide perfectly for the expansion and contraction of the metal.

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"Invisible Joint"
STEEL CEILINGS
SEND FOR CATALOG.

MILWAUKEE CORRUGATING CO.
MILWAUKEE, WIS. - KANSAS CITY, MO.

EAVES TROUGH, CONDUCTOR PIPE, ELBOWS, RIDGE ROLL, SHEET METAL, ROOFING AND SIDING, ETC.
SEND FOR PRICE LIST.



The Accompanying Cut Represents Our

Famous Universal Wood Worker

Eight machines in one. Our full page ad in the October number of this paper will show you some of these different attachments.

The Sidney Tool Co. - Sidney, Ohio, U. S. A.



THE NEW SASGEN Circle Swing Derrick

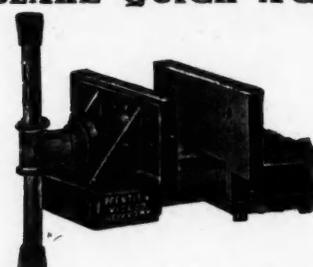
Light in weight, speedy in operation, all malleable castings; weight 250 lbs., CAPACITY 1000 to 1500 LBS.

Manufactured by **SASGEN BROS.**
2744 Lincoln Ave. (Old No. 665.)
CHICAGO, ILL.

\$35.00

Fully equipped. Ready for use F. O. B. Chicago.
Sold on trial to all reliable contractors. Our catalogue is FREE for the asking.

BLAKE QUICK ACTING VISE



For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best

Send for Catalogue of all kinds of Vises
PRENTISS VISE COMPANY, MAKERS
44 Barclay Street, New York, U. S. A.



THE HAVEN FLOOR PLANER

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. It embodies the mechanical principle of the plane. Planes and scrapes floor at one operation. Does better work than most hand work. Most rapid scraper on the market.

"Wavy" Floors an Impossibility

Makes floor scraping simple and agreeable. Particulars on request.

THE HAVEN MFG. CO. : ; RACINE, WIS.



❑ BECAUSE, it is the easiest floor scraper to operate ever manufactured, owing to the fact that its working action is entirely automatic. The position of the operator when scraping is erect. No stooping, no lifting, no pumping motion necessary.

❑ BECAUSE, there are two small cams attached to the blade holder part that regulate each cutting stroke and prevent the blade from butting into or in any way marring the surface of the floor.

❑ BECAUSE, the blade holder section can be easily and quickly adjusted so that the blade will take a shearing cut.

❑ BECAUSE, it has a removable weight.

❑ BECAUSE, it has a brake, which, when set, permits you to pull or push the scraper about at will, without injury to the floor or blade.

❑ BECAUSE, the outfit includes the ACME BLADE SHARPENER, which is the only device on the market that assures you of having just the right cutting edge on a blade.

❑ BECAUSE, the outfit includes the ACME SANDER which is easily attached to the scraper.

❑ BECAUSE, the blades and other tools sent with the outfit are the best that can be obtained.

❑ The above reasons are not imaginary ones, but are based on absolute facts. I am ready to prove this by offering to send the ACME FLOOR SCRAPING OUTFIT to you on a week's free trial. I will allow you to work with the machines as much as you like, and if at the end of the week they do not meet with your approval, just send them back at my expense.

❑ Does this proposition sound fair to you? If it does, write me to-day for further information and booklet.

JOSEPH MIOTKE
247 Lake Street, MILWAUKEE

Eastern Representatives . . . JORDON & WIESS, STAMFORD, CONN.



“A Bit Of Utility”

Guided by its circular rim—instead of its centre—the Forstner Labor-Saving Auger Bit will bore any arc of a circle, and can be guided in any direction.

Doesn't matter how hard the wood is, no consequence whether it is full of knots, or the grain awkward to negotiate. The Forstner Bit works with equal smoothness under any condition and leaves a true polished surface on every job.

Unequaled for Delicate Work

Supersedes chisels, gauges, scroll-saws, or lath tools combined, for all kinds of delicate work. Cabinet and pattern makers and carpenters are enthusiastic because they do more work than other bits and cost no more.

We can offer something special in the matter of price on sets packed in a sensible box. Send today for particulars and catalog.

The Progressive Mfg. Co.
Torrington, Conn.



“Last a Lifetime and give Satisfaction to the end”



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 catalog. Be sure and specify “CARPENTER'S CATALOG”

MACK & CO., 20 Brown's Race, Rochester, N. Y.

Established 1872

Everything in Hardware

ELECTRICAL SUPPLIES
OF ALL KINDS

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FOR EVERY TRADE

BUILDERS AND GENERAL HARDWARE
MOST COMPLETE LINE IN THE WEST

HAND DUMB WAITERS ELECTRIC

COOLING ROOMS and REFRIGERATORS
FOR HOTELS, RESTAURANTS, MARKETS, ETC.

MARKET AND GROCERS' FIXTURES

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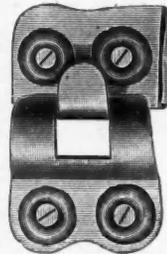
Our Goods are the Best that Money
can Buy—Make us Prove it

Orr & Lockett Hardware Co.

71-73 Randolph St., Chicago

FRESH AIR IN THE BED ROOMS

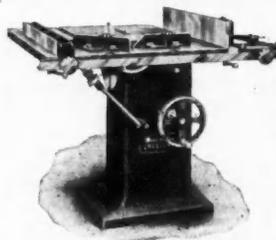
Don't cut holes in the storm window frames. Hang them with **Gossett Hinges** and swing them out at the bottom for ventilation. Special fasteners lock them securely, opened or closed. Easily put in place, just hook them on. No tools or ladder needed because of the **PATENT GUIDE FLANGES**



Easily taken off to wash windows. Full length screens can be hung with the same fittings. Screens and windows last longer. They'll not be left on after their season, it's so easy to make the change. No loose parts to get lost, nothing to wear out. 50,000 doz pairs sold this year. If your dealer can't show you Gossett Hinges send for complete set for actual test. Free to carpenters, contractors and planing mills.

1/2 SIZE **F. D. KEES MFG. CO.**
Box 522 **BEATRICE, NEB.**

The World's Best SAW BENCH



This machine is a dandy. It is strongly built. The arbor moves up and down in an arc so that the belt is always tight. Equipped with four gauges, two saws and counter shaft, including our splendid gear operated double acting, tilting, ripping fence.

Send for complete catalog of Saw Benches.

THE CRESCENT MACHINE WORKS
38-50 SOUTH FRONT STREET, GRAND RAPIDS, MICH.

“LOOK! before you invest.
It pays to get the best.”

A. F. A. A.

Carpenters and Contractors who have used the **“SPRING-DRIVEN”** all agree that one day's work with it is better than three with an old-style **“DEAD-WEIGHT.”**

As to hand-scraping a floor, let that be buried with the dead past.

The **ANDERSON SPRING - DRIVEN
AUTOMATIC
ADJUSTABLE Floor Smoother**

has the necessary **Weight, Adjustability** and **Power** to do speedy, first-class work on any kind of floors—old or new, hard or soft.

Try this machine on your next job, whether you have any other machine or not. We will send it to you on approval. If you cannot see a big saving over what you have, send it back. Your decision is final.

More information upon request



For 30 days we will allow Credit on old machines taken in exchange

Triple “A” Machine Co.,

1020 Chicago Opera House Building, CHICAGO, U. S. A.

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.

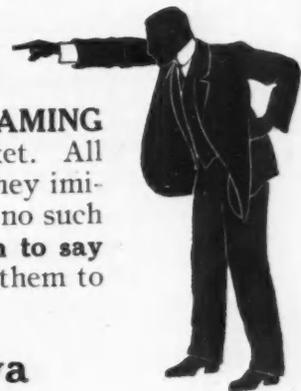
Our Guarantee is a Protection to every Purchaser.

J. B. ACKERMAN CO., 100 Pearl St., Grand Rapids, Mich.

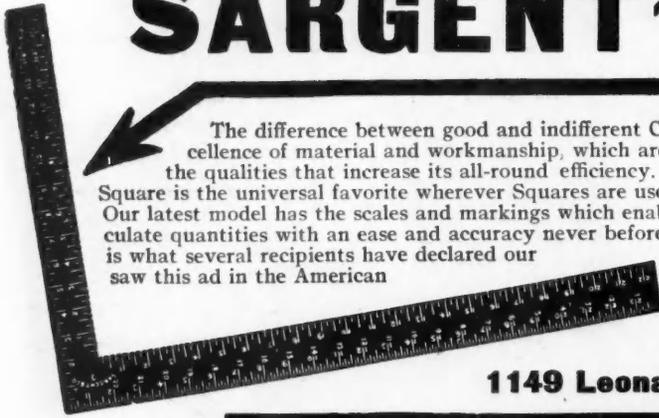
It's Up to You, Mr. Carpenter,

To see that the Dealer furnishes you with the **NICHOLLS FRAMING SQUARE**, which is the first Framing Square ever put on the market. All others are imitations. If it were not a good thing, why should they imitate it? We have learned of late that some dealers say there is no such Square made; others say they cannot get them. Well, we wish to say they can get them for you, and if they will not, we will furnish them to you direct from the Factory and prepay the freight.

NICHOLLS MFG. CO., Ottumwa, Iowa



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.



Philadelphia Pattern
 Best Quality Crucible Trowel Steel.
 Wood Handle.

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Send An
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Genuine Marshalltown Trowel

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

Marshalltown Trowel Co., - - Marshalltown, Iowa

"Sterling" Transits and Levels



On account of their self-evident Superiority in point of Accuracy, Convenience and Durability "STERLING" Transits and Levels are the recognized standard for Building Construction. Special facilities for promptly and economically repairing Instruments of all makes.

Send for 225 page Catalogue of Surveying Instruments,
 Engineering and Drafting Supplies.

ISZARD-WARREN CO., INC.

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LUFKIN STEEL TAPES and RULES



ARE INDISPENSABLE FOR ACCURATE WORK

MADE BY

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

For Sale Everywhere.
 Send for Catalogue.

"Little Giant" Floor Scraper

Sent on Free Trial
20,000 "Little Giants" 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 following liberal proposition.

Special Terms

A request from you brings a "Little Giant" to your door—you send no money and we pay all expenses. After you have tested it as thoroughly as you know how, and have found it satisfactory, pay for it. If you don't consider it the best floor scraper in existence, return it at our expense. That's all. Won't you give it this chance today?

CATALOG AND FURTHER DETAILS ON REQUEST
HURLEY MACHINE COMPANY,
155 South Jefferson Street, CHICAGO
71 First Street, SAN FRANCISCO
1010 Flatiron Bldg., NEW YORK



10 Days FREE A Floor Scraper That Scrapes

One that actually does the work you want it to—that is the reputation that has been enjoyed by the **WEBER** Double Acting Floor Scraper for years.

Do you know why?

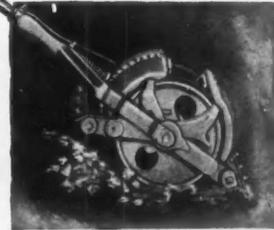
Because the **Weber** is the only Floor Scraper that has adjustable blade holders that can be set at the correct angle to scrape any wood—and a flexible frame which prevents chattering—makes no difference what the wood may be, the **Weber** will not leave waves in the floor.

You don't have to take my word for it—try it ten days **FREE** of all cost to you—let me pay the freight charges—and when you get it give it a hard trial. Then if you're not satisfied—send it back—at my expense—That's liberal, isn't it?

The **Weber** Automatic Sharpening Device enables the operator to sharpen a blade without removing it from the machine. So simple a child can use it—you can't sharpen at a wrong angle.

Write today for further information. Ask me for my booklet and 1909 Price List of my 10 different models.

JOHN F. WEBER, Pres.
Weber Mfg. Co.
670 71st Ave.,
WEST ALLIS, WIS.



The Floor Scraper

THAT'S ABSOLUTELY PERFECT

Five Day Free Trial

As a duty to yourselves you are asked to test this machine before you spend a cent on floor scrapers. A postal stating you will use the star for five days brings one to your door. We want you to be the judge of the best floor scraper. We want you to be thoroughly convinced of Star superiority.

We pay the Freight

Particular literature on request

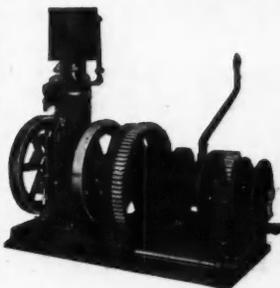
Of all the floor scrapers on the market not one can be quite as good as the Star, because no other embraces such durable features.

There's practically nothing about it to wear out. Consider the benefit obtained by the new mechanical principle. The principle that means better work and quicker.

The Star does clean work. A patented Ball and Socket device allows the blade to be set diagonally at any angle. This gives a shearing cut to the machine. It means a finished floor free from planer marks and "waves." It works the same on old floors as it does on new.

Star Scraper Co. - Elkhart, Ind.

EVERY CONTRACTOR AND BUILDER



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.

BATES & EDMONDS MOTOR CO. LANSING, MICHIGAN

The Union Floor Scraper

Price \$35.00

A money maker for the contractor and a satisfied customer every time a floor is scraped.

The Union will pay for itself in two days.

SENT ON APPROVAL

GEO. J. BACHMANN
No. 501 Lyon St.
Grand Rapids, Mich.



WE PAY THE FREIGHT



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 five 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 Company
[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

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.

We Furnish Machine, Engine and Tools Complete.

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

Used by Contractors, Lumber Yards and Railroads Everywhere

C. A. & F. G. Diffin
Builders' Exchange
PHILADELPHIA, PA.

COMPLETE OUTFIT PRICE \$15.00 HAND AND FOOT-POWER MACHINERY

Our No. 7 Scroll Saw is warranted to be made of good material and workmanship, and to saw pine 3 inches thick at the rate of one foot a minute.

Send for Catalogue.

W. F. & Jno. Barnes Co.

74 Ruby St. ROCKFORD, ILL.



CALIPERS and DIVIDERS For CARPENTERS



We make several different styles, all good. Get our free Catalogue, No. 186, of the largest line of Fine Tools for all kinds of mechanics.



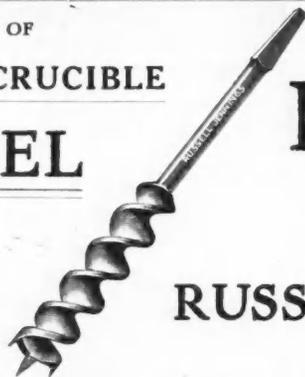
The L. S. STARRETT CO.
Athol, Mass., U. S. A.

MADE OF

GENUINE CRUCIBLE

STEEL

THE STANDARD FOR 70 YEARS



BE SURE YOU SEE

Russell Jennings

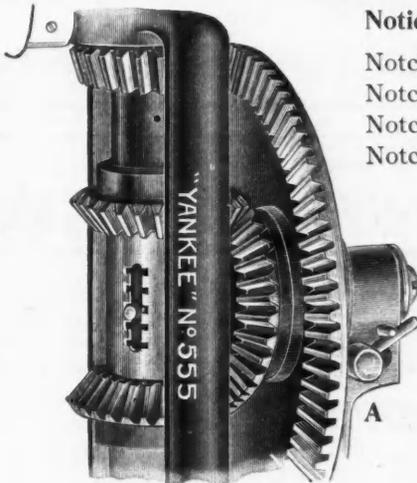
On the round of the bit. If the name is there it's the best bit you can buy

RUSSELL JENNINGS MFG. CO.
CHESTER, CONN., U. S. A.

21-1

"YANKEE" Breast Drill with Automatic Double Ratchet Adjustable Ball Bearings

The Latest
and
Greatest



Notice the little shifter between the gears:—

Notch 1—gives you a plain drill.

Notch 2—A Left Hand Ratchet for removing taps, etc.

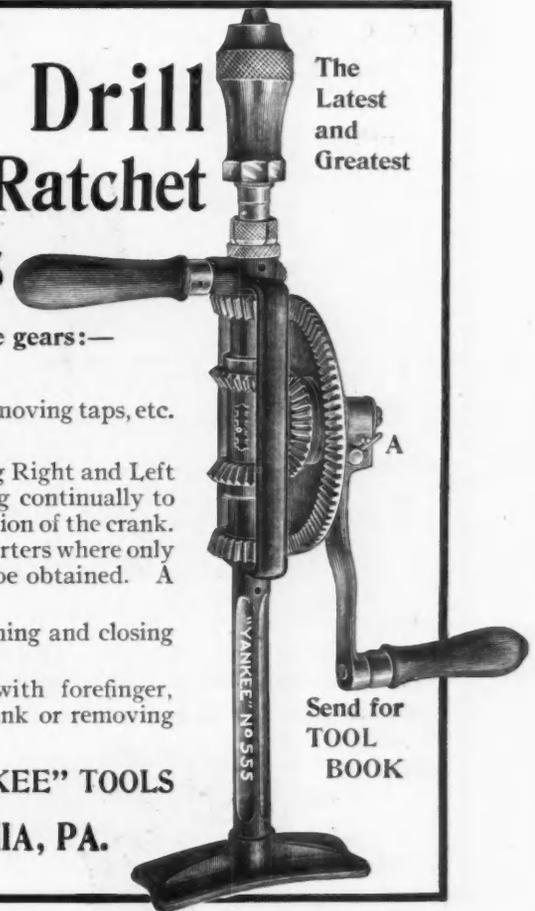
Notch 3—A Right Hand Ratchet.

Notch 4—An Automatic, Alternating Right and Left Hand Ratchet, the bit turning continually to the right regardless of the motion of the crank. A great advantage at close quarters where only a short throw of crank can be obtained. A true time saver.

Notch 5—Locks drill for opening and closing chuck.

Lever A—Change of speed with forefinger, without releasing hold on crank or removing bit from hole.

Your Dealer sells "YANKEE" TOOLS



Send for
TOOL
BOOK

NORTH BROS. MFG. CO., Dept. A, PHILADELPHIA, PA.



Price \$7.50

CARPENTER'S BORING MACHINE

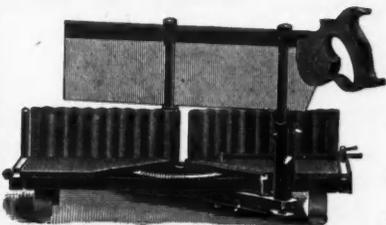
WE do not offer this machine as a low priced one, but do say without hesitation that it has no equal in merit and style. It is durable, neat in appearance, folds up compactly for shipping, and never fails to give entire satisfaction.

It can be used either in upright position, as shown in the cut, or in a moment's time adjusted to any angle required. The power and speed are regulated by the extension cranks. The sale of a machine in any neighborhood invariably brings orders for more. Ask for catalogue illustrating our full line of tools.

MILLERS FALLS COMPANY 28 Warren Street, NEW YORK, N. Y.
and Millers Falls, Mass.

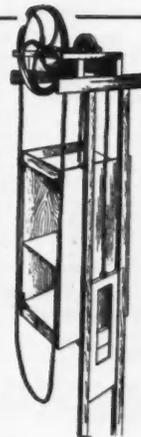
GOODELL MITRE BOX

Made of STEEL - Cannot Break



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

GOODELL MFG. CO., Greenfield, Mass.



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 erect-
ing ever issued

SEND FOR SPECIAL PAMPHLET

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

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

CHAPLIN'S IMPROVED PLANES

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

We invite the
Severest
Comparative
Tests



We want you to have a copy of our booklet

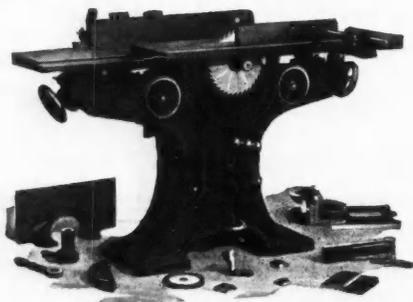
"A 'Plane' Talk About a Good Plane!"

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

Tower & Lyon Company, 95 Chambers Street, New York

The Crescent Variety Wood Worker

fills a long felt want in those shops that have varied but limited use for wood-working machinery. It combines a jointer, saw-table, borer, shaper, pole-rounder and tool-grinder.



Machine is valuable to carpenters and contractors, as they can take the machine out on a job, or use it in the shop with equal satisfaction. It can be driven with electric motor or gasoline engine.

Get our 1909 catalogue and find out all about this splendid tool and our elegant line of band saws, disk grinders, planers, planer and matcher, jointers, shapers, saw tables.

The Crescent Machine Company

224 Main Street : LEETONIA, OHIO

Think how convenient is this ROTHMOTOR BAND SAW

Place it anywhere, no shafts or belts to bother with—
Absolutely Dependable,

All ROTHMOTORS Are

Our Experience is valuable to you.

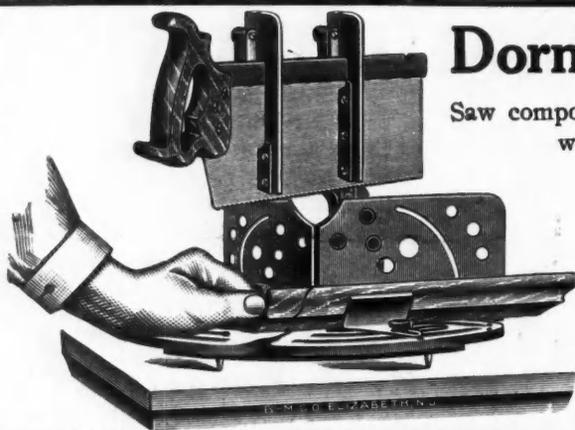
Our Engineers can be of Service to You.

Let us equip your shop with ROTHMOTORS.



ROTH BROS. & CO.

1422 W. Adams St. Chicago, Ill.
136 Liberty St., New York.



Dorn's Revolving Mitre Box

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

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IT TELLS THE STORY



Compound Mitre

MANUFACTURED BY

Braunsdorf-Mueller Company

1093 E. Grand Street, ELIZABETH, N. J.

MILLER'S LOCK MORTISER

Makes Openings in All Sizes for
MORTISE LOCKS

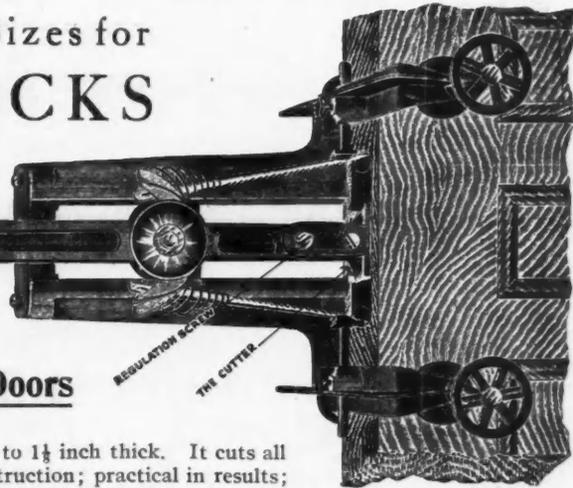
In hard or soft wood, complete job in three minutes.



Actual use of tool, one-half minute.

Thin Doors Handled as Easily as Thick Doors

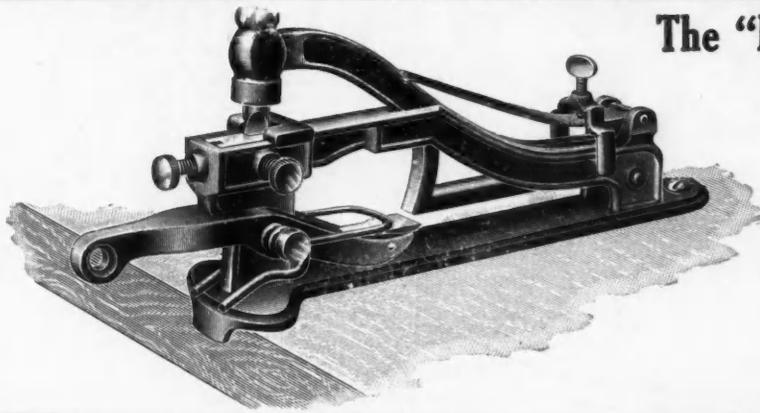
Five Cutters with each machine to cover locks from $\frac{1}{2}$ to $1\frac{1}{2}$ inch thick. It cuts all the different lengths of openings for locks. Durable in construction; practical in results; weighs 12 pounds; will stand any strain. Inches cast in frame to show how far the cutter enters the door. The best mortiser made; saves time and money. Notched fingers continually keep the mortise clear of shavings. The clamps are provided with pads. **Sent on ten days' trial to any reliable Contractor or Builder.**



ALBERT W. MILLER MFG. COMPANY

MAIN OFFICE: NEVADA BUILDING,
WESTERN OFFICE: RIVERSIDE, CAL.

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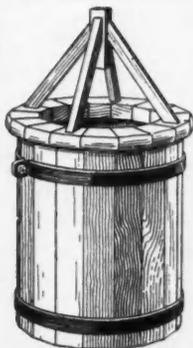
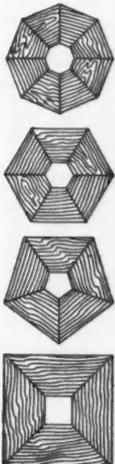
The "Foote" Hammer Saw Set

Operated entirely by foot power, allowing both hands to control the saw, the stroke being absolutely uniform.

The "Foote" Hammer Saw Set is popular and a rapid seller for the reason that it is a pleasure to operate it and every user is delighted with the machine. It weighs three pounds, and is made of the best iron and has steel anvil and hammer.

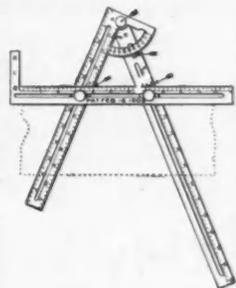
Write for our special proposition to agents.

The J. B. Foote Foundry Co.,
Specialty Dept. Fredericktown, Ohio.



A Free Course in Framing and Circular Work

To anyone purchasing the ABC Protractor Square we will teach the art of roof, stairway and circular work absolutely free. This is an opportunity of your lifetime as, in a short time, by the use of the ABC Protractor Square, you can become an expert on work of this kind and demand as big wages as a carpenter who has made a life study of the common square. It is the simplest tool on the market, and yet the best tool. It is an adjustable triangle. Price of Square \$3.00—course of instruction *Free*. Send at once.



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Here is a Gimlet

Equal in quality and usefulness to any Brace Bit

HANDLE OF
SELECTED
COCOBOLO
WOOD

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

Price Postpaid **15 cents** each

H. H. MAYHEW COMPANY
SHELBURNE FALLS, MASS.

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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.

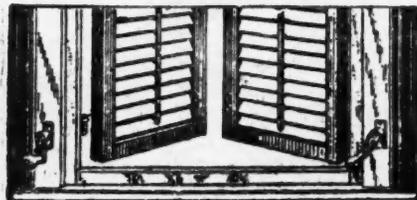


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Northwestern Grille Works

CHR STENSEN BROS., Props. 1452 Milwaukee Ave., Chicago

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Standard
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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.

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DON'T PUT SASH WEIGHTS IN YOUR WINDOWS—THEY ARE OUT OF DATE The "AUTOMATIC" SASH HOLDER

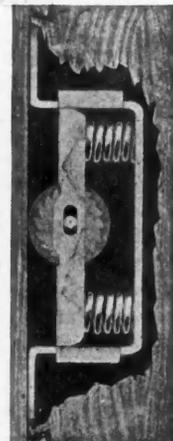
The "Automatic" Sash Holder is the new, modern, up-to-date device that dispenses with cumbersome sash weights, kinking cords or ribbons, useless weight pockets, misfit pulleys and reluctant balances, and saves all the time, labor and expense of fitting them in place.

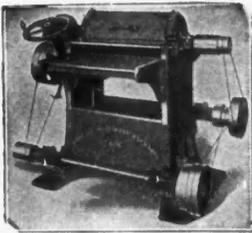
Prevent rattling and permit the window to be moved up and down with ease. Hold it safely at any point desired.

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

Automatic Sash Holder Company

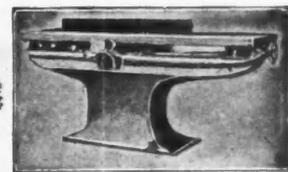
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Chicago No. 35 Pony Planer

Machines for Contractors



Chicago Hand Jointer
8, 12 and 16 in.

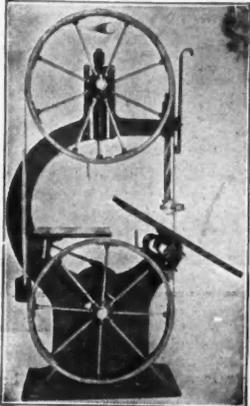
Every carpenter and builder can afford to invest in one, or more, of these machines. From our stock of 500 new and rebuilt machines contractors can obtain sufficient machinery to make them independent of local mills and their attendant delays and high charges.

Stop paying somebody else profit—put it in your own pocket. Be in a position to estimate under competitors. You can do this by installing your own machinery. All our machinery is of special construction to secure fine finished surfaces and to reduce sandpapering to a minimum.

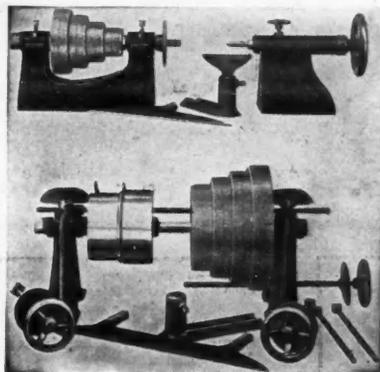
Prices are lower than you think. Send today for our monthly list of rebuilt machines (free to carpenters and builders).

Chicago Machinery Exchange

7-11 No. Canal Street, CHICAGO



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



Wood Turning Lathe and Countershaft
16 and 20 in.



Chicago No. 10 Tilting Table
Improved Variety Saw Bench

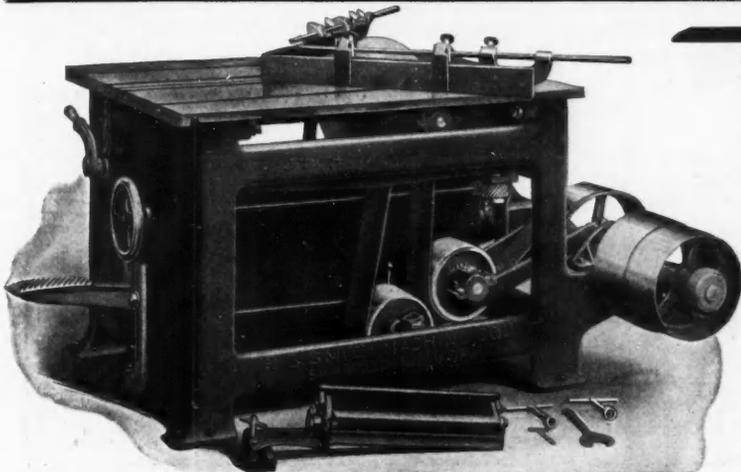
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2,000,000 ft. new and second hand lumber at \$8 per M. ft. and up. Laths, shingles, doors, windows, finish mouldings, etc. New bath tubs with nickel plated fittings, \$8 to \$17.50. Low tank combination closets, complete, \$10. White enameled lavatories, \$4.50 to \$9.

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CHICAGO WRECKING and SUPPLY CO., 3640 Manchester Avenue, St. Louis, U. S. A.



No. 347-A—Combination Saw and Dado Machine

Are You Interested?

The SAW or DADO HEAD brought into the work by a foot treadle, thus leaving both hands free to handle the lumber.

Gauges furnished for Ripping, Cross Cutting and Mitering.

For further particulars address

H. B. SMITH MACHINE CO.

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

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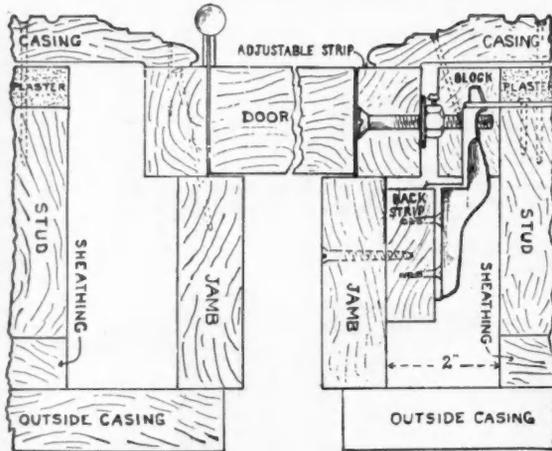
A Swell Head and A Swell Door

are both pretty stiff propositions, but the latter is a mere trifle when you have

The Taylor Door Jamb Adjuster

A few turns of the screws make a perfect fit, whether the door swells or shrinks.

Send for folder explaining this cut.



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Carry
A Ton,
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A LIFETIME—

A pair of our smallest size

Wall Brackets.

There isn't room here to tell you how cheap or how convenient they are.

Write for Catalogue and Special Trial Offer.

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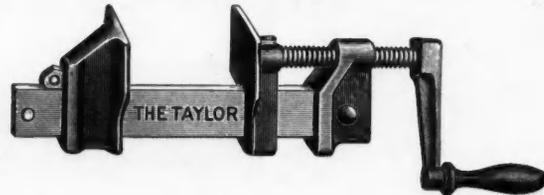
Do you know about our improved gripping device?

It Saves Time;

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Our Clamps are warranted unbreakable in use.

Catalogue showing 19 styles sent on request.



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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 Shaves, Bench and Hand Screws, Cabinet Makers' and Manual Training Benches, Etc. Write for our Catalogue No. A, if you are interested in GOOD TOOLS.

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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.

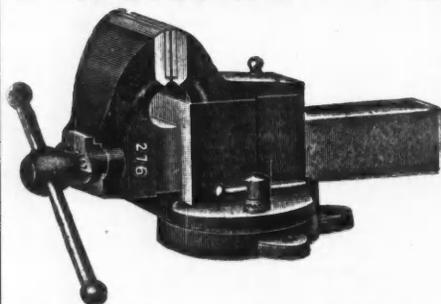
Prices and Catalogue on Request.

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.



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MADE
ESPECIALLY
FOR WOOD
WORKERS

FOR SALE BY
DEALERS

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CHAS. PARKER CO.
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SELF-SETTING PLANE

No plane like it. See this paper for December, pages 261, 320 and 322, for facts and large pictures. This advertisement authorizes any dealer to sell the first SELF-SETTING PLANE in any town on our regular 30 days' trial guarantee. If it is not more than satisfactory to their customers, the dealer may return it to us at our expense within 90 days of this date, and we will refund the amount he sent us. If your dealer does not care to supply you, try another; if he won't, send us list price and we will deliver the plane, charges prepaid, and if it is not just what you want, return it to the Express Co. within 30 days of your receiving it, and they will send it to us at our expense, and we will refund the trial won't cost you a nickel. This paper guarantees that we will do as our advertisement says. November 1, 1909.



SECTIONAL VIEW—showing ADJUSTABLE IRON THROAT.

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The "UNIVERSAL" ADJUSTABLE HANGER

can be used anywhere. It forms a perfect, practicable lock; sash hung with it cannot be opened or removed from the outside; it cannot be blown open by storms; makes practicable the only substitute for the half-sash sliding screen; is sold in sets, half sets, or in any other way the trade demands; indestructible; will outwear a dozen screens.

Ask your hardware dealer or write for free sample and catalog.

The ADJUSTABLE HANGER CO.
415 Huron St. Toledo, Ohio, U.S.A



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

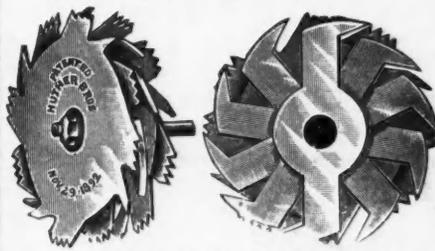
"SILVER LAKE"

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 specialty

of concave ground, smooth cutting circular Mitre Saws, for either rip or cross out; Grooving Saws for all kinds of special work; Lock Corner Cutters, Concave Saws, etc.

Try our Scraper Blades and you will use no others.

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STAR EXPANSION BOLTS

Hold for years and years! The falling away of the wall itself is the only thing that ever causes the bolt to drop out.

You ask why is this bolt so much more popular than the fifty and one other makes, and the answer comes: "Because when you buy a STAR you get 'quality' in the bargain."

The positive inner end expansion of the shield makes it impossible for the bolt to become loose or pull out.

Order from your dealer today, or procure samples from us.

STAR EXPANSION BOLT CO.,

147-149 Cedar Street New York City

"IT CAN'T PULL OUT"



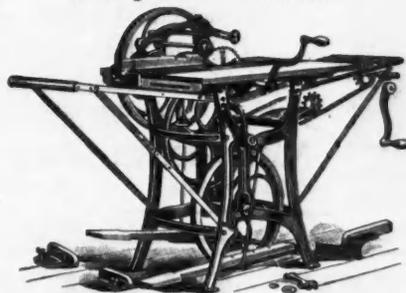
FOOT, HAND and POWER Wood-Working Machinery

FOR WORKING WOOD IN ANY MANNER

Complete Outfits



"Victor" Scroll Saw



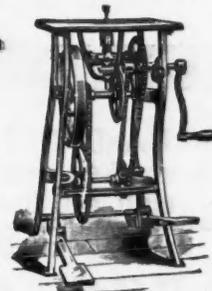
No. 5 "Union" Self Feed Rip and Cross-Cut Saw



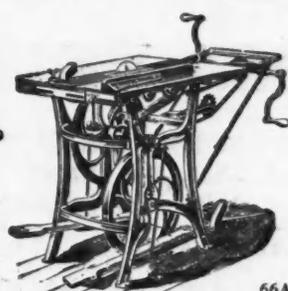
"Diamond" Mangle



No. 8 "Union" Power Saw



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No. 6 "Union" Combination Saw

Carpenters, builders, cabinet-makers and wood-workers generally can successfully compete with the large shops by using our labor saving machinery. With any one of our machines one man will do the work of four to six men using hand tools.

They are built for hard work, accurate work and long service.

Each machine is carefully tested before leaving factory. We guarantee them to give entire satisfaction, and they may be returned at our expense, if, after ten days' trial you prefer your money back.

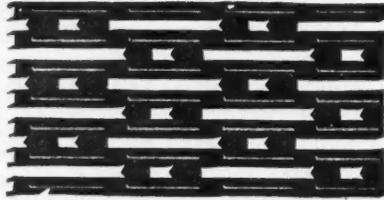
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THE Seneca Falls Mfg. Co.,

218 Water Street

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ECONOMY FROM START TO FINISH



Coming right down to the economy question Clincher Lath has got everything beaten.

As a practical man you can understand the principle by the illustration. Notice the level

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Sagging between the studding is rendered absolutely impossible if Clincher Lath is used. Read what progressive carpenters have to say about it.

Easier to handle and easier to erect than any other lath on the market. Prove this by sending to Department R. C. for samples. Free to anybody interested.

The American Rolling Mill Co.

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COMPO-BOARD

A substitute for Lath and Plaster.
Can be put on by any Carpenter.
It is Warmer, more Durable,
Quicker and more Easily Applied.
Manufactured all 4 ft. wide, 8, 9, 10,
11, 12, 13, 14, 15, 16, 17 and 18 ft. long.

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Northwestern Compo-Board Co.

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SAMSON SPOT SASH CORD

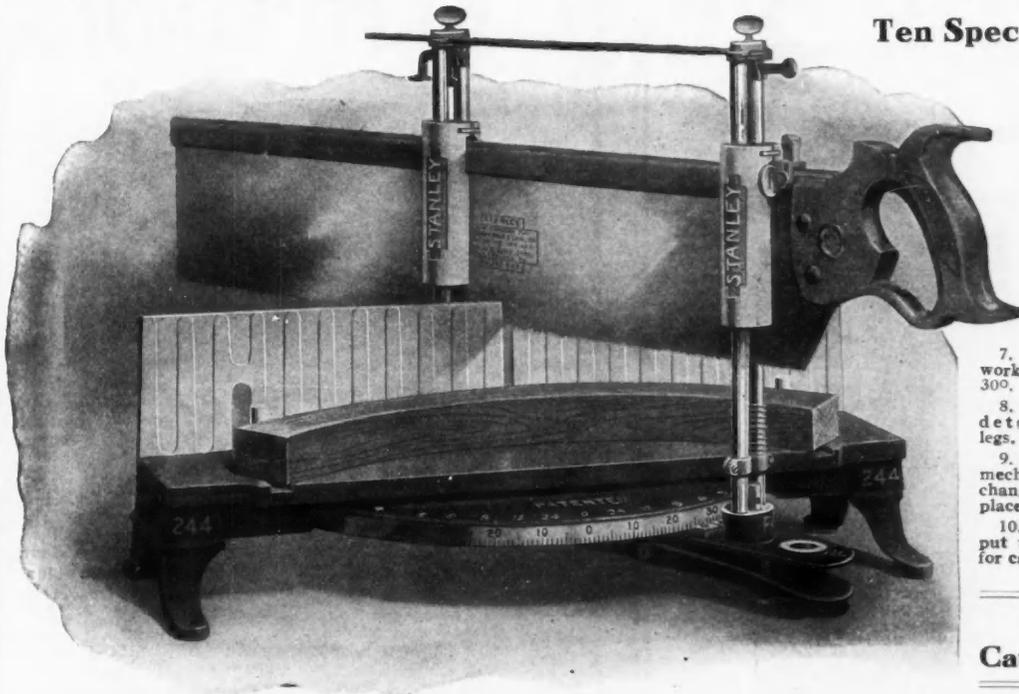


Be sure that the cord you buy has SAMSON AND THE LION on the label, and that the braid is marked with the COLORED SPOT. You may be sure you'll get the best.

WE'RE GLAD TO SEND SAMPLES AND FULL INFORMATION.

SAMSON CORDAGE WORKS, BOSTON, MASS.

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Ten Special Features:

1. Saw is held above work when not in use.
2. Swivel is automatically locked at any angle.
3. Two sockets in swivel for use of long or short saw.
4. Narrow opening in back of frame, especially adapted for small work.
5. Steel rod up-rights for saw guides.
6. Stock guides for holding work in place.
7. Extra wide range of work—will saw at angle of 30°.
8. One-piece frame with detachable malleable iron legs.
9. Construction thoroughly mechanical; all parts interchangeable, and readily replaced if lost.
10. Quickly and easily put together or taken apart for carrying.

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Catalogue No. 34

STANLEY RULE AND LEVEL CO.

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When in the market for Plumbing Supplies and you wish to

**SAVE
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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.

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

Our screens have waterproof coped joints and the frames are weather proofed before the finishing coats are applied.

Best grades of Wire Cloth, enameled, galvanized, genuine bronze, fastened by the most approved methods.

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Special terms to Contractors and Builders.

A. J. PHILLIPS & CO.
FENTON, MICH.

25 Years' Experience

3½ Acres of Floor

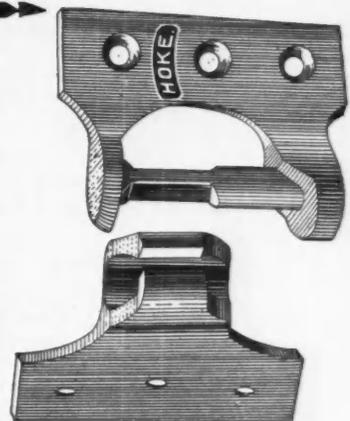
Your Future Business Hinges

Not on the quantity—but the Quality of the goods you sell. With us it's Quality first—then quantity. We can give you both in the

Hoke Reversible Shutter Hinges

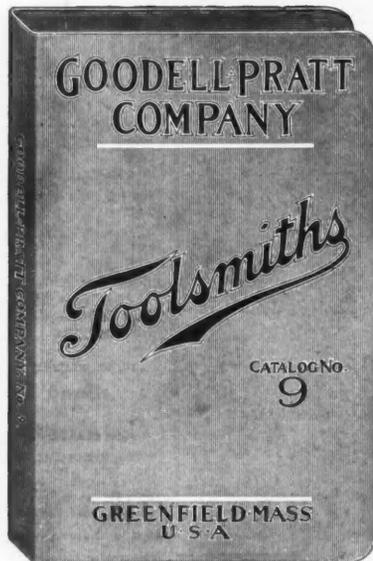
They'll meet with instant approval from every carpenter and builder. Easily adjusted. Prevents slamming, banging, or shutters falling off. Can be used on either side of window. Are easily hung, being guided to the leveled slot. Let us send you free samples. We feel confident it is the "business builder" you will adopt eventually. Why not now?

**Hanover Hinge
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HANOVER " " [PA



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Free



You ought to have it. It tells about useful tools.

GOODELL-PRATT
Automatic Drills and Screw Drivers.

GOODELL-PRATT
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Tool Grinders

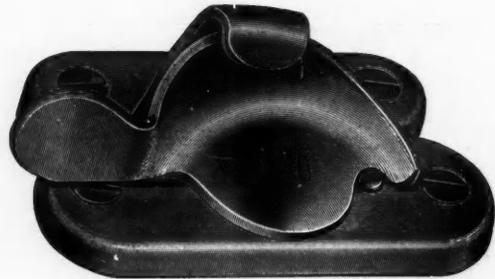
All these tools and many others are illustrated and described in this book which no carpenter should be without. Send for it to-day.

Goodell-Pratt Company

Toolsmiths

Greenfield, Mass., U. S. A.

MONITOR SASH LOCKS



(PATENTED)

NEVER BREAK

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

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

MADE IN TWO SIZES AND ALL FURNISHED BY

The Champion Safety Lock Co.
Geneva, Ohio

GRAND RAPIDS

All-Steel Sash Pulleys

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

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

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

Direct from the makers to you. Inquiries welcome.



**GRAND RAPIDS
HARDWARE CO.**

34 Pearl St., Grand Rapids, Mich.

“DEFIANCE” HIGH GRADE

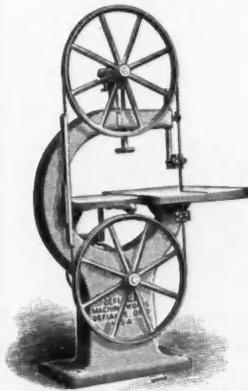
Wood-Working Machinery

Invented and Built By

**The Defiance Machine Works
Defiance, Ohio**

For Manufacturing General Wood-Work

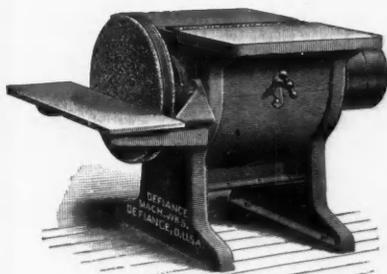
Also Special Machines for making Hubs, Spokes, Wheels, Wagons, Carriages, Automobiles, Rims, Shafts, Poles, Neck-Yokes, Singletrees, Hoops, Handles, Spools, Bobbins, Insulator Pins, Balusters, Table Legs and Wood Dishes.



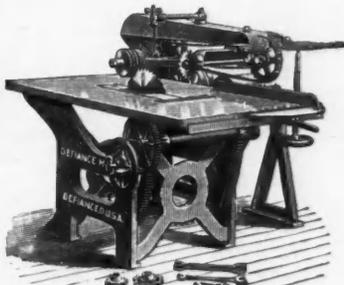
28" Band Saw



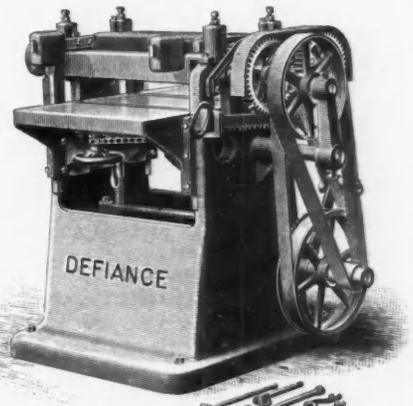
12" Hand Feed Planer with or without Boring Attachment



Drum and Disc Sander



No. 3 Power Feed Rip Saw



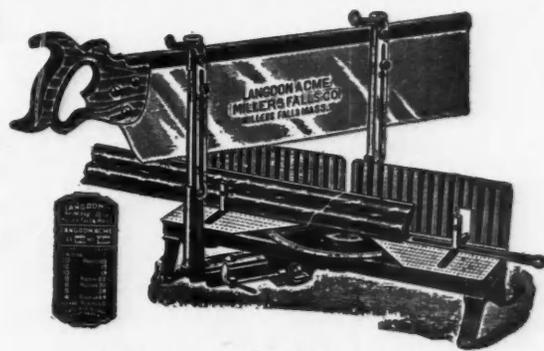
24" Single Surface Planer

ARE YOU INTERESTED IN MITRE BOXES?

If you are, it will pay you to investigate the **LANGDON ACME**. It has all of the advantages of any other box and several that others do not have. They are made in three sizes and put up with varying lengths of saws.

MILLERS FALLS COMPANY

28 WARREN ST., NEW YORK, and MILLERS FALL, MASS., U. S. A.



Ask for Catalogue giving full description.



PERFECTION ELEVATORS

ARE "BEST BY EVERY TEST"

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

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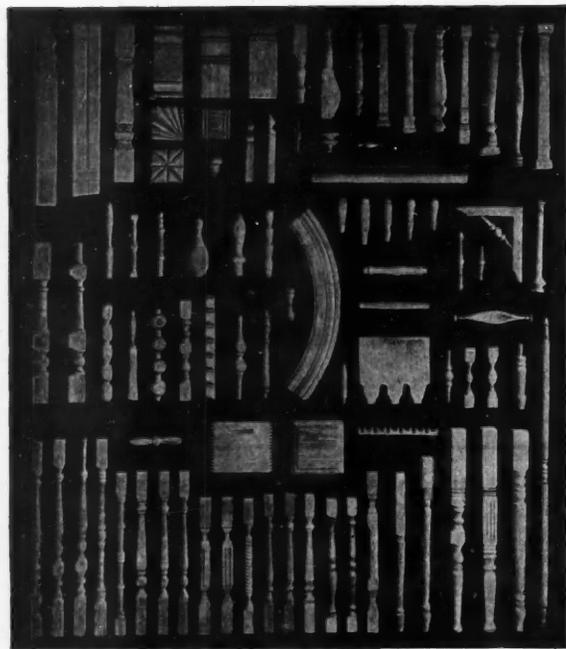


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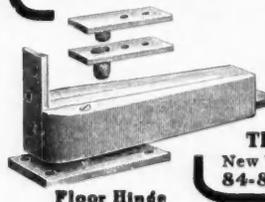
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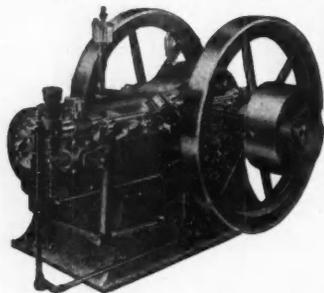
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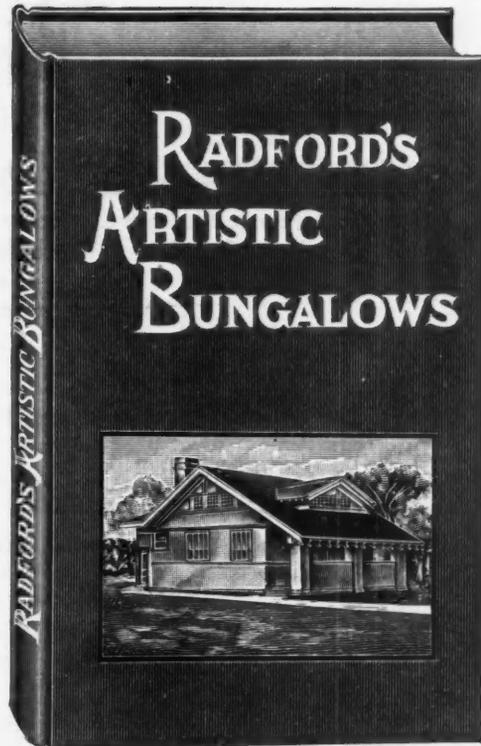
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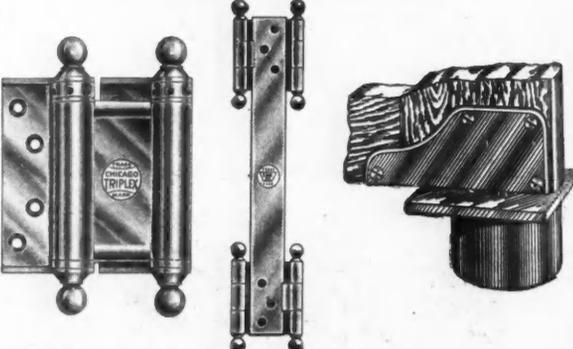
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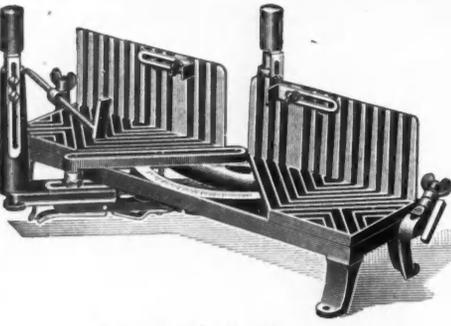
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VOL. VIII NOVEMBER, 1909 No. 2

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Carpenters in general are an ambitious lot. The apprentice wants to become a skilled journeyman; the journeyman carpenter works to get to be foreman; and the foremen, without exception, are ambitious to become building contractors, structural engineers and architects.

This spirit of self-improvement is good, for certainly every man owes it to himself to better his condition—to learn more so that he can earn more.

To this end carpenters and builders are in a most fortunate position. The approaching winter months, with the long evenings, offer a prime chance to get well started on a line of practical reading and study that will open up new possibilities for them, will explain the practice as well as the theory of building construction with all its allied branches, and will present a clear "perspective view" of the whole subject of modern construction and design. A superb, twelve-volume set of practical books has been especially prepared for this purpose, covering the entire subject. You will find them announced on pages 235, 236, 237 and 238 of this number. We want to recommend them to you for examination and study.

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**Building and Loan Associations Prosper**

THE seventeenth annual convention of the United States League of Local Building Associations met and the home-seeking population of the country was represented by more than 500 delegates who at various times during the sessions of the convention announced that the condition of the many societies in the United States is better than it has ever been in the history of the organization.

According to the report Pennsylvania still leads in the roll of states from the standpoint of the number of branch associations, total assets and number of members enrolled. Ohio is a close second. Last year's figures from every state show a marked increase over the previous year.

"The local building and loan associations," says the

report, "have been enjoying a practically uninterrupted period of prosperity, which has not even been retarded to any appreciable degree by the financial depression of last year. The figures for 1908 continue to show a marked increase in the membership and the total assets, as well as an increase in the total number of associations.

"According to the present report, there are 5,599 local building and loan associations in the United States, with a total membership of 1,908,811, and assets amounting to \$775,665,008. This is an increase in membership over last year of 69,692, and an increase for the year in assets of \$44,156,562. With the unsatisfactory business conditions prevalent last year, this must be regarded as a most remarkable showing and unmistakably indicates the stability and generally healthy condition of these associations. With reviving prosperity, they should, during the present year, make much greater gains.

"The volume of business transacted was not much in excess of the preceding year, due largely to the number of laboring men out of work and, consequently the usual amount was not saved. This condition naturally also increases the amount of withdrawals and did not admit of as many loans being made by the associations.

"The total receipts were \$519,721,576, and of this sum \$134,085,170 was loaned out on mortgages as against \$209,925,072 in the preceding year. The total business transacted was at an expense of \$5,548,604, or seven-tenths of 1 per cent., based on the assets. This fully sustains the contention made on behalf of these associations that they are economically managed. On the whole, the record of the year must be regarded as exceedingly satisfactory, considering the unfavorable conditions heretofore noted.



IT TAKES a bigger man to accept suggestions than commands.



France Prohibits White Lead in Paint

AFIGHT against the use of white lead in paint was started in France in 1904, and since then the battle progressed through different stages until July of this year a law prohibiting its use was finally passed. It was claimed that white lead was injurious to the health of the painters, but as the death rate was very low, averaging only one in every 7,000 or 8,000 painters, the contemplated law was fought for some time.

Another point upon which the two French houses differed was whether an indemnity should be allowed to manufacturers of white lead for damages they might sustain from the loss of the market for the goods they had on hand. The law as finally passed prohibits the use of white lead in painting buildings, inside or outside, after the expiration of three years. Within that time it is believed the manufacturers will be able to dispose of their product now on hand.

The Hole Will Shrink

ACORRESPONDENT asks if a hole bored in a piece of green wood will become smaller or larger as the wood shrinks. Although the answer seems almost absurdly self-evident to one who knows, there are very many who ask the question; or, not asking, believe that the hole will expand. Their idea is that the wood, shrinking, will draw away from the hole; but a few moments' thought will serve to remove this delusion. Suppose a 1-inch hole is bored through a stick 1 1/16 inches wide; and that the stick shrinks 1/8 inch—what then? If the stick was 2 inches wide—or a foot wide—and the shrinkage proportional, would the case not be the same?

The hole would shrink. One will readily understand if he imagines the hole to have been cut with a plug cutter having no thickness. He knows that the plug will shrink; and that if it was left in place, the surrounding wood would remain in contact with it as the whole dries. Why, then, should the mere removal of the plug cause a complete change in the direction of shrinkage?

Again: Suppose the hole bored in the center of a circular piece, leaving but a slender ring of wood. It will, I think, be perfectly clear that the ring will shrink; and that the hole will become smaller. Increasing the thickness of the ring, provided the wood is all of the same grain and texture, will make no difference in the shrinkage of the hole.

In the days when the old-fashioned rush-bottomed chairs were made in the backwoods it was the custom to make the legs of green wood; while the stretchers were made of seasoned stuff. The tenons on the stretchers were made to fit the holes tightly at the end; while they were slightly reduced in size toward the shoulder. Thus, when the wood of the legs shrunk, the stretchers were dovetailed in. No glue was used or needed.

The lumbermen "down in Maine" used to—and perhaps still do—put up spruce gum in miniature barrels which were something of a puzzle to the uninitiated. They would take a piece of white birch, say 3 inches in diameter and of proper proportional length, and bore a 2-inch hole through it lengthwise. They would then whittle the outside to the similitude of a barrel, and cut a croze in each end. Heads of seasoned wood, 2 inches in diameter, were then fitted; and, the barrel being filled with gum, temporarily secured in position. As the little barrel seasoned it closed on the heads till each filled its croze tightly; and they could be removed only by cutting them out. The shrinkage of a ring of sap wood of this sort is quite considerable, and the heads would extend deeply enough into the crozes to make them very secure indeed. W. D. GRAVES.



SO MANY young men seem to forget that the first half of their years should make provision for the last.



How to Save Money—Put your Rent Money into a Home of Your Own

SPANISH TILES - OLD and NEW

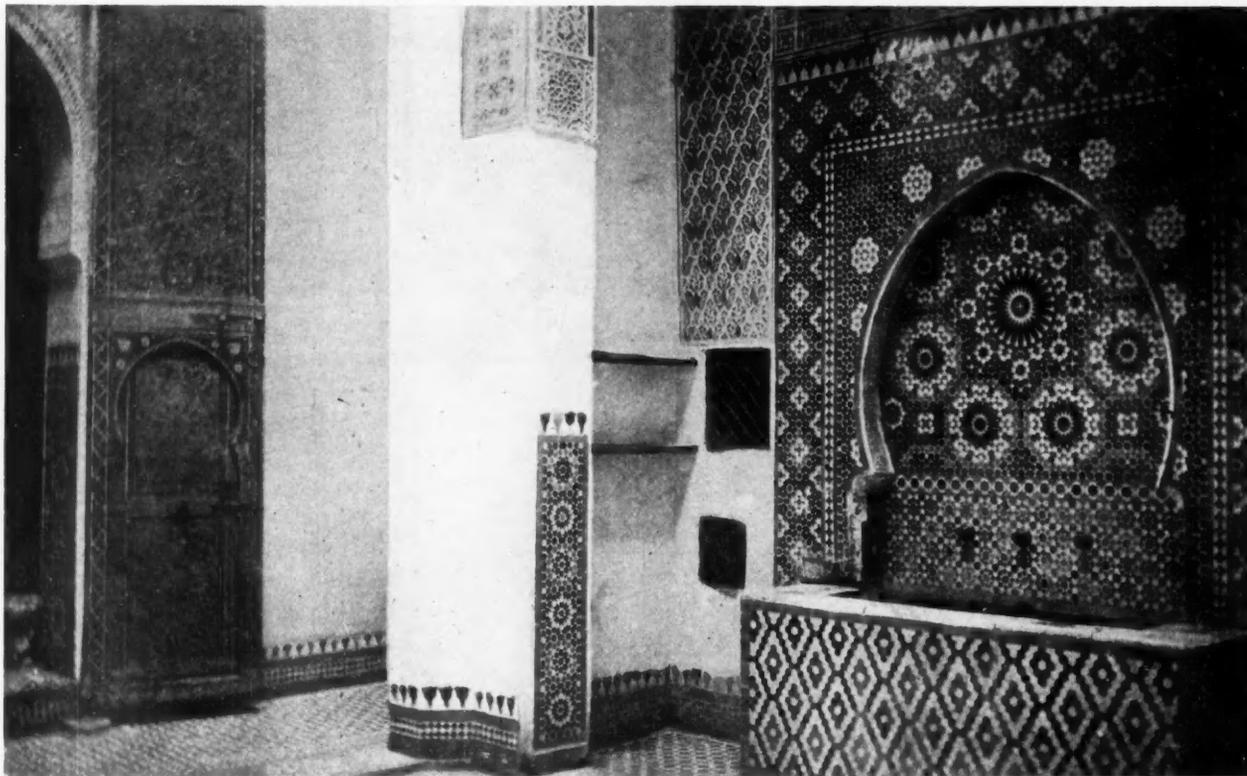
By Geo. E. Holt and Ralph W. Emerson



SO IMPORTANT a part do tiles play in building construction in Spain, and of such varied use and interest are they, that they deserve special consideration. Their use is the thing which gives Spanish building construction its distinctiveness, its difference from that of other countries, to a large degree. Were the tiles and the arabesques eliminated from Spanish buildings the greater portion of them would indeed become poor examples of man's handicraft.

As there is almost nothing in Spain today for which the Spaniards are not to a greater or less extent indebted to the Moors, who once maintained supremacy there, so it is with tiles. Those which are today used by Spanish builders are of the same designs—though

usually of inferior quality—as those used by the Moors who centuries ago builded the Alhambra at Granada, the great Mosque at Cordova, the Giralda at Seville, and the palaces of the Sultans at Fez, in Morocco. The Moors were not the first people to use tiles—they have been found by antiquarians in the older countries of the world so deep in the earth that the cities in which they were used must have fallen into ruins and had other cities built upon them long before the beginning of the Christian era—but they were made so well that mankind has not been able to improve upon them, either in material, color, or artistic design, for the last five hundred years. Just as the Egyptians, the Greeks and the Romans each perfected a style of architecture which mankind since has been unable to improve, so



A Gorgeous Use of Old Moorish Tiles

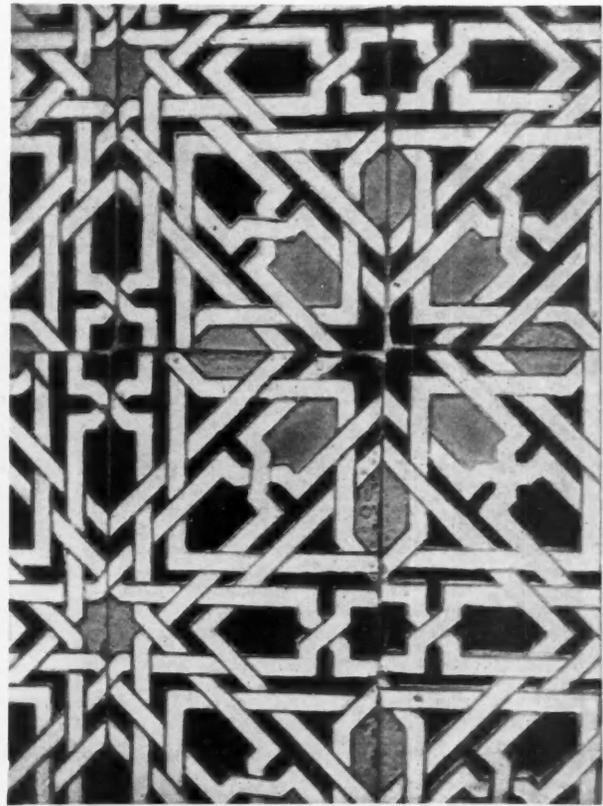
the old Moors perfected their tiles and the peculiar decoration, half writing, half design, known as arabesque, to a point where further improvement was impossible.

Unfortunately one today sees much misuse of both these elements in Moorish architecture. In the cities of Spain, and in the "infidel" city of Tangier, Morocco, one finds tiles and arabesques prostituted to uses for which they were never intended, and with sad effect; just as the adaptation of a thing to purposes other than those for which it was designed almost invariably



New Style Spanish Tiles in Use

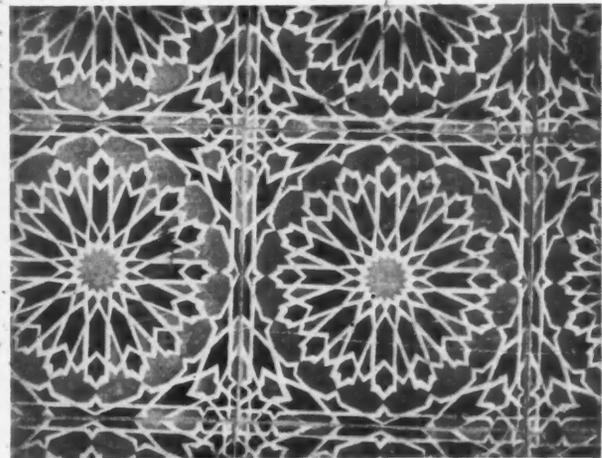
results in grotesque productions. The application of ornate decoration, "gingerbread work," scrollsaw designs—all right in the right place—to the exterior of houses and other buildings has produced facades that were either caused by, or were the cause of, a nightmare. And so the use of arabesques on railway stations, or of colored tiles on tombstones, has not been productive of the very best results. But in the old Moorish buildings, whether in Spain or Morocco, where they were used by men who knew how to handle them, and in some modern buildings, in cases where the builder had a superior artistic sense or had studied the old methods to better effect, the tile and



Old Style—Each Color a Separate Tile

arabesque are invariably the life of the building.

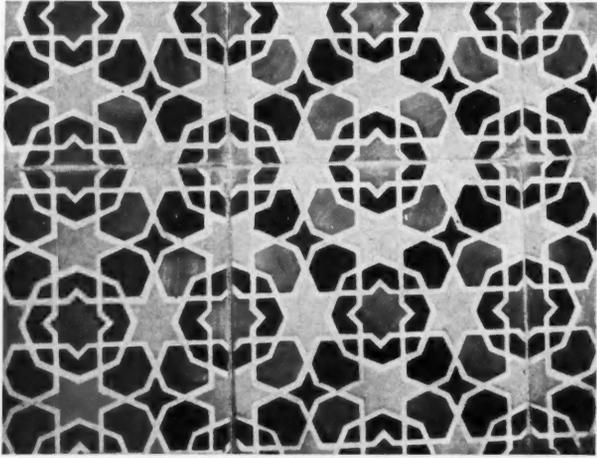
Tiles may be divided into two classes; those which are used as an integral part of the building or for elementary constructional purposes, and those which are used for decoration. While it is, naturally, in the use of the latter that the most striking results are apparent, the value of the former is by no means inconsiderable, either from the structural or the artistic



Large Tile of Many Colors—New Style

viewpoints. The impression of mossy coolness given to a white-walled building by roofs of dark green tile runs very near to art, and is productive of physical refreshment as well as pleasure to the eye. To the person accustomed to looking upon roofs of dead gray shingles or brick-red clay tiles, the first glance over

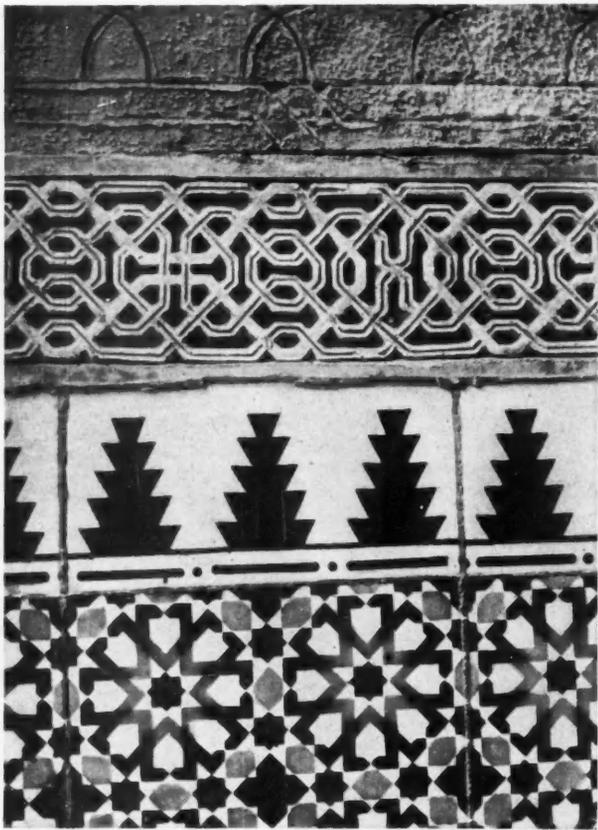
a Spanish city with its white walls and green or pink tiled roofs is like looking upon a cool garden. Not all the roof tiles are green. Red ones are also largely



New Style Made to Resemble the Old

used, but not the scarlet, clamoring red which one finds in certain other cities. They are more of a pink color, shading to crimson. Like the green ones they are usually glazed.

The title illustration shows a roof scene—a cluster of roofs which, with wooden shingles, would be indescribably ugly. The picture also shows better than

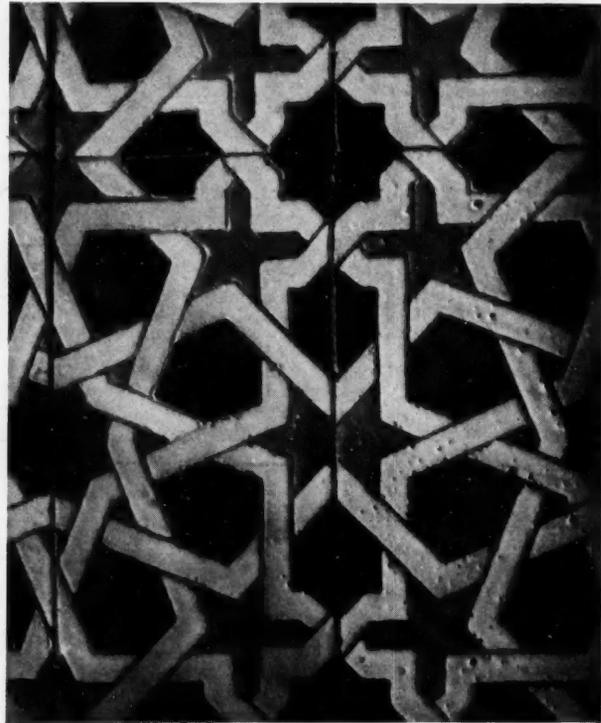


Dado of New Style Decorative Tiles

words can tell the shapes of the Spanish roofing tiles and the manner in which they are used. It may be necessary to explain, however, that they are held to-

gether by small protuberances, or pegs, on the under side at the bottom of each tile, which fit into holes near the upper edge of the tile beneath it, or by a flange in place of the projections, which fits into a groove in the underlying tile.

The manufacture of building tiles is quite an industry in Spain, as may be imagined. At Granada and at Seville we visited tile yards. There is not much to be said of the method of their manufacture except that they are fashioned out of red or gray clay, colored or left in the natural shade, and then baked or glazed in big ovens. Our photographs show several views in the factories, or yards, at the two Spanish cities



Detail of Old Moorish Tile

above mentioned. The tiles are produced at very small cost and are much cheaper than wood.

The purposes for which decorative tiles can be, and are, used is almost unlimited, and in every instance where their use is directed by an artistic and intelligent mind, the results are good. Modern artisans have never been able to handle the Moorish tile as the Moors handled it—or, rather, to produce the same glorious results. But that is undoubtedly due to the same reason that it is impossible for the modern artists to equal the old masters. Undoubtedly the colors of the old Moorish tiles—the finest obtainable—have improved with age. Also it is almost impossible for the modern artisan to absorb enough of the oriental atmosphere to produce the ultra-oriental results attained by the old builders. And yet another great drawback of the present day is the fact that while in the olden times each color and shape of tile was made separately, nowadays an entire design, with its different colors, is made on one tile.



Wall Tile in the Yards at Seville

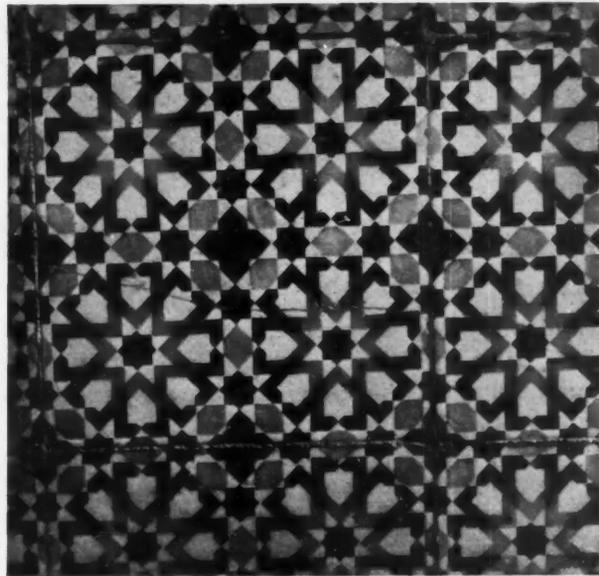
Most of the tiles used in the old days were not over an inch in length, and often smaller. But now they are usually 6 inches square, the designs upon them formerly calling for the use of from 40 to 100 tiny tiles. It is quite apparent how this difference in materials produces difference in results. In a few places the smaller tiles are still made. In Tetuan, Morocco, for example, good imitations of the old Moorish tiles are produced, but the industry is carried on on such a small scale as to prohibit their general use. While it is true that the old Moors sometimes made and used large tiles, they were never imitations of the designs produced by the smaller tiles, and were only used where a heavy effect was desired.

The accompanying illustrations will serve to illustrate the difference in the new and old tiles. It will be seen that in the old style each color of tile is separate. In the new style, on the other hand, the entire figure or, in some cases, four of them, are on one tile.

Modern Spanish builders find tile work very useful—and supposedly ornamental—in many ways. In many buildings of Spanish construction a dado of tiles will be around each room, extending to perhaps 4 feet above the floor and topped off by a wooden molding. Fireplaces are usually faced with tiles and window sills and frames are frequently tiled. Stairways usually have a dado of figured tiles running on either side, and frequently the steps are made of white or gray tiles. Occasionally the front of the step will be of colored tiles. In many cases both plain and figured tiles are worked into the outside wall of a building, especially that surrounding the patio, or interior court or garden, in which case the effect is more pleas-

ing to the eye than when they are used as a dado upon the front of a building, or when the windows and doorways are outlined with them, or when perhaps a row of figured ones run along the sidewalk and the sides of the steps, as may sometimes be seen.

In many cases—although not so much in buildings of today as of a few years ago—tiles are also generously used in business buildings. They have some



New Style Spanish Tile

advantages. They are sanitary, easily cleaned and do not gather dirt, and are durable. But they seem just a little out of place—like a statue of Venus de Milo would seem in a boiler factory.

Old Houses Made New by "Overcoating"

THE USE OF CEMENT PLASTER ON METAL LATH TO REMODEL OLD FRAME HOUSES—THE COST OF THIS WORK AND HOW IT SHOULD BE DONE

THE argument most frequently made against frame houses is that the outside woodwork, siding and trim is too short lived. It is asserted, and with a good deal of truth, that the lumber now generally obtainable will not stand the weather. Even when frequently painted it seems to go to pieces in a surprisingly short time and adds its bill for repairs to the already large painting bill.

Prospective home builders, considering this matter, are deterred from building, or are persuaded to use some of the more expensive forms of construction.

house trim and snug, or when for any reason it is desired to renew the exterior, metal lath is nailed right on and the cement plaster, in two coats, is applied to it. This plaster coat is thoroughly weather and water-proof; and the lime in it, acting as a preservative for wood, stops all further decay of the timbers underneath. This is all done at a cost hardly more than double the expense of a good job of painting. All the various finishes in use for ordinary cement surfacing are equally well adapted to this overcoating process. So the success of such a job from an artistic



Fine Old Frame Residence of Mr. C. Dewick, Detroit, Mich., Renewed by "Overcoating"

Even when their preference for the cosy and attractive appearing shingled or clapboarded house would lead them to build that kind, they are persuaded to use brick or tile or cement.

Cement plaster "overcoating," to be applied at some future time, may solve the problem for such; certainly this overcoating finish is doing wonders in the restoring and remodeling of many old frame dwellings which seemed to have reached the very last stage of their usefulness.

The method is simplicity itself. When the clapboarding, shingles or other outside timber work has become too much weatherbeaten to longer keep the

point of view has been tested and is assured.

The photographs presented herewith will show how easy it is to effect a complete transformation in the appearance of an old frame house by an exterior application of cement mortar. It is confidently hoped that a general adoption of this method will soon revolutionize the appearance of American residences in both town and country. With Portland cement in a plastic state it is possible to bring out in the most attractive way every artistic idea; and as the material is practically indestructible by time or the elements, every house so treated will be given a long lease of life under conditions conducive to the comfort and satisfaction



Old Frame House at Niles, Mich., with Clapboards Removed Ready for Furring

of both owner, occupant and building contractor.

If no alterations of plan or design are intended, the method of procedure may be as mentioned above, for the most inexpensive job; or it may be as indicated in the accompanying working drawings. In the latter case it will be necessary only to rip off the window

and door trim, and after nailing wood or metal furring vertically to the weather boarding on 12-inch centers, attach metal lath outside of the furring to cover all sides of the house. If extra warmth is desired it has been suggested that building paper could be first applied, over the siding and under the furring strips.



House at Niles with "Scratch" Coat Partially on. Note Furring Strips and Lath

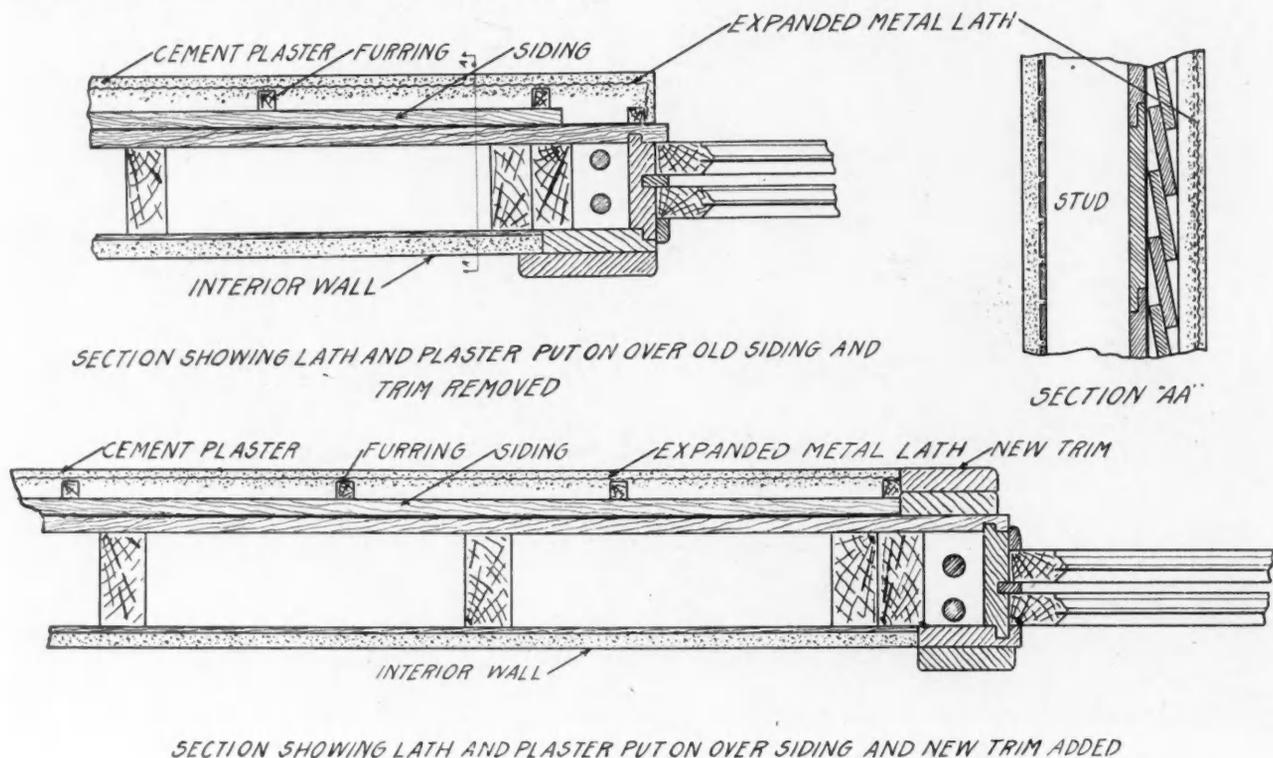


House at Niles, Mich.—Transformation Complete—Total Cost for Labor and Material, 62 Cents per Square Yard

The cost of such cement plaster work complete, including lath, furring strips, and sheathing paper ranges from 8 to 12 cents per square foot, including contractor's profit. This cost applies to the straight run of wall; extras, of course, should be added for fram-

ing around doors, windows, copings, cornices, etc.

In some cases it has seemed wise to remove the shingles or siding before the overcoating is done. The job at Niles, Mich., illustrated, was of this kind. The



total cost for labor and material on this job was 62 cents per square yard.

In considering this expenditure in the light of an investment, it has been the experience of many that the saving in fuel and repairs otherwise necessary has been equal to from 10 to 20 per cent annually on the cost of the work.

The preparation of the cement plaster and its application on such a job is practically the same as for other stucco work. The following is a good specification for it:

Specifications for Cement Stucco

1.—*Intent.*—It is the intent of these specifications to obtain a sound, permanent and water-proof stucco.

2.—*Materials.*—The materials composing the stucco shall consist of,

(a). Portland cement which has been carefully tested and found to satisfactorily meet the requirements of the specification of the American Society of Testing Materials.

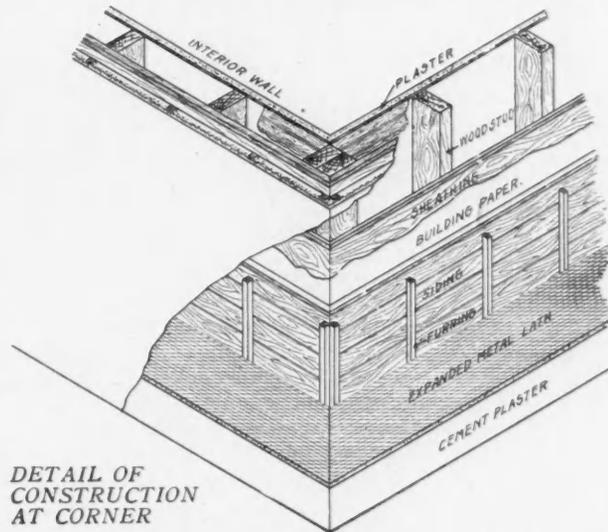
(b). Sand which is practically free from organic matter and uniformly graded in size from coarse to fine. Preference shall be given to a sand of spherical grains.

(c). Hydrated lime which has been slaked with excess of water from double strength lump lime and allowed to stand at least a week before being used.

3.—*Proportions.*—The proportions of the above

specified materials by volume shall be five parts cement, twelve parts of sand and one part lime paste.

4.—*Mixing.*—The cement shall be thoroughly mixed with the dampened sand and sufficient water added



DETAIL OF
CONSTRUCTION
AT CORNER

to give proper working consistency. The lime paste shall then be added and the whole composition most thoroughly worked until perfectly homogeneous. This composition shall only be made up in lots that can be immediately applied and any material that has been mixed with water over thirty minutes before applying shall be rejected.



Artistic Little Home at Kenilworth, Ill., Rough Finished with Cement Plaster on Metal Lath

5.—*Application.*—All walls shown on elevation for stucco finish shall be two-coat work. The first coat shall be prepared as specified above, with the addition of long cow hair when applied to metal lath. The face of the first coat shall be thoroughly scratched over to form a key for the finish coat, which shall be applied to a total thickness of 1 inch, when the first coat has set sufficiently hard to safely hold it. The finish coat shall be carefully floated free from any porous imperfections.

When plastering over a masonry surface, special care must be taken to thoroughly saturate with water and to apply the plaster at once.

6.—*Water-proofing.*—The stucco shall be thoroughly water-proofed. Any one of the standard compounds, at the discretion of the architect, may be used. Follow the directions furnished by the manufacturer closely.

7.—*Drying.*—Special care shall be taken to avoid too rapid drying. If in direct rays of the sun, it shall be protected with a damp canvas or burlap and when sufficiently resistive should be frequently sprinkled with water.

8.—No exterior plastering shall be permitted until all interior partitions are studded up and completely braced.



Starting the New Furnace Right

The first few days a new furnace is in operation is apt to determine its character, if furnaces have a character. If the furnace starts off well, as a good furnace should, the members of the household will be convinced that their furnace is a good one, and it will require a number of furnace misfortunes to remove the favorable impression after it has once been formed, says the *Metal Worker*. On the other hand, if the furnace behaves in an improper manner at first, doubts may be entertained regarding its future warming abilities. It is supposed the dampers in the hot air pipes have been turned in the proper direction to allow the heat to pass, and that the damper rods were put in the proper way, so the handle or ring will indicate whether the damper is closed or open. A mistake made in putting in a damper rod may cause much trouble, as the damper will appear to be open when it is closed, and much furnace talk may be required to explain why heat does not come up the register. If the cold air box is provided with a slide or damper, such appliance may have been left closed, so the furnace does not receive a supply of fresh air. There may be a wide crack under the hall door so the outer air may enter and quietly run down the hall register, thus preventing any warm air from coming up. Thus the hall pipe may be acting as a cold air box.

It has been known for several years that the human eyes and nose are not pleased with smoke. On this account if for no other, the chimney should be examined before connecting the smoke pipe. The chim-

ney flue is liable to become stopped up by soot, mortar or even bricks which may have been dropped by the mason or fallen from the top. By building a small bonfire in the bottom of the chimney the draft can be tested. It may be well to attach a piece of iron to a rope, then proceed to the top of the chimney and lower the iron. If it arrives safely at the bottom of the chimney without encountering any obstruction, one may infer the flue is clear. If there are any openings in the furnace chimney other than the one used by the furnace, they should be closed. While it may be supposed that all smoke pipe fits tight at each joint, it is well to be certain that a tight joint has been made where the smoke pipe joins the surface and also where it enters the chimney.

If the attendant is not accustomed to the management of a furnace, or does not take sufficient interest, ashes and clinkers may be allowed to accumulate in the firepot to such an extent that a good fire is impossible. Some houses are so constructed that grates are placed in a number of rooms, and if these grates are not in use, too much air may be carried up the various flues, resulting in a great loss of heat. If there is not a good fire in the furnace the air may pass through without being properly heated, and then the furnace may be blamed for not warming the house, or the grate flues may be taking away the heat as fast as it is produced.

In some houses there are one or more rooms that require long pipes to convey the heat to them, and on this account the rooms do not receive the required amount of heat. A remedy may be found by incasing the pipes with tin or some of the various pipe coverings that are nonconductors of heat. If a certain room does not receive the proper amount of heat, it may be on account of there being no escape provided for air. If a room is closed tight it can hardly be expected that a supply of hot air can enter, there being no provision made for the escape of the cool air.



How do you determine the size of a furnace required to heat a house? Some look the house over casually and wind up with: "I guess a No. 28 will heat her all right."



The Much Maligned Cabbage

Wigg—What kind of cigars does Closefist smoke?

Wagg—Well, when you light one of them you instinctively look around for corned beef.



Common Sense

This question was asked upon an examination paper: "What steps would you take in determining the height of a building, using an aneroid barometer?"

The answer was: "I would lower the barometer by a string and measure the string."



Details of Modern Framing

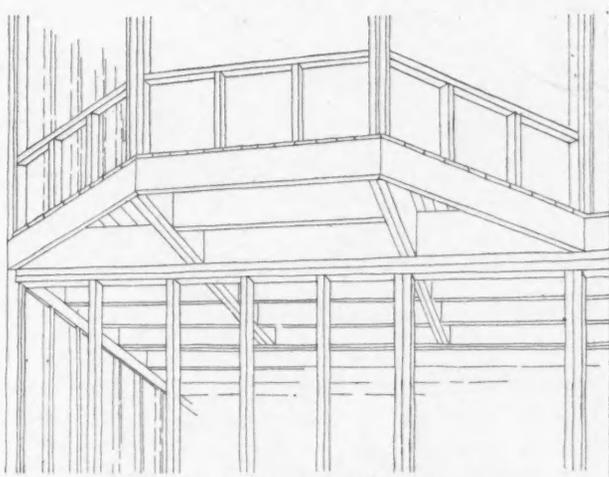
SKETCHES MADE "ON THE JOB" SHOWING HOW CERTAIN FRAMING PROBLEMS ARE NOW BEING SOLVED—GOOD AND BAD IN MODERN CARPENTRY CONSTRUCTION

By C. Bryant Schaefer

THESE framing illustrations show what is going on in present-day carpentry construction. Methods that are believed to be most practical may not prove so when the last spike has been driven. Unless one has had considerable experience one may work out model details only to find it necessary to modify them when it comes to the actual work. It is therefore wise to be familiar with work as it is being done as well as to know what is best theoretically. One need not necessarily copy other people's ideas; but they may get their own ideas whetted down in studying out the why and wherefor of this and that.

The framing of the overhanging bay illustrated in Fig. 1 is probably done in about the average way. The studding is set and the joists are laid up to the double trimmers. Then the distance is measured from there out as far as the desired projection and the out-lookers cut and fitted accordingly.

A careful builder will not rely absolutely on his diagrams, but will always prove the figures by the actual work as he goes along. Where it is not convenient to fit and compare the work before cutting it

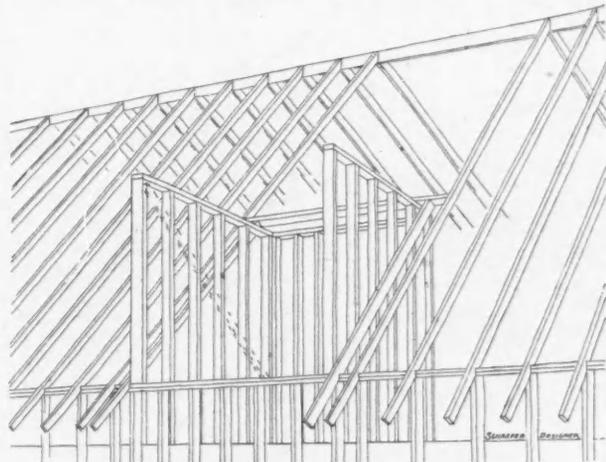


1. FRAMING FOR A PROJECTING BAY WINDOW.

out, care should be taken that there is room for a little adjustment. It saves time and material.

After the projecting joist come the face pieces. Then the short lengths of joist can be fitted in, and the flooring nailed down. The corner studding and win-

dow plates then follow. But a spiked together frame is no security against sagging and shrinkage; or against windows that stick and cracks that open in the future; or against a floor that humps up in the middle of the room; and plastering that buckles and cracks. Two mortised joints at the inner end of the projecting pair of joist would save the owner from future trouble. This particular building might have been constructed in this way; but cheap commercial work is never known to have such provision for



2. FRAMING FOR A SMALL GABLE ROOM.

strength and durability. If it did it would be widely advertised.

While those who sell houses call attention to good construction in a general way it would be more convincing to purchasers to have the good points explained more definitely and in detail. If builders would see that information like this is not lacking it would be a great help to the cause of good, strong workmanship.

The framing of a small gable, Fig. 2, takes in an entire attic room in a one-story cottage. The studs, plates and rafters are first set, leaving a space for the gable.

The gable studding is the full height of the story. They are continued back and around the inner side of the room with an opening for a doorway. The dotted lines show where a diagonal brace has to be

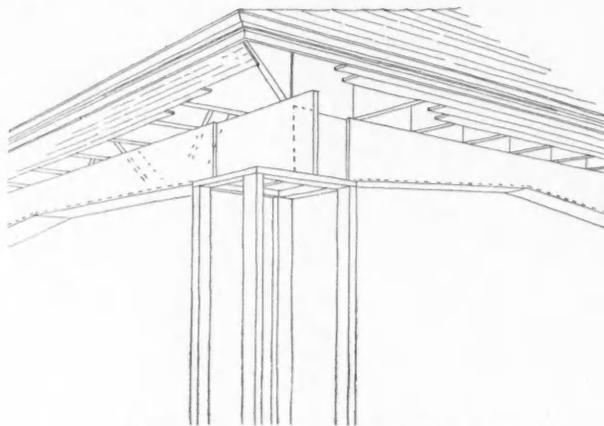
nailed while putting the framing together. The short rafters in the upper part of the roof are not yet in place. The gable rafters will probably be first set and then the valley rafters fitted in place to the ridge.

It seems to be a custom in some parts of the country to omit the ridge pole. It shows how weak and skimpy methods spread until it takes some determination to stand against them. In construction, as in politics, the majority is not always right.

A new problem for carpenters comes with the introduction of cement. It involves furring out to secure thickness and proportions resembling masonry work. Anyone acquainted with steel construction would call this skeleton construction in wood and solve its difficulties in a workmanlike manner. This is especially true of the roomy porches people like for their modern houses. The interior of a corner column, Fig. 3, is about as large as a small closet in a city flat. A mitered frame of 2 by 4 inch has to be made to hold the four corner studs in place, top and bottom.

A 2 by 10 lintel is put in place and rafters extended out over the same from the building. A like cornice framework is secured at the ends by spiking on a row of outlookers. Another is mitered at the corner. The lintel is then increased in width by diagonal furring, usually on the back, the lintel having been placed far enough forward of the center of the column for that purpose. When this framing is complete the mill work can be put on, then the ceiling and crown molding.

Where the lintel is to be cement plastered it has to be furred out on both sides for lathing. A firm



3. MASSIVE PORCH CONSTRUCTION

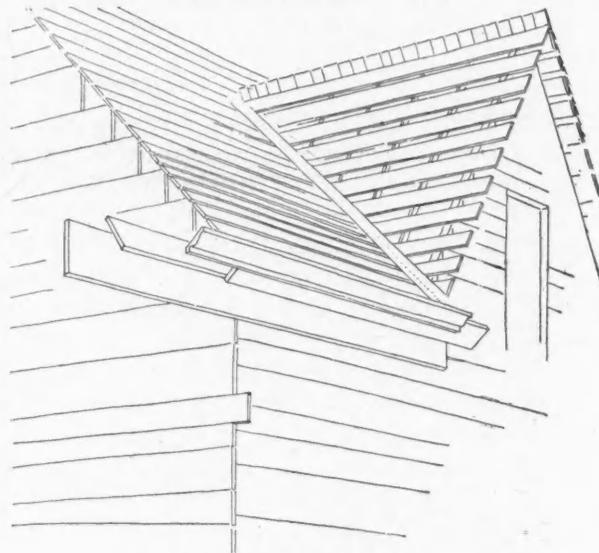
ground must, however, always be secured. The columns and porch rail are usually extended from the basement line up past the floor. A deep, firm foundation is absolutely necessary.

Convenience has established two methods of finishing a frame house. In the more expensive building the mill work is brought to the place already complete in its several parts and ready to be put in. The rough carpentry is finished for its reception. But in smaller houses or buildings planned with little mill work the moldings, and so on, with which to finish the job are cut and fitted at the building. This is illustrated in Fig. 4, which is a sketch of a cornice in

progress of construction with part of the molding in place.

A form for this cornice is built of plain boards and the crown molding put on with the finishing touches. The sketch shows the board ends before being cut for matching with the gable finish. A frieze board will cover the sheathing ends under the gable. The gutter will probably be of a type nailed onto the roof sheathing with a narrow strip with brackets behind it and tin flashing to finish.

A cottage can be built just as strong and tight, putting everything together on the building, as where



4. BUILDING A CORNICE.

much ready-made mill work is employed. In combinations of shingles, cement plaster and sheathing, with bays and porches finished in the same material, some of the most artistic effects may be produced.

Many builders put up houses that look unintentionally plain and stiff. The thing to do is to have a perspective view so as to study it out before hand. It will then be seen how some slight alterations will produce the desired effect when applied to the building. A little change in the proportions of the porch, manner of connecting the bay to the exterior wall, a splay on a few rafters, or more prominence to some insignificant feature, all without calling for extra mill work, will enable the builder to keep up with the best taste of the day.



Prize Designs for Cement Show

The Cement Products Exhibition Company offers a first prize of \$200, a second prize of \$100, and a third prize of \$50 for a design for an ornamental center-piece to be constructed in the Coliseum, Chicago, for the third annual cement show, Feb. 18-26, 1910. Information as to the conditions is given in a circular that has been sent out. It is hoped that there will be a large number of competitors for this center-piece. It is to be circular in form, 17 feet 6 inches in diameter, with a 9-foot aisle surrounding it. The

limit of height is 65 feet. We quote from the circular:

"The purpose of the competition is to secure a design for an ornamental center-piece to be built of cement or concrete and to be the central feature of the decorative scheme at the cement show. Those entering the competition will not be limited in form or type of construction. Each competitor will make his own suggestion for a center-piece and submit a design for it. The competition is open to all persons desiring to enter it.

"Location.—The center-piece is to be placed in the center of the main floor of the Coliseum, as shown on the official diagram of the cement show.

"Cost.—The cost of the center-piece complete is not to exceed \$2,000. Each design must be accompanied by a brief typewritten statement of materials and methods of construction proposed and itemized cost based upon prices of material and labor in Chicago.

ditional drawings of details may be submitted if desired.

"All drawings must be mounted on heavy pulp board.

"All drawings must be completed and delivered to the offices of the Cement Products Exhibition Company, 115 Adams street, Chicago, not later than 5 o'clock, December 1, 1909. To each design entered in this competition there must be attached a plain, blank envelope, sealed, containing the competitor's name and address. No cipher or *nom de plume*, identifying name or mark, shall appear on the drawing or wrapper.

"The drawings will be judged by a jury of three disinterested parties, two of whom will be appointed by the Cement Products Exhibition Company, and the third by the Chicago Architectural Club.

"The announcement of the jury's awards will be made as soon after the close of the competition as pos-

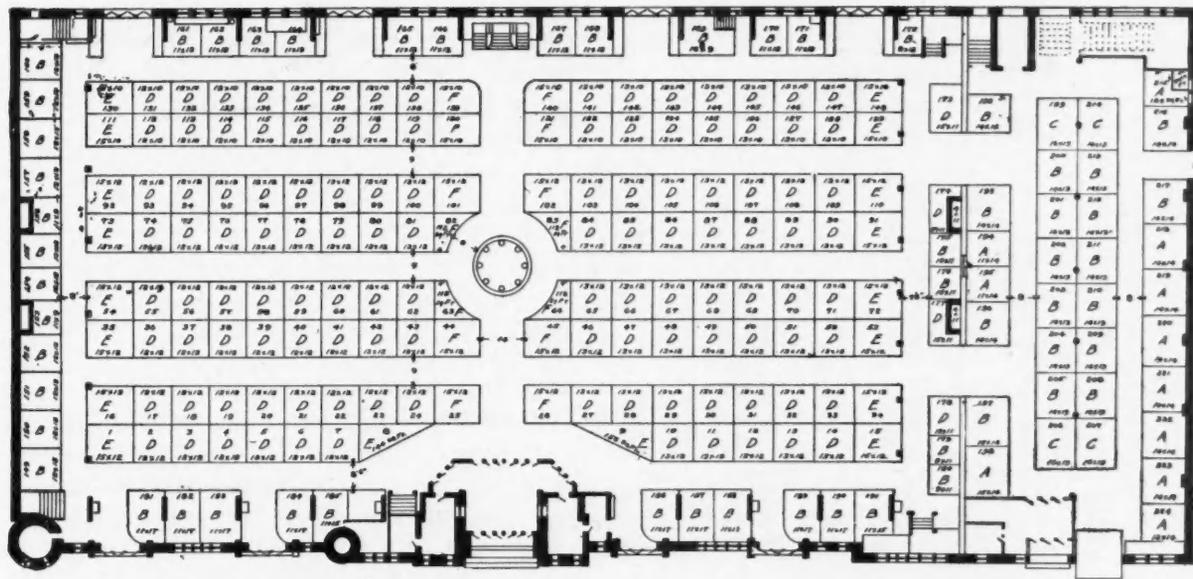


Diagram of Floor Space for Third Annual Cement Show—Coliseum, Chicago

"Construction. The center-piece may be of either plain or reinforced concrete, concrete blocks or cement plaster; if of blocks, the so-called rock-face must not be used. The center-piece may be finished in any manner which will produce, in the opinion of the designer, a pleasing effect. The use of color is admissible, as well as decorative detail in relief which can be cast in molds. The designer must bear in mind that only four days are available for the construction of the center-piece in the Coliseum. Structural members or parts may be made in advance, however, and moved into the building four days before the opening of the show.

"Drawings Required.—A floor plan and a section at the working scale of 1/4 inch to the foot and one elevation at a scale of 1/2 inch to the foot. An accurate perspective drawing at a scale of 1/2 inch to the foot to be rendered in color. Graphic scales are to be shown on all designs except the perspective. Ad-

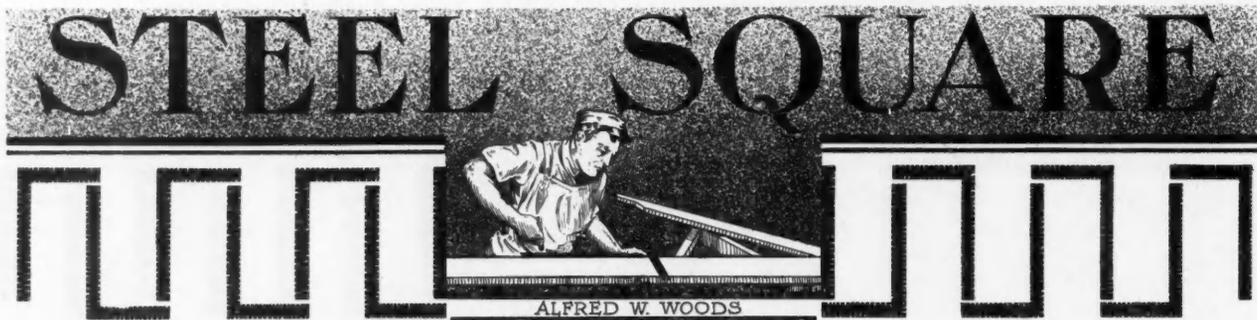
sible. The jury's awards will be based upon:

- "1—Appropriateness of design—
- "2—General attractiveness of design—
- "3—Its adaptability to concrete construction—
- "4—Cost of construction—

"If in the opinion of the jury no designs submitted are sufficiently meritorious the first and second prizes will not be given.

"The prize drawings are to become the property of the Cement Products Exhibition Company. The right is reserved to publish or exhibit any or all of the drawings. The right is also reserved to adopt any design submitted for the construction of the center-piece or to adopt any part of any design presented. Some or all of the drawings will be exhibited at the cement show."

Intending competitors will address the Cement Products Exhibition Company, eighteenth floor, Commercial Bank building, Chicago.



How to Use the Steel Square

HOW THE LENGTHS AND CUTS OF RAFTERS MAY BE FOUND IN FRAMING ODD RUNS AND RISES PER SCALE WITH THE STEEL SQUARE

IT SOMETIMES occurs in framing a roof that the span, or width of gables, are of odd measurements instead of being in even feet. In fact, this is the case in most all buildings. The framework of the walls may be laid out without fractions; but the architect in order to work out the detail of the cornice to suit his fancy, may shove the seat of the rafter beyond or back of the plate line, regardless of what may be the width of the framework below the cornice, and thereby throw the roof calculations into fractions. He does not stop to think, nor does he care, what kinds of trouble he is piling up in store for the carpenter so long as it looks good to him.

Now, as a matter of fact, the fractions in the run or rise of the rafters need not bother, for they may be just as easily handled as even feet, and that too without using more than a mental calculation in handling the steel square. The lengths need not cause any worry as it is not necessary that the manipulator of the steel square even know the exact lengths as that part will take care of itself.

In most all of the work in this department we have illustrated on the full scale for 1 foot run, which we think is preferable to the 1-inch scale to the foot.

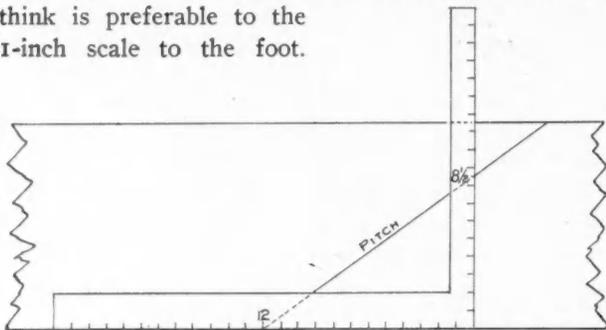


FIG. 264

However, as the fractional part of the run is not as easily grasped and handled with it as with the latter, by the average workman, we will use the 1 inch scale to the foot run. In using the side of the square that is divided into twelfths of an inch, it is to be observed that these divisions are made to represent inches in the actual framing; so, if a measurement is off $\frac{1}{12}$ of an inch, it means a whole inch off in the framework. It cannot therefore be called an absolutely accurate method, but nearly enough so for practical purposes

in woodwork. Where accurate work is required, as in steel framing for trusses, etc., the lengths of the diagonals should be found by the method of extracting the square root.

In Fig. 265 is shown a roof plan with odd runs, the main roof having a gable 23 feet $9\frac{1}{2}$ inches wide at one end and 21 feet 6 inches wide at the other. A side gable 19 feet 7 inches wide is thrown in on the side with a 3 foot 4 inch projection, and set at an odd distance from either end of the main part. The run of the common rafter for the widest gable will be 11 feet $10\frac{3}{4}$ inches, and that for the next will be 10 feet 9 inches, while that for the side gable will be 9 feet $9\frac{1}{2}$ inches. Very well. The length of the rafters for these runs are the easiest to find, because they need no further calculations as to their runs.

Suppose the rise we wish to use to be $8\frac{1}{2}$ inches to the foot. Now, take a straight edge board and place the steel square as shown in Fig. 264 and draw a line from 12 and passing at $8\frac{1}{2}$ which will represent the pitch line. Sliding the square along the edge of the board, let the figures on the tongue represent the run resting at the foot of the line. Then that part covered by the square will represent the length of the rafter and the figures intersected by the line will give the seat and plumb cut. Thus, the figures to use for the run of the longest common rafter would be eleven, and ten and three-fourth twelfths inches. In other words, read feet as inches, inches as twelfths and fractions of an inch as that part of a twelfth of an inch.

To find the length of the jacks—suppose they are placed on 2-foot centers—begin at the upper right hand corner; the projection of the side gable is shown to be 3 feet 4 inches. Now, if the center of the second rafter is set 2 feet from the corner, there would be 1 foot 4 inches left to the corner, or 8 inches short of that of the run for the corresponding common rafter, which would be 9 feet $1\frac{1}{2}$ inches. For the remainder of the jacks, move in the square 2 inches each time.

Proceed in the same manner for those on the other side, the length of the plate being 5 feet 6 inches, which would necessitate that the run of the first jack from the common rafter be 6 inches shorter, or 11 feet $4\frac{3}{4}$ inches.

In the plan is shown another kind of a jack that taxes the ingenuity of some carpenters to find the length and cuts. It is the jack that rests in between the hip and valley rafter, the cuts of which are the same at both ends, that is, a plumb and side cut. Its run is determined by the difference in the width of

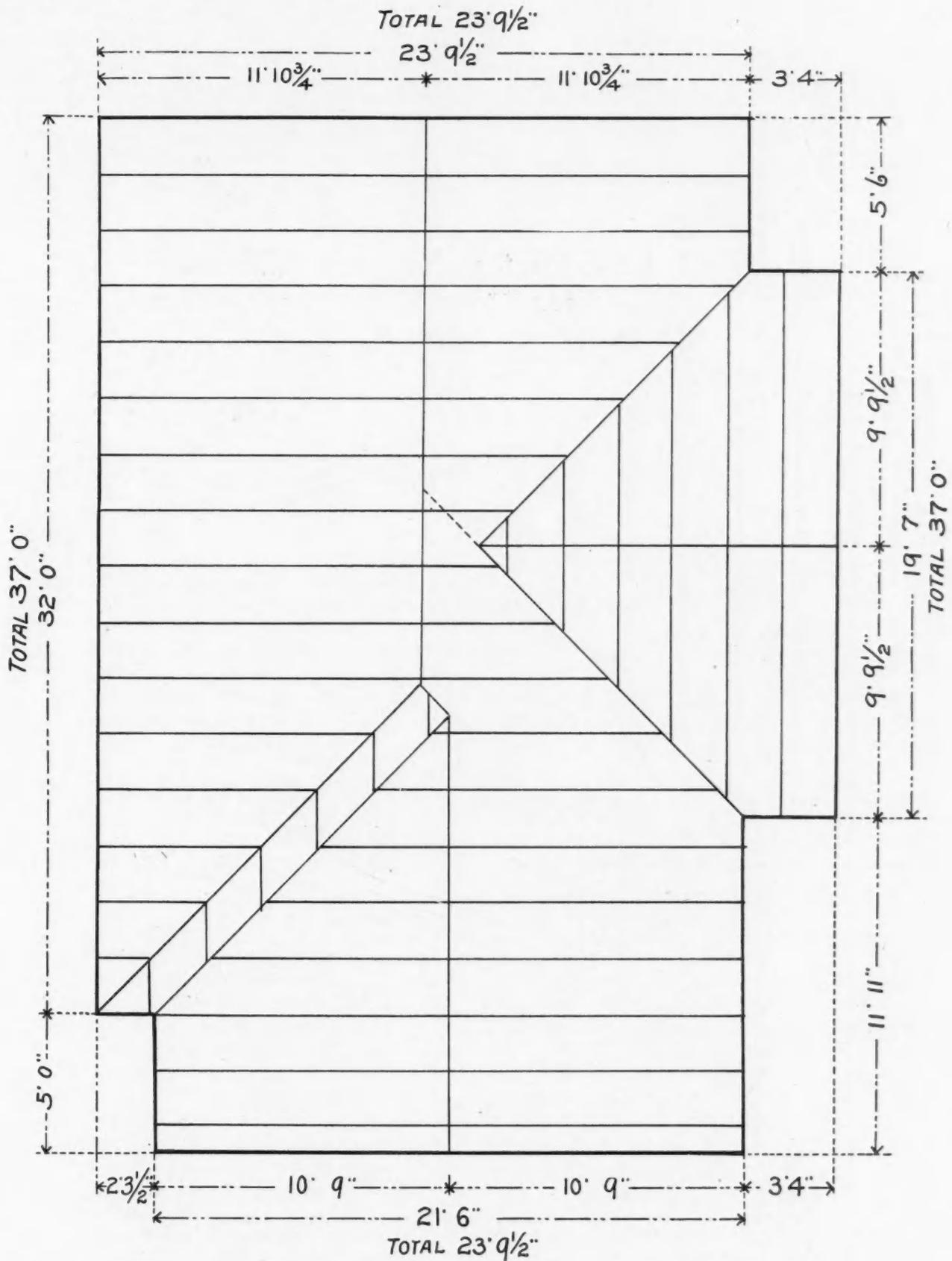


FIG. 265.

the building. In the example, the width at one end is 23 feet 9½ inches and the other 21 feet 6 inches, which makes a difference of 2 feet 3½ inches and represents the run of the jack in question, generally known as a cripple jack.

The lengths of the hips are found in the same manner, that is, the same figures for the run are used as for the common rafter, but the pitch line, instead of being from 12 on the tongue, is changed to 17 because the gain of the hip run is 5/12 more than that of the common rafter.

The seat and plumb cuts may be found at any of the places that the lengths are found as described above. In finding the net lengths, allowance should

be made for the ridge board, and the hips and valley. This may be found by deducting from the run one-half the thickness of the ridge board for the common rafter, one-half of the diagonal thickness of the hip or valley and all the diagonal thickness for cripple jacks.

The side cuts of the jacks may be found in this case by taking its own run and length or the same for that of the common rafter. The side of the square on which the length is taken will give the cut. The side cut of the hip may be found by taking its own run and its length. Cut on length. The run of the hip may be found by measuring diagonally from like figures on both blade and tongue that represent the run of the corresponding common rafter.

How to Lay Out a Square Corner

THE "RADIUS TOOL" AND HOW TO USE IT—HOW THIS USEFUL BUT SIMPLE INSTRUMENT MAY BE EASILY MADE—THE WORK IT WILL DO

By James F. Hobart, M. E.

THE matter of accurately laying out a "square," or more correctly speaking, a right angle, is often quite a problem, especially where considerable accuracy is required, or where the given line is not well defined. Especially in laying out the sides of a building, is it found difficult to determine the squared corner with the necessary accuracy. Not only is the instrument about to be described very convenient when made 10 or 12 feet long, but it is also very handy when made in sizes from 6 inches to 2 feet.

For the want of a better name, this tool, which was invented by the writer, is called a "radius tool," from the fact that it employs three radii of a circle in determining a right angle about a given point in a line. Before describing the method of using the tool, its construction will be explained, for it is so exceedingly simple that any carpenter can make one in ten min-

utes. which should be just large enough to allow a wire nail to be driven through them without splitting the strip.

Having completed strip A, Fig. 1, proceed with the longer strip shown by Fig. 2, which, as stated, is twice the length of A, Fig. 1. Place one end of the short strip on the long strip, at D, which must be exactly in the middle of strip G, H, both lengthwise and crosswise. Mark a straight fine line along the middle of strip G, H, and bore all the holes exactly in the line. Put nail, D, in place and insert a nail at E, then mark across the center line at G, which gives the place to bore for another wire nail. All the nails used in this instrument should be filed to a point, with its center fair in the axis of the nail. That is—don't file the point on one side of the nail. If you do, the instrument will not work accurately.

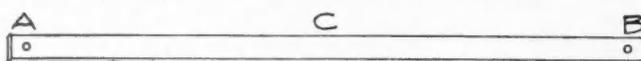


FIG. 1
THE RADIUS STRIP

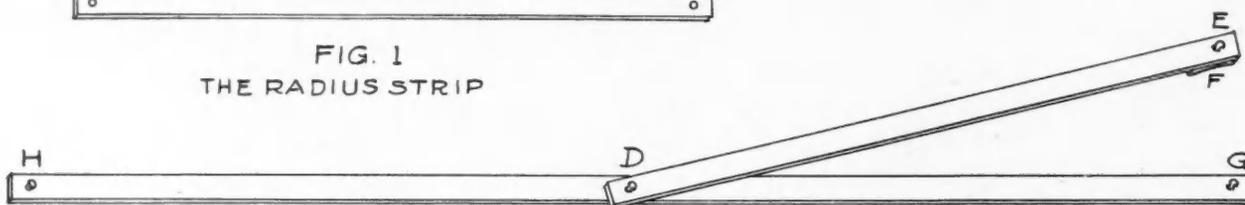


FIG. 2
A COMPLETED INSTRUMENT

utes. If made more elaborately in metal, it proves a worthy addition to the tools of any mechanic.

To make up this tool, first get out the radius strip, as shown by Fig. 1. This may be of any convenient length, of any material, and a split sapling may be used in case a strip of board is not at hand. All the detail necessary is that it be one-half the length of the longer strip shown by Fig. 2. Bore two holes through the strip, one at A, the other at B, and take exceedingly good care that both holes are square with the face side of the strip, and that the face side is out of wind. Better use a try-square in boring the holes,

For a more elaborate instrument, the points to be inserted at E, G and H may be made of tool steel, and they may be threaded and screwed into the holes. The nail at D may be replaced by a well-fitting carriage bolt, and a number of other refinements may be made in the instrument to suit the wish and the ingenuity of the maker.

After hole G has been located as described, revolve the short radius strip and make another mark at H. Bore a hole here and insert another nail or hardened point. Then the tool is ready for business without further trouble.

Fig. 3 gives an idea of the use of this tool. Consider that a line, I, J, has been laid down, and it is necessary to establish another line, K, L, exactly at right angles to I, J. The principle upon which this tool works is that theorem in geometry, that "an angle in a semi-circle is always a right angle". In the tool, the line, G, H, represents the diameter of a semi-circle, and D, E is a radius of this circle. Then, according to the geometrical rule, the three points, G, H, and E, must always form a right angle should they be connected together with lines. This being the case, to "erect a perpendicular" through L, Fig. 3, or through any other point from the line, I, J, it is only necessary

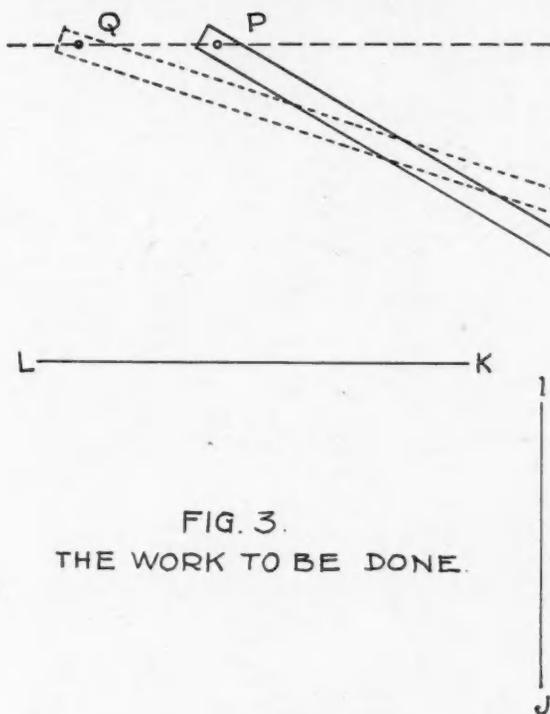


FIG. 3.
THE WORK TO BE DONE.

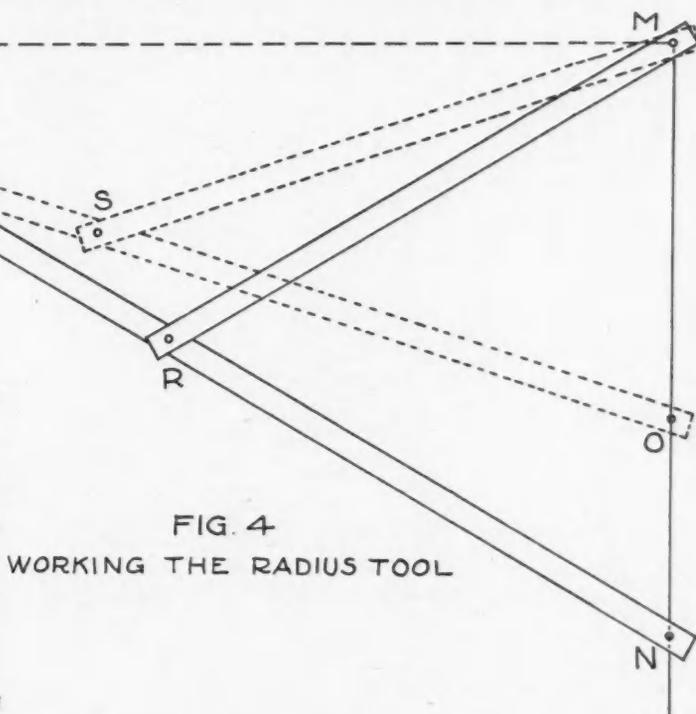


FIG. 4
WORKING THE RADIUS TOOL

to place two points of the instrument on the line I, J, one directly under L, and the remaining point of the instrument must surely (if the instrument has been accurately made) lie at right angles to the other points of the tool.

The matter above noted is well illustrated by Fig. 4. The line, M, N, has been given, and it is desired to "square out" from point M. All that is necessary is to place the point M on the point from which the perpendicular is to be erected. It will be observed that the point on the short arm of the instrument, is the one which should be always placed on the point from which the lined is to be squared out.

With point M on the place from which the line is to start, the other point, N, may be placed anywhere in line M, N, and point P will always fall in a line perpendicular to (square with) line M, N. It is found that with one point of the tool at N, the other will fall at P while should point P be removed to O, the tool will immediately take the position shown by the dotted lines, and point P will be pushed out to Q, but it will still fall in the "square" line P, M, which is the one we have been trying to locate.

For some kinds of work, the pins may be omitted and the ends of the strips sharpened to points. The tool thus made is used exactly as before, with the exception that marks cannot be made by the nail points, but must be marked by some other tool upon the work which is to be squared. A hundred uses soon develop for this tool, once a man has one at hand, and it applies itself to the greatest number of novel uses imaginable.

Portland Cement Grindstone for Glass

What is claimed as an important discovery in the glass industry has been made, which will tend to revo-

lutionize the art of grinding glass. The grinder, which Mr. Little has invented or discovered, is made of one-half best Portland cement and one-half silica sand. In this stone there are no soft or hard spots, and it will grind glass without scratching. The cost of the grindstone is about 10 per cent that of the common grindstone. The inventor is receiving many inquiries regarding his discovery.

He Was an Expert

The householder smothered his wrath and descended to the basement. "Are you the plumber?" he asked of the grimy-looking individual who was tinkering with the pipes in the cellar.

"Yes, guv'nur," answered the man.

"Been long in the trade?"

"'Bout a year, guv'nor."

"Ever make mistakes?"

"Bles yer, no, guv'nor."

"Oh, then, I suppose it's all right. I imagined you had connected up the wrong pipes, for the chandelier in the drawing-room is spraying like a fountain, and the bathroom tap's on fire!"

Aluminum Gives Way to Wood for Air Ships

NEW FORM OF AIR SHIP OR DIRIGIBLE BALLOON FRAMING—FIRST PUBLISHED PHOTOGRAPH OF COUNT ZEPPELIN'S HUGE BALLOONSHED AT FRIEDRICHSHAFEN

By Oskar Herwig

THERE went stirring news through the German daily papers some days ago to the effect that Count Zeppelin, the first man in aeronautics, intends no longer to use aluminum for his airships, but some lighter material, namely, wood.

It is said the saddest day he ever experienced was the day of the terrible disaster at Echterdingen in August last, when his brand-new ship, Zeppelin II, exploded in a thunderstorm and was completely wrecked. There was an instant rising of feeling with the German people who at once subscribed large sums to enable the unfortunate Count to resume his experiments. He himself and experts meditated however what could have been the cause of the catastrophe, and it is now certain that the immense mass of metal, contained in the rigid skeleton and cars, attracted atmospheric electricity and conducted sparks from the metal to the gas, causing the explosion.

It is clear that if wood had been used for the

frame the accident could never have been possible.

A model of such an airship has been completed; the wooden frame work of it is illustrated herewith. The inventor is a Berlin architect of good reputation and many and varied accomplishments. He designed the German parliament buildings. He has also designed and constructed many successful racing-boats, so he may be called an expert in wood. According to his model and plan the airships or dirigible balloons of the future are to have hollow rods connected with glue. These rods are of solid cross-section only at the crossings.

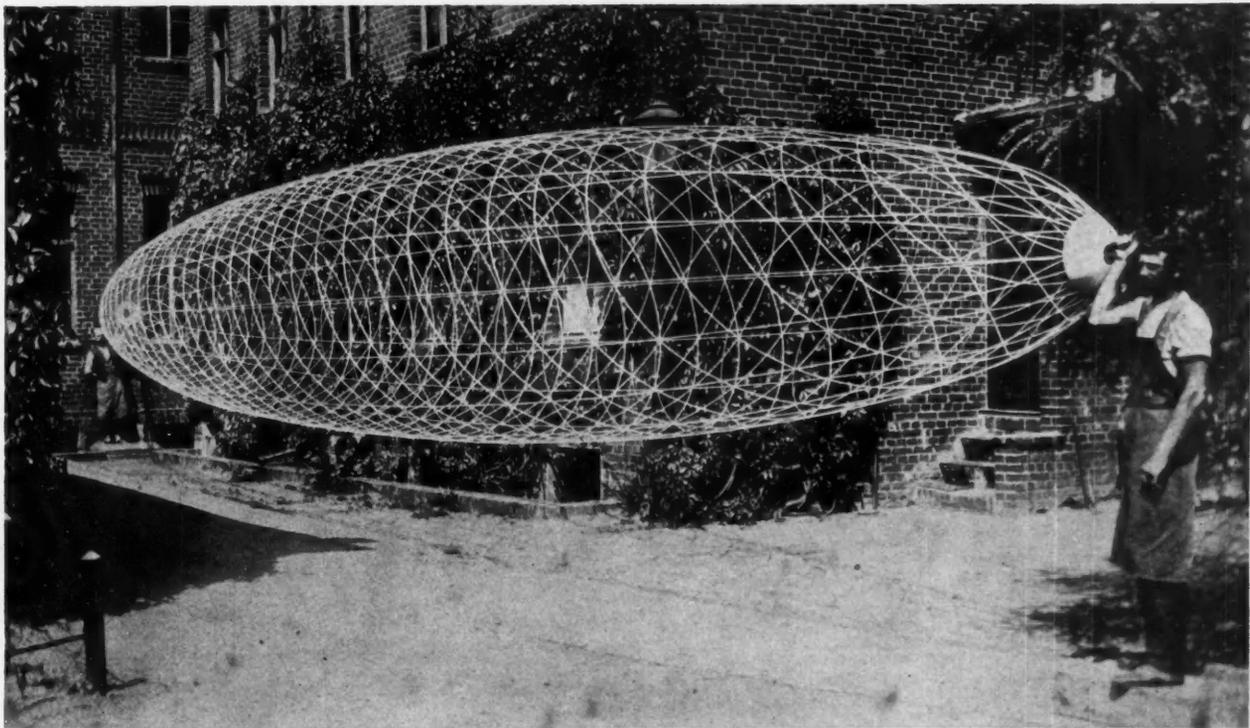
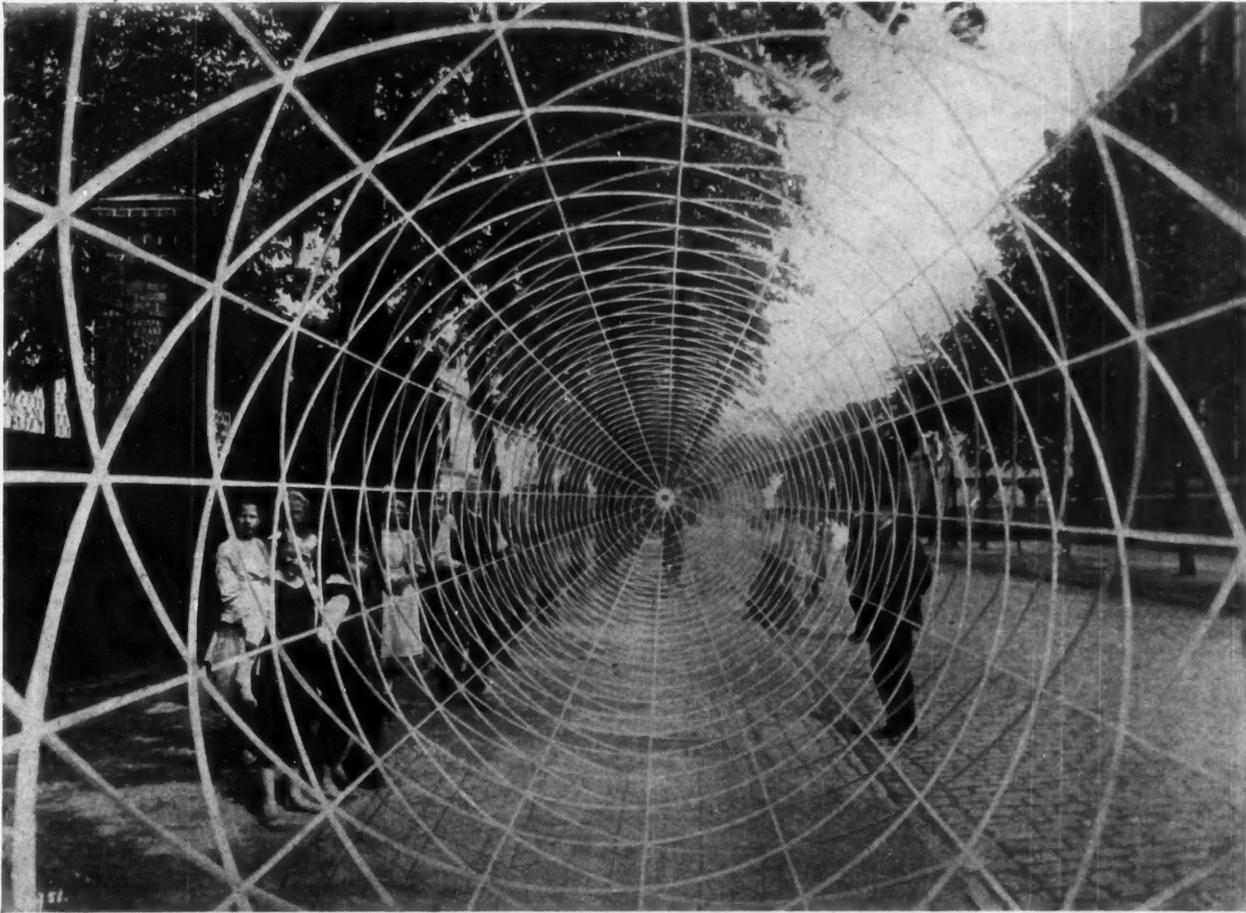
The specific weight of Canadian pine employed is 0.38 to 0.4 while that of aluminum is eight times as much. On the other hand this metal is three times as strong as the wood; so a stick of the same strength is about one-third the weight. Considering the large size of our modern airships and the immense weight of frame, etc., much could be saved in dead load if



Count Zeppelin's First Stationary Balloonshed, 492 Feet Long, 66 Feet Wide, 59 Feet Clear Height inside

To house his big airships Count Zeppelin had always installed on the lake near Friedrichshafen floating sheds. These, however, were not entirely satisfactory as they could not be held stationary in a strong wind.

- This year, for the first time, he has erected a big stationary barn in Friedrichshafen to hold one ship. It is curiously made of wood, being of self-supporting timber construction. It has corrugated iron sheets between the beams.



Two Views of the Wood Skeleton for the Model Dirigible Balloon, 100 Feet Long and 8 Feet in Diameter. Exhibited at the Recent Aerial Exposition of Frankfort, Germany.

wood is substituted. One result is that such a balloon can be made much smaller and yet has the same lifting power. The Zeppelin reached its smallest pos-

sible size with 11,000 cubic meters; with wood framing the lower limit is 8,500 cubic meters.

The shape of this new type is that of an ellipse.

The diameter is largest amidships which is a decided advantage as there the bending force is greatest. A cylinder of the Zeppelin types would be bent or broken in the middle unless the frame were strengthened there at the expenses of the dead load. In the Zeppelin the load was divided into two cars 198 feet apart which is more expensive, increases the dead load and minimizes the manoeuvring ability. In this new ship the gondola is attached in the center. The shape of a spindle also gives less surface; the capacity being the same and less envelope material is needed. This form of framing added to the natural resiliency of the wood

is said to withstand shocks and bending or breaking much better than the earlier types. With it, there is also a minimum of air resistance.

Wood is, as we know, not sensitive to moistness, heat or cold if coated with a weather-proof varnish while metal expands and oxydizes, loosing strength.

These points seem to be sufficient to show the superiority of such an airship, and it will not be long before large balloons of wooden construction will be built. The model shown here is exhibited at the aeronautical exposition in Frankfort this year where it received much attention and favorable comment.

Water Hammer in Steam Heating Pipes

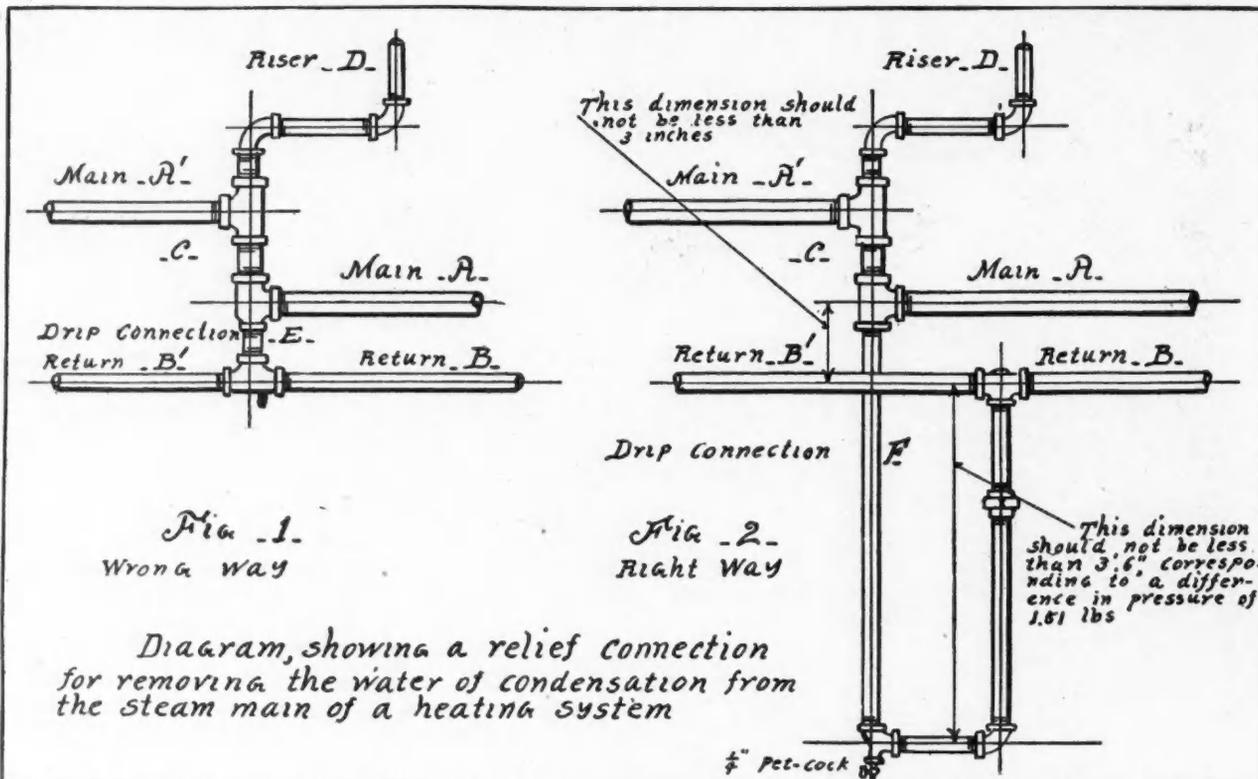
RIGHT AND WRONG METHODS OF GETTING RID OF WATER CONDENSATION—PROPER ARRANGEMENT OF PIPING—SOME COMMON ERRORS IN CONSTRUCTION

By J. P. Lisk, M. E.

THE design of a system of piping to carry the steam to the radiators and return the water of condensation to the boiler without the noise so frequently heard, in steam-heated buildings, is an easy matter for a practical heating engineer to accomplish, but is quite difficult for the ordinary steamfitter, or the man with the mere theoretical knowledge. I am not obliged to prove this statement by argument, as there are numerous installations that will speak for themselves, when fired up.

Fig. 1 shows wrong method of relieving a steam main of its water of condensation, yet in practice I have met with such arrangements of piping so often

pipe, C is a vertical riser supplying steam to a higher level through outlet D. After rising as high as the floor beams will allow, the main A' is continued on to other parts of the building. The main return pipe B and B', taking the water of condensation back to a pump receiver or to the boiler direct, have connection, E, to the bottom of the steam main; which is intended to remove the water of condensation from this low point (the low point is made necessary by pitching the main in the direction in which the steam flows to the radiating surfaces) and returning it through the main return pipe to the receiver, or boiler, as the case may be. Right here is where the trouble



that I am led to believe it is a very common fault throughout the entire field of steam-heating work. Referring to Fig. 1, A is a horizontal main supply

begins if this connection is not properly made, and if, as I said in the beginning, it is made according to Fig. 1, it will not work satisfactorily. The system

will pound and hammer, the radiator fill up with water which will rush back flooding the receiver, causing the pump to race, and quite frequently doing itself serious damage.

The reason for this action is explained as follows: A heating system is a condenser of steam. The supply pipes carry the steam to the condensing surfaces. The return pipes carry the water of condensation back to the boiler. There is a varying difference of pressure between the steam and return pipes. This difference is greatest at the points where the steam first enters the system, and where the water finally leaves it. That is at the reducing valve and the receiver of the pump, or at the outlet of the boiler, and in the return pipe near the boiler.

To be better understood, I will explain, for the benefit of those not entirely familiar with heating work, that the water in the return pipe of a gravity system of heating is from 12 inches to 3 feet higher than the water level in the boiler. This condition is brought about by the difference in pressure, caused by the steam being condensed as it gives up its heat through the radiating surfaces, thereby occupying less space in the system, consequently less pressure. This difference is greatest at the two extremes of the system, as mentioned above. Now, it will be easy to understand the trouble brought about in making a drip connection as shown in Fig. 1.

The steam entering the main through the reducing valve, or from the boiler direct, flows out until it reaches the point of relief, where it crosses over into the return pipe and feeds both ways. The water of condensation coming back through the return pipe meets an ever-increasing retardant in the steam flowing in the opposite direction, and as the volume of water increases the area of the steam space in the pipe decreases. The velocity of the steam increases in proportion to the contracted area through which it flows, eventually stopping the return water from flowing toward the boiler. The return water now fills the pipe, cutting off the supply of steam from the return pipe side. The steam beyond this immediately condenses, forming a vacuum. The water now begins to flow, with high velocity, assisted by the pressure of steam back of it, until it meets with some obstruction, such as water from the radiating surfaces forced on by the steam from the feed main or an elbow where the pipe changes direction, producing the shock called water hammer. This shock is frequently great enough to rupture the pipe and do a great deal of damage to the building.

Having pointed out a very common defect in the arrangement of a piping system for steam heating, and showing the results obtained as well as giving the reason for such results, let us see how the trouble may be avoided. Looking at Fig. 2 in the diagram, we see at once how this is accomplished. Instead of making connection, E, directly into the return pipe, B, the loop, F, is carried about 3 feet 6 inches below the level of

the return pipe, as shown. This effectually prevents the steam from short circuiting into the return pipe. At the same time it allows the water of condensation to pass freely from the steam main A, and riser D, into the return pipe B, through which it passes to the receiver or boiler.

The loop, while acting as a seal, also adjusts itself to the varying inequalities of pressure in the system, due to rapid change in working conditions. I have frequently seen the temperature of a building drop 20 degrees, during extremely cold weather, within a period of fifteen minutes. Such a large variation in condition naturally subjects the heating apparatus to greater duty, which means more heat units transmitted per square foot of surface, consequently more steam from the boiler and more water going back through the return pipes and a greater difference in pressure between the two extremes of the system. If a system is properly designed, it will adjust itself to wide variation in working conditions, but if errors of construction exist, as shown in Fig. 1, there will certainly be more noise than agreeable. There is also the probability of having to make repairs to a leaky system.

Summed up, the cause of water hammer consists in the fact that certain parts of the system, after being filled with steam, become so isolated from their source of supply by the water that is free to move in the system, that the steam in the isolated parts is condensed, leaving a vacuum, into which the water rushes until it meets with some obstruction that interrupts its movement. The intensity of the blow delivered depends on many varying conditions. It ranges, however, all the way from a light shock, to a blow that ruptures pipe and fittings.—*Engineering Review*.

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Got There First

Mrs. Hicks (relating burglar scare)—“Yes, I heard a noise and got up, and there under the bed I saw a man’s legs.”

Mrs. Wicks—“Mercy! The burglar’s?”

Mrs. Hicks—“No, my husband’s—he had heard the noise, too.”

+

Baldwin Breaks Dirigible Height Records

Captain Baldwin, builder of the U. S. army dirigible airship, broke the world’s record for height of flight in dirigibles by flying to an altitude of 3,500 feet while testing the airship he used during the Hudson-Fulton exposition. The great height reached, which is claimed to be 500 feet higher than Count Zeppelin’s record, was not intended at the start, but he found the wind sufficiently strong at an altitude of 1,500 feet to force him to go higher or give up the flight. At an altitude of 2,000 feet the wind was also too turbulent, therefore he rose to an altitude of 3,500 feet, where he found a steady current of air. At this altitude he carried on a series of maneuvers at a speed of more than 25 miles an hour. The flight occurred at Worcester, Mass.

TYPICAL AMERICAN HOMES

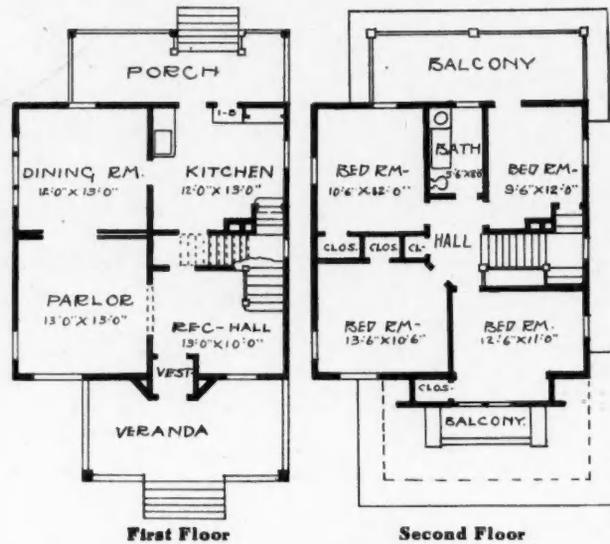


Modern Successful Residence Designs

PHOTOGRAPHS AND FLOOR PLANS OF SEVERAL HOUSES ERECTED THIS YEAR PRONOUNCED BY THEIR OWNERS THOROUGHLY PRACTICAL AND SATISFACTORY

WHEN a man, or a woman, becomes discontented with the renter's lot and gets to longing for the comforts and satisfaction of a home of his own he suddenly takes an interest he never had before in all the new houses, built or in the process of building, in his vicinity, that seem to be anywhere near in size and in cost what he would want himself. He wants to know the special merits of the cement plaster coating Jones is using on his house, and why Brown is finishing the outside of his new house with rough boards, stained, instead of the ordinary siding. He wants to know how the heating problems are being worked out and whether the private water supply plant Smith has put in is practical. For the first time in his life he forms a definite opinion in regard to interior finish and finds out what he prefers in builders' hardware. Moreover he finds out what things cost—how much he can build for the two, three or four thousand dollars he figures on spending.

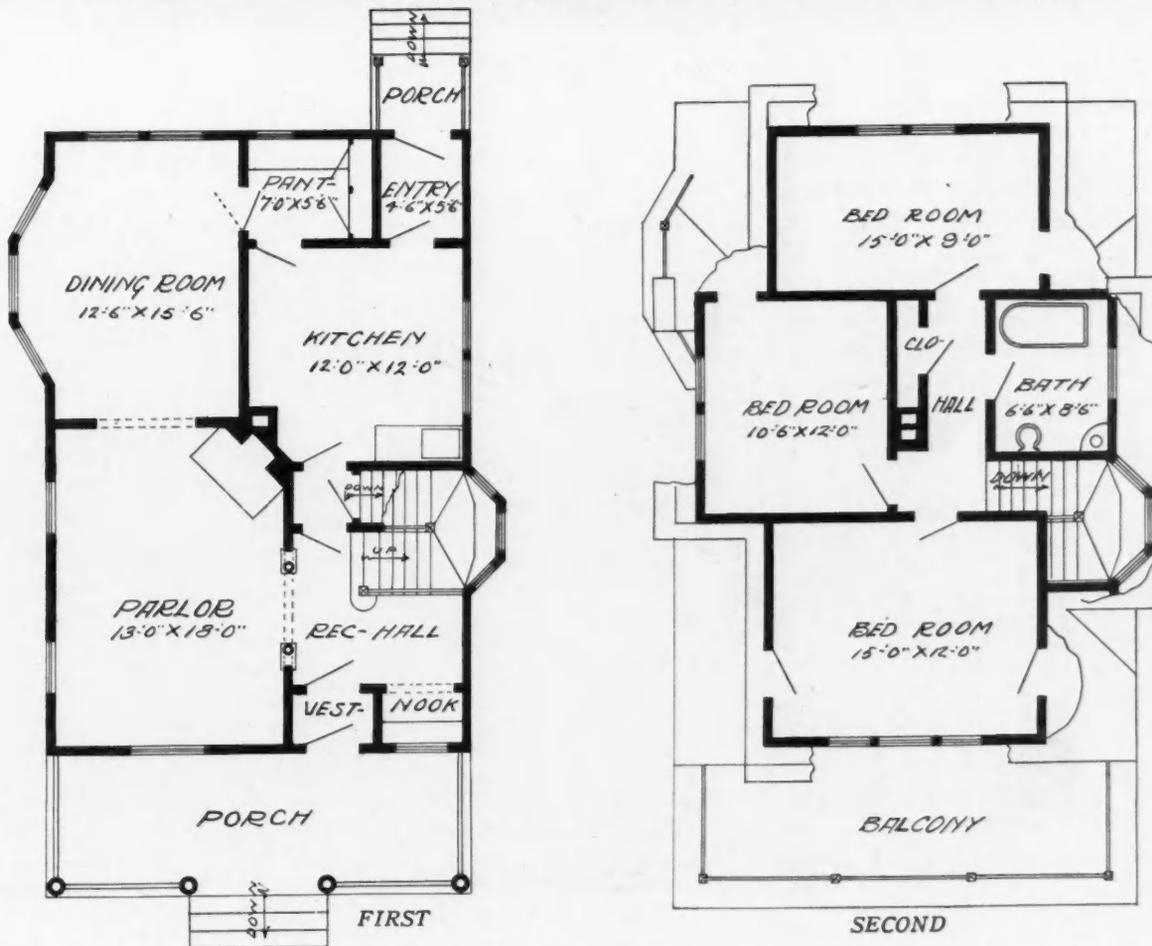
All this is good, a necessary and desirable part of the very desirable and praiseworthy process of becoming



Comfortable Eight-Room House Built at Oshkosh, Wis., by Fluor Bros. Construction Co. Cost, \$2,800.



Very Attractive House Built by J. H. Perus at Frankfort, Mich., by C. G. Reichel & Son. Cost, \$2,700

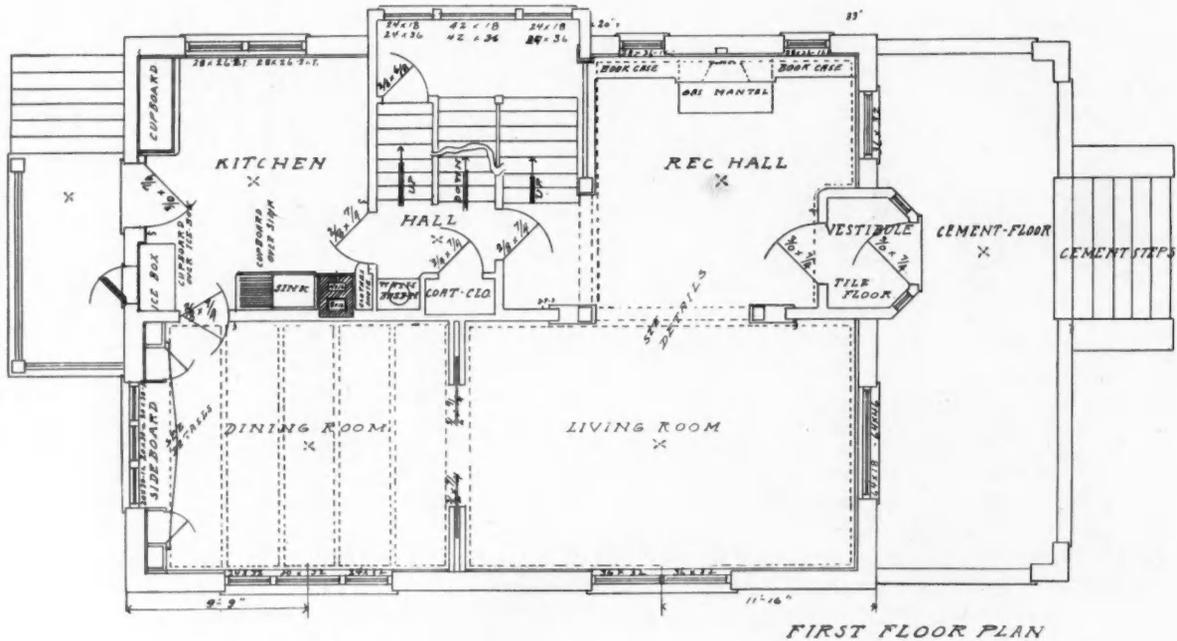




Fine Brick Veneer and Stucco House Built by Fluor Bros. Construction Co., Oshkosh, Wis.

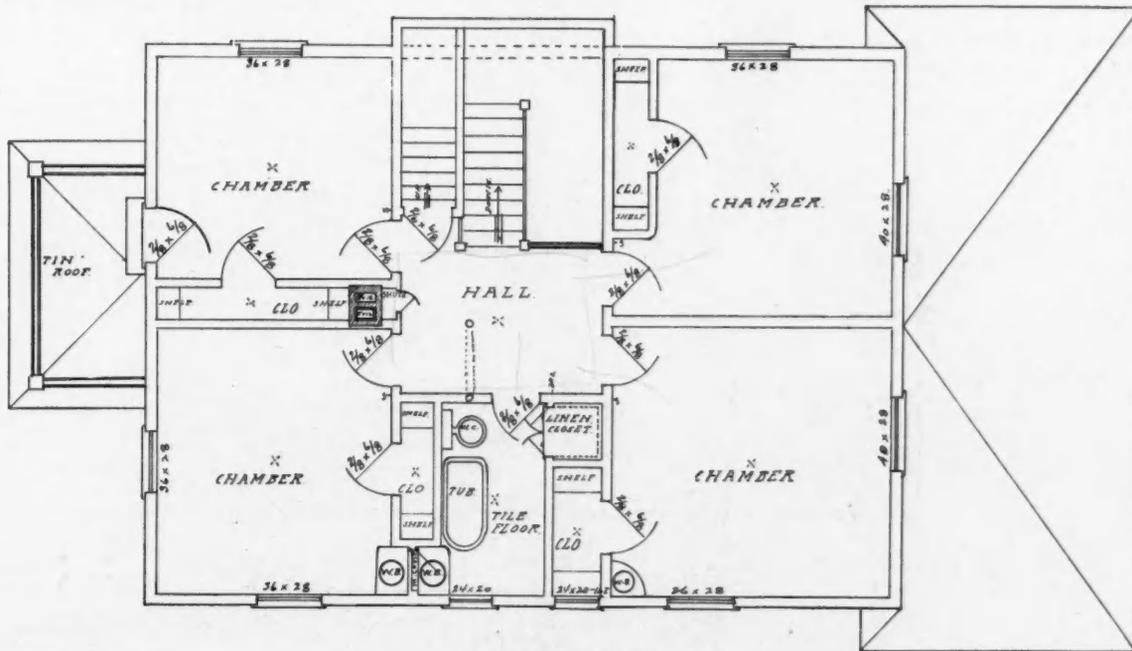
ing a home owner. It shows proper interest in the project. In the absence of actual first-hand inquiry and observation of this kind the next best course is to study the published records of recent home-building. A good photographic view may be just as good as

the building itself to show the external appearance of the design; and the floor plans, giving the size and arrangement of rooms, serve better even than the house itself to show what is the most convenient and desirable arrangement.



The accompanying designs, like all the others we have published, should prove very helpful in this way. Carpenters and builders will do well to loan them out

struction Company, at Oshkosh, Wis., is an exceedingly practical design and makes an attractive residence. The second is an example of the gambrel

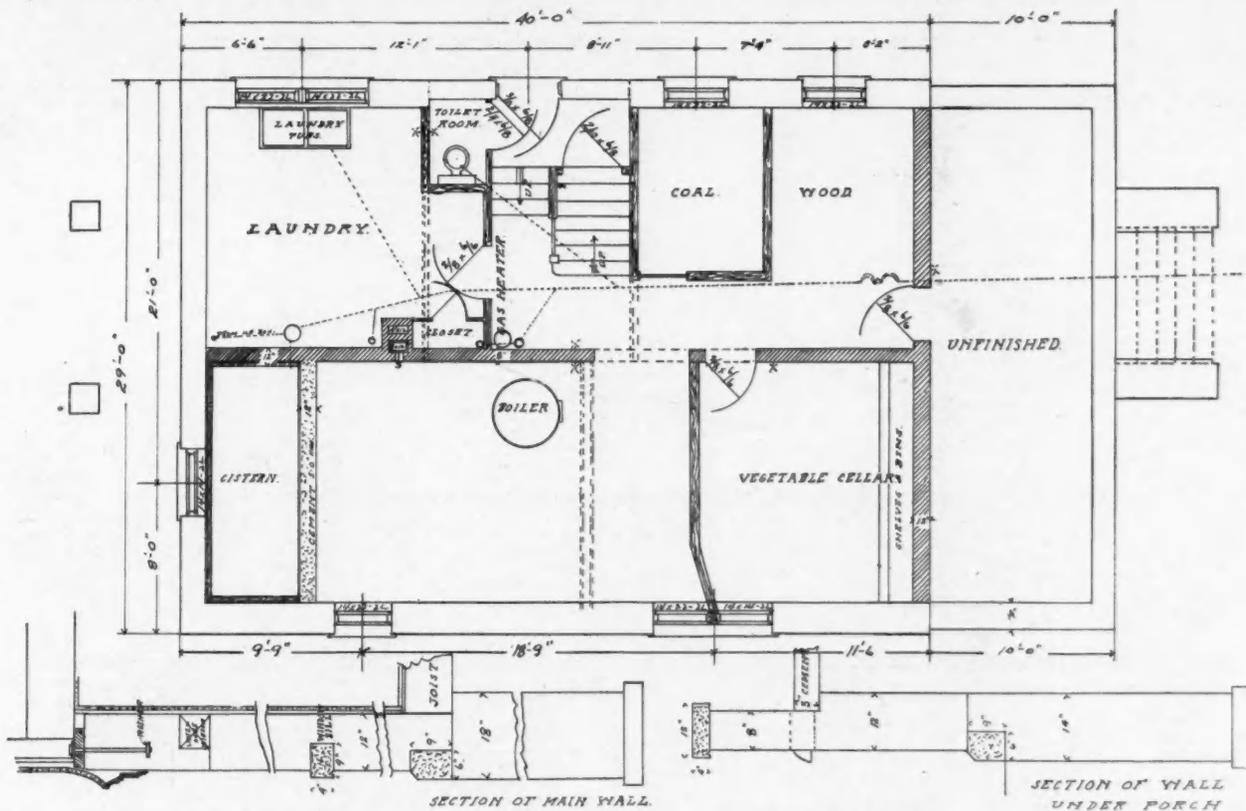


SECOND FLOOR PLAN

for study to prospective builders. The "home-hunger" will grow if it has anything to feed on!

roof house that is very well proportioned. The builders, C. G. Reichel & Son, submit the following schedule as the actual cost of this house: Mason work, \$281;

The first two houses, those shown on pages 202 and



BASEMENT PLAN AND WALL SECTIONS

203, are quite similar in their general arrangement and cost. The first one, put up by Fluor Bros. Con-

struction Company, at Oshkosh, Wis., is an exceedingly practical design and makes an attractive residence. The second is an example of the gambrel

sewerage, \$35, plastering, \$150; plumbing, \$65; tin-smith, \$80; furnace, \$135; kitchen sink and bathroom,

\$90; electric wiring, \$40; hardware, \$38; painting, \$150; dray, \$30; lumber, \$64; millwork, \$320; carpenter work, \$500; shingles, \$60; grading and walks, \$143; total, \$2,700.

The third design is a fine brick veneer house with second story plastered. Full architect's drawings, including details of interior finish, are given for this design.

Keeping Cupid on the Job

"That widow is a good manager, isn't she?"

"Manager? I should say so. She got that house of hers practically fixed up like new for nothing."

"How did she manage it?"

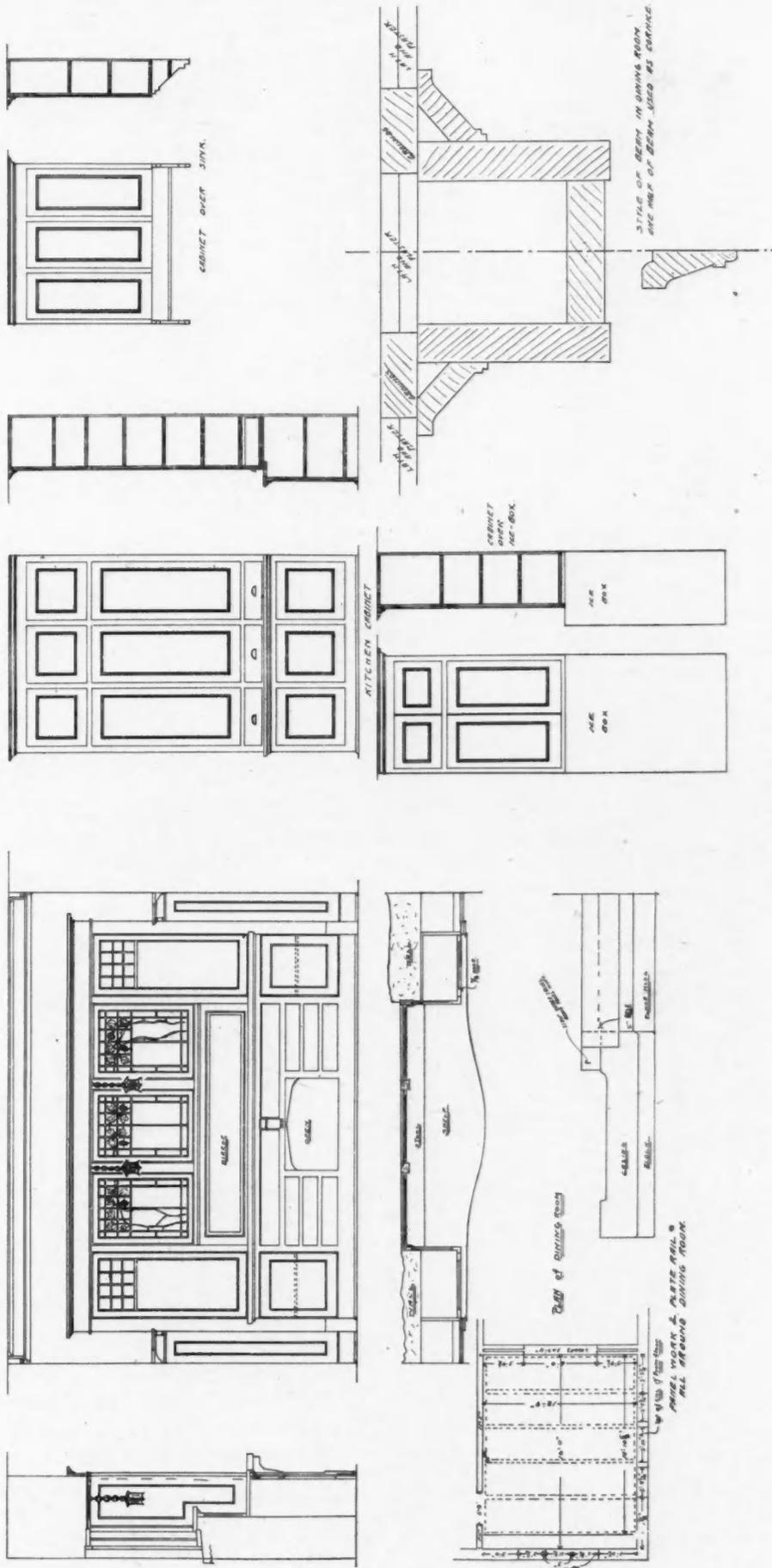
"She was engaged to the carpenter till all the wood-work was finished, and then she broke it off and married the plumber."—*Baltimore American.*



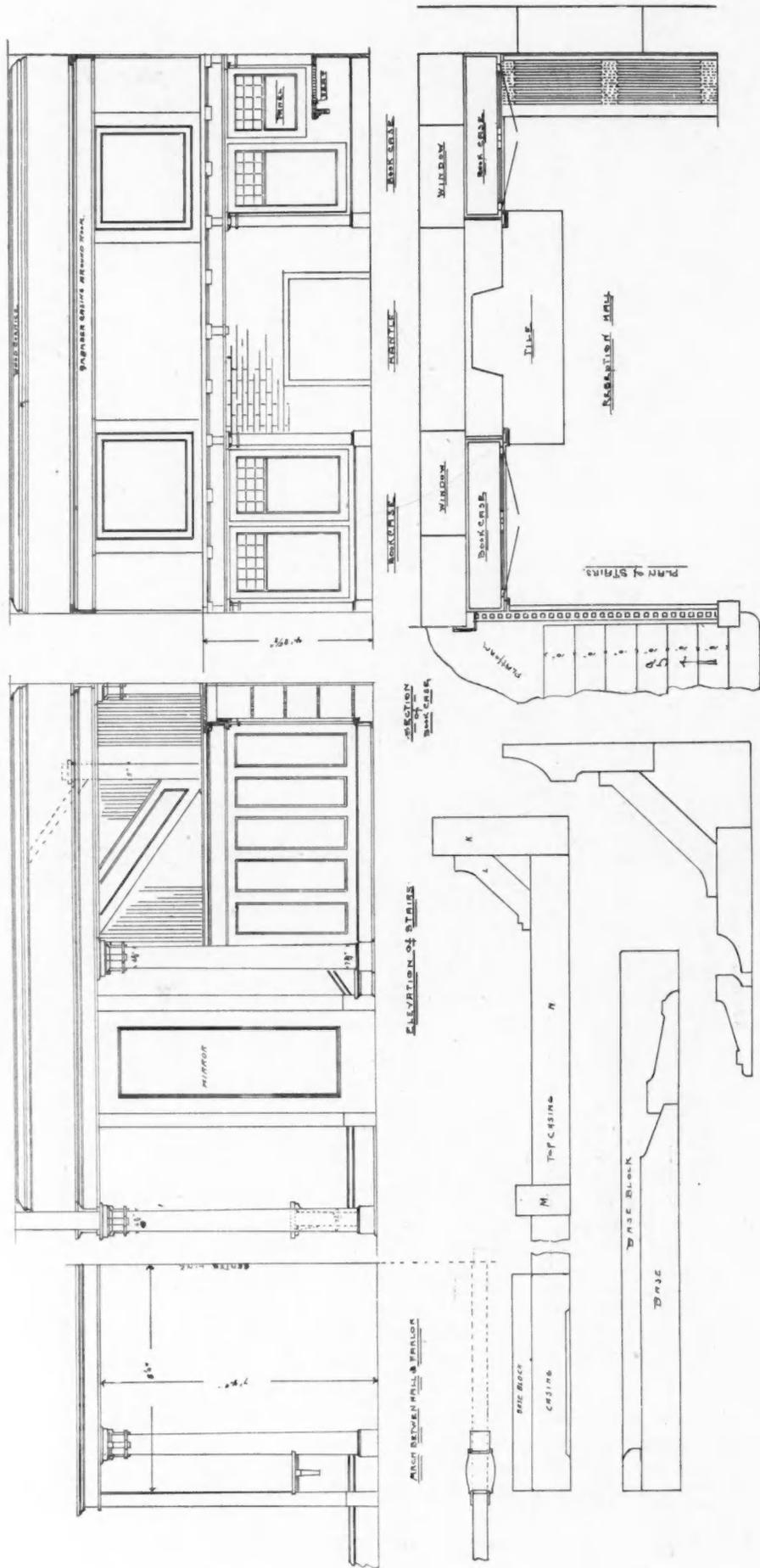
RIGHT SIDE ELEVATION



LEFT SIDE ELEVATION



INTERIOR DETAILS



INTERIOR DETAILS OF HOUSE PICTURED ON PAGE 204



Designs for Piano Bench and Chair

HOW TO MAKE A NEAT PIANO BENCH AND A UTILITY CHAIR IN THE HOME SHOP—PROPER METHOD OF FINISHING AND UPHOLSTERING DESCRIBED

THE piano bench shown this month is of very thorough construction. The side rails are grooved into the legs in such a manner as to make the piece very rigid. Select good clear quarter-sawed white oak, taking especial care to get a piece with good "markings" for the top.

STOCK BILL FOR PIANO BENCH

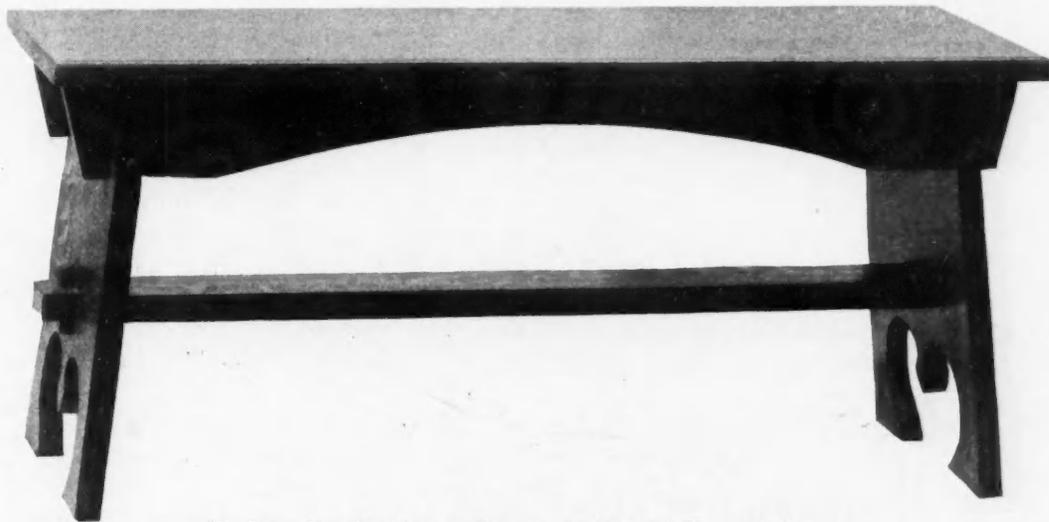
		Thick	Wide	Long
For the top,	1 piece	1 $\frac{1}{8}$ in.	16 in.	43 in.
For the legs,	2 pieces	1 $\frac{1}{8}$ in.	16 in.	18 $\frac{1}{2}$ in.
For the rails	2 pieces	1 $\frac{1}{8}$ in.	4 $\frac{1}{4}$ in.	41 $\frac{1}{2}$ in.
For the stretcher,	1 piece	1 $\frac{1}{8}$ in.	4 $\frac{1}{4}$ in.	43 in.
For the keys,	2 pieces	$\frac{3}{4}$ in.	1 $\frac{1}{2}$ in.	3 $\frac{1}{2}$ in.
For the cleats,	2 pieces	$\frac{3}{4}$ in.	$\frac{3}{4}$ in.	9 in.

These pieces are all specified a little wider and

ends of the legs and to assist in properly laying out the mortises.

It will be necessary to make a paper pattern by which to lay off the design at the bottom of the legs. The easiest way is to take a piece of paper and shape it the size of the bottom of the leg, fold it along its center line and, having penciled one-half of the design freehand, with the scissors cut along this line while the paper is folded. Place this pattern on the wood and trace around it. The turning saw or compass saw will be needed to cut out the curves on the wood.

Before cutting out these curves, however, it will be the better part of wisdom to lay out the mortises for the stretchers and to cut them. The pounding neces-



The Piano Bench—Always a Favorite Project with Home Craftsmen

longer than will be needed in the finished piece to allow for squaring up the ends and sides. They should be got mill-planed on two sides, however, to the thicknesses specified.

The top may be made first by squaring it to the width and length shown on the accompanying drawing. Be careful to remove all signs of the mill-marks. A sharp cabinet scraper will be needed for this. Round the top edges off a little—about a quarter of an inch down the edges and back on the face.

The two legs may next be prepared. While the two edges are cut sloping, it will be necessary to put a joint edge on each piece from which to square up the

sary to cut the sides of the mortises will not be so likely to split the pieces.

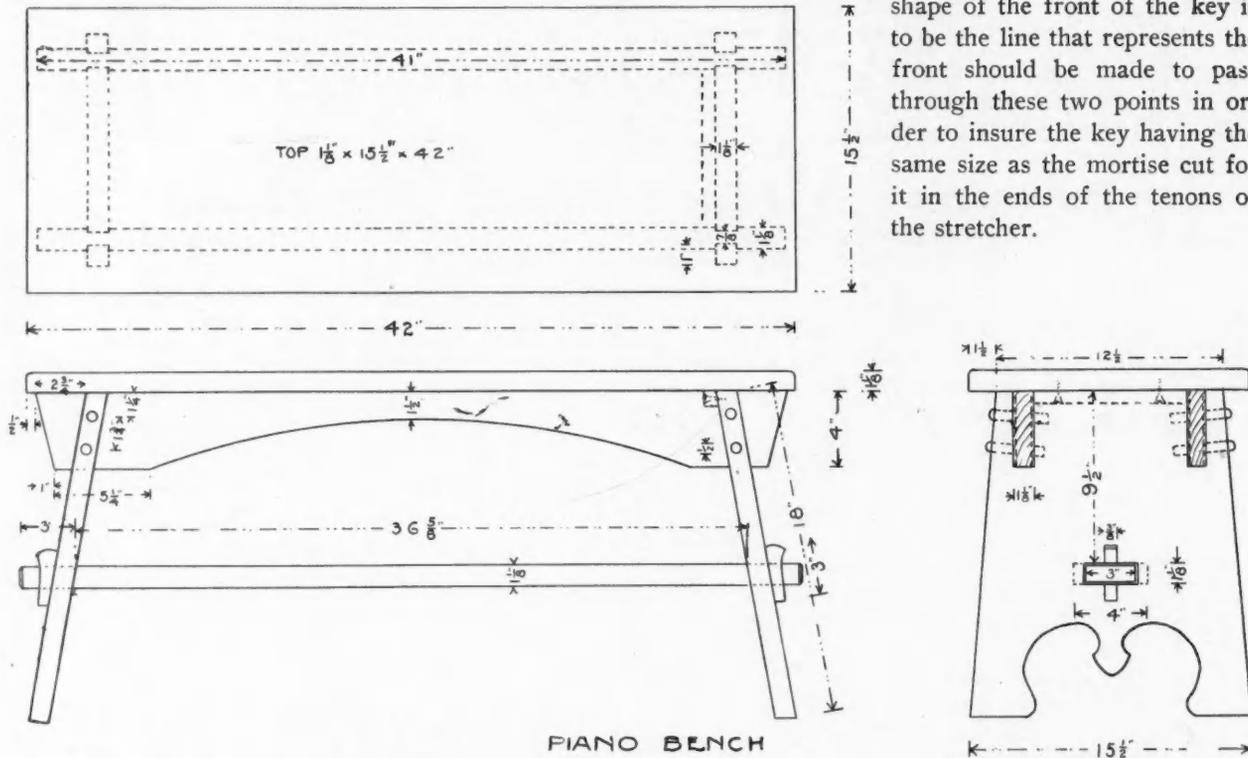
Cut the grooves at the top of the leg and then shape the sides of the legs.

The two side rails should be made next. They are to be cut and shaped as shown on the drawing. A sweep arc should be used to lay out the curve. These rails are grooved on each side of each end that the leg may enter therein. The bevel is to be used for laying them out. One-half inch wood dowels are used to fasten the rails and legs together. The ends are allowed to project and are rounded off after being driven in place.

Fit the rails in place but do not fasten them yet. While fitted, secure the length of the stretcher from shoulder to shoulder by measuring between the two mortises of the legs. Transfer this to the stretcher

lines midway between the ends so that they shall be apart a distance equal to the thickness of the stretcher. On the top line measure out three-quarters of an inch. On the lower line, one-half an inch. Whatever the

shape of the front of the key is to be the line that represents the front should be made to pass through these two points in order to insure the key having the same size as the mortise cut for it in the ends of the tenons of the stretcher.



PIANO BENCH

and lay out its tenons, also the mortises in the tenons for the keys and cut them. These shoulder lines and the sides of the mortises will have the same slope as the dados of the rails.

Thoroughly scrape and sandpaper the various parts and assemble them. The top is fastened to the frame by means of cleats, one at each end. Screws, through these cleats into the legs and into the under side of the top hold the top firmly in place.

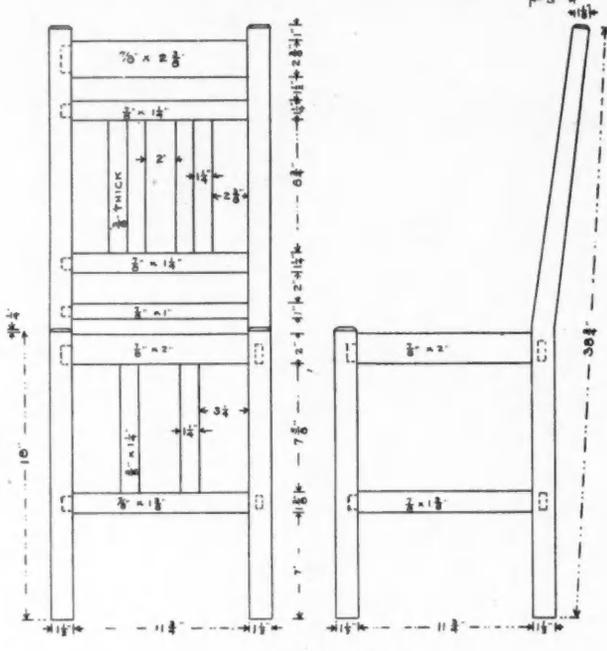
For the mortise of the key make the opening of the

How to Make a Utility Chair

The chair shown this month may appropriately be used as a desk chair, a hall chair, a chair for the bedroom, etc. It should be made of some hard wood, preferably quarter-sawn white oak.

STOCK BILL FOR CHAIR

	Thick	Wide	Long	
2 Posts	1 1/2	1 1/2	19	S-4-S
1 Post	1 1/2	6	39	S-2-S
4 Rails	7/8	1 3/8	14	S-4-S
4 Rails	7/8	2	14	S-4-S
1 Rail	7/8	1	14	S-4-S
2 Rails	7/8	1 1/4	14	S-4-S
1 Rail	7/8	2 3/8	14	S-4-S
2 Slats	3/8	1 1/4	8 1/2	S-4-S
2 Slats	3/8	1 1/4	10	S-4-S
1 Slat	3/8	2	10	S-4-S
4 pieces for seat frame	7/8	1 1/2	12	S-4-S



UTILITY CHAIR

top surface three-quarters of an inch and for the bottom surface one-half an inch. Chamfer the ends of the tenons slightly.

There is nothing unusual in the construction of this chair. The rails enter the legs at right angles, making the shoulders all square and therefore easily cut and fitted. The front posts are straight throughout their entire length, but the rear posts are sloped backward three inches, as shown in the drawing. All the stock is ordered mill-planed on four surfaces except that for the back posts. This stock is ordered mill-

Cut the keys to a length of three inches. Lay off

planed on two surfaces. Out of this piece the two posts can be got by using a little forethought.

The rails should be tenoned into the posts thoroughly, being shouldered on each of the four sides. Tenons three-eighths of an inch thick with each edge shouldered back the same amount as the sides will answer for all the rails except those that form the seat. These rails should be seven-eighths of an inch thick, as are the others, but shouldered on the upper edges only. Shoulder these upper edges back suffi-



ciently to insure the leg not being split out on the top end.

The slats are not to be shouldered at all but are to have the whole ends "let in." A quarter of an inch will be deep enough.

The seat may be made of a piece of leather drawn over a frame and this fastened in the chair between the rails as shown. Or, it may be upholstered as follows: First stretch a canvas over and around the seat rails and tack on their under side. On this cross weave and fasten underneath upholsterer's webbing. On this place a stuffing of hair or elastic felt. A piece of muslin draws this in place; and on top of the muslin comes the final covering of Spanish leather.

A Mission oak finish will be appropriate for these pieces. The color of Mission oak is a shade between the English and dark golden finishes, the quarterings being in less pronounced contrast to the field than in either the dark golden or English finishes.

For the above finish use a light paste filler colored

with umber and Venetian red; 12 ounces of umber and 4 ounces of the red to 20 pounds of filler will give about the shade required.

For an eggshell gloss specify one coat of Mission oak water stain; when dry sand with fine sandpaper and apply a second coat of stain diluted with about one-half water. Follow with a light coat of thin shellac, sand lightly and fill with paste filler to match the color of the stain. When dry sand lightly with 00 sandpaper, and give a coat of orange shellac. Sand lightly again and follow with two or three coats of some good rubbing varnish; rub first coats with hair-cloth or curled hair, and the last coat with pulverized pumice stone and crude oil or raw linseed oil.

For a polished finish specify that the last coat be rubbed first with pulverized pumice stone and water, and for a piano finish specify a further rubbing with a furniture polish, used with a little pulverized rotten stone, applied with a piece of soft felt or flannel.

If a rubbed finish is not desired, omit the specifications for rubbing the last coat.



Silver Plating Without a Battery

Dissolve eight silver quarters (money) or silver of equivalent amount in two ounces of nitric acid (strong), and to this add four ounces of common salt dissolved in as little water as possible. A heavy precipitate is silver chloride. Decant the liquid, add more salt solution to see if all the silver has been taken out. Wash the silver chloride precipitate with water and then dissolve it in a solution composed of two ounces potassium cyanide and three ounces sodium hyposulphite in six ounces of water. Filter the solution, if necessary, and make up to two quarts with pure rain water. Hang the articles to be plated in the solution suspended by a strip of lead or immerse the articles and boil them for ten to twenty minutes, according to the thickness of the plating desired. The articles to be plated must be free from grease, fat and dirt. By this method we get a durable and handsome silver plating on watch chains, rings, medals, watches, ornaments and German silver articles.



Annual Convention of Architects

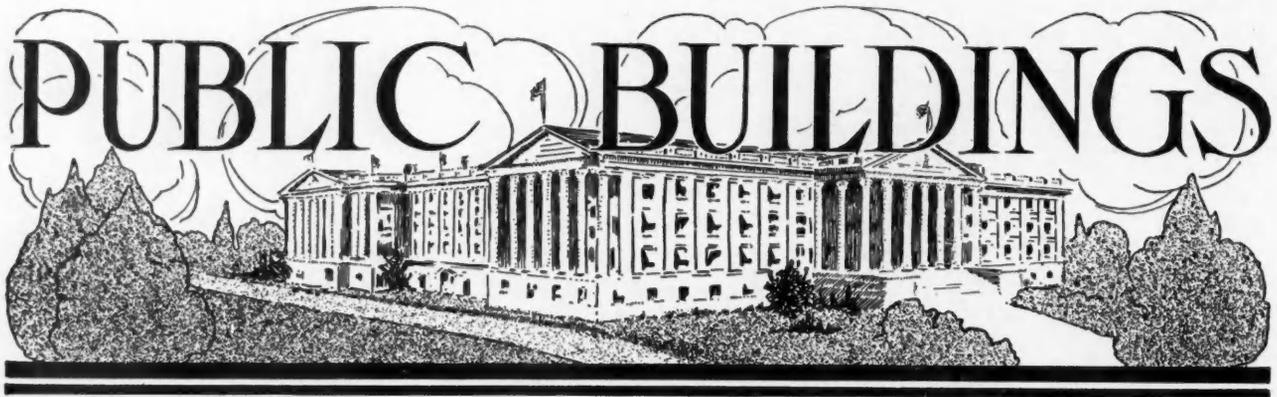
The Executive Board announces the annual convention of the Architectural League of America will be held at the Willard hotel, Washington, D. C., December 11, 12, 13 and 14, 1909.

Further information can be obtained from the president, 1103 Union Trust building, Detroit, Mich., or from the office of the permanent secretary, 729 15th street, Washington, D. C.



He (nervously)—Er—er—Margaret—er—er—there's something has been trembling on my lips for the last two months."

She—Yes, so I see. Why don't you shave it off?—*Princeton Tiger.*



Design for Four-Room City School

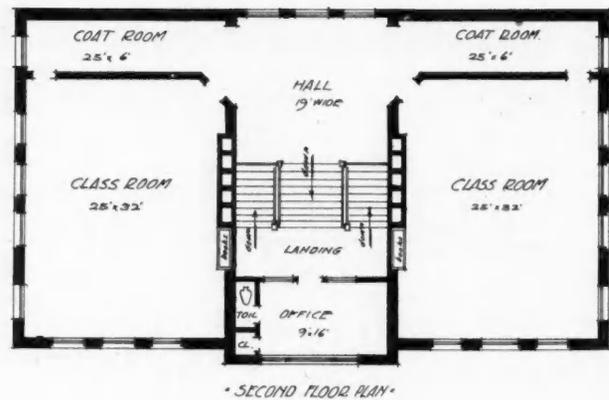
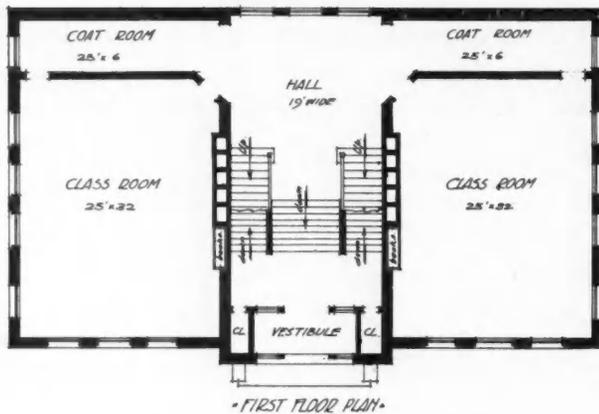
PERSPECTIVE AND FLOOR PLANS OF A MODERN SCHOOL BUILDING THAT CAN BE DOUBLED IN SIZE AT ANY TIME WITHOUT HURTING THE DESIGN

THE accompanying plans show a modern four-room school recently designed by G. W. Ashby, architect. It is especially suited to new and growing communities, for it can be made into an

eight-room building by simply attaching an identical four-room section to the rear and so improving the design. The materials to be used for this building are red brick and Bedford limestone.



Attractive School Building so Arranged That It Can Be Readily Doubled in Size



Wisconsin's Model Country School

COMPLETE PLANS OF THE MODEL RURAL SCHOOL ON EXHIBITION AT THE WISCONSIN STATE FAIR—
ONE OF THE STANDARD DESIGNS ADOPTED BY THE STATE SCHOOL DEPARTMENT

HERE was on exhibition at the Wisconsin State Fair this year a model one-room country school building, placed there by the state superintendent of public instruction. This was one of the eleven designs now furnished the district schools of Wisconsin by the state school department under act of legislature of 1907. All district schools now built must follow the plans of one of these models. Or, in case the district board decides to make its own plans, they must be approved by the county superintendent. The lighting, heating and ventilating system, however, must follow along the same lines as those used in the model buildings.

Some time ago the state superintendent held a competition among architects to secure the best designs possible for these model schools. The design here presented, the one erected at the state fair, was designed by Knapp & West, architects, Seattle, Wash.

The building is estimated to hold fifty pupils and cost \$1,650, not including stove, blackboards and furnishings. The steel stack leading from the stove passes through a ventilation duct leading from the floor so that the room can be cleared of foul air in fifteen minutes. The room is very well lighted, yet all the light comes from one side so as not to injure the children's eyes.

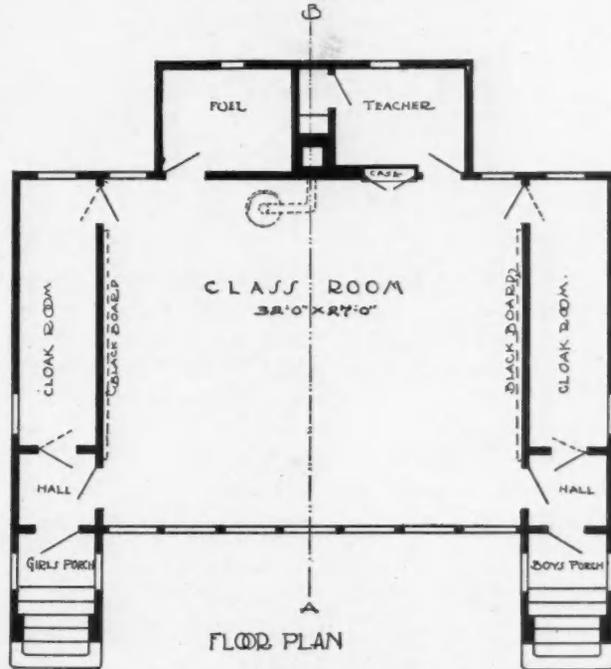
The specifications in part for this model building follow:

MASONRY AND LUMBER

Concrete.—Note: Brick is shown for the construc-

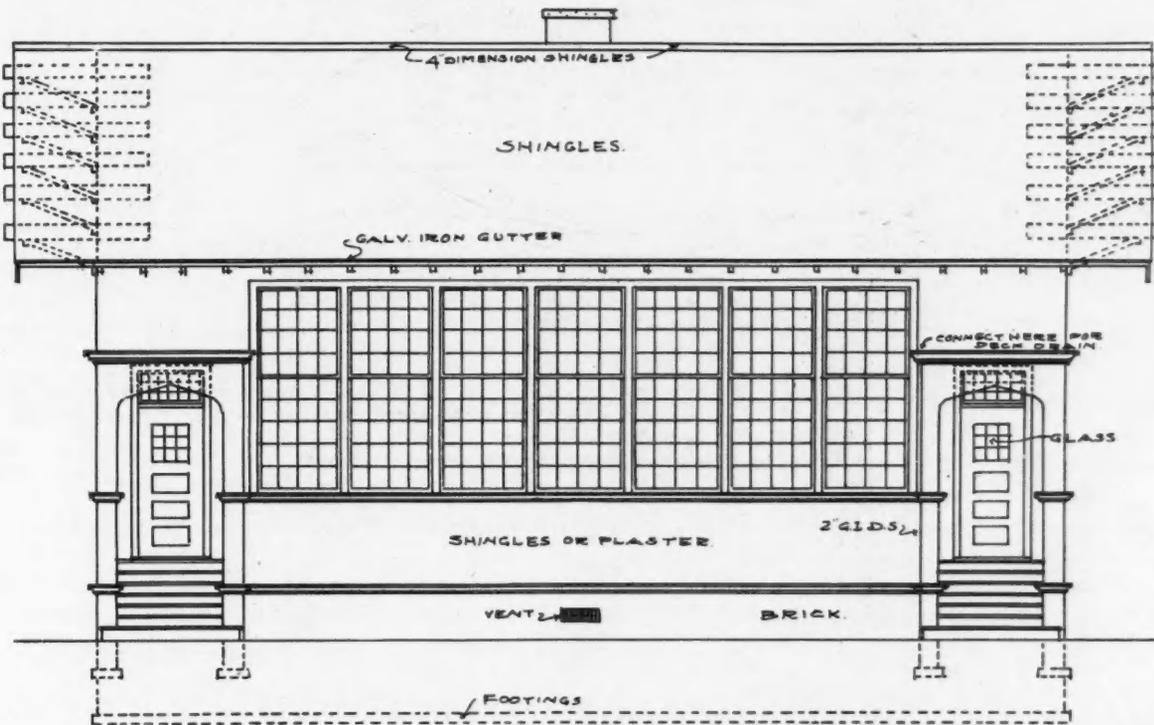
tion of the foundation of the building, but concrete or stone may be used.

Cement the exterior walls above grade lines in cement mortar, in medium rough cast finish.



Use sound, hard, well-burned red brick. Point up above grade lines in struck joints.

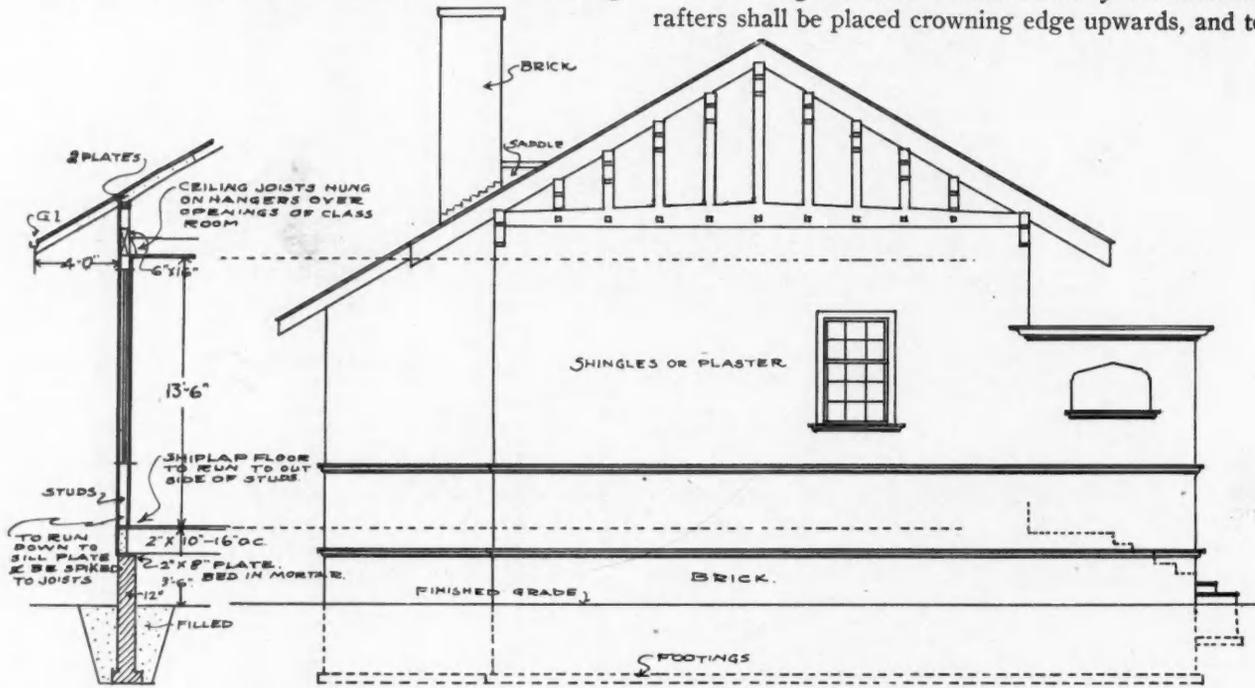
Lumber.—Where no particular lumber is specified, it shall be No. 1 fir, yellow pine, or Norway hemlock.



FRONT ELEVATION

Girders and Joists.—All girders and joists shown in connection with this work shall be set with crowning

be necessary to cut them for pipes or other fixtures. In framing the roof around chimney the trimmer rafters shall be placed crowning edge upwards, and to



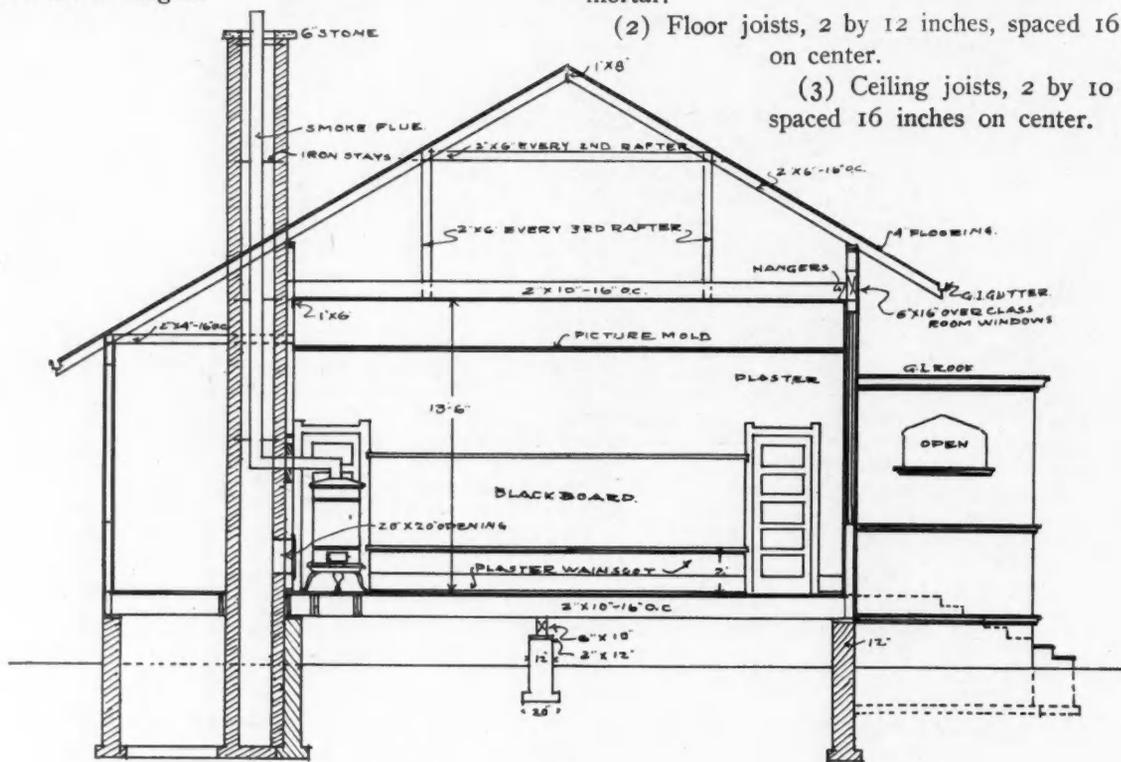
edge upward, and hung on approved joist hangers, no bearing to come closer than 2 inches to any flue. No joists to rest less than 4 inches on the masonry. All joists shown to run parallel with partitions and under partitions are to be doubled and spiked together and hung on above hangers.

SIDE ELEVATION.

run on sills and well nailed to same and to trimmer. Place trusses over all openings more than 4 feet wide.

SIZES OF TIMBERS

- (1) Sills, 2 by 8 inches laid flat, bedded in cement mortar.
- (2) Floor joists, 2 by 12 inches, spaced 16 inches on center.
- (3) Ceiling joists, 2 by 10 inches, spaced 16 inches on center.



CROSS SECTION ON LINE A-B.

Framing.—The sills shall be bedded in cement mortar and set perfectly level. The floor joists and other important timbers shall be so framed that it may not

- (4) Headers and trimmers, 2 by 12 inches, doubled and tripled.
- (5) Plates, 2 by 4 inches, and 2 by 6 inches.

- (6) Studs, 2 by 4 inches, spaced 16 inches on center.
- (7) Partitions, 2 by 4 inches, doubled and spiked, etc. See details of construction.
- (8) Rafters, 2 by 6 inches, 16 inches on center.
- (9) Ridge boards, 1 by 8 inches.
- (10) Porch joists, 2 by 8 inches, 16 inches on center.
- (11) Lookouts, 2 by 6 inches, 9 feet long, dressed four sides, spiked to rafters.

Bridging.—All floor joists are to be cross bridged as follows: Once in every 10 feet, twice in every 18 feet, four times in every span over 18 feet, all cross bridging is to be 2 by 4 inches securely fastened with 10-d. nails, two to each joist.

All outside walls, and inside partitions shall be bridged once in their height, with 2 by 4 inch cut in diagonally and nailed at each end with 2 10-d. nails.

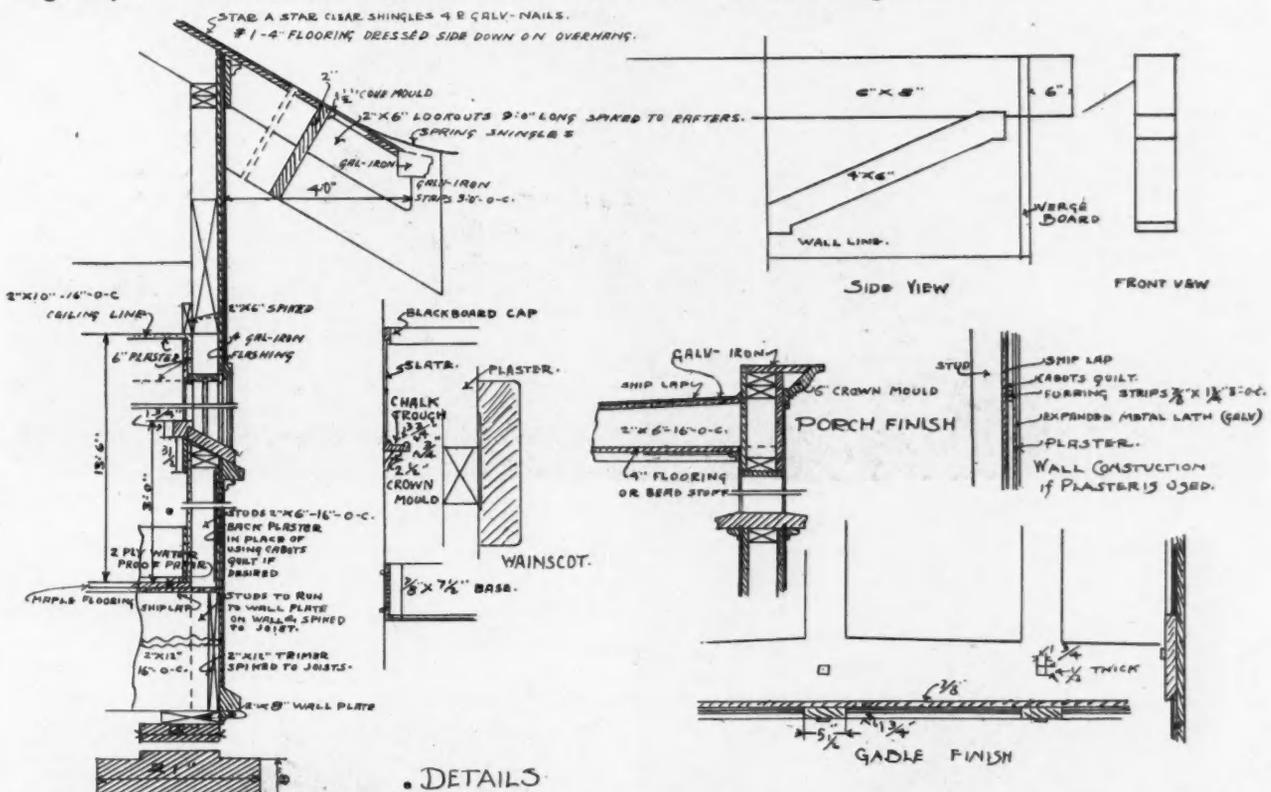
Sheathing.—Sheathe the entire exterior of building with No. 1, 8-inch or 6-inch D. & M., well nailed twice to each bearing.

Shingles.—Place shingles on walls and roofs of Star A Star Washington red cedar shingles, laid 4½ inches to the weather, using 4-d. galvanized iron nails. Form the hips and ridges of 4-inch dimension shingles.

Porch Floors.—Lay over porch floor joists No. 1 ⅞ by 4 inch T. & G. pine flooring laid in white lead.

Roof Sheathing.—The entire roof of building is to be sheathed with No. 1 ⅞ by 6 inch shiplap or 6-inch D. & M., nailed with two 8-d. nails to each bearing.

Stairs.—Outside stringers to be not less than 2 by 12 inches, 3 feet on center, treads to be composed of two 2 by 6 inch spaced ½ inch apart, all to be dressed and well nailed to stringers.



Brace all exterior corners with 2 by 4 inch at an angle of 45 degrees from floor to ceiling.

Grounds and Furring Strips.—Put in place ⅝-inch grounds for all base, wainscot caps, door openings, and blackboard caps. Provide grounds, cleats, etc., for hooks, etc., for all wardrobes. Build in blocking on outside of outside walls and other walls for the support of furring strips.

Rough Flooring.—Lay a fir or pine under floor throughout the first floor, using No. 1 ⅞x8 inch shiplap laid diagonally on joists, and well nailed twice at every bearing. Run this flooring closely around all studs, and up to the outside sheathing boards, breaking joints only on joists.

Floor Work.—Place two-ply approved water-proof paper over all shiplap floors, and run up walls 6 inches.

Wall Work.—Place single-ply quilt over all exterior sheathing.

Finished Floors.—Place over entire first floor, No. 1 1 by 3 inch D. & M. IXL vertical grained kiln-dried hard maple flooring, blind nailed and smoothed down to an even surface, and end matched.

Window Frames.—The pulley stiles and parting strips for all double-hung windows shall be of clear fir, coated with raw linseed oil before assembling. The frames for double-hung sash to be hung on all steel sash pulleys, with 2-inch ball-bearing bronze finish wheel.

Pulley stiles shall be 1⅞ inches thick, heads ⅞ inch, openings to be left to repair ropes, each frame to be provided with molded hanging stile.

Inside Trim.—All inside finish to be selected slash grained fir or pine.

Wainscot Caps.—Place the detailed 6-8 by 2¾ inch plain wainscot caps in the classroom, corridors and wardrobes.

Sheet Metal as a Roofing Material

THE ADVANTAGES AND USE OF SHEET METAL, ESPECIALLY METAL SHINGLES, AS A HIGH GRADE ROOFING—PROPER METHODS OF FRAMING

NO MONEY spent on a house will add more to its selling value than that expended in taste and material on the roof. The roof is the first thing seen, and first impressions are most lasting.

Poor roofing is expensive at any price, as the damage that results from its use often amounts to more than the cost of a half dozen good roofs. So, good roofing is a consideration of the highest importance to every builder and property owner.

sills and timbers, to injure the walls and cause the plaster to break, and render the building damp and unsanitary. With such a roof, repairs are necessary within a few years, and their cost is not only considerable, but they depreciate the investment.

With these points in mind it is well for builders and owners to consider the merits of the various permanent roofings. We have, already, in recent numbers of this magazine discussed the desirability and



Residence of Mr. Henry Jordan, Hendersonville, N. C., Showing Use of Metal Shingles

There have been so many different kinds of roofing material offered the public in recent years—many of which proved unworthy of the name—that the average man is apt to listen with incredulity to recommendations of the merits and quality of any roofing that is proposed to him.

It should be remembered, however, that primarily the duty of a roof is to afford shelter and protection from the elements. If a building is erected for temporary purposes only, most anything will do for a roof, but when erecting a barn, church, dwelling, or public building, the owner wants a roof that will not only give the greatest protection, but one that will last as long as the building stands without constantly needing repairs.

Also, looking at the matter in a broader aspect, a roof should be something more than a protection. It should ornament and increase the value of the building.

Few people realize the great effect the appearance of the roof has upon that of the entire structure, and to what extent a good roof adds to its worth.

A roof should be looked upon as an investment or, rather, as a protection to the investment that is represented by the building and its contents.

It does not take long for a leaky roof to rot the

use of slate and of tile roofings. So now we want to give particular attention to the various styles of sheet metal roofing and shingles. We know that "comparisons are odious," but when you are intending to



Attractive House at Robinson, Ill., Having Metal Tile Roof

spend good money for a roof it is advisable to compare the relative merits of the different kinds.

The wooden shingles that are supplied by the lumbermen today are very poor roofing, and for permanency and utility are not to be considered. In the old days, when shingles were hand grooved and sawed, and made from well matured lumber, they performed the service demanded of them and made good roofs.

Now they are made by machinery, too often from green, sappy and unseasoned timber; are sold without being assorted, and will not last over three or four years without repair.

While cheaper at the start, the expensive repairs that are necessary to make wooden shingles do anything like the service that is required of a good roof, make their purchase poor economy.

Compared with the wooden article, metal shingles, or other metal roofing, will not rot, split, curl up or burn. They are more durable; more easily laid; more ornamental; and will not need constant repair. They are fireproof and reduce the cost of insurance on buildings where they are used—this saving in a few years amounts to considerable. A metal roof is also a protection against lightning—no building so covered has been known to be injured by lightning. Should lightning strike a metal roof, the electricity is scattered and passes off harmlessly into the atmosphere.

An incident related by the *Metal Worker* illustrates well the merits of corrugated roofing as a fire protection. "In a recent fire, consuming the storehouse and barns of one of our subscribers, a building adjacent to a large storage warehouse filled with combustible goods, had a corrugated iron roof laid on over old shingles. There had been an unusually long dry spell, but although long tongues of flame at times seemed to envelope the entire roof, and the heat was so great as to peel the galvanizing off, yet it resisted the fire, and in so doing, stayed the path of the flames which otherwise would have lain in ashes a prosperous business section. The corrugated iron by its very shape maintains an insulated air space between the under side of the iron and the roof, and during a fire in all probability cool air passes from the eaves to the peak, thereby further preventing ignition with the wooden parts of the building. In this respect corrugated iron is far superior to tin, especially for farm buildings and other structures where the cost of frequent painting would not permit of so good a material as tin being used."

The cost of metal shingles, while more than other forms of metal roofing, is less than the first quality of slate, and is as low, and cheaper in some localities than good wooden shingles when their service and permanency are considered. A comparison of the initial expense is not to be accounted, because it takes but a few years for the saving they effect in repairs

and other ways to greatly outweigh their first cost.

Metal shingles are applied by the same rules that govern the laying of wooden shingles or slate. The roof should be covered with sheathing boards laid with tight joints. Good common boards will answer, but they should be of even thickness. Sheathing boards should be laid either parallel with the ridge and eaves or diagonally —



Spring House With Artistic Japanese Roof of Metal Shingles

never lay sheathing boards up and down.

The use of sheathing paper with any form of metal roofing is recommended. Being a non-conductor, it adds much to the warmth of the house in winter, makes the house cooler in hot weather, and adds but little to the cost of the roof. Tarred paper, however, should never be used under metal roofing; the acid in the tar injures the metal.

In flashing against a side wall bend shingles or flashing strips so that they project up the side of the wall 3 inches or more, and counter-flash down to within



Example of Metal Tile Roofing From Clarksburg, W. Va.

1 inch of the roof line. These directions apply also to dormers, chimneys, skylights, etc.

Any good carpenter or workman, who understands the simple rules for applying wood shingles or slate, will have no trouble in laying metal shingles.



Large Combination Stock Barn

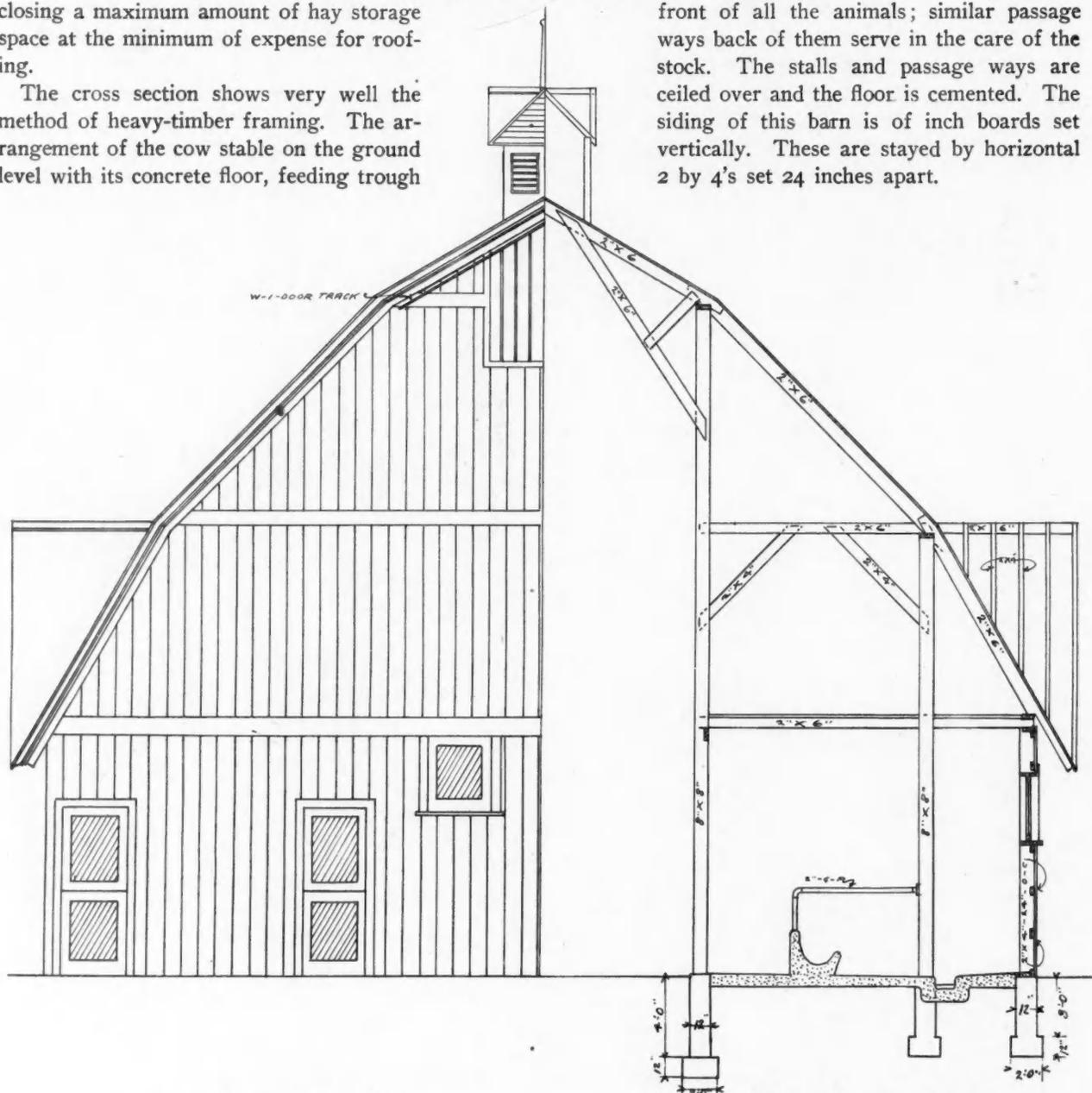
COMPLETE PLANS INCLUDING DETAILS OF FRAMING FOR A LARGE BARN FOR HORSES AND CATTLE AND HAY AND GRAIN STORAGE

THE accompanying architect's drawings were prepared for Montgomery Bros., of Edgar, Neb., and have been used by them with much success. They call for a barn 65 feet long by 48 feet wide, 13 feet high at the plates and 30 feet high at the ridge. The roof is of the favorite double gambrel type, enclosing a maximum amount of hay storage space at the minimum of expense for roofing.

The cross section shows very well the method of heavy-timber framing. The arrangement of the cow stable on the ground level with its concrete floor, feeding trough

and gutter is also well shown in this drawing.

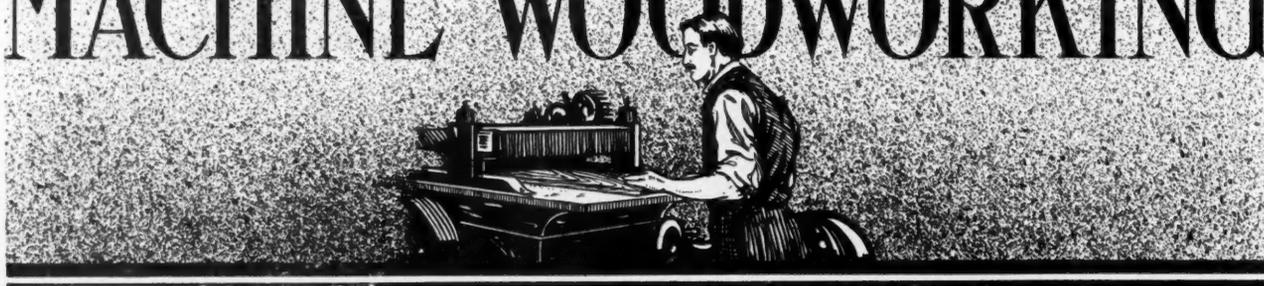
Reference to the floor plan will show the interior of this barn. There is a central driveway 15 feet wide for unloading and storage purposes. On the right are the horse stalls and across on the other side are the cattle. Feeding alleys extend clear through in front of all the animals; similar passage ways back of them serve in the care of the stock. The stalls and passage ways are ceiled over and the floor is cemented. The siding of this barn is of inch boards set vertically. These are stayed by horizontal 2 by 4's set 24 inches apart.



HALF ELEVATION - END.

HALF CROSS SECTION.

MACHINE WOODWORKING



Memoranda of a Machine Woodworker

THE PROPER CARE OF MACHINERY—NUMEROUS PRACTICAL HELPS IN WOODWORKING GATHERED FROM LONG PERSONAL EXPERIENCE

By H. C. Haner

AFTER an absence of ten years I dropped in to see a little factory in a small town where I once lived. A wood yard has the place, the factory having failed long ago. It was one of those small places where it seemed to be a peculiarity of the owner to let things run on as they might, until, like the one-horse chaise of the story, there was a break-down all over at once. In it I watched the progress of a countershaft from a condition of inefficiency at the start to a final breakdown, all the time wondering if the owner did not realize that stops for temporary repairs were costing him about twice the value of shaft had it been taken out and a new one with pulleys put in its place. The price of the shaft with one-half its cost added for putting up would have been about \$7 if new shafting was used. But in this case the same shaft would do by using a compression coupling in place of the flange coupling in use, the keyway of which was worn beyond repair. For some reason that will always be a mystery to me, the old shaft had been allowed to run on, stopping the whole shop from two to ten times a day. As a matter of curiosity, the cost of the stops was figured up, taking the labor cost only and making no allowance for the shortage of the output of the mill. Twenty-two stops in two weeks cost a little over \$33. This had gone on for about a month when a \$2 coupling would have fixed it up in good shape. This is an example why there is no money in the mill business—for some people.

Consider the Grain

Did you ever make a water or eaves trough of a piece of 4 by 4 or 6 by 6? If you did, have you ever thought of the probable effect of the weather on it in its exposed condition when in use? If it is made right and of heart timber it will outlast most of the metal gutters made of tin or of light galvanized iron. But if it is made so that the wrong side of the grain is left on the work it would be better to leave the timber for some other purpose. On an order for five pieces that I saw got out, three of the sticks were sawed with the grain the wrong way, leaving the heart corner on the gutter, while the other two were sawed to take the

heart grain out, leaving the long grain of the sap or outside to hold the piece together and resist the action of the weather. This was only an accident, as the man who sawed the sticks did not pay any attention to the grain, nor did he seem to know that it made any difference. There is not any difference in the amount of work required to get out the finished piece either way, but it means the difference between success and failure, between lasting and cracking open after the gutter is in use.

Saw Teeth

Little matters of common knowledge are very uncommon to some operatives of wood working machinery, as, for instance, the proper way to file a resaw or a rip saw for any purpose. A resaw in a shop in which the writer took a look seemed to be sawing very slowly, but was doing fairly straight work. Another visitor was curious about the matter also, and as soon as the saw was stopped the teeth were examined and found to be filed just like a cut-off saw, with the bevel on the back and the front straight and very little pitch. Some people file cut-off saws this way, while some file with the bevel in front, but this was the first saw for ripping I had ever seen filed in this manner. The dust showed how the work was being done, but the man who did the filing thought it was the proper thing.

A Dangerous Practice

The self-feed ripsaw table is often used as a plain ripping table with the feed works raised up out of the way, and is as dangerous as the proverbial kicking mule. The guide or fence on this kind of a machine usually extends past the back of the saw and stock does not have a chance to "drop away" as easily as from the tail of the saw as it does on a common rip table. If the feed wheel is raised just enough to let the stock feed under clear, any strip catching on the saw is thrown off by the wheel, but if the wheel is too high, the saw will throw the strip out ahead, and, as a strip that catches on the back of a saw is thrown at a speed equal to the travel of the rim of the saw, it is a dangerous thing to be in range of

when it comes back. In one instance a saw fired back a strip of 1 by 3, 16 feet long, which broke off a post of 3 by 3, knocked a water pail into splinters, took two pickets off the yard fence and went clear across the street, where its force was spent in a pile of rubbish in a carpenter shop. Better use the feed on these machines when you can, or hold the feed wheel down as a safety guard.

Babbitting

While it is possible to use a mandrel of a machine for a babbitting mandrel, it is not advisable to do so at any time, the only exception being such a time as the work must be done at once. Then the mandrel should be wrapped with paper and the metal poured at as low a heat as will allow of its running free, at the same time pouring both top and bottom boxes. To pour one-half of the box and then the other will almost invariably spring the mandrel in the bearing. On a fellow machine in a wagon shop where this rule was disregarded I have seen a mandrel sprung one-eighth of an inch in its length, and that right after the mandrel had come from the lathe and had been straightened from similar treatment. Once a steel mandrel springs from this cause, it is going back to the same spring every time the metal is poured on it hot. There is hardly any more troublesome thing than a mandrel sprung from this cause, as the effect can never be permanently removed.

There Is a Reason

While the same general principle covers the operation of a shaper, probably no two operators do a piece of work in the same way, owing to surroundings and equipment. The practice of using only one knife to do the cutting is often condemned, but while it is not strictly "mechanical" in a sense, it is no worse than many other things that are done by men who should (and do) know better, but are forced by their surroundings and want of proper material to adopt means for getting out the work or have to look elsewhere for a job. If those who are disposed to criticize the practice could look in at some of the shops the writer sees, they would not wonder at what the men do. If they had to work in a little dark cuddyhole of a filing room, often under a stairway, and make molder bits from old planer knives or pieces of saw plate from the mill, use up the stubs of old emery wheels left from the sawmill grinder, they would not wonder at a man for using only one knife. While not defending the practice at all, there are certain kinds of work on which one knife can be used at a good deal of saving of time and material, but that does not alter the fact that there are many places where practices equally bad are not only tolerated, but made necessary by sheer want of material.

Flooring

Every machine designed for making flooring as one of its products has a set of stops arranged to hold the

stock in line after the cutters have worked it, but it is no infrequent thing to find flooring with stubbed ends, showing that the stops have been neglected and as the strip leaves the guide, the cutters will bite off a little more than they should, and this leaves a bad end, which, if laid next to a straight board will show a crack in the floor. Nothing short of neglect can produce such a piece of work and it looks bad for both the machine man and the man who inspects the work. Sometimes these stops get broken, and as the work is always faulty without them, such repairs should be made without any delay.

Help and Hints

In tempering molding bits of irregular shape, where some of the bit will draw to color before it reaches the longer members, a small piece of wet waste in the hand will be found a handy thing with which to check the color as it progresses until the whole edge is right. Quickly done, this will prevent hard or soft spots in a knife.

It is best to run a new engine for a day at least with low pressure and a light load and look for possible defects then. Engines are so often needed at once that this is not always permissible, so the next best thing is to run with things slacked up just a little and take up as you progress. No one knows the peculiarities of a new machine until it has been run awhile.

Lumber Piling and Drying

When lumber is piled to dry and the last top courses are doubled for a water shed, it is a good idea to lay a strip across the pile near the center and one through it a few layers down, and secure the ends of each together at the sides of the pile. It helps to keep the top courses straight and prevents the wind from blowing off the covering. This is especially true in the case of thin lumber.

Experiments with old boilers as heaters for dry kilns have often been made, and usually with disastrous results, the loss not always being confined to the condition of the lumber alone. The last one noted was at a mill where the motive power had been changed from steam to gasoline engine, and then the boiler fixed up as it stood for a heater by removing the tubes and firing internally, building a kiln room over the boiler. Careless firing did the trick of spoiling the plan, as want of means of controlling the heat set fire to the kiln and came near destroying the whole plant. A home-made drykiln is a good deal like a mule, in that it is very uncertain and hard to manage.

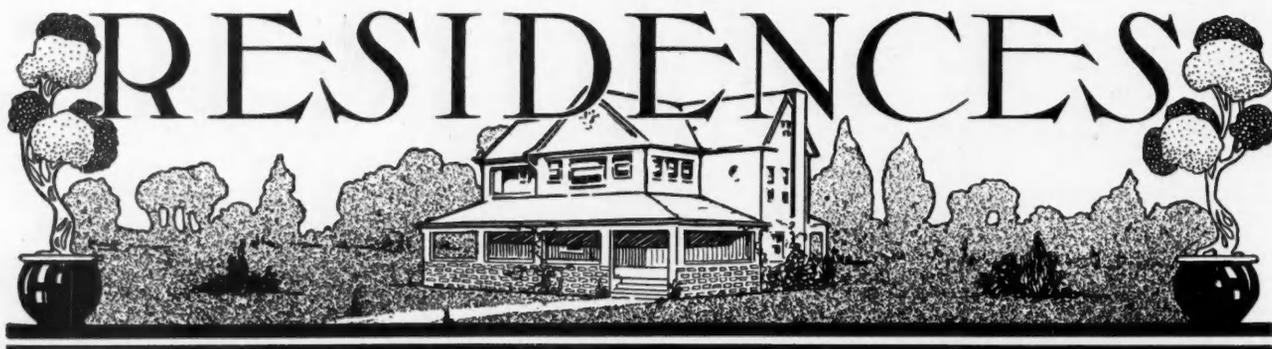


Found Out!

"Would you like to hear a secret involving Mrs. Nextdoor in a dreadful scandal?"

"Yes, oh yes! Tell it to me!"

"I don't know any such secret. You have certainly got a mean disposition."—*Houston Post*.



Complete Plans for Seven-Room Cottage

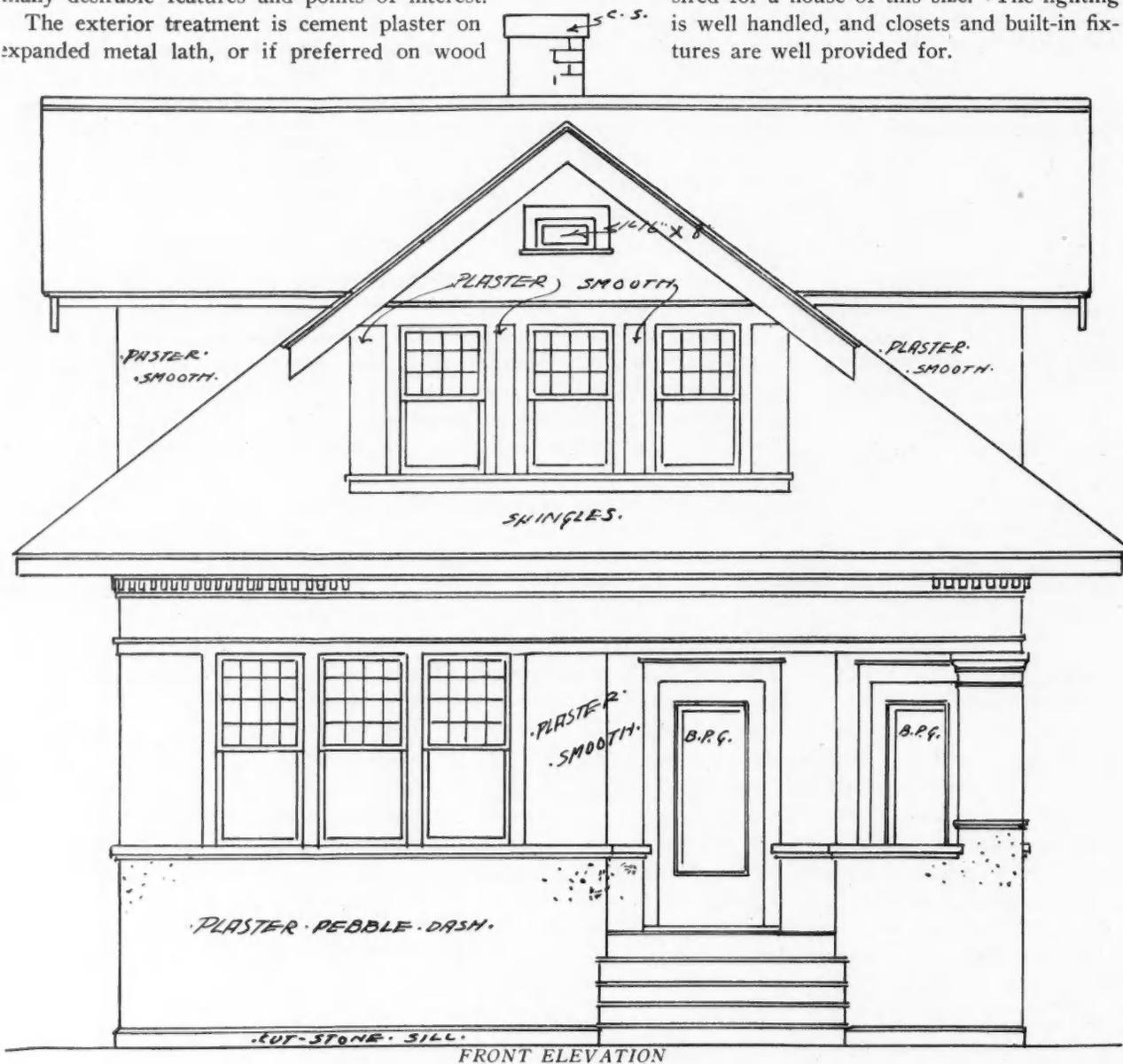
FULL WORKING DRAWINGS OF AN ARTISTIC PLASTERED COTTAGE OF SEVEN ROOMS AND CONTAINING ALL MODERN IMPROVEMENTS

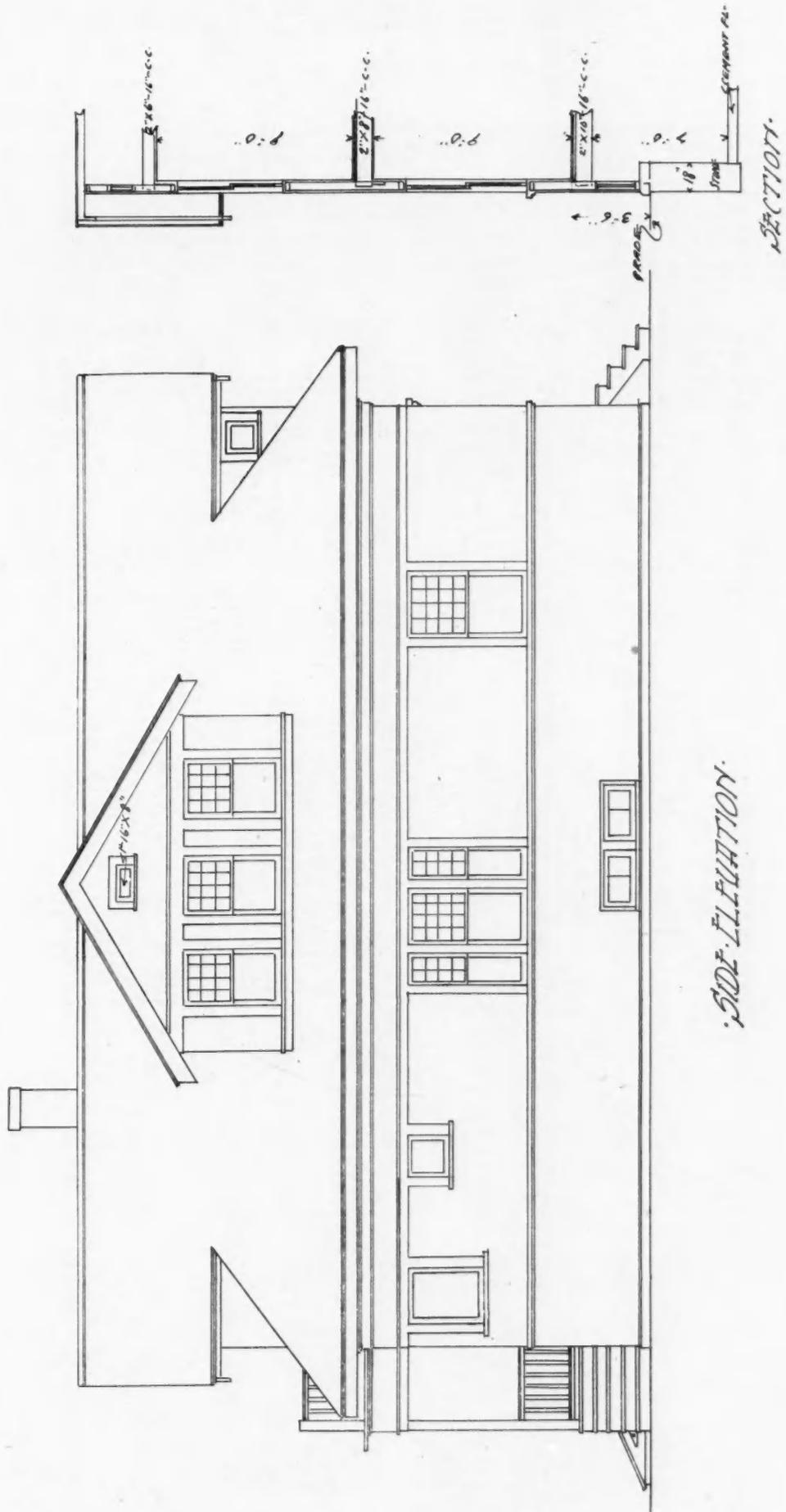
THE architect's drawings here reproduced were prepared for Mr. A. J. Launch, of Kankakee, Ill., and have been successfully carried out by him there, producing an exceedingly convenient and homelike residence. A study of the plans will reveal many desirable features and points of interest.

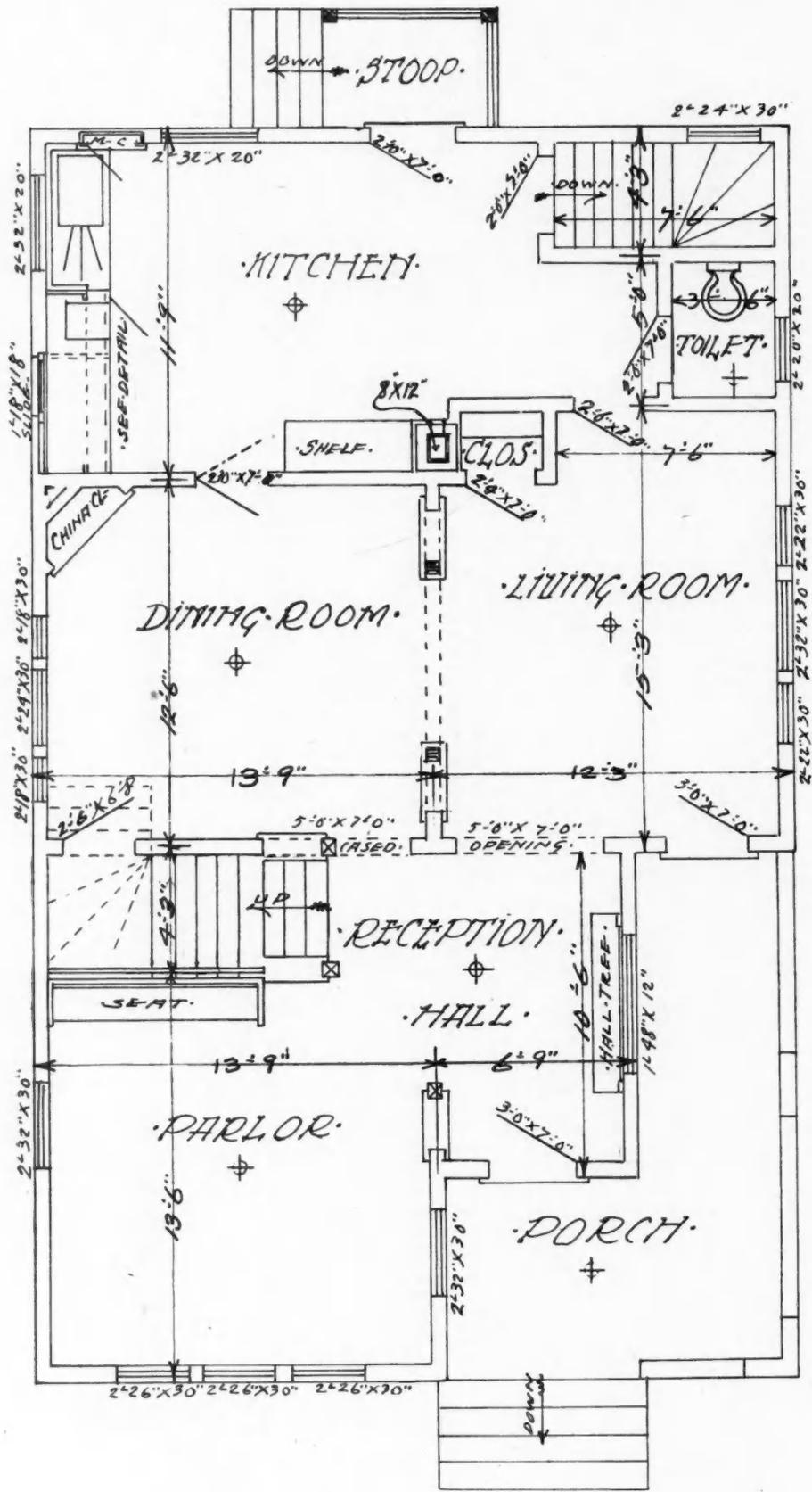
The exterior treatment is cement plaster on expanded metal lath, or if preferred on wood

lath, a pleasing effect being gained by the use of a rough pebble dash finish from the foundation up to the continuous window sill course and a smooth plaster finish above.

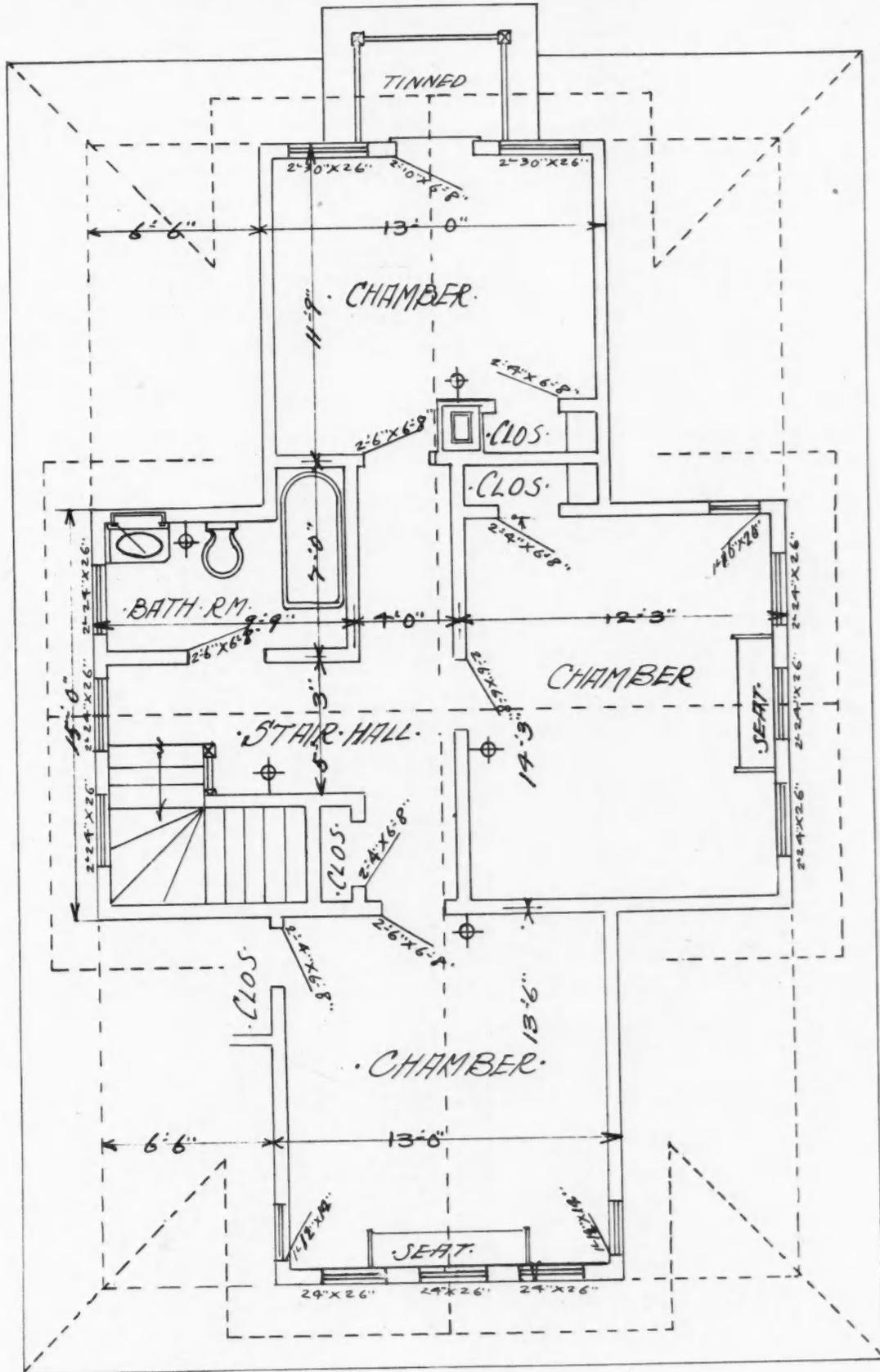
The interior arrangement leaves nothing to be desired for a house of this size. The lighting is well handled, and closets and built-in fixtures are well provided for.







FIRST FLOOR PLAN



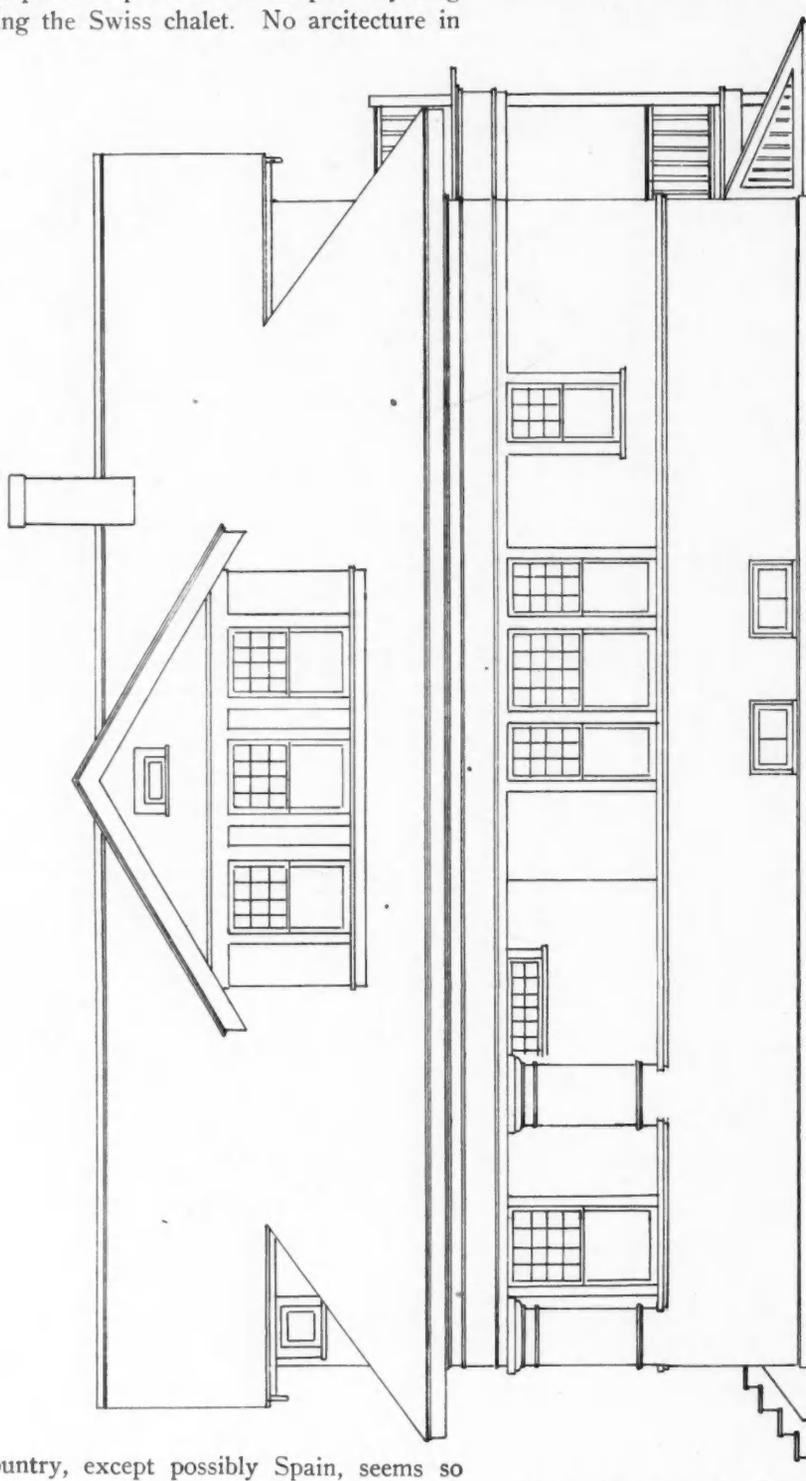
SECOND FLOOR PLAN.

The Swiss Chalet

In adopting the chalet as a solution of their architectural problem the Swiss have produced a strongly individual architecture and have not been influenced in any way by the architecture of other countries, says William Neil Smith, in the *Delineator*.

No other people have produced in the past anything even resembling the Swiss chalet. No architecture in

upon close study, are found to be that they have first solved the needful considerations made necessary by the unusual severity of the climate. The other influence shown in the houses of the Swiss and one that reveals the traits of the people, is the fearless honesty in showing the construction of their buildings and making this construction beautiful.

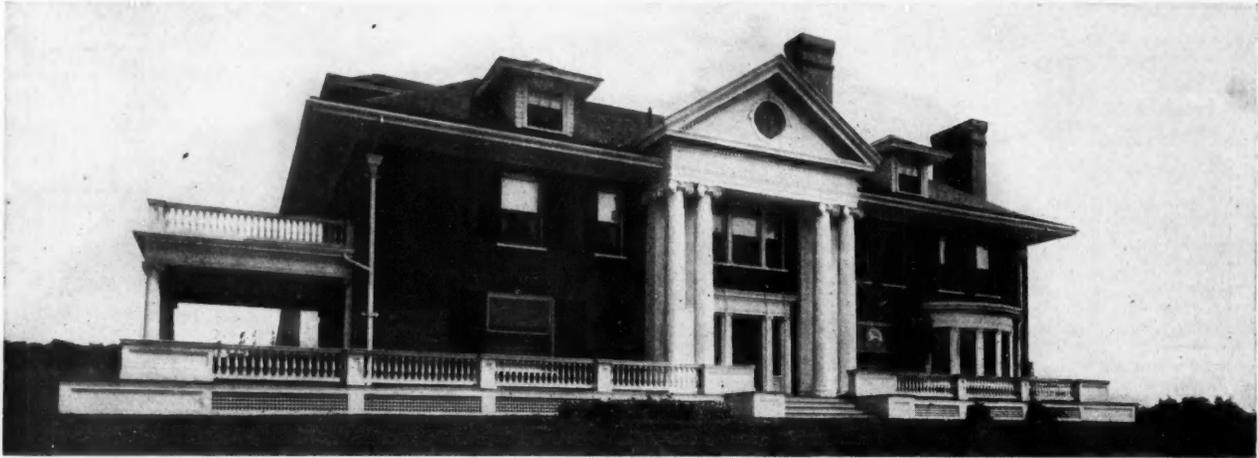


SIDE ELEVATION.

any other country, except possibly Spain, seems so much a part of the environment.

It is hard to picture Switzerland to ourselves without thinking of this form of house as part of the natural surroundings. Besides being beautiful, the homes of the Swiss are eminently practical. In fact, the reasons for the individuality that they have attained,

There is no mask about a Swiss home, no false plastering-over of honest construction. They are frankly wooden houses, a true application of the material nearest at hand, a true type for a forest country. In this respect the architecture of the Swiss is entirely opposed to the school of which the French are per-

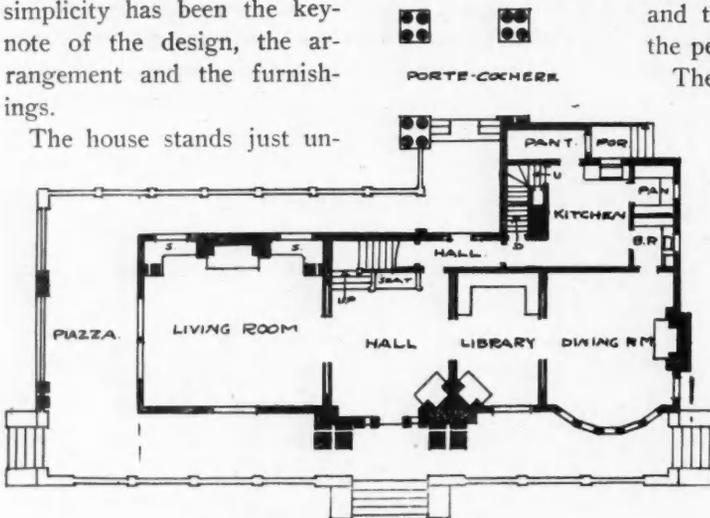


Notable Country Home at Rowley, Mass.

THE SUMPTUOUS COUNTRY RESIDENCE OF MR. E. B. GEORGE AT ROWLEY, MASS., DESIGNED BY C. H. BLACKALL, ARCHITECT, OF BOSTON

THIRTY miles from Boston, near the little town of Rowley and overlooking Cape Ann, stands a country residence which is notable—not for its size nor magnificence but because of its rich simplicity. It was designed to be the home of a gentleman of moderate means, but of artistic tastes and desires. A dignified and at the same time a homelike simplicity has been the keynote of the design, the arrangement and the furnishings.

The house stands just un-



First Floor Plan

derneath the crest of a hill and the view of the surrounding country is far and unbroken on every side. To the south stretch green meadows where purple shadows linger; to the east lies the blue line of the ocean, with here and there a white sail, and to the north the hills lift their stately peaks heavenward.

The exterior of the house is of brick. The color is very dark dull red; selected common brick with dark headers were used. The work was laid up in Flemish bond; and after the mortar was set slightly, the joints were raked out to a depth of $\frac{1}{2}$ to $\frac{3}{4}$ inch. In consequence, the wall presents a texture which

could not be obtained if the joints were filled and joined in the usual manner. Each brick counts for itself, and the fact that the bricks are rough is an advantage rather than a detriment, as it gives to the wall surface much the texture of a pencil sketch. Wide overhanging eaves and broad dormers help to bring the scale of the house down close to the ground; and the dignity is supplied by the tall columns and the pediment marking the center of the south front.

The interior arrangement of the house, as will be seen from the floor plans, is commodious. On the left of the square entrance hall, which occupies the center, is the living-room, 25 feet square, with large windows on three sides and a huge fireplace with built-in seats on the north. To the right are the library and dining room. There are large fireplaces, built for

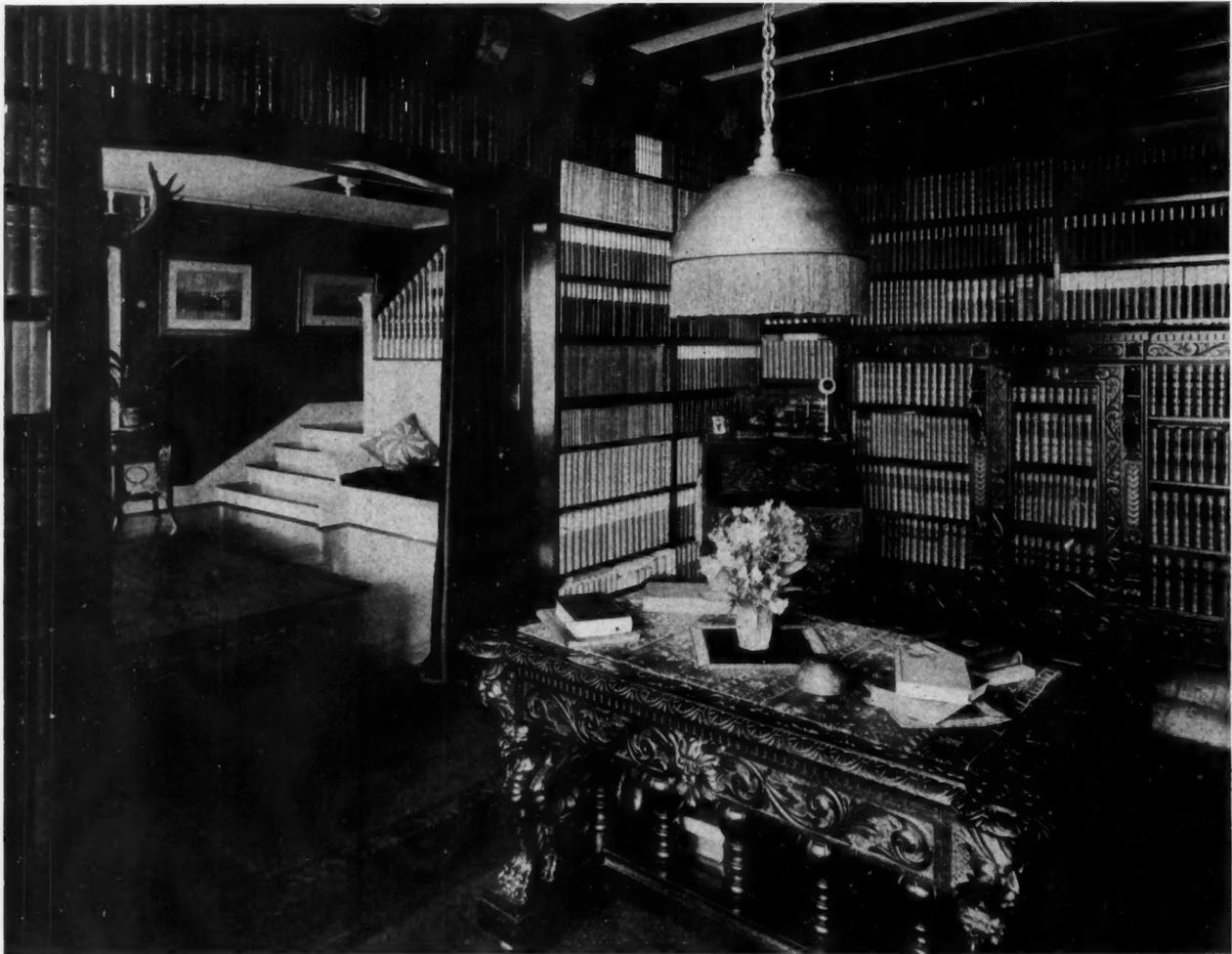


Second Floor Plan

use, in all the rooms, the house being heated in the good old-fashioned way. A study of the interior views will reveal more than words can express, the charm and simple beauty of this well-planned country place.



View of the Living Room and Detail of Fireplace, Showing Burnt Wood Decorative Panel



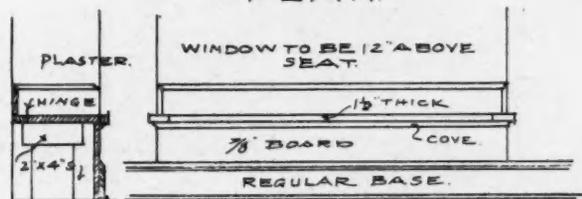
Entrance Hall and Library—Home of Mr. E. B. George at Rowley Mass.

CORRESPONDENCE



Details for Window Seat

To the Editor: Kenedy, Texas.
 Will you kindly give details of inside finish for window seat as per enclosed plan?
 We carpenters in small country towns usually have to be the architect, contractor, foreman and carpenter all rolled into one. We are the whole cheese, but when we wish to do something extra nice or up-to-date we find ourselves up against it.



My greatest trouble is with inside finish generally. Can you refer me to some book that gives inside details?
 T. C. McCoy.
 Answer: The accompanying sketch will show you details that will work out very well indeed for the window seat in question.
 EDITOR.

Mr. Worm Turns

To the Editor: Milwaukee, Wis.
 You are answering many questions in the columns of AMERICAN CARPENTER AND BUILDER. Would be pleased to have you answer my question.
 I have lately been advanced to foreman on buildings, but I find trouble on the way.
 Will you advise me how to best proceed in building, how to place men in their work to the best interests of both men and employer?
 How can I prevent grumbling and kicking about the work they are placed at?
 Why is it that some men must kick about the foreman?
 Your helpful advice will be thankfully received.
 J. W. WORM.

How to Build a Boat

To the Editor: Novinger, Mo.
 For the benefit of Robt. Mathews and others who may be interested in plain boat building, will say that I build a boat for four persons 16 feet long and from 22 to 24 inches wide on bottom at widest point, with sides from 14 to 16 inches wide, flaring from center to back, set at an angle corresponding to a 9-inch to 12-inch rise. The sides are 14 inches wide at the center, drawn up to 10 inches wide at the front.

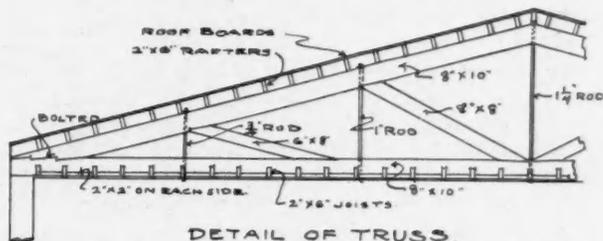
Fasten sides to frame, first letting them project below the frame. Then place stem, which should be 3/5 of widest point on bottom. Place it at an angle of 6 on 12 inches.
 Next bring sides to bow-blocks; set at same angle by means of strips clamped across sides to prevent splitting in twisting. Then with foreplane proceed to secure level edges below by using straight edge crossways.
 Surface all bottom planking to remove planer marks, and use heavy white lead in all joints; these should be screwed every 2 inches or less.
 Never use basswood; it rots. Cedar is rather too brittle to insure bending. Edge grain cypress is surest and best.
 Will someone please inform me through these columns how to build a fireless cooker?
 CHAS. E. OTTO.

Which Is Your Way?

To the Editor: Maywood, Ill.
 The undersigned would like to hear from your big family as to which is the more common practice in squaring up mill-planed stock (1) to smooth-plane the two broad surfaces after the edges and ends have been straightened and squared or (2) to plane one broad surface first, then the edges and then the second broad surface. It is assumed that the stock is S-2-S and level enough for the work in hand so that all that is to be done to the broad surfaces is merely to smooth off the mill marks.
 JOHN LAWRENCE HEATON.

Truss for Church Roof

To the Editor: Scott, Kan.
 I enclose you a rough sketch of a church that is to be built here. I will be pleased to have you tell me the proper way to frame the roof of this building, the roof being 1/4-pitch, also the proper height of walls in order to have the best acoustic properties in the auditorium, the ceiling to be of



pressed steel. It is proposed to give the floor a drop of 18 inches from rear to front. What is the proper way to frame this with basement under the entire building?
 DON S. FARMAN.

Answer: The accompanying sketch shows the details of a truss which will meet the requirements of the case. These trusses are to be placed about 14 feet apart with a roof as low as 1/4 pitch. It is necessary to make the ceiling flat. Your walls should probably be 12 feet or 14 feet in height.
 We would suggest that much the better way in a case of this kind is to secure from a competent architect complete plans and specifications for the building.
 EDITOR.

Mr. Talbot Has a Last Word

To the Editor:

Hanford, Cal.

I send coincidentally with this letter diagram upon tracing cloth showing very suitably the features of the "hand-spike problem" that P. Schneider, of Milwaukee, as well as J. G. Weatherby, of Marshalltown, Iowa, got stuck on. As they each have got started wrongly, I fear it will take something like the article here enclosed to fully enlighten them. The article is copyrighted, and if you choose to publish article with reproduced illustration, I herewith give permission.

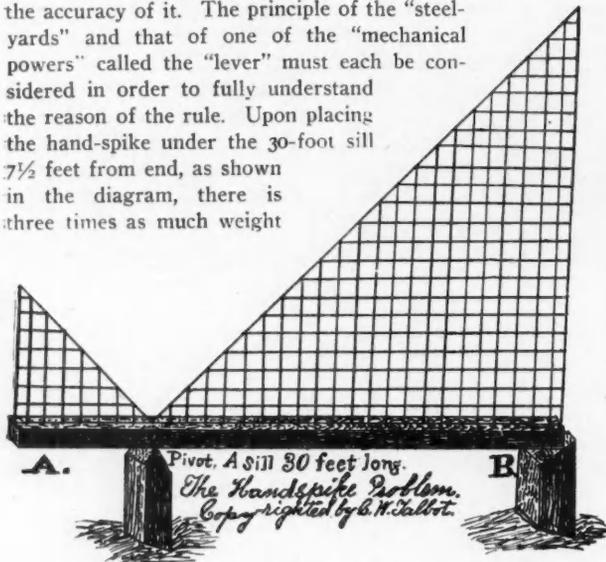
I consider this one of my very best treatises upon a mathematical question. You will agree with me, if you notice it. It is very seldom that a person is dragged into a controversy in which the contestants are wrong upon every proposition and yet they don't know it.

The Hand Spike Problem

Let A. B. in the diagram be a sill 30 feet long and weighing the same at every point of its length; required point where hand-spike should be placed to carry two-thirds of the weight of the sill.

Answer: The hand-spike should be placed one-quarter of the distance or $7\frac{1}{2}$ feet from the end. By placing the hand-spike one-fourth of the length of the sill from the end, in any given case of evenly weighing timber, it will sustain two-thirds of the weight of that timber.

The diagram illustrates the reason of the rule as well as the accuracy of it. The principle of the "steel-yards" and that of one of the "mechanical powers" called the "lever" must each be considered in order to fully understand the reason of the rule. Upon placing the hand-spike under the 30-foot sill $7\frac{1}{2}$ feet from end, as shown in the diagram, there is three times as much weight



of the sill upon the other side of the pivot as there is weight in the $7\frac{1}{2}$ feet overlapping the pivot or hand-spike. But weight of timber in long end has a balancing power of nine times that in short end on account of being further from the pivot. The purpose of the diagram is to illustrate this feature. The author of this article feels assured of having, by the diagram made simple that which was complex; as most every child knows enough to tell the yet smaller child, while riding upon the plank in "seesaw," "Get nearer to the end in order to balance me." Almost every adult person has watched some one move the pea on the beam of the "steel-yards" closer or further away from the pivot so that it will sustain in equipoise the article being weighed.

With diagram facing you, showing the sum of the series on one end to be so much greater than the similar set of series on the short end side of the pivot, you will readily see that the $7\frac{1}{2}$ feet reaching over the hand-spike, with no other support outward to the end of the timber from the hand-spike, will sustain or deduct from the "natural weight" of the sill on the long end side of the pivot exactly one-ninth of its weight. It would not do this except the premises of the problem are such that long end is to be held up and its nat-

ural gravity to the earth resisted; but no condition of the problem has the effect to deprive the $7\frac{1}{2}$ feet from acting as a lever to sustain one-ninth of the natural weight upon the end at the other side of the pivot.

Recapitulation: There will rest upon the hand-spike exactly two-thirds of the weight of the sill, when the timber throughout weighs uniformly the same, when the hand-spike is placed one-fourth of the length of the sill from the end. This weight is: First, one-fourth; then one-ninth of three-fourths; and then also one-half of the remaining weight, eight-ninths of three-fourths. Thus, if sill in its entirety weighs 360 pounds, the hand-spike thus placed would sustain 240 pounds.

Illustration and article copyrighted.

C. W. TALBOT.



He Wants It on the Square

To the Editor:

Clinton, Okla.

Will you please give me a rule by which to cut the bevel on the bottom of the hip rafter in the enclosed cut, taken from



your October number? I can get the length and top cut, but I want both bevels on the bottom "by the square."

Please answer in the next number of the AMERICAN CARPENTER AND BUILDER.

A. P. BROWN.

Answer: The sketch enclosed shows the rafter in question to be a hip resting against the corner of a deck and with the lower end against the ridge board of a gable. The cut at the bottom is a plumb and side cut just the same as at the upper end. However, at the top, the side cut should be right and left, cut in half way to fit against the corner of the deck.



EDITOR.

Water-proof Stable Floors

To the Editor:

Greenwich, Conn.

Will you please advise me as to the method of laying water-tight floors in a barn where horse stables come over cow stables.

FRED W. HOBBS.

Answer: One way suggested is to lay a tight floor of $\frac{7}{8}$ -inch matching, then cover that first with asphalt about $\frac{1}{2}$ to $\frac{3}{4}$ inch, and on that lay a $1\frac{1}{4}$ -inch matched floor. This floor should be properly graded, so as to drain to a trough for carrying off fluids.

This method is all right, but it would prove to be expensive in the course of a few years. Another and possibly a better way would be to lay a rough floor on the joists, and put on this floor four or five inches of good concrete, well laid down, not leaving more than 25 square feet in one block, using 1-inch expansion joints filled with pitch. This will keep the floor from cracking, and will also be water tight. There should be a gutter just behind the horses, and the floor should have at least $\frac{1}{2}$ -inch fall to each foot. The floor should not be troweled smooth, but left rough, except in the

gutter; put on this concrete (after it has been down six or seven days) about two inches of clay. Wet it thoroughly and tamp lightly into place. Clay is one of the best materials for horses to stand on.

If it seems preferable to have wood for the animals to stand on, lay a floor of rough planks, somewhat open, over the concrete, leaving cracks wide enough so that all liquid will immediately run through to the concrete and be drained to the desired points.

EDITOR.

How to Develop Corner Brackets

To the Editor:

Cleveland, Ohio.

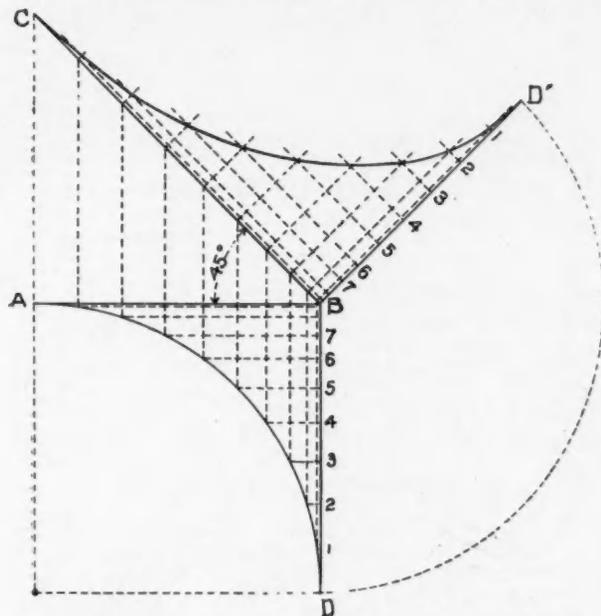
Would like to see published through your magazine how to lay out the corner cove brackets for a room with cove ceiling, as you know they cannot be the same size as for those that go around the walls.

JOSEPH P. BATTES.

Answer: There are several ways of solving problems of this kind, but the method most generally used is shown in the accompanying illustration, which explains itself.

The curve of the side wall brackets can be anything desired and should be laid off full size.

In the illustration A B represents the run of the curve bracket for the side walls and C B the same for the run of the bracket to fit in the angle. B D represents the drop on the wall, and it necessarily follows that A D represents the curve of the side wall brackets and C D' the same for the angle bracket, which for a square-cornered room would rest at 45 degrees from that of the wall brackets. Next lay off



any number of lines parallel to the run of the wall bracket (A B), as at 1, 2, 3, etc. Then lay off a like number of lines of same distance apart, parallel to C B, but of indefinite lengths. Now draw lines from the curve A D and at right angles to the run A B, intersecting the run of the angle bracket (C B), thence at right angles indefinitely. At the intersection of like numbered lines of the angle bracket will be the points through which to run an off-hand curve to coincide with that of the wall bracket.

The corresponding curved rafters for any shaped building may be developed in like manner, provided the angle that the hip rests with that of the common rafter is correctly maintained in the diagram. For particular work, the curve of the hip should be backed, which may be found by measuring back one-half of the thickness of the hip on the parallel lines, which will give the gauge line along the side of the hip from which to remove the wood to the center of its back.

In case of interior work, as for a cove ceiling, as above described, the backing, instead of being beveled off as for the hip, would be just the reverse, or V-shape in the back or curve of the bracket, and in that case it is better to get out two brackets and back them one way, right and left, and then nail them together, so that the V-shape will be formed, and thus give a solid bearing for the nailing of lath or other material.

A. W. WOODS.

Mr. Schneider Hopes This Settles It

To the Editor:

Milwaukee, Wis.

In the October number of your valuable magazine, Mr. C. J. Talbot, in his defense of the "steelyard" proposition says, that we (Mr. J. G. Weatherby and I) attempted in our contributions to enlighten your readers about the "handspike problem." He is right in that, for as far as I am concerned, it was my intention to do so, but I see now, that my attempt did not produce the least effect upon him. It seems to me that he overlooked my remark, or else he wouldn't have said, I was inconsistent. I said, A and B will have to carry any length of the timber alone which would balance upon this handspike, whether cut off from the rest or not, because this piece does neither increase nor diminish the length or weight of the remaining part, and C had to carry only one-half of the remaining part. If the handspike is 5 feet from the end, the balancing piece is then 10 feet and the remaining part 20 feet and not 25 as Mr. Talbot said. If his text book teaches very correctly, that two men with a handspike will carry two-thirds of a sill with one man at the extreme end when the handspike is $7\frac{1}{2}$ feet from the center, then his text book is mistaken. The two men with the handspike at this distance would carry three-fourths of the sill and the other man one-fourth. Now in order to enlighten those readers who may have been misled by Mr. Talbot's text book, I will give here the rule for placing the handspike for any number of feet, the man at the end is to carry from one foot up to one-half of the timber. The man at the end will carry as many feet as the handspike is placed from the center. The man with the handspike in the center would carry the whole timber, leaving nothing for the other man. If he is to carry one foot, place the handspike one foot from the center; if he is to carry $7\frac{1}{2}$ feet, place the handspike as many feet from the center, and so on to the end of the timber. I hope this will settle the "handspike" controversy.

P. SCHNEIDER.

A Slap and a Hunch

To the Editor:

Irondale, Wash.

I see in the September issue, under the heading "Comments from a Reader," that a Mr. W. P. Hubbard takes the stand that a little careful thought by a practical man is often as good as strict mathematical knowledge, and cites the question of S. H. Hay, of Enfield, N. H., regarding a taper stick, as something that may be solved without pencil and paper by a practical man. He goes on to show that the board measure in a stick 12 by 12 inches at one end and 6 by 6 inches at the other and 12 feet long, is 81 feet. Now, the funny part of it is that he is wrong, as the actual board measure is 84 feet.

I take the liberty of drawing attention to this to try and instill a little wholesome respect for mathematics into the minds of mechanics, especially the younger men.

WM. MOORE.

Claims to Simplify Degree Framing

To the Editor:

Crookston, Minn.

We notice on page 58 of the October number you have an article on the possibilities of the steel square, and you explain how to lay out a roof given in degrees. A case of this kind

is just where our "A B C protractor square" would do the work without figuring and without any effort on the part of the carpenter at all. All that he would have to do with our tool would be to set member C to member A at 12 (or rather at 6, as he would have to use a scale of $\frac{1}{2}$ inch to a foot), then set member B to 42 degrees with A, and C would then coincide with B at $5\frac{9}{24}$ which, multiplied with 2, would give $10\frac{19}{24}$. This is done in a minute without any figuring at all. Furthermore, member B would at the same time give the length $8\frac{1}{12}$ which, multiplied by 2, would make the rafter 16 feet and 2 inches. By using member B as straight edge, A will give the upper cut, and B the lower cut of the rafter.

It is so easy to do those things with our tool that we believe it would be to your interest as well as ours to call the attention of the carpenters to it in your columns. Any kind of degree work would be just as easy.

We should like to get you people so interested in the "A B C protractor square" that you would give articles explaining its use like you are doing with the common square.

CROOKSTON TOOL COMPANY.

House Design

To the Editor:

Port Angeles, Wash.

This is a picture of a house I have just finished, built for



Mr. A. I. Filion at Port Angeles, Wash. It was designed by the owner and was constructed at a cost of \$5,000.

J. A. EPPERSON.

Advice for Mr. Knowlton

In answer to Albion Knowlton's question, "What Is the Trouble?" I would say: Your upper window over the bay either leaks at lower end of outside casing and sill or at the top. To prevent leaking, take off window stool and apron and let your tin run clear through the wall and turn up on the inside of the sill. Also let the tin turn up a little on the studding. That will form a trough which will carry off all water. I have repaired several and it proved satisfactory.

C. D. FISHER.

A New Word Coined

To the Editor:

Collinwood, Ohio.

There is a growing tendency to call the larger particles that go into concrete with sand and cement, aggregates, when in fact the whole mixture is the aggregate or sum.

A very close study of the word fails to reveal any definition that would imply that it could be used as a name of an object, and since the broken stone, slag, cinder or other things put

in with the cement and sand are objects, such a term, that means the *whole*, is out of place. Hence, I suggest the word *copard*, to mean anything of a larger size that will be used in concrete with sand and cement.

Copards are the co-partners of the sand and cement, to make up the aggregate or sum total, which is the concrete. Using the word in a sentence something like this: "The copards in the concrete mixture were slag," or, "A washer for copards should be built near the source of supply." Or, if no new word is needed, do not use aggregate as it is confusing and improper.

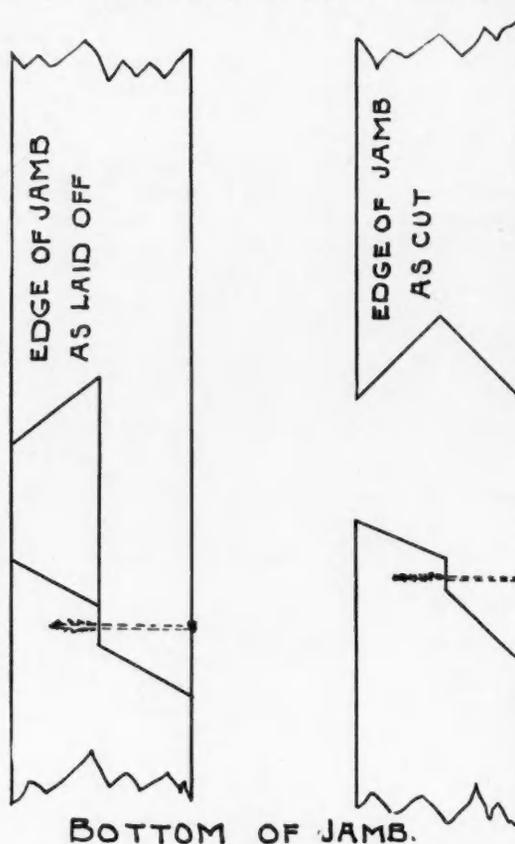
W. D. BROWNING.

Cutting Pockets in Jamb

To the Editor:

Harveyville, Kan.

Enclosed find drawing of my plan for cutting pockets in



jamb. I find it very quickly done, neat and much better than using the saw. I use a $\frac{1}{2}$ -inch chisel ground very thin.

H. MCPHERSON.

Plank Splicing Question

To the Editor:

Ewen, Mich.

Being a charter member, I wish to learn which is right? A brother carpenter and I had a dispute over splicing out a joist, 2 by 12 inches, 22 feet long, to make it 24 feet long. He wanted to put on 2 feet more, making it 24 feet. I told him that if I had it to do I would cut a 2-foot piece from another plank and butt the ends together, and then cut from a 1 by 12 inch board 2 pieces 3 feet long, and nail one to each side of the plank. Now his way was to take a plank 2 by 12 inches, 10 feet long, and laying it 2 feet past the 22-foot piece, nailing the balance to the joist. My claim was that the 8 feet of plank was wasted and no benefit to the joist, for it only adds needless weight to it and the weak point in the joist would be at the end of the 10-foot splice plank.

Which is right?

C. M. UDALL.

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235, 236, 237, 238

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See Partial Table of Contents on Next Two Pages

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

RADFORD'S

PARTIAL TABLE OF CONTENTS

MECHANICAL DRAFTING.

What Mechanical Drafting Is.
Whom It Concerns.
Instruments and Materials.
Correct Use of Instruments.
Scale.
Pencil and Inking.
"Don'ts" for Draftsmen.
Exercises with Instruments.
Orthographic Projections.
Isometric Projections.
Oblique Projections.

THE PLAN.

THE ELEVATION.

Practice Exercises.
Intersections and Developments.
Pictorial Representation.
Draftsman and Employer.
Style of Work.
Dimensioning and Lettering.
Tracing and Blue-Printing.
Practical Drafting in Wood, Steel,
etc.
Architectural Drawing.
Architectural Forms.
Conventional Symbols for Mate-
rials, Fixtures, etc.
Layout of Details.
Working Drawings.
Plans, Elevations and Sections.
What to Show.
The General Composition.
Use of Large-Scale Details.
Details of Construction.
Full Sizing—When Done?

SHADES AND SHADOWS.

FREEHAND DRAWING.

PERSPECTIVE DRAWING.

Sketching.
Pen and Ink Rendering.

WASH DRAWINGS.

Colors and Brushes.
How Wash Is Applied.
Use of Color in Finished Draw-
ings.
Color Schemes.

CLASSIC ORDERS OF ARCHI- TECTURE.

Tuscan Order.
Doric Order.
Ionic Order.
Corinthian Order.
Greek and Roman Ideals.
Adaptation to Various Classes of
Buildings.
Conventional Designs.

ARCHITECTURAL LETTERING.

Letter Forms.
Spacing and Composition.
Kinds of Letters to Use.
How to Lay Out a Title.
Freehand Lettering.
Mechanical Lettering.

CARPENTRY.

Geometrical Forms.
Drafting Problems.
Use of Compass and Trammel.
Kerf Sawing.
Arches.
Gothic Architecture.
Parts of an Arch.
Six-Pointed Star.
Foliations.
Rafter Layout.
Hip-Roof Framing.
Cutting Bed-Moulds.

HOUSE FRAMING.

Good and Faulty Construction.
Construction of Sills and Joists.
Studding.
Cornice.
Porch Construction.
Window and Door Openings.
Attaching Woodwork to Masonry
Walls.

ROOFS AND ROOF CONSTRUC- TION.

Forms of Roof Trusses.
Stresses on Roofs.
Strength of Beams.
Dimensioning Struts, Tie-Beams,
etc.
Roof Braces.
Rafters and Purlins.
Hips and Valleys.
Wall Plates.
Jack Rafters.
Dormers.
Octagonal and Hexagonal Roofs.
Plan of a Barn.
Supporting a Ceiling.
To Make a Door.
To Prevent a Leaky Window
Frame.
Timber and Lumber.
Quarter-Sawing Oak.
To Cure a Sweaty Wall.
Constructing a Cesspool.
Cost of Labor.

CONSTRUCTION OF STAIRS.

Treads and Risers.
Housed and Open Strings.
Straight and Curved Stairs.

BUILDING CONSTRUCTION.

Foundations.
Materials for Walls.
Girders.
Cellar Windows.

JOINTS AND SPLICES IN FRAMING.

Framing around a Fireplace.
Windows in Frame Walls.
Storm Windows.
Inside Blinds.

COVERING OF ROOFS.

Method of Shingling.

ORNAMENTAL MOULDINGS.

Roman Mouldings.
Bead Mouldings.
Mitered Mouldings.
Raking Mouldings.
Cutting Veneer.
Chamfering.
Match Boarding.

JOINTS, STRAPS AND OTHER FASTENINGS.

Joining of Beams.
Shrinkage and Expansion.
Cracking of Plaster.
Safe Loads for Trusses.
Design and Dimensioning of
Trusses.
Hanging Sliding Doors.
Placing Metal Lath.

GENERAL INTERIOR DECORA- TION.

MASONRY CONSTRUCTION.

Classification of Rocks.
Properties of Building Stone.
Weathering Qualities.
Adaptation to Ornament.
Cost of Building Stones.
Easy Methods of Testing Stones.
Kinds of Stonework.
Rubble Masonry.
Bonds and Joints.
Mortar for Stonework.
Masons' and Bricklayers' Tools.
Stone Cutting.
Dictionary of Masonry Terms.
Masonry Structures.
Foundations and Walls.
Abutments and Culverts.
Piers and Arches.

BRICK AND BRICKWORK.

Manufacture of Brick.
Varieties of Bricks.
How to Test Brick.
Mortar for Brickwork.
Varieties of Bond (English, Flem-
ish, etc.).
Brick Walls and Chimneys.
Brick Sewers and Arches.
Measurement of Brickwork.
Inspection of Brickwork.

ELEMENTS OF STEEL CON- STRUCTION.

The Raw Material—Iron Ore.
World's Output of Iron and Steel.

MANUFACTURE OF CAST IRON.

The Blast Furnace.
Grades of Cast Iron.
Wrought Iron.

MANUFACTURE OF STEEL.

Bessemer Steel.
Open-Hearth Steel.
Crucible Steel.
The Steel Industry.

MANUFACTURE OF STEEL SHAPES.

I-Beams and Tees.
Angles, Channels, etc.

HOW TO USE THE HAND- BOOKS.

Rivets and Riveting.
Stresses in Rivets.
Factor of Safety.
Ultimate Working Stress.

CLASSES OF STRUCTURAL MEMBERS.

Beams and Girders.
Strength and Stiffness of Beams.
Design of Beams.
Shear and Bending Moment.
Limits of Span.
Plaster Cracks.
Working Rules.
Plate-Girders, Simple and Box.
Plate-Girders, Deck and Through.
Cover-Plates and Stiffeners.
Bearings for Girders (Sliding and
Rolling).
Design of Girders.
Loads on Beams and Girders.
Uniform and Concentrated Loads.
Dead and Live Loads.
Engine and Equivalent Loads.
Beam and Girder Reactions.

COMPRESSION MEMBERS.

Columns.
Lacing Bars and Tie-Plates.
Tension Members.
Eye-Bars.
Built-Up Members.
Pins, Holes, and Plates.
Riveted Angle Members.
Pin and Angle Connections.
Field and Shop Riveting.
Hand and Machine Riveting.
Beam and Girder Bridges.
Deck and Through Bridges.
Bridge Trusses (Howe, Pratt,
Warren, etc.).
Cantilever Bridges.
Suspension Bridges.
Determination of Stresses.
Loads on Bridges.
Design of Bridges.
Weight of Bridges.
Bracing.
The Clearance Diagram.

STEEL FRAME BUILDINGS.

Mill Buildings.
Office Buildings.

ROOF TRUSSES.

Stresses in Roof Trusses.
Design of Truss Members.
Steel Grillage Foundations.

MANUFACTURE OF STRUC- TURAL MEMBERS.

Cost of Steel Structures.
Erection of Steel Buildings.
Erection of Beams and Girders.
Bridge and Viaduct Construction.
False Work.
Travelers and Derricks.
Erection of Roof Trusses.
Erection of Mill Buildings.
Erection of Office Buildings.
Footings and Columns.
Floor Beams.
Superintendence of Steel Construc-
tion Work.
Time and Cost Keeping.

How to Increase Efficiency of
Workmen.
General Theory of Steel Construc-
tion.
Bending Moment.
Shear.
Stresses in Columns.
Temperature and Deflection
Stresses.
Eccentric Loading.
Wind Stresses.
Impact Loads.
Typical Specifications.

USES OF THE STEEL SQUARE.

Uses of the Figures, Lines and
Scales.
Board, Plank and Scantling Meas-
ure.
Adjustable Fence.
Miscellaneous Practical Rules.
Measuring Areas.
Geometrical Problems in Layout.
To Find Length of Braces and
Other Timbers.
Steel Square in Roof Framing.
Rafters Cutting.
Finding Bevels.
Heel and Plumb Cuts.
Framing a Gambrel Roof.
Miter Cutting.
Hip Roof Framing.
Finding Length of Rafters.
Octagonal and Hexagonal Roofs.

THE SQUARE IN STAIR-BUILD- ING.

Strings and Finishes at Top and
Bottom.
Treads and Risers.
Balusters and Brackets.
Square of the Newel.

KEY TO STEEL SQUARE.

Rafter Table.
Framing Timbers at Any Pitch.
Laying Out a Circular Frame.
Possibilities of the Steel Square.

HOUSE SANITATION.

Heating and Ventilating.

HOT-AIR HEATING.

Size of Furnace Required.
Location and Size of Flues and
Registers.
Cold-Air Supply.

STEAM HEATING.

Size and Type of Boiler Required.
Piping Systems (One-Pipe Cir-
cuit; The Divided Circuit).
Dry and Wet Returns.
Overhead or Mills System.
Two-Pipe System.
Radiator Connections.

HOT-WATER HEATING.

Size of Heater Required.
Two-Pipe System.
Expansion Tank and Connections.
Radiator Connections.
Overhead System.
Circuit, or Single-Main System.
Special Fittings.
Sizes of Mains.
Pressure Systems of Hot-Water
Heating.
Accelerated Systems.
The Chimney Flue.
Vacuum and Vapor Heating.

METHODS OF VENTILATION.

TEMPERATURE REGULATION.

Practical House Plumbing.
Sewer and Connections.
Sewer Traps and Ventilation.
Rain Water Pipes.
Sizes of House Drains.
Cistern Overflows.
Roughing-In a Plumbing System.
Soil-Pipe Joints.

THE PIPING SYSTEM.

Drain and Soil Pipes.
Waste and Vent Pipes.
Water Supply Pipes.

CYCLOPEDIA OF CONSTRUCTION CARPENTRY, BUILDING and ARCHITECTURE

PARTIAL TABLE OF CONTENTS

PLUMBING FIXTURES.

Sink, Range Boiler.
Lavatory and Bathtub.
Water Closet, etc.
Traps and Vents.
Siphonage.
Stacks and Connections.
Water Supply Connections.
Range and Boiler Connections.

TESTING A PLUMBING INSTALLATION.

HOT-WATER SUPPLY.

Coils and Water-Backs.
Automatic and Instantaneous Heaters.
Tank Heaters.
Direct and Indirect Heating.
Heating Water by Electricity.
Typical Installations.

USEFUL TABLES AND RULES.

Discharge of Sewer Pipes.
How to Make Rust Joints.
Capacities of Tanks.
Useful Recipes.
Lifting Power of Pumps.
Friction Loss from Ells and Valves.
Plumbing By-Laws of Various Cities.

PLUMBING IN OFFICE BUILDINGS.

FACTORY PLUMBING.

Private Water Systems.
Windmills, Standpipes, and Tanks.
Private Sewerage Systems.
Cesspools.
Sewage Disposal.
Septic Tanks.

ELECTRIC WIRING.

Principles of the Electric Current.
Conductors and Circuits.
Sizes of Wire.
Insulation.
Armored Cable.
Flexible Cord.
Conduits for Wiring.
Connections.
Electric Fixtures.
Incandescent and Arc Lamps.
Wiring Systems.
Switches and Switchboards.
Circuit-Breakers and Cut-Outs.
Electric Heating.
Electric Batteries.
Installing Bells, Annunciators, etc.
Burglar Alarms.

PAINTING.

Mixing Paints.
Ready-Mixed Paints.
White Lead and Zinc White.
Adulteration of Paint.
Linseed Oil (Boiled and Raw).
Turpentine.
Driers.
Causes of Blistering.
Priming Coat.
Estimating on Painting.
Rules for Measuring.
Selection of Colors.
Exterior and Interior Painting.
Brushes, Their Use and Care.
Covering Knots.
Putty.
Best Time to Paint.
Painting Tin Roofs.
Painting Floors.
Wood Fillers.
Hardwood Finishes.
Staining.
Kinds of Varnishes.
Wax Finishing.
Oil Polishing.
Graining.
Enameling.
Gilding and Bronzing.
Stripping.
Painting Plastered Walls.
Calcimining.
Whitewash.
Painting Galvanized Iron.
Painting Concrete Blocks.
Painting Brickwork.
Removing Stains, Smoke Marks, etc.
The Painter's Health.
Fire Risks in Paint Shops.

PAPERHANGING.

GLAZING.

BUILDERS' HARDWARE.

CONTRACTS AND SPECIFICATIONS.

Relations of Architect, Owner and Contractor.
Formal Contract.
Method of Payment.
Time Limit.
Requirements of a Good Specification.
Relation to Working Drawings.
Sample Specifications.

BUILDING LAW.

ESTIMATING.

Cost of Materials, Labor, etc.
Percentage for Profit, etc.
Sample Estimates.

BUILDING SUPERINTENDENCE.

HOME SHOP WORK AND MANUAL TRAINING.

Mission Furniture Designs.

CONCRETE CONSTRUCTION.

Modern Alliance of Concrete and Steel.
Concrete Compared with Other Structural Materials.
Versatility and Accumulative Strength.
Permanence and Hygienic Value.
Economy of Concrete.
Concrete as an Educator.
Concrete the Home-Builder's Friend.

HISTORICAL SKETCH.

Ancient Uses of Concrete.

DEVELOPMENT OF THE CEMENT INDUSTRY.

DISCOVERY OF PORTLAND CEMENT.

Origin of the Name.
Triumph of American Methods.
Superiority of American Portlands.
Statistics of Cement Production.
Unlimited Possibilities of Concrete.

THE FUTURE OF CONCRETE.

Dictionary of Terms.

CONCRETING MATERIALS.

Common Lime.
Hydraulic Lime.

KINDS OF CEMENT.

Natural Cements.
Rosendale Cement.
Pozzuolana.
Slag Cement.
Keene's Cement.

PORTLAND CEMENT.

Manufacture of Portland Cement.
Packing, Storing and Shipping.

CEMENT TESTING.

Fineness.
Time of Setting.
Soundness.
Tensile Strength.

AGGREGATES

Sand.
Impurities in Sand.
Effect of Mica.
Gravel.
Grading Sizes.
Crushed Stone.
Cinders.
Water.
Effects of Alkali.
Determination of Voids.

MANUFACTURE OF CONCRETE.

Proportions for Mixing.
Hand and Machine Mixing.
Continuous and Batch Mixing.
Wetness of Mixture.
Leanness or Richness of Mixture.
How to Regulate Setting.
Cost of Concrete.
Standard Specifications for Cement, Sand, etc.

GENERAL WORKING RULES.

Placing Concrete.
Depositing under Water.
Effects of Sea Water.
Effect of Regauging.
Bonding Old and New Concrete.
Precautions against Freezing.
Efflorescence and Laitance.

CONCRETE TROUBLES AND THEIR REMEDIES.

Expansion and Contraction.
Checking and Cracking.
Dampness and Sweating.

CAUSES OF FAILURE OF CONCRETE WORK.

Imperfect Design.
Careless Workmanship.
Ignorance of Requirements.
Poor Quality of Materials.

WATERPROOFING PROCESSES.

Mass or Integral Methods.
Surface Treatment Methods.
Asphalting.
Patent Compounds.

CONCRETE BLOCKS.

CONCRETE BRICK.

Mortar.
Hollow Concrete Tile.
Terra Cotta Tile.
Stucco.

CONCRETING MACHINERY AND TOOLS.

Crushers, Grinders, Separators.

CONCRETE MIXERS.

Drum Mixers.
Paddling Mixers.
Commercial Types of Mixers.
Automatic Proportioning.
Water Measuring Tanks.
Street-Paving Machines.
Elevators and Hoists.
Automatic Dumping Buckets.
Hand Tools for Concrete Work.

CONCRETE BLOCK MACHINES.

Solid Concrete Blocks.
Hollow Concrete Blocks.
Two-Piece Blocks.
Aggregates for Blocks.
Wet and Dry Mixing.
Facing of Blocks.
Rough Rock Faces.
Cut Stone Faces.
Curing and Storage of Blocks.
Cost of Blocks.
Concrete Brick Machines.
Column Moulding Machines.
Drain Tile and Pipe Machines.
Shingle Machines.

PLAIN CONCRETE CONSTRUCTION.

Construction of Wooden Forms.
Collapsible Metal Forms.

CONCRETE HOUSES.

Types of Design.
Monolithic Construction.
Concrete Block Houses.
Concrete Brick Construction.
Plaster Work and Stucco.
Pebble Finish.
Half-Timber Work.
Drainage and Foundations.
Water Table.
Concrete Piles.
Pile Driving.
Footings.
Floors and Walls.
Sills and Lintels.
Partitions.
Fireplaces and Hearths.
Stairs and Steps.
Areaways.
Chimneys.
Roofs.
Shingles.
Porches.
Examples of Concrete Houses.

FIREPROOF CONSTRUCTION.

The Fire Risk and Insurance.
Fireproof Floors.
Hollow Tile Walls.
Expanded Metal.
Metal Lath and Furring.
Welded and Woven Wire.
Mineral Wool.

CONCRETE SIDEWALKS.

Curbs and Gutters.
Pavements and Driveways.

CULVERTS.

ARTISTIC AND ORNAMENTAL USES OF CONCRETE.

Coloring of Concrete.
Surface Finishes.
Ornamental Shapes.

LANDSCAPE ADORNMENT.

CONCRETE ON THE FARM.

Fence and Gate Posts.
Hitching Posts and Horse Blocks.
Sewer and Drain Pipe.
Concrete Barns and Stables.

CONCRETE SILOS.

Feeding Floors.
Poultry House.
Hog Pen.
Feeding and Watering Troughs.
Windmill Foundations.
Concrete Cisterns.
Hotbeds and Greenhouses.
Root Cellar, Cyclone Cellar
Ice House, Refrigerator.
Concrete Hens' Nests.

REINFORCED CONCRETE.

Historical Sketch.
Relation to Portland Cement Industry.
Advantages of Reinforced Concrete.
Stiffness and Durability.
Fire Resisting Properties.
General Principles of Reinforced Concrete Design.
Cost of Reinforced Concrete.

REINFORCING MATERIALS.

Life of Steel in Concrete.
Expanded Metal.
Rib Metal.
Welded and Woven Wire.
Metal Lath.
Plain Bars.
Deformed Bars.
Bending and Twisting Bars.

VARIOUS SYSTEMS OF REINFORCEMENT.

Reinforcement of Beams.
Reinforcement of Columns.
Reinforcement of Floor Slabs.
Reinforcement against Cracks.
Concrete and Hollow Tile Construction.

INDUSTRIAL BUILDINGS.

Factories, Mills and Shops.
Office Buildings.
Train Sheds.
Water Tanks, etc.
Representative Reinforced Concrete Structures.
Manufacturing Plants.
Smokestacks.

SEWER AND TUNNEL WORK.

Piers and Docks.
Dry Docks.
Cofferdams.
Clay Puddle.
Steel Sheeting, Ribs and Lagging.
Retaining Walls.

REINFORCED CONCRETE BRIDGES.

Piers and Abutments.
Representative Bridge Structures.
Viaducts.
Irrigation Canals.
Head Gates and Flumes.
Reservoirs and Water Tanks.
Sea Walls and Harbor Works.
Breakwaters.
Lighthouses.
Concrete Telegraph Poles.
Concrete Railroad Ties.
Concrete Coal Hopper.
Concrete Garage.
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Burial Vaults.
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Useful Hints, etc.

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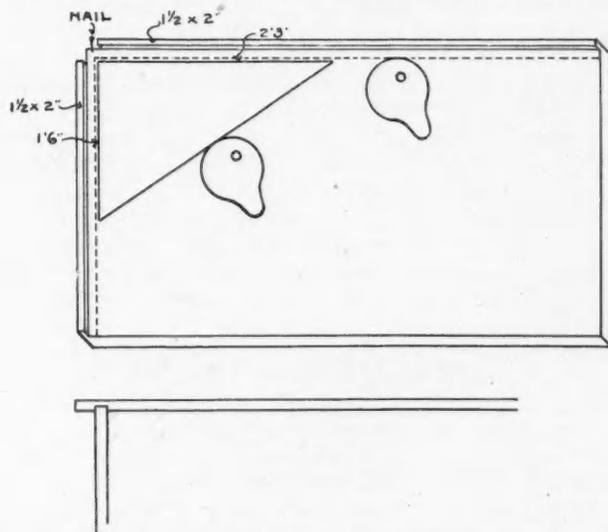
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(W. A.)

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Device for Squaring Frames

To the Editor: Youngstown, Ohio.
 Seeing a query some time ago for a device to square window frames, and to do it quickly, I herewith enclose sketch.
 Make a board table 3 feet 6 inches wide by 7 feet long. Up one side screw on two pieces $1\frac{1}{2}$ by 2 inches, leaving a space in the center about 1 foot 6 inches for nailing on sill; also on one end same thing, leaving corner open for nailing head. Make a triangular piece having one square corner 1



foot 6 inches by 2 feet 3 inches, as per sketch. Also make two irregular circular pieces of wood; in these bore a hole a little out of center and put in an iron bolt, so that when turned it will wedge the square into the corner. The lower irregular circle is to wedge pulley stile to the side. The dotted lines on sketch is where the pulley stile and head are placed.

I think the quickness of this device will soon make up for first cost on construction of the table. R. R. ATKENSON.

Hot Shot From "P. D. G."

To the Editor: St. Joe, Mo.
 As a reader of the AMERICAN CARPENTER AND BUILDER, from its first issue, I wish to thank you and all concerned for the great good it is doing for me and my fellow workmen. You certainly have a good staff of writers, and may they continue. I take great pleasure in reading the problems submitted and answered by the brother chips—some of which bring amusing results because they are not grasped or seen in the light in which they are intended. Among them I call to mind a problem in the February number submitted by Mr. R. L. Ricks in regard to the shed roof rafter. In short, the question was, what is the length of rafter for a shed having a span of 8 feet with a rise of 2 inches to the foot and intersecting with the main roof having a rise of 8 inches to the foot, both plates being same level.

Mr. Ricks, in submitting the question, says, "I enclose herewith what looks like a simple problem, but it has "stuck" school teachers. If you have room in your columns I would be pleased to see what our carpenters will do with it. We want a mathematical solution independent of the steel square."

After describing his problem, Mr. Ricks closes with, "Give mathematical solution."

In the March number, we find that 48 had given correct answers, and among them Mr. Ricks, showing that he was not looking for information to perform the work himself. Four of the number, Messrs. Peterman, Beidler, Halverson and Griffith's solutions, were published in full. The first two by arithmetic and the latter two by algebra and trigonometry re-

spectively. Now what I wish to say is that these parties did just what they were asked to do. That is, solve the problem by mathematics, but along comes John Stillians in the August number with a well-written article of the grand stand order! After fortifying his remarks by stating that he was not a regular reader and that he had not even seen Mr. Rick's question, he then proceeds to exemplify the problem by the use of the steel square, which is simple enough, and I trust any one of the 48 could have done as well if they had been asked to do so! But taken in the light of Mr. Stillians' article, coming on the scene four months later, at a time the average or majority of the readers had forgotten the real question, it was made to appear that the 48, who submitted correct answers, had failed utterly to present the matter in a light that those who read might understand.

I am inclined to believe, Mr. Editor, that the greater part of the trouble of the would-be learners to catch on in mechanic arts is not with the writers at all, but with their own lack of application; they do not bother to apply the principles already explained for like conditions. They look for special solution or demonstration for each problem instead of studying the relation of similar conditions. "P. D. G."

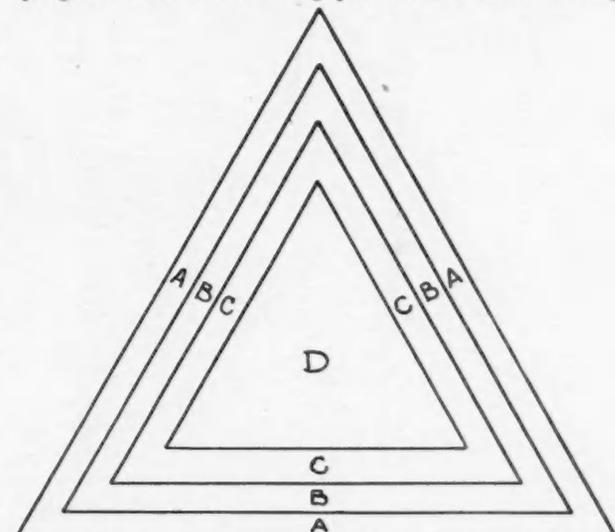
Church Roofing Problem

To the Editor: Hickman, Neb.
 I have the contract to build a new church at Cheney, Neb., 30 by 36 feet, with a 12 by 26 foot addition, tower 8 by 8, as per the enclosed diagram. What I want to know is this: Could I make the comb of the 26-foot addition even with the main comb, which is one-half pitch or 15-foot rise on the 30 feet? I would like to make the rise on 26-foot the same; but in this case, will my ceiling meet together nicely on my arched hips? Or would you advise to give one-half pitch to 26-foot addition also?
 J. E. OFFER.

Answer: It will be better to make all roofs of the same pitch with the plates the same height, letting the ridges come where they will.
 EDITOR.

Interesting Problem

To the Editor: Argyle, N. Y.
 I am a charter member of your large family. I have run up against it in the following problem and am wondering



if there is any rule to govern the division of polygons. The problem that struck me is as follows:

To divide a given triangle into any number of similar concentric triangles so that the open area between each triangle and the next succeeding concentric one will be equal; or, in the figure that the spaces A, B, C and D may all be equal.
 GEO. SADLER.

Nailing Hints

To the Editor:

Greenleaf, Ore.

A man who has spent his life on the finer side of carpenter work called my attention recently to the fact that a brace or any temporary board was usually nailed in the middle. Then when the hammer was clawed under the edge of the board to pull it off, a split board was the result. He said a nail in the edge of the board would do the same work, and the board could be pulled off without spoiling. See?

MARION P. WHEELER.

Mission Cabinet Design

To the Editor:

Grand Rapids, Mich.

In the September number of the AMERICAN CARPENTER AND



BUILDER Harry C. Lewis requests a mission cabinet design. I enclose a design which may be of some assistance.

THOMAS WIENAND.

Suggestions Wanted

To the Editor:

Florence, Mont.

"There is a man in our town" who proposes building a house of "monolithic concrete." His idea is, not to make complete molds at once, but to build them up about 2 feet; and, after filling that much and allowing it to set, to move

the molds up. For the face of the mold he intends to take galvanized iron siding, pressed in imitation of chipped stone, fill the face of the sheets with plaster, and nail them on a board backing.

In the openings he proposes to place rough frames of 2 by 6—the walls being 6 inches thick—to which to nail 7/8-inch stuff for jambs and finish. He is not a mechanic, and proposes to use "cheap help" in getting up the concrete work. The intention is to make the walls solid, furring for lath and plaster on the inside.

There seems to be some elements of novelty in his design—and some of virtue—but what kind of a fix are the carpenters going to be in when called on to finish the job? I would like to hear from the practical readers of the CARPENTER AND BUILDER, if, in their opinion, he is on the track of "something good"; and what slight modifications he should be induced to make in order to render the carpenter work tolerable. I know that building has been done by methods similar to those he proposes; but the details and results of such process seem to have been but little discussed. It would seem to be of interest.

CARL TOWNSEND.

Framing for Projecting Bay

To the Editor:

Wharton, Ohio.

I am sending you a sketch of bay end that is in course of construction here where I am working. I don't know whether or not it bothers the contractor that is doing the work, but I know it doesn't look right to me!

Could you suggest how the roof ought to be framed to

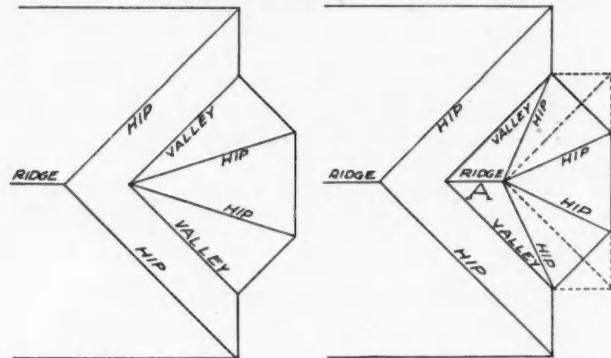


FIG. 1.

FIG. 2.

look right? Would like to have you explain through your correspondence column. I have taken your paper since it has been published.

DAVID W. BRANDT.

Answer: Fig. 1 shows the plan of the roof as it has been built and Fig. 2 shows the proper method of framing same. There should be a ridge at "A" equal in length to projection of bay, exactly the same as if the bay had been a square projection as shown by the dotted lines.

EDITOR.

To Cut Jack Rafters in a Miter Box

To the Editor:

San Francisco, Cal.

Can jack rafters be cut in a miter box so as to make the plumb and back bevel with one cut? If so, at least 64 cuts could be saved in framing a hip roof with timber long enough to cut right and left jacks with one cut.

GEO. A. ATWOOD.

Answer: Sure; jack rafters can be cut in a miter box; but an experienced framer would not take the time to bother with a mitre box as he can do as well without it. To begin with, the cuts on the box must be to the angles required on the rafter, which would save laying them off on each rafter. The box would have its advantage in furnishing a guide to cut by, which might be quite a help to some, as not all can cut on a diagonal line across the back of a rafter and at the same time maintain the plumb lines on the sides without laying off the lines clear around the timber.

EDITOR.

700 SQUARE FEET PER GALLON FARRINGTON FLOOR FINISH

By the Farrington process copal can now be handled with certainty, rapidity and ease. Hitherto it has been impossible to use copal successfully. But now, as a result of the Farrington process, copal can be used more easily, with perfect certainty and greater economy and satisfaction, than shellac or any other method of finishing floors. Copal is harder, more elastic, more durable, more serviceable.

HERE IS OUR MONEY BACK WARRANTY—The Farrington Method

We send full instructions with each order. In return for your promise that materials will be used in no other way, we guarantee Farrington Floor Finish as follows:

"If your first gallon of Farrington Floor Finish does not convince you of the superiority of the Farrington method, it will cost you nothing. Use it as directed, and if your trial does not convince you of its better value and better satisfaction—or if for any fair reason whatever you are not pleased with it, we will refund your money at once and in full. Any time within 30 days, write to us, and if you say that you are not satisfied, we will send your money back to you and the remaining cans of this order can be returned to us at our expense. H. C. HANSEN, Treasurer, Farrington Company, Metropolitan Tower, New York City."

THESE LETTERS TELL YOU WHAT FARRINGTON FINISH IS AND DOES

LUDLOW, VT.—Let me add my testimony to the superior qualities of Farrington Floor Finish over all other finishes I have ever used. I have been in the business forty years. During that time I have tried every kind of finish that is known to the trade. I will testify to the exact truth to every one of the claims I see you are making in your advertisements, and I will stand ready to prove it. I have clipped and kept your advertisements to show my customers. And I add something you have not mentioned. I recommend my customers to use Farrington Floor Finish in places where shellac is used. It is a better filler. It goes on smoother. It does not raise the grain. And it does not color the most delicate wood. It is ten times more elastic than any other finish. It does not cost more than one-third. I have tried Farrington Floor Finish on all kinds of fine-grained woods, and it bears up so perfectly that I can do a first-class job with one coat for filler and two finishing coats. It won't scratch white like shellac and all other fillers will. The difference between Farrington Floor Finish and all others is its durability, lower cost of up-keep, its beauty, conveni-

ence and ease of application. Costs less than half, wears twice as long, work of applying it is reduced one-half, cost and labor of keeping it in condition is insignificant. It has given genuine satisfaction to every one I have ever used it for. E. P. SAUNDERS, Decorator and Painter.

DORCHESTER, MASS.—Let me write a good word for you in praise of your Farrington Floor Finish. For re-finishing old floors of rooms that are in constant use, your finish saves all kinds of trouble. Folks I do work for have asked many times what materials I have used as they want some for their own use. I think the specially commendable points about Farrington Floor Finish are—1, its durability—2, its body—3, its quick drying qualities—4, its freedom from varnish odors—5, its economy. In fact I find that, for my line of work, there is no comparison between any of the other floor finishes and Farrington Finish. It would be in more general use, I suppose, if painters generally understood hardwood finishing, and if they were not afraid to

tackle an innovation. I ran across a sample of your finish when I was with the Shawmutt Furniture Company and found that it was all that you claimed. After that time they never used anything else while I was with them, and I believe they are using it yet. I know you have a big success coming to you with Farrington Floor Finish.—M. H. DONNELLY, Antique and Modern Furniture, 237 Bowdoin Street.

MILFORD, N. H.—We find Farrington Floor Finish will do all you claim. When I placed my first order, you will remember I told you I would test it personally before recommending it to my trade. One of my customers, a painter, was putting new floors in his house and consented to try it. He is very much pleased with the result and will use Farrington Floor Finish regularly. He says it is the best floor finish he has ever used and he has been in business 30 years. You are at liberty to use this letter.—CHARLES B. DODGE, Hardware and Paints, Emerson Building, South Street.

The price of Farrington Floor Finish is \$2.50 per gallon, freight paid to the Mississippi river. Discounts on quantities.



One gallon, used by the Farrington Method finishes 350 square feet of floor, two coats. Costs less per square foot per year than any other finish or method ever known.

FREE TEST We will send you materials with which you can convince yourself regarding Farrington Finish. Just fill out and send us this:

The Farrington Company, (Acb) Metropolitan Tower, New York.

You may send, without cost to me, materials for an easy and thorough test of the Farrington Method of finishing floors—a test that I can make without leaving my desk.

Signed

Firm or House..... Address

I am interested as..... (Owner, Supt., Mgr., Agt., Architect, Bldr., Decorator) in
..... (No. of)..... (kind of) buildings with a total of about.....sq. ft. of floors on
which some sort of finish must be used.



PRACTICAL TRADE APPLIANCES

Valuable Catalogue for All Builders' Tools and Hardware

The editor has received a copy of the new catalogue of the Stebbins Hardware Company, the same being a complete general catalogue showing the entire line of mechanics' tools, cutlery and builders' hardware carried by this well-known firm.

It is safe to say that no book of more genuine value and interest to carpenters and builders has been issued than this. Although compiled, printed and bound at large expense to the Stebbins Hardware Company this book is being mailed free upon request to readers of the AMERICAN CARPENTER AND BUILDER. It is expected that the demand for the book will be so great that the first edition will soon be exhausted. So it is urged that copies be secured at once.

The catalogue is fully illustrated and much valuable information concerning standard sizes and weights, prices, general supplies, etc., is given. The fact that the index covers 22 double-column pages indicates the completeness and scope of the work.

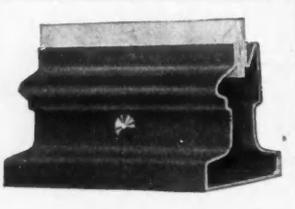
In the foreword we find the following:

"In issuing this general catalogue, we present what we be-

lieve to be the most practical compilation possible, considering the fact that the name "hardware" embraces so many different kinds of goods that an absolutely hardware catalogue is an impossibility. We would ask that whenever our customers want an article which is not listed herein they make their want known to us as we probably have the desired article in stock.

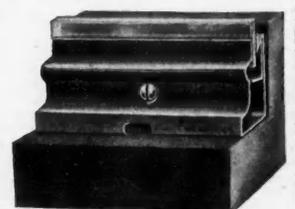
"Tool buyers are of two kinds—the skilled mechanic and the man who wants a good tool but is unable to tell a good one from a poor one, and this paragraph is particularly for the latter's instruction. As every skilled mechanic knows, reputable manufacturers of high-grade standard tools will not allow their product to be sold under any name or trademark but their own, so that wherever you find a dealer handling a so-called standard line of tools marked 'manufactured especially for us' and bearing his (the dealer's) name or trademark, or some high-sounding fanciful name, it is a safe guess that the article is of inferior grade. Our tools are the product of the foremost manufacturers; tools with well-earned reputations for quality—such goods as the skilled artisan asks for and insists on having, and we handle no goods that the maker is ashamed to brand with his name.

(Continued on page 246)



Kawneer No. 50 Sash—Half Size

SPECIFY *Kawneer System* of Store Fronts



Kawneer No. 30 Sash—Half Size

For the installation of all plate and prism glass and you will secure 100% efficiency. There are a dozen positive points in its favor; two of which have alone placed it far in advance of all other forms of construction.

**Cushion Friction Spring Grip
Allows for Expansion.**

**Perfect Ventilation and
Drainage without Dust.**

Having been designed to fulfill the present day demands; all glass can be set from outside, maximum amount of light and display space is secured. Strength and durability together with the all glass effect is obtained, and its great Architectural lines greatly enhance the value of the show window.

Where wood backing is designed for use Kawneer No. 30 Sash should be specified. If no wood backing is desired, call for Kawneer No. 100 Sash for first story show windows and Kawneer No. 50 Sash for second and third floor display windows.

Ventilation and drainage holes are punched in both face piece and spring and metal setting blocks are supplied upon which all glass will be supported.

COMPACT:—All parts are small and inconspicuous, minimum obstruction.

DURABLE:—All material made from copper, brass, aluminum or bronze and will not rust nor corrode.

EFFICIENT:—Perfect system of ventilation and drainage. Ample protection to all glass.

Kawneer Construction in the aluminum finish, only recently placed on the market, gives all the advantages of nickel plate with none of the troubles. All solid metal, there is no cracking or peeling as is the case with plated metal.

Book of details No. 2 containing full size illustrations (Detail and Photographic) and concise information awaits your request.

KAWNEER MANUFACTURING CO.

HOME OFFICE, NILES, MICHIGAN,
BRANCH OFFICES:

Chicago	New York	Kansas City	Indianapolis	Lincoln, Neb.	Minneapolis	Salt Lake City	Houston
St. Louis	Denver	Atlanta	Philadelphia	Spokane	Vancouver, B. C.	Sioux City, Ia.	Seattle
Pittsburg	Portland	Milwaukee	Detroit	London, Ont.	Cincinnati	San Francisco	Los Angeles
							Syracuse, N. Y.

SEE SWEET'S INDEX PAGES 650-651

Sackett Plaster Board

FIRE PROOFING

**Instead of
Lath**

**Time
Saving**

**Labor
Saving**

**Money
Saving**

**DOES
NOT
STAIN
OR
BUCKLE**



**The board
that made
plaster
boards
famous**

**First used
in 1891
Perfected
in 1908**

Sackett Plaster Board Company

**17 Battery Place
NEW YORK**

*We want your Name
and Address so we
can send You Free a
Working Sample of
JOHNSON'S WOOD DYE*

CUT off the coupon now, while you think of it, saying we may send this bottle, and stating the color you want.

Choose from the fourteen standard colors below.

This is our open-handed way of showing the trade what Johnson's Wood Dye will do.

It will pay you to know—it will pay us to have you know. You will never handicap yourself in your work by using a mere stain when you have once tried

Johnson's Wood Dye

Made in Fourteen Standard Shades:

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|---------------------|-----------------------------|---------------------------|
| No. 126 Light Oak | No. 128 Light Mahogany | No. 121 Moss Green |
| No. 123 Dark Oak | No. 129 Dark Mahogany | No. 122 Forest Green |
| No. 125 Mission Oak | No. 130 Weathered Oak | No. 172 Flemish Oak |
| No. 140 Manilla Oak | No. 131 Brown Weathered Oak | No. 178 Brown Flemish Oak |
| No. 110 Bog Oak | No. 132 Green Weathered Oak | |

Price (all shades), half-gallon size, \$1.50.

**You will find the Johnson Colors
the Richest and the Easiest to Apply**

Johnson's Wood Dye is a dye—not a mere surface stain to be rubbed off by a little wear. Johnson's sinks far into the pores of the wood, bringing out the grain to best advantage—and the wood *stays* that way.

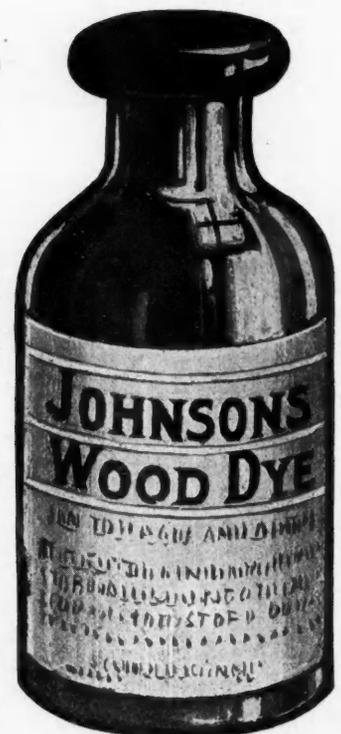
You have fourteen standard colors—colors of snap and richness—to choose from. And from these you can make many other shades.

We'll Send Our Book Free, Too

You will find this book of great help as a guide in all finishing or refinishing of woodwork, floors and furniture. It is richly illustrated and contains a complete color card. Send us your request *now* for this working sample of Johnson's Wood Dye and for this book.

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

"The Wood Finishing Authorities"



---Please Use this FREE COUPON---
I accept your offer of Free Booklet, Edition A. C. B. 11, and Sample Bottle of Johnson's Wood Dye. Send me Shade No.
Name.....
Address.....

*You should send your
Name and Address
at once for a Free
Working Sample of
JOHNSON'S UNDER-LAC*



Did you ever get hold of a varnish that would dry *hard* in half an hour—and wouldn't show scratches or heel prints?

Did you ever see a shellac that wouldn't lap, pull or crawl before you could get it spread?

Try Under-Lac

You can use it wherever you would use shellac or varnish. Over stain, dye, filler or on bare wood. To brighten up old varnished, oiled or shellacked surfaces. To preserve and beautify linoleum, oil cloth, etc.

It is applied easily and quickly. Dries hard in a half hour's time. Will not lap, pull or crawl. Gives a brilliant, lasting finish, with all the fine effect of "hand-rubbed" work. More artistic—more satisfactory to both you and your customers—better in every way than shellac or varnish—and *costs less*. Gallon cans, each, \$2.50.

Under-Lac is made of pure gum and spirits.

Owing to the recent removal of the Revenue Tax, we are able to use Denatured Alcohol that formerly sold for \$2.60 per gallon—can now be bought for 45c.

One test will convince you that Under-Lac hasn't an equal in the world for its purpose.

Prove It At Our Expense

Send this coupon for a free sample of Under-Lac, and try it yourself. We put it up to your judgment. If you can go back to ordinary shellac or varnish—or to anything else of the kind—after once using Under-Lac, then we've nothing more to say. But we *do* ask you to try it. And we make you this free-test offer because we know what Under-Lac will do. Here's the coupon. A minute's time and a two-cent stamp are all that's needed. Why not get it into tonight's mail?

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 better than varnish or shellac; also book edition A.C.B. 11. I agree to test the sample and report results to my paint dealer.

Name
Address



"Established in 1860, we have forged steadily ahead until today we occupy an enviable position in the hardware trade, being recognized as one of the oldest, largest and most reliable hardware houses in America."

As already stated, this valuable book will be sent free on request. No reader of the AMERICAN CARPENTER AND BUILDER can afford to be without it. Address the Stebbins Hardware Company, 74 Van Buren street, Chicago, Ill.

The "Edwards" Metal Spanish Tile

Ever since the beginning of time the question of roofing, from the most primitive form, as seen in the straw-thatched hut, has been looked into by everyone contemplating—of necessity—a roof of some sort.

When the Moors were driven out of Spain they left behind



them the art of making those beautiful earthenware roofing tiles that lend such a charm to the many ancient buildings, many of which are still standing in that historic country.

Despite their happy blending of the decorative element with unique powers to resist the weather the Spanish earthenware tile is handicapped by several serious disadvantages.

Great weight, liability to breakage and displacement, with the attendant leakage, when added to their high cost, have barred them from adoption by thousands who would gladly avail themselves of their beautiful powers.

In placing before the public the "Edwards" metal Spanish tile, the company advise that they have eradicated all these dangers, and in them offer the following vital advantages:

A roof covering that is architectural and ornamental in appearance, and one of extreme lightness and durability.

One that is absolutely wind, weather, storm, fire and lightning-proof.

One that can be applied without soldering, the use of special tools, and by any ordinary mechanic, at a very moderate cost.

The method of interlocking Edwards metal shingles and

Spanish tile forms the only perfect system of contraction and expansion so essential in securing an absolutely water-tight roof.

Edwards metal shingles, metal slate and metal Spanish tile are manufactured from the best quality Worcester grade tin plate, furnished either painted or galvanized (galvanized after formation) in the following sizes:

Metal slate, 7x10, 10x14, 14x20 inches.

Queen Anne and Rookwood metal shingles, 10x14 inches.

Metal Spanish tile, 10x14 inches.

In addition to their metal shingles and metal Spanish tile, this company manufactures a complete line of metal ceilings and side walls, hip shingles, metal roofing and siding, steel cluster shingles, imitation brick and stone siding, roof cresting, valleys, ridge roll, skylights, cornice, finials, metal fireproof window frames and sash, etc. A handsome catalogue illustrating their complete line will be sent free on request. Address The Edwards Manufacturing Company, "The Sheet Metal Folks," 401-419 Eggleston avenue, Cincinnati, Ohio.

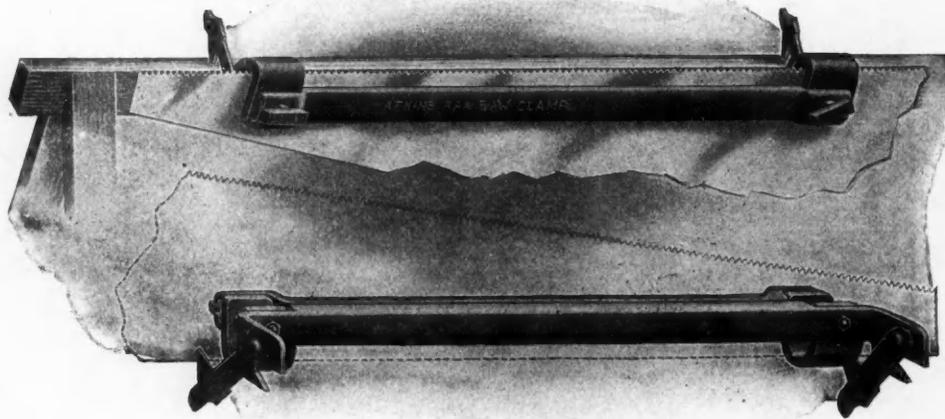
Amatite Growing Popular

The tremendous popularity of Amatite ready roofing shows how the idea of a roofing which you *don't have to paint* has been seized upon by practical Americans all over the country. There is no doubt that the great trouble with the old-style smooth-surfaced roofings was the fact that they required so much care. They had to be painted every two years to keep them in proper condition.

A free sample of Amatite can be had by addressing nearest office of the Barrett Manufacturing Company, New York, Chicago, Philadelphia, Boston, St. Louis, Cleveland, Pittsburgh, Cincinnati, Kansas City, Minneapolis, New Orleans.

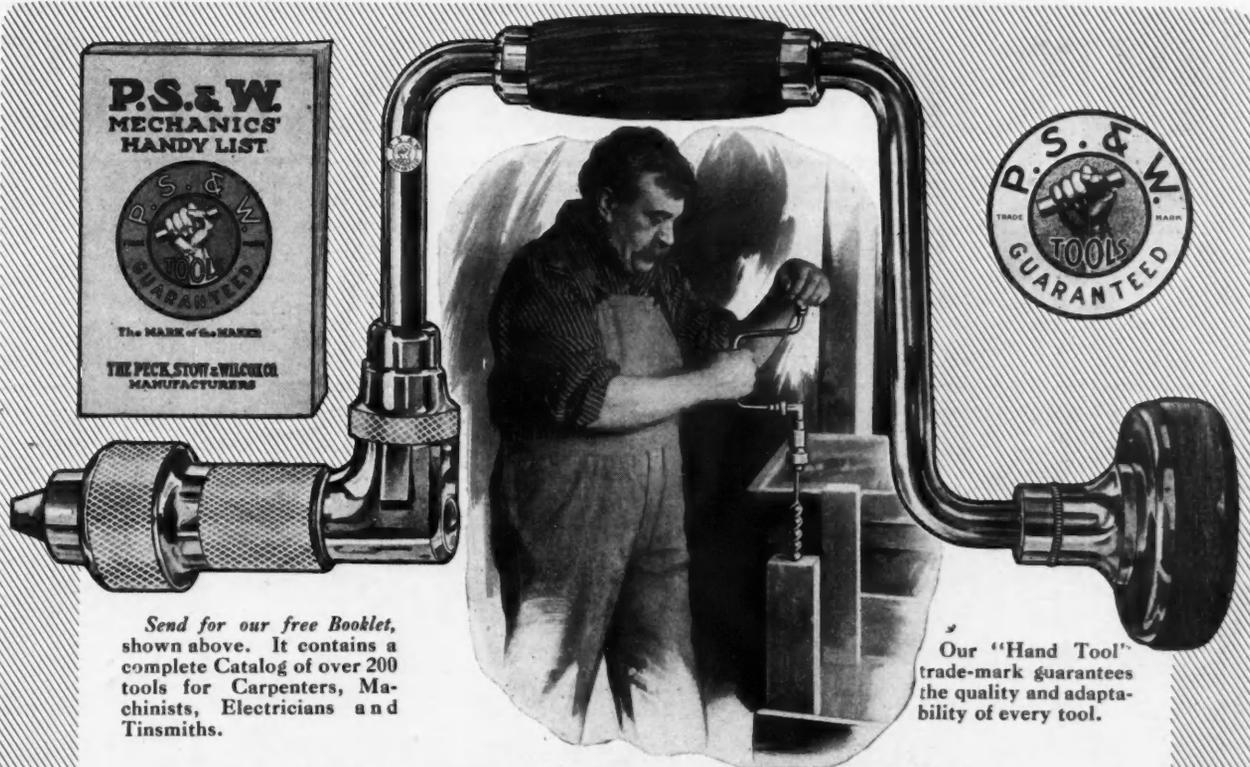
Atkins "AAA" Hand Saw Clamp

This is a new device, weighing a trifle over one pound and occupying about the same space as a chisel.



It can be instantly attached to or removed from any flat

(Continued on page 250)



Send for our free Booklet, shown above. It contains a complete Catalog of over 200 tools for Carpenters, Machinists, Electricians and Tinsmiths.

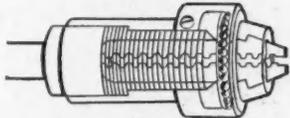
Our "Hand Tool" trade-mark guarantees the quality and adaptability of every tool.

The Ball-bearing Chuck is the Strongest Gripping Device Ever Put on a Brace

It is the greatest improvement ever made in brace construction. It tightens and releases more easily, and has a firmer grip on any type of shank than the chuck of any other brace. The *only* brace made with this patented chuck is the P. S. & W.

SAMSON BRACE

What the Chuck Will Do



Tenpenny nails, held in this chuck, have been bored through solid oak.

Five-sixteenths inch rods with one end in a vise have been twisted by the Samson to the breaking point.

You can tighten it with the bare hand to a firmer grip than you can get on any other chuck with the help of a vise.

No matter how firm the grip, it releases so easily that a child could do it.

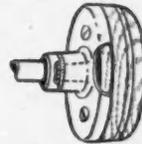
"No Other Brace Would Do That"

The following speaks for itself. It is an extract from a letter by a man who writes from practical experience.

"I purchased one of your Samson Braces about two weeks ago and like it better than any Brace I ever used. I hardly expected it would hold a straight shank drill only 1-16 inch in diameter, but it did grip it perfectly. No other brace that I have used would do that."

J. R. REEDY,
132 E. Kossuth St.,
Columbus, O.

The Steel Clad Head



The head has dust-proof steel ball-bearings.

It is securely protected from splitting by a steel cap, surrounding the head to a height of $\frac{1}{8}$ of an inch.

The Alligator Jaw is another good feature of the Samson Brace. It adjusts itself perfectly to suit the shape of the drill shank. The spring cannot be broken by jamming in the drill.

Sold by leading dealers in all cities—Write us for the "Handy List"

The Peck, Stow & Wilcox Co.

MANUF'RS of the Largest Line of Mechanics' Hand Tools Offered by Any Maker

Established 1819—Five Large Factories

Address Correspondence to 22 Murray Street, New York City

OUR GREATEST SALE OF

Never before, in our twenty years' experience of continually giving the building trades "bargains upon bargains," have we been able to approach such great values as we offer you today. For we have just completed some enormous purchases of Lumber, Mill Work, Builders' Hardware, Roofing, etc., at Sheriffs' Sales, Receivers' Sales and from Manufacturers who were forced to sacrifice their stocks for ready cash.

To enable you to take advantage of this great sale, we have placed all of these purchases into our new 500-page Catalog, for which you should write today and begin saving 25 to 50 per cent on almost every article you buy.

Quality. We believe in the best grades and positively refuse to handle shoddy or cheap goods, and confine our purchases only to the better qualities such as we can absolutely guarantee to give you satisfaction or refund your money.

OUR MONEY SAVING LUMBER PRICES—SAVE YOU 25% to 50% on EVERY ORDER

DIMENSIONS		Price per 1,000 feet.
2x 4—8 ft. sized—No. 1 Pine.....		\$14.00
2x 4—24 ft. Yellow Pine—No. 1 Sized.....		20.00
2x 6—12 ft. Yellow Pine—No. 1 Sized.....		16.00
2x 6—20 ft. Yellow Pine—No. 1 Sized.....		16.00
2x 12—14 ft. Yellow Pine—No. 1 Sized.....		18.00
FLOORING		
4 in.—Quarter-Sawed Hard Pine Flooring.....		\$28.50
4 in.—No. 1 Yellow Pine Flooring.....		20.00
3 in.—No. 2 Quarter-Sawed Georgia Pine Flooring.....		16.00
6 in.—No. 1 Yellow Pine Flooring.....		21.00
6 in.—No. 1 White Pine Flooring.....		29.00
4 in.—C and Better White Pine Porch Flooring.....		20.00
2 1/4 in. Face Select and Better Red Oak Flooring.....		24.00

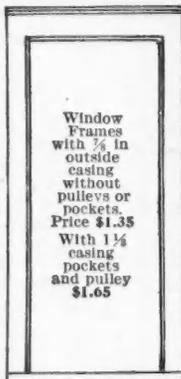
SIDING AND CEILING		Price per 1,000 feet.
Well Seasoned, Dry Stock and Guaranteed up to Specified Grade. All Prices for Standard Lengths 10 to 20 Feet. Brand New High Grade Stock.		
6 in. Clear Oregon Fir Drop Siding.....		\$29.00
6 in. Select Common White Pine Novelty Siding.....		29.00
6 in. C Select Cypress Drop Siding.....		30.00
6 in. Common and Better Yellow Pine Drop Siding.....		17.00
4 in. D Select White Pine Beveled Siding.....		13.00
4 in. B Grade Norway Pine Beveled Siding.....		23.00
4 in. Clear Spruce Beveled Siding.....		18.50
6 in. No. 1 Cypress Beveled Siding.....		14.00
4 in. Clear Georgia Pine Ceiling Beaded.....		19.00
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4 in. No. 2 White Pine Roof Sheathing Dressed.....		\$15.00
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12 in. 12 to 18 ft. Common Y. P. Barn Boards.....		18.50
8 in. and 10 in. No. 1 White Pine Barn Boards.....		29.50
6 in. No. 2 White Pine Dressed and Matched Sheathing.....		18.00
SHINGLES AND LATH		
1 in. by 2 in.—10 to 16 ft. White Pine Shingle Lath.....		\$ 2.45
4 ft.—No. 1 Northern Soft Pine Lath.....		3.25
32 in.—No. 1 Northern Soft Pine Lath.....		1.50
Common Star A Star Red Cedar Shingles.....		2.35
Extra Star A Star White Cedar Shingles.....		3.25

SEND US YOUR LUMBER BILL FOR OUR ESTIMATE

"EXTRACTS" from our NEW MAMMOTH CATALOG—ON ITEMS YOU BUY DAILY

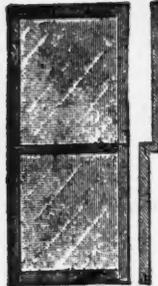
FRAMES SAVE 25% IN FRAMES



Window Frames with 3/4 in outside casing without pulleys or pockets. Price \$1.35 With 1 1/4 casing pockets and pulley \$1.65

All frames which we furnish are manufactured out of high grade stock only. The Drip Cap and Crown Mould Cap frames we guarantee to have clear outside casings. We ship these frames K. D., but same are cut to size as ordered. Therefore do not overlook the saving we are making you on labor. Inside Door Jambs. We can furnish you in any kind of wood to match the balance of your interior trim. Same are guaranteed to have clear face side and are sanded and dadoed for head pieces. Our No. 10-A-100 Window Frame, shown herewith, is taken from our catalog, as an example of the class of frames which bring us repeat orders from carpenters and contractors.

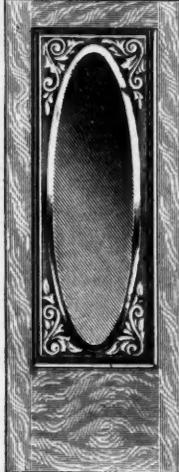
WINDOWS AT 1/3 OFF



WINDOWS. The sash stock used in the windows which we furnish we guarantee absolutely to be of the very best quality CLEAR, SOFT PINE, primed in oil. In addition to regular ordinary windows, we can also furnish you special designs, such as shown in our catalog, as well as any odd style that you would prefer.

Illustration shows our Two-light, Check Rail Window, 1 1/4 inches thick, catalog No. 10-A-71, size of glass 24x28. Quality strictly guaranteed. Price glazed single strength glass, \$1.05.

THIS IS ONLY ONE PATTERN OUT OF 2,000 SIZES AND STYLES SHOWN IN OUR MAMMOTH CATALOGUE.



\$8.10 FOR THIS BEAUTIFUL FRONT DOOR

Made of soft pine, double "A" quality, strictly first class (our catalog No. 10-A-13), size 3 feet by 7 feet, 1 3/4 inches thick, \$8.10.

In comparing our prices on doors—front doors as well as interior doors—do not overlook the fact that we do not change or substitute the grade, but the grades which we specify are strictly in accordance with manufacturers' grading. This means, if we take your order for an "A" grade door, we guarantee to furnish you same. Our catalog explains that we furnish doors of any description and quality.

WRITE AT ONCE FOR OUR BIG CATALOG AND SAVE MONEY

CUT OUT THIS COUPON

Chicago House Wrecking Co., Chicago

I saw your full page advertisement in Amer' Carp. & Bldr. Send me free of all cost your Large General Catalogue 742. I am interested specially in

Name.....

Town and County.....

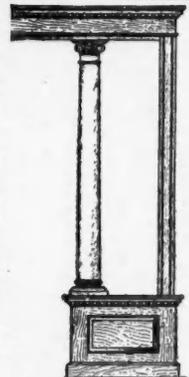
R. F. D. P. O. Box..... State.....

INTERIOR TRIM AND STAIRS.

We furnish you interior trim only in the highest grade material. We carry in stock at all times complete trim, in stock patterns, as shown in our catalog, in Yellow Pine and Oak. Same is run out of kiln dried stock, sanded, and, if desired, furnished in specified long lengths.



We can build stairs for you for less money than anybody else, either ready to be set up, K. D., or material for stairs only, whichever you prefer. In asking us for prices thereon, it would be advisable to send pencil sketch, showing the run of stairs, also give full information as to height of ceiling, measuring same from floor to floor, and state whether the stair is to be closed or not.



CHICAGO HOUSE WRECKING CO. 35TH AND IRON STS., CHICAGO

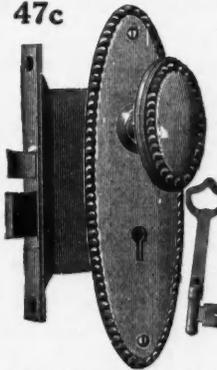
NEW BUILDING MATERIAL

OUR PLAN BOOK BRINGS CUSTOMERS TO EVERY CONTRACTOR AND BUILDER.

WE FURNISH YOU OUR BOOK OF PLANS ABSOLUTELY FREE, which is a great help to you in getting business. This is the handsomest book of its kind ever published. It contains a large number of House and Barn designs, showing photographic illustrations, floor plans, and gives a general description of houses from \$290.00 up. It contains plans that are positively the most desirable of their kind. Not only are they up-to-date, but they are practical in every way as well. Have all been built and the low prices for material for them will be a pleasant surprise for you.

BUILDERS' HARDWARE

47c



OUR BUILDERS' HARDWARE represents the best values and only the latest, up-to-date patterns.

47c FOR THE WILMETTE DOOR SET
Made of wrought steel, antique copper finish, plated.

Our catalog No. 4-A-1662 set furnished complete in every detail. Price 47c or \$5 for one dozen sets.

TOOLS FOR GOOD MECHANICS. We are particular in the quality of our tools and offer you only such as will give you good service and prove satisfactory in every way.

Illustration shows our Adjustable Iron Bench Plane of which we can furnish you set as follows:

- Catalog No. 4-A-1090. 9 in. Smooth Plane \$1.25
- Catalog No. 4-A-1092. 14 in. Jack Plane 1.45
- Catalog No. 4-A-1094. 18 in. Fore Plane 1.60
- Catalog No. 4-A-1096. 22 in. Jointer Plane 2.10

Total...\$6.60



Complete Set \$6.25

As an inducement for you to give our tools a trial, we make price on complete set \$6.25.

PREMIER

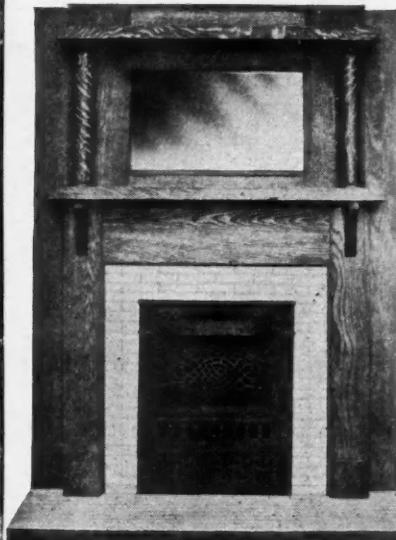
Ready-Mixed House Paints



Guaranteed for ten years. We offer you a selection of over fifty different shades at a price of 85c per gallon, in barrel lots, or 95c per gallon in 5 gallon cans.

Premier paint is made of only the best materials, carefully ground and mixed and will not flake or peel off like ordinary paints. Write for our Free Color Card.

\$11.95 FOR THIS BEAUTIFUL MANTEL



Our catalog shows over fifty different sizes and styles but this is an example of a simple yet ornamental design and this low price cannot be secured elsewhere. Furnished in oak or birch.

- Height, 79 inches.
- Width, 60 inches.
- Tile opening, 36x36 inches.
- Projection, 3 inches.
- Plain mirror, 16x28 inches.
- Columns, 3 1/4 inches.
- Oval mirror, 75 cents extra.

ALL BEST RUBBED AND POLISHED PIANO FINISH

No. 10-A-8021. Mantel, with woodwork and mirror only. \$11.95

No. 10-A-8022. With best quality enameled tile for the hearth and facing, and No. 1 grate outfit, which consists of combination grate \$13.30

RUBBERIZED GALVO ROOFING

ONE DOLLAR per square for our Genuine Rubberized Galvo Roofing—the best ready-to-lay roofing on the market. Price includes nails, caps and cement sufficient to make the laps and we will pay the freight at this price to all points within 400 miles of Chicago. 2 ply at \$1.40; 3 ply at \$1.75. Other grades also. Write for free samples and descriptive literature.



BUILDING PAPERS

Red Rosin sized Sheathing Paper, guaranteed quality, absolutely the best, 36 inches wide, 500 square feet to a roll at extremely low prices.

- No. 13-A-10. 20 lbs. \$0.33
- No. 13-A-11. 30 lbs. .50
- No. 13-A-12. 40 lbs. .60

"PREMIER" BLUE PLASTER BOARD
Best grade made. Can be used in the place of plaster. It is 36 inches wide. The following prices mean money saved.

- No. 13-A-16. Contains 250 sq. ft. Weight 30 lbs. Price per roll.....\$0.70
- No. 13-A-17. Contains 500 sq. ft. Weight 60 lbs. Price per roll..... 1.40

STEEL ROOFING

100,000 squares of New Steel Roofing, which we are selling at the following prices, Freight Prepaid:

- Flat \$1.60, Corrugated, V Crimped or Standing Seam \$1.85.

At these prices we Prepay the Freight to all points east of Colorado except Oklahoma and Texas; quotations to 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.

BRICK SIDING \$1.85 buys 100 square feet

of our Pressed Steel Imitation Brick Siding, a fireproof covering for buildings of every kind. It is easy to put on, requires no previous experience. Looks just like the real bricks after you put it on your building. Sheets are 24 inches wide by 68 inches long. We will prepay the freight if you live east of Colorado, except in the States of Texas and Oklahoma. This freight prepaid proposition refers only to this brick siding. Ask for free sample.

ANY ITEMS QUOTED ON THESE TWO PAGES SENT C. O. D. UPON RECEIPT OF 25 PER CENT DEPOSIT WITH ORDER.

FROM THIS PLAN BOOK your customer can make a selection suitable to his wants and ideas and then you can make him a proposition of the total cost of the House and Barn, including all material, labor, etc.

OUR SYSTEM of selling you the material for practical, complete houses saves you time, saves you labor, saves you money. You need this book, you will use it often it will create customers for you and CAUSE MANY PEOPLE TO BUILD who had not the faintest idea of building before they saw this book, as its beautiful illustrations picture homes such as people want, and prices quoted will PAVE THE WAY FOR PROSPECTIVE HOUSE OWNERS STARTING BUILDING OPERATIONS.



Write Today for Our Free Books

Simply tell us that you want our Free Plan Book. If you are interested in Heating or Plumbing, you should have our "Cold Weather Comforts." It tells you all about Plumbing, Plumbing Goods, Heating Apparatus and Water Supply Systems. Every mechanic or handy man should have this book in his household. Ask for "Cold Weather Comforts."

Either or both of the above books sent by prepaid post, absolutely free of any cost to you. Simply say that you are a reader of the American Carpenter and Builder.

Write us today.

CHICAGO HOUSE WRECKING CO., 35th and Iron Sts., Chicago

Draftsmen Wanted

CONSTANT DEMAND FOR PRACTICAL TRAINED
DRAFTSMEN OFFERS PERMANENT POSITION
WITH BEST SALARY

It is perhaps not known to most of our readers, but especially to the ambitious, wideawake and progressive man, and to the large number of mechanics reading our paper that there is no better field or opportunity for advancement than there is to the practical and well-trained draftsman in this line.

But not that man is wanted who has the largest or most expensive library of technical or school books "at home," neither the one that carries along with him under his arm when applying for a position a nicely engraved "beautiful diploma" on paper (costing \$50 to \$75 per square foot), nor the "would be" draftsman that can "copy" a nice looking picture from another picture with given dimensions.

No, the demand is for draftsmen with practical drafting room training, such draftsmen are wanted badly all the time, and the better the man the better the salary, \$25-\$75 per week, and more for the best men.



F. V. DOBE

The quickest and best way to be trained on practical drafting room work and to get the required practical experience is to receive personal and individual instruction from a high-grade, practical man at the trade, with a reputation as the most experienced man in training men to become *competent and successful draftsmen*.

An ordinary draftsman, even the best draftsman, cannot teach this trade unless he has many years' experience as an instructor, and has ability to impart knowledge that is understood and that will stick forever—a special gift that ninety-nine out of 100 do not have.

Mr. F. V. Dobe, Chief Draftsman of the Engineers' Equipment Co. (Inc.), Chicago, with twenty years' experience in training and handling men has for a good many years given personal individual instruction by mail with the most deserving success, because his instruction work consists of actual practical drafting room work that gives his personal student and apprentice the required practical experience.

Mr. Dobe has been an advertiser in our paper for a good many years, and will send his "Successful Draftsmanship" Prospectus, 6x9, also list of 250 open positions for draftsmen, and full information free.

(Continued from page 246)

surface and will accomplish the same work as the old style, heavy, cumbersome vise.

It has attachments for both filing and setting hand saws, each part of the blade being easily accessible.

It retails at a very popular price and sells on sight at a good profit.

The "AAA" clamp is manufactured by E. C. Atkins & Co., the Silver steel saw people.

Your dealer will supply you.

The C. H. & E. Portable Saw Rig

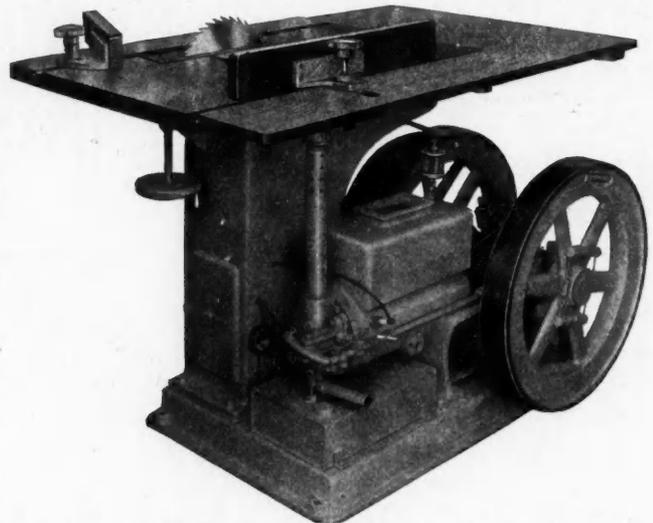
The main problem with the retail lumber yard dealer today is how to work the raw material into first class stock in the most efficient manner and at minimum cost. When a carpenter contractor comes to the lumber yard office and asks for a certain size stock, the retail dealer may not have same on hand; which not only delays the contractor but causes the dealer to handle the lumber three times in loading the raw material, pulling it to the lumber shed to be dressed and then re-loading it on the carpenter contractor's wagon. It is to save this waste of time and labor and inconvenience that the C. H. & E. No. 2 portable saw rig was put on the market. This movable rig is the best time and money saver put before the lumber trade in a good many years, being an easy machine to move to any part of the yard.

The rig has filled a long felt want; and a glance at the illustration will be sufficient to convince you that it is an exceptionally handy outfit, and one that will enable you to do a great deal of millwork at a very small cost. This rig is rigid and compact, total weight being 1150 pounds. It is built entirely of iron.

Mounted on skids, a wagon thill can be attached so that a horse can pull it to that part of the yard you wish it placed.

The iron table is fitted with gauges and can be raised and lowered. It is 26 by 36 inches, accurately planed. This rig carries a strong six horse power, water-hopper cooled, engine and will saw lumber 15 wide by 4 inches thick. The saw columns is cast iron, mounted on iron base with engine.

The engine runs four hundred and fifty revolutions per minute, driving twelve-inch saws with three and one half-inch



width of belt. The saw mandril is made with long projection on collar end, so that varying thickness of cutter or dado head may be used up to two inches. This machine will carry saws up to fourteen inches in diameter. The cut-off gauge is adjustable from square to miter in either direction.

The rig is furnished complete, with oil grease cups, the batteries, coal and switch, are wired and inclosed in saw column. Each rig is thoroughly tested and is ready to run when received.

Why Carey's Roofing Insures Right Results



THE Philip Carey Mfg. Company are the oldest and largest manufacturers in the United States of a uniform grade and quality of roofing. Because their organization covers this entire country and Canada; they are thoroughly equipped to handle any contract roofing work, and to apply the Carey Roof Standard to any class of buildings for Architects, Builders or Property Owners.

Carey's Roofing is finished and completed at the factory under their direct supervision.

Satisfaction is guaranteed on all contract work entrusted to their care.



means absolute uniformity. It is standard in manufacture, quality and weight—year in and year out—the world over.

Carey's Roofing has been on the market for over twenty years, and the original design and plan of construction and same uniform grade of materials have been strictly adhered to—because they have proved their superiority as a roofing construction.

The materials of the Carey Roof actually improve with age and exposure, and may be perpetuated to last the life of the building. The inner cement com-

ound retains its elasticity. The manufacturers have samples of Carey roofs that have given 15, 18 and 20 years of service that are as flexible—in as good condition—as when first applied.

The Patented Wide Lap (a special Carey feature) thoroughly protects the nail-heads and seam, and insures an absolutely water-tight and wind-proof joint.

A sample of Carey's Roofing and Carey's Roofing Book will be gladly sent on application. Detailed estimates and specific information on any point desired. Address

The Philip Carey Manufacturing Company

30 Wayne Avenue, Cincinnati, Ohio

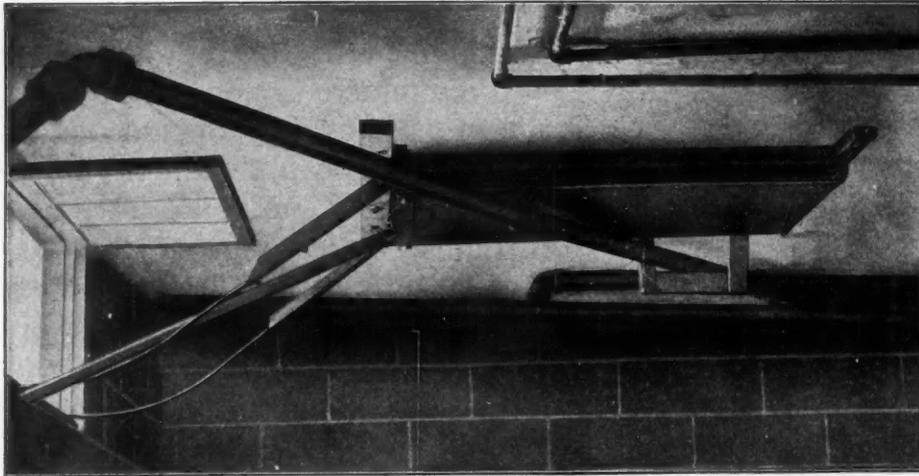
IFORTY-FIVE BRANCH OFFICES AND DISTRIBUTING POINTS:

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The Breese Bros. Co., Cincinnati, O.	" " " " Little Rock, Ark.	" " " " Rochester, N. Y.	Western Asbestos-Magnesia Co.,
The Col. Rug. & Supp. Co., Columbus, O.	" " " " Memphis, Tenn.	" " " " Scranton, Pa.	San Francisco, Cal.
The Philip Carey Co., Cleveland, Ohio	Warren & Bailey Mfg. Co., Los Angeles, Cal.	" " " " St. Louis, Mo.	Nott-Atwater Company, Spokane, Wash.
	W. S. Nott Company Minneapolis, Minn.		

received. The Inter-State Equipment and Engineering Company, whose ad. appears in this issue, will be pleased to send you their descriptive folder and quote you their attractive price.

The Coal Chute "Puzzle" Solved

Last month we published in these columns an illustration which proved to be quite a puzzle. A large number of our readers have already solved it correctly, and for their trouble have been sent copies of the valuable catalogue of the Taylor Coal Chute & Manufacturing Company, as offered.



The illustration here reproduced gives the proper explanation of the puzzle; the words to accompany it are, "In the Cellar Out of Sight." It shows the standard chute of the

Taylor Company when put away in the coal cellar. In this position it does not interfere with the window sash and takes up only 4½ inches space next to the ceiling. It is easily operated from the outside by means of the handle.

It is stated that the reason the Taylor steel folding coal chute came to be made was that the old wooden coal chute in the front yard of a fine residence always seemed very much out of place. The coal window with the frame battered and the base board above shattered and broken, is usually the most unsightly thing to be seen around a good residence.

In these modern times it was thought that such nuisances should be done away with. As a result, the Taylor steel folding coal chute was designed; and it fills the bill perfectly, with the house thoroughly protected and the chute out of sight.

Over four hundred chutes are now in use in Kewanee alone and not \$5.00 has been paid out for repairs in seven years. This proves their durability. Duplicates of orders prove the merits of the chute.

If you are interested write the Taylor Coal Chute & Manufacturing Company, Kewanee,

Ill., and they will send you their catalogue which tells you all about their product, showing the class of buildings in which it is installed and much information that will be of

Mastic Roofing Makes Many Customers

We regard **carpenters** as those who have the most right to **share our profits**. We argue that our interests are **mutual**.

The man who lays the roofing is held responsible for its worth. He ought to know which is the most reliable. His reputation is based upon his own work.

Contractors who use cheap roofing, when **Mastic**—a **good** roofing—costs so **little** more, are committing business suicide. Conscientious dealers use—and recommend—Mastic Roofing for **service**.

Then here's the proposition:

Under the MASTIC banner are hundreds of carpenters who **sell** Mastic Roofing.

They have found by **experience** that it's "the roofing that fulfills the claims." They are enthusiastic over Mastic because they, actually **know** "it delivers the goods."

Consequently they act as our **selling agents** with profit to themselves. They use Mastic Roofing in their daily work and are naturally the most competent to sell it.

We Co-operate with Carpenters, Builders and Contractors—especially

There is more territory open. Write for details.

We offer special inducements to contractors, carpenters and builders putting on the first Mastic roof in localities where it has not been introduced. Write for particulars, free sample and literature.

National Roofing Materials Co.

Edwardsville,

Illinois



THE ABOVE CUT IS AN EXACT REPRODUCTION OF A PIECE OF MASTIC ROOFING 2½X1½ INCHES AND SHOWS THE SIGHTLY SURFACE FINISH.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

60 Winter Days

Free Test at Our Risk and Cost

We Furnish Plans and Tools for Installing

As manufacturers, directly responsible to you for satisfactory results, we will send you a **Hess Steel Furnace** and complete heating outfit, including pipes, registers, fittings and everything needed, made to fit your measurements, with correct plans and instructions for installing, at **\$25 to \$100 less** than you can buy from others. We deliver the outfit at your station freight prepaid. You place the purchase price in the hands of your local banker, who will hold the money 60 days while you test the heater.

In case the test is not satisfactory in every way, you may return the goods at our expense and the banker will refund your money.

Don't Pay an Exorbitant Price for a Heating Outfit

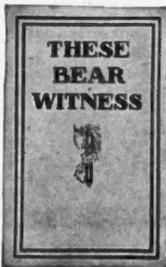
We Save You From \$25 to \$100 We have manufactured heating outfits for 36 years and can assure you that there is no necessity for paying the exorbitant prices demanded by others in order to have a modern, high-grade furnace and outfit installed in your building.

Send us a rough sketch of any building you wish to heat. Without any charge or obligation on your part, we will have our expert furnace draughtsmen prepare a plan which you can easily understand, showing the best way to heat your building, including every detail of the furnace, pipes, registers, etc., in their proper places, with the exact cost to you of the complete equipment. **No Charge for this.**

By following our simple, clear plans and directions any man handy with tools can easily install a Hess Furnace and outfit. We loan all the necessary tools, free.

Our free booklet, **"Modern Furnace Heating,"** clearly explains the principles of furnace heating. This booklet is so simply written anyone can easily understand the text, plans and illustrations it contains. It covers the entire heating proposition thoroughly and gives information of much value to the intending builder.

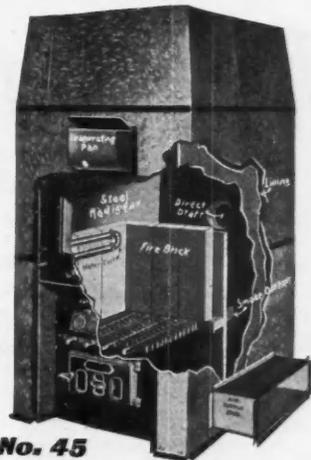
The booklet, **"These Bear Witness,"** gives the names and addresses of hundreds of people in every state and territory (many of them, perhaps, your neighbors) who have, and are using the Hess Steel Furnace and outfit, and to whom we refer as to the success of our heater and the advantages we offer to buyers.



Heats 7 or 8 Rooms Burns Any Fuel

Our Leader No. 45 is an economical furnace. It will heat seven or eight rooms, a small church, store, school or similar building.

Besides any kind of coal or wood, any other fuel, such as gas, coke, chips, twisted straw, corn cobs, etc., may be utilized in the Hess Furnace and money saved.



No. 45 "Leader" Steel Furnace
Price \$49 Pipes and Registers Extra

Delivered to any station east of Omaha and north of the Ohio river.

We Fill Rush Orders Promptly

We are prepared to fill rush orders promptly and can ship complete outfits within a few days after receipt of order.

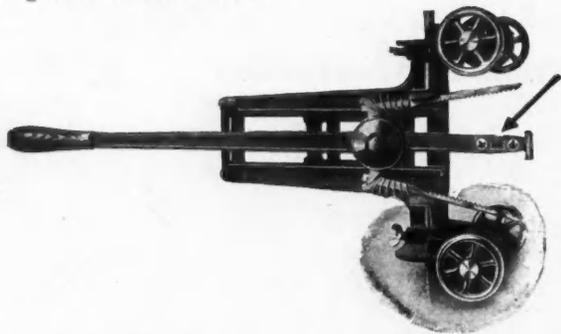
Send us a Rough Sketch of any Building you wish to Heat.
Our Plans, Estimate and Advice, Cost You Nothing, Whether You Buy of Us or Not

Hess Warming & Ventilating Co. 920 Tacoma Bdg. CHICAGO

benefit to you. The catalogue costs nothing and the coal chutes themselves can be bought very reasonably.

Miller's Lock Mortiser

"It's a peach." "It's a little beauty." "It has saved me \$65 in four weeks." "Wouldn't be without it for ten times its price." And so the buyers of the Miller Lock Mortiser keep reporting. They are men who appreciate what new labor-saving tools will do for them.



The Miller Lock Mortiser is a tool made on scientific principles to reduce the labor and time required in cutting an opening in a door for a lock. It cuts this opening in one-half minute. The whole operation of placing the tool in position, etc., and doing the actual cutting requires but three minutes. Anyone knows that this is saving considerable time. Besides this, a carpenter sometimes has an unusually thin door to cut the opening in. With a Miller mortiser he can make a cleaner job and without any danger of cracking or injuring the door.

The Albert W. Miller Manufacturing Company, Nevada building, Cincinnati, Ohio, have so much faith in their mor-

tiser that they offer to give every carpenter and contractor a chance to thoroughly examine and test it before buying. Their proposition gives the prospective buyer every chance of seeing just what he is getting before he pays a cent. The mortiser has been on the market for over four years, and there are many already in use by men who believe in getting the latest and best labor-saving tools as soon as possible. Circulars and prices on request.

"Sebco" Extension Drill

The Star Expansion Bolt Company, Cedar and Washington streets, New York City, has just introduced another live wire specialty. Their latest is a line of improved extension drill heads which can be used with any ordinary piece of gas or water pipe.

The four drill heads most frequently desired are the Nos. 2, 3, 4, 5, which drill holes 9/16, 11/16, 7/8 and 1 inch respectively. No. 2 requires a piece of 1/8-inch pipe for a handle. No. 3 requires a piece of 1/4-inch pipe. No. 4 a piece of 3/8-inch and No. 5 a piece of 1/2-inch. These four sizes come packed one each in a neat wooden box and comprise a set. It is decidedly worthy of note that seven entirely new sizes have been introduced in "Sebco" extension drill heads. In addition to the above four sizes, the following closely graduated range of sizes is made: 1/8, 1/4, 1 3/8, 1 1/2, 1 3/4, 2, 2 1/4, 2 3/4, 3, 3 1/4, 3 1/2, 3 3/4, and 4-inch.

Compare this list with the sizes you've been able to buy heretofore, and you'll notice a lot of important additions.

For all the larger sizes only three different sizes of pipe are required for handles. A piece of 3/4-inch pipe serves as a handle for either the 1 1/4, 1 3/8 or 1 1/2-inch drill heads. A piece of 1-inch pipe fits drill heads 1 3/4 to 3-inch, inclusive, and the 3 1/4, 3 1/2 and 4-inch drills all work equally well with a 1 1/4-inch pipe for a handle. This feature constitutes a

Hess Sanitary Bath Room Locker (Medicine Cabinet)

Something New For Your Home

Made of Solid, Smooth Steel Throughout, and Finished Inside and Out in Finest Everlasting Baked White Enamel—Snow White—with Adjustable Enamelled Steel Shelves, Nickel Plated Hinges and Handle.

Dust, Germ and Vermin Proof.

Better Than Wood and Costs No More



SEE THAT
LOCKER

No home is complete without a Hess Sanitary Bathroom Locker. It is suitable for the finest bath room. It is dust, germ and vermin proof and easily cleaned with warm water.

Style "A" Locker is made to recess into the wall and projects 1 1/4 inches from the face of wall. It has a beveled plate mirror 16x20 inches and measures 19 1/2x23 1/2 inches inside. Below the mirror is an open shelf 19 1/2x5 1/2 inches. Style "C" is the same size and finish; made **not to recess** into the wall, but to be suspended on the wall.

Price of Style "A" \$8.00

Price of Style "C" 9.00

Without Mirror deduct \$1.50. Without Open Shelf deduct \$1.00.

We will prepay freight charges anywhere east of Missouri and north of Ohio rivers on orders for two or more Lockers.

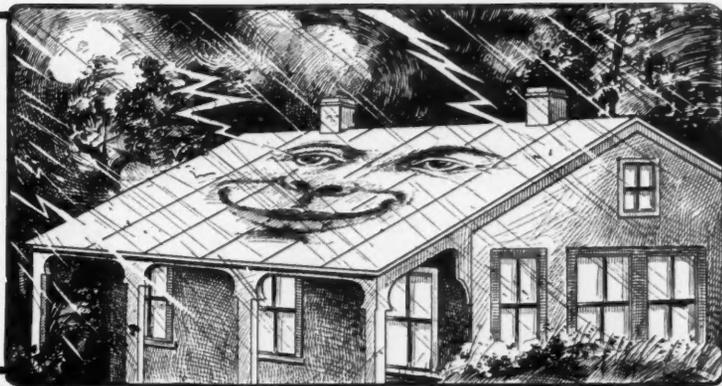
The same cabinets with a different arrangement inside, are used in office buildings, clubs and institutions for **Toilet Lockers**.

Send for Illustrated Circular Showing Several Sizes

We are makers of the Hess Steel Furnace. Important booklet, "Modern Furnace Heating" Sent Free.

Hess Warming & Ventilating Co. 820 L. Tacoma Bld. CHICAGO





THE ROOF THAT LAUGHS AT THE STORM

Ford's Roofs Are Special Roofs

It is no longer necessary for the progressive dealer to buy roofing from a half dozen manufacturers to meet the requirements of his trade—you can secure from the **Ford Line** any style and price of roofing your trade demands.

The **Ford Trade Mark** on a roll of roofing signifies quality—dependability. Forty years of reputation stands behind it.

The man who comes into your store to buy roofing, can't walk out without leaving his order, if you handle the **Ford Line**—whether he calls for a roof to cover a hen-house, his barn, his factory, or his mansion, he will find a "Special" roof to meet his requirements.

The Ford Line provides roofs for every building purpose. To appreciate this, you must see the samples.

Use the coupon and send it in today.

Ford Manufacturing Co.

2333 La Salle Street, CHICAGO

Ford M'fg. Co.
Chicago, U. S. A.

Please send samples of and full information about Ford's Special Roofs.

Name.....

Town.....

State.....

A. C. & B.—November, 1909

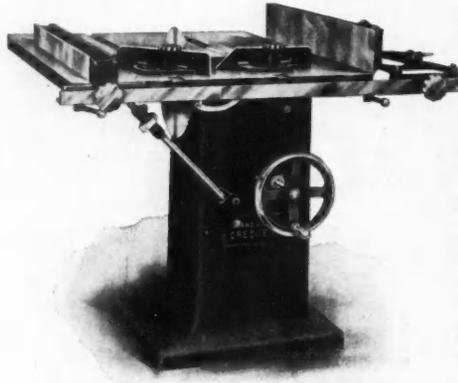


forward step in the manufacture of "extension drill heads." In the past, each separate size of drill head required a different size pipe for a handle.

The enviable reputation which the Star people have already established for their standard line of Star expansion bolts and Star screw anchors is sufficient of a guarantee that there is good stuff in "Sebcó" drills.

Variety Saw Bench

This saw bench of the Crescent Machine Works is built to supply the popular demand for a strong, convenient bench for all-around service. It is said to be stronger, better, heavier made and has more improvements than any other saw bench on the market selling at the price.



The base is stronger, larger and heavier than is customary. The yoke ways are cast solid with it. The floor bearing is extremely large, giving

substantial support. It does not interfere with the operator's feet.

The yoke is extremely large and free from vibration. It travels in an arc concentric with the counter-shaft. The

arbor belt is always at the same tension regardless of the position of the saw. No stronger and neater construction, giving a tight belt at all times, is found in any saw bench. The yoke has a bearing on each side of the base 20 inches in length. It is raised and lowered by a spiral gear and rack operated by the large hand wheel on the front of the machine. The yoke remains locked in any position.

The arbor is made of 1 3/8-inch ground crucible steel. The pulley is 4 1/2 by 5 1/2 inches, turned inside and outside and grooved. Provision is made for taking up end play. The arbor is left sufficiently long to permit the use of a boring attachment. The bearings are 6 inches in length, lined with genuine babbitt, hand scraped and self-oiling from ample reservoirs. When specified the threaded end of arbor is left long enough to accommodate 2-inch dado heads.

The table is 38 by 48 inches in size. It is extremely well ribbed to insure a true surface. It has double ribs around the sides to permit the use of clamps. The table tilts to 45 degrees on heavy, durable semi-machined hinges. The degree of tilt is registered by a graduated segment and pointer. The table is quickly tilted and rigidly clamped in any position. The angle required is accurately obtained by use of the micrometer attachment. The method is quicker than the long screw and nut employed in other saw benches. As will be noticed, the table does not raise and lower as on other saw benches. This insures a solid table at all times.

The gauges are four in number, two cut-off gauges, one plain ripping gauge and one tilting ripping gauge. The tilting ripping gauge can be used on either side of the saw. This superior ripping gauge is not furnished on other makes of saw benches.

The regular countershaft, made of 1 3/4-inch shafting with heavy hangers and 6-inch self-oiling bearings, is furnished

CARPENTERS AND BUILDERS

Looking for the Latest and Best Methods of Approved Construction should be informed on

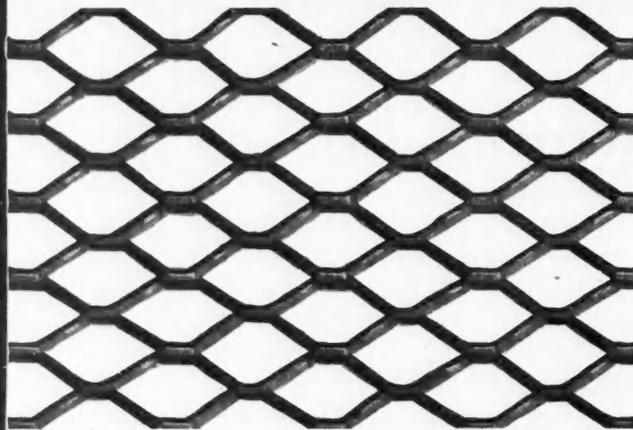
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930-950 Old Colony Bldg.

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The Perfection of Metal Lath

BEST for OVERCOATING

Best for all Plastering—

PERFECT KEY

STIFFEST—EASIEST TO HANDLE

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Largest and Newest of All Plan Books

280 Pages -- 250 Designs

"Radford's Artistic Homes" is an absolutely brand-new book, illustrating the newest and most up-to-date designs in modern homes. This is the largest single book of house designs ever published, consisting of 280 pages and showing 250 designs of houses, together with complete plans, and giving the arrangement and dimensions of all rooms.

Homes to Suit Any and Every Taste

There is a wide diversity of design shown in the houses. This is done because the taste in home architecture is as wide as that in any other field. There are houses for people of moderate means and there are others for the more wealthy, but in every case the design is made with reference to comfort and economy.

Homes Designed by the Best Architects

Every design shown has been made by the best architects in the world, who have made a study of home architecture and that alone. This volume has received the benefit of the most careful attention. In a word, the designs are the best that could be secured.

Marvelous Advance in Home Architecture

One will wonder, in glancing over the beautiful structures shown in this book, at the marvelous advance in home architecture in recent years. Yet it has been a development slow and sure, keeping pace with the advancement of the race along all lines.

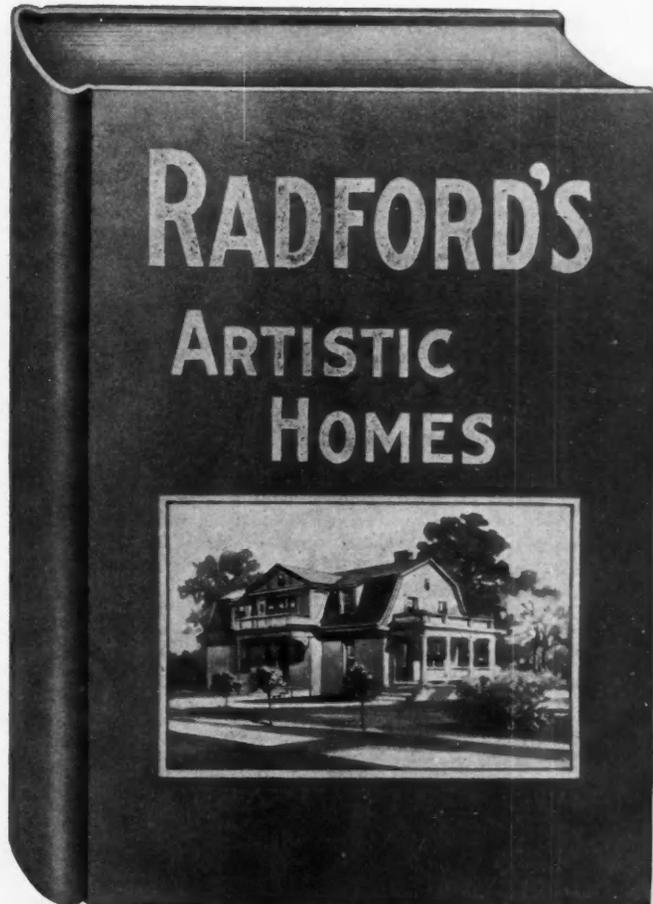
Homes Planned for Comfort and Convenience

Every design shown has been made with reference to comfort, convenience and economy in materials. Every house is planned from the inside and not from the outside; that is to say, the convenience of arrangement has been the first consideration.

Accurate and Economical Plans

Every design in this book is drawn with a faithful regard for mathematical accuracy, and there is no error to bother the builder.

There are designs here that will be found adapted to any community, for the dweller in rural hamlets, small towns or in cities. In house building, as well as in all other things in which men engage, the purpose should be improvement and betterment.



How to Obtain This Book **FREE** Our Great Special Offer

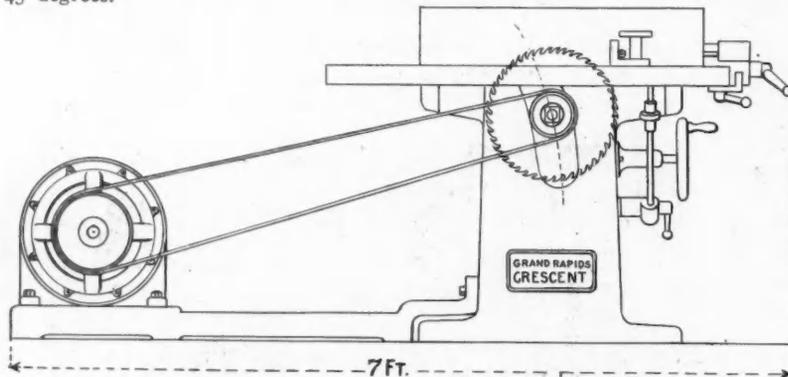
The AMERICAN CARPENTER AND BUILDER will **give** a copy of this valuable book, "RADFORD'S ARTISTIC HOMES," **absolutely free, postage prepaid**, to all new and old subscribers whose subscriptions or renewals are received before Dec. 1, 1909. In all cases cash in full to cover one year's subscription to the AMERICAN CARPENTER AND BUILDER (\$2.00) must accompany the order. All renewals will be credited from the date present subscriptions expire. Address

American Carpenter and Builder

185 JACKSON BOULEVARD
CHICAGO

with this machine. The loose pulley is self-oiling. Belt shifter attachments provided. Size of tight and loose pulleys is 10 by 6 inches; size of driving pulley, 16 by 6 inches. Speed of countershaft, 500.

Range: Cutting off, 18 inches wide; ripping, 24 inches wide and 13 inches thick; beveling and mitering from 0 to 45 degrees.



The yoke travels in an arc, keeping the belt always tight

Equipment: One 16-inch rip saw, one 16-inch cut-off saw, two cut-off gauges, one plain ripping gauge, one tilting ripping gauge throat piece, countershaft, self-oiling loose pulley, wrenches, etc.

Weight, 1,000 pounds; crated weight, 1,100 pounds; boxed weight, 1,250 pounds. Cubic contents, 56 feet.

For further information concerning this new type "D" variety saw bench address Crescent Machine Works, manufacturers of patented and improved wood-working machinery, Grand Rapids, Mich., U. S. A.

Will Appoint Selling Agents

Rather a novel proposition is being offered by the National Roofing Materials Company, of Edwardsville, Illinois, to carpenters, builders, and contractors generally. Arguing that the men who use prepared roofing are the ones most competent to recommend it to others, they are appointing carpenters as their selling agents for Mastic roofing.

The sales departments of roofing manufacturers have hitherto not taken carpenters into their calculations as being likely men to sell roofing. Their efforts have been directed chiefly towards the building material dealers who carry large stocks of prepared roofing and are generally supposed to induce the contractor and consumer to purchase whatever they may recommend.

That this method has faults is easily discernible. Dealers are naturally in business to make money and are only acting upon principles when they push the goods that pay the most profit. Cheap, inferior roof-

ings are often sold to unsuspecting carpenters as being of good quality and upon him falls the blame when the goods are not satisfactory. It's the carpenter—not the dealer—who suffers in reputation.

The National Roofing Materials Company, therefore offer to make carpenters their local selling agents, knowing that they will put their best efforts into a proposition that is good without question. Large numbers of builders and contractors have entered into the spirit of the thing and are enthusiastic over its success. We understand there are many localities



The New Carborundum Sharpening Stone for Carpenters

It's a combination stone and IT IS ROUND

Its shape and size allow for the rotary motion required in sharpening chisels, planer iron, etc.

With the ordinary rectangular stone a square inch or two is used and the rest scarcely ever touched—

With the round stone all of the cutting surface—twelve inches—enough for the largest tools—is brought into play and there is no unused surface.

Besides, it has the fast, keen edge producing Carborundum qualities.



QUARTERED OAK BOX HOLDER FIFTY CENTS.

PRICE ONE DOLLAR

ASK YOUR DEALER, OR SEND DIRECT TO

THE CARBORUNDUM COMPANY

NIAGARA FALLS, N. Y.

Peerless Plaster Board

2 1/4 Cents per Square Foot for the Best Grade of Plaster Board

Peerless Plaster Board is Superior to All Other Kinds of Plaster Board Now on the Market and Excels the Kinds That Are Now Being Sold for 4 to 5 Cents per Square Foot

Peerless Plaster Board, the Best and Cheapest Substitute for Lath and Plaster. Peerless Plaster Board will not buckle or show ridges after being laid. It is the cleanest kind of material that can be used for covering a wall or ceiling. By using Peerless Plaster Board you do away with all the muss and dirt of sand, hair, water, etc., that are used for making plaster. It can be laid in less than one-quarter of the time and does not require skilled labor to lay it; anyone handy with a hammer can tack it on and make a first class job.

Avoid Dampness by Using Peerless Plaster Board. Common plaster contains a big percentage of water, water causes moisture, and moisture spreads and is absorbed by the woodwork, causing it to crack and check at a later date. Peerless Plaster Board is perfectly dry and comes to you in long sheets, 32 inches wide, just wide enough to span every third studding.

Peerless Plaster Board Does Not Crack Like Common Plaster. All buildings sooner or later are sure to settle; the settling of a building is sure to cause cracks and crevices in the plaster, making an unsightly wall and permitting dampness and cold air to penetrate. This is entirely overcome by using Peerless Plaster Board.

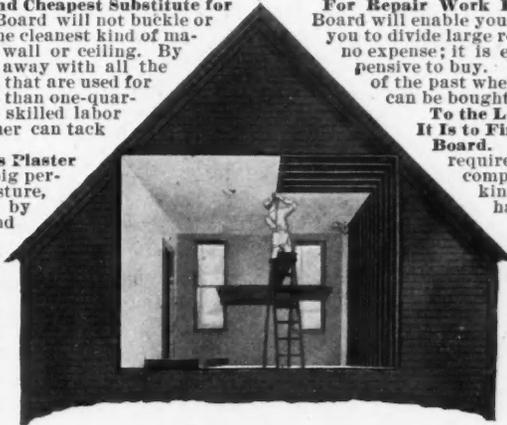
Anyone Can Lay It. Peerless Plaster Board is the finest substitute for lath on the market. In many respects it is superior to lath and plaster. It is vermin proof, dampproof and will retain heat longer and exclude cold better than any other kind of plaster board made.

For Repair Work It Cannot Be Beat. Peerless Plaster Board will enable you to finish off your garret; it will enable you to divide large rooms into smaller rooms with little or no expense; it is easy to lay, easy to handle and inexpensive to buy. Unfinished walls should be something of the past when the very best grade of plaster board can be bought for 2 1/4 cents per square foot.

To the Left We Illustrate How Simple and Easy It Is to Finish Off a Room with Peerless Plaster Board. Simply order in the lengths that you require, nail it on your walls and your job is complete; no plasterers and no muss of any kind to contend with, and the room is habitable as soon as the last piece is laid.

There Is No House Too Fine and No House Too Cheap for Peerless Plaster Board. It can be used in the highest class residences, medium or low priced houses; in fact, it is so low in price that one could well afford to line any kind of a building, store, office, warehouse, and even barns and chicken coops, because the expense is very low compared with the cost of lath and plaster.

Peerless Plaster Board can be finished by papering, tinting, etc., in practically the same manner and at the same low cost as common plaster.



WHAT IT IS MADE OF

The smaller illustration below shows a sheet of Peerless Plaster Board in readiness to place on the wall, showing the three plies of heavy compressed fiber board with the two layers of best grade of asphalt. The various plies of the fiber board are cemented together under hydraulic pressure, forming one solid piece. This method of manufacture makes a most satisfactory wall covering. It will not warp, will not check; in fact, the three heavy pieces of fiber board cemented together in the manner outlined make it stronger and much warmer than if made of solid wood or porous plaster, yet it is light in weight and is so prepared that it will readily take whitewash, kalsomine, wall paper or any other kind of finish.

SHEETS ARE 32 INCHES WIDE

Just the proper width to span every third studding. SOLD IN FROM 8 TO 12-FOOT LENGTHS



2 1/4 cents per square foot in lots of 500 square feet or more.
2 1/2 cents per square foot in lots of less than 500 square feet.

This illustration gives a sectional view showing how the three plies of heavy fiber board are formed into one solid piece by being cemented together with two layers of refined asphalt under hydraulic pressure.

Sample Free

If you are in doubt about the quality of Peerless Plaster Board write for free sample, which will be sent you immediately upon request, free of charge, postage prepaid.

We illustrate below a dining room finished with Peerless Plaster Board. The dining room shows Peerless Plaster Board tinted and frescoed with panel ceiling decorated to match.



For Anything or Everything Else in Building Material

JUST ONE LOOK INSIDE THIS CATALOG will convince you beyond a doubt that we can save you nearly one-half on everything in the building line. This beautiful Building Materials and Mill Work Catalog, by far the best catalog of its kind ever published, will be sent you free, postage prepaid, for the asking.

THIS NEW 1910 BUILDING MATERIALS AND MILL WORK CATALOG is so much more complete and is so brimful of new suggestions and ideas that anyone thinking of building, every carpenter, every contractor, in fact anyone interested in the building trade, should have a copy of this book, because it quotes the very lowest prices and is by far the best and most complete book of its kind in print.

BEAUTIFULLY ILLUSTRATED IN COLORS. Many of the items are most beautifully reproduced in colors. Fancy doors are reproduced in colors, showing the beautiful and harmonious effects produced by art glass making. Interior views reproduced in colors, also a full line of art glass chandeliers and gas fixtures, all of which are handsomely reproduced in exactly the same colors in which the goods are furnished.

Send for Our Big 1910 Catalog of Building Materials and Mill Work, Containing a Full and Complete Line of the Following, the Highest Grades of Material Absolutely Guaranteed:

- Veneered Front Doors
- Pine Sash Doors
- Painted and Grained Doors
- Panel Doors
- Everything in Windows and Sash
- Glass (Leaded and Plain)
- Window and Door Frames
- Moldings of Every Description
- Hard and Soft Wood Flooring
- Porch Material



Over 900 Kinds and Sizes of Doors, 960 Kinds and Sizes of Windows and Sash

- Outside Trimmings
- Stairwork
- Arch Grilles
- Siding and Ceiling
- Steel Roofing
- Asphalt Roofing
- Building Paper
- Eaves Troughs and Pipe
- Wall Board
- Sheet Steel
- Tin Shingles
- Roofing Preservative
- Ridge Cap, etc.
- Chandeliers, Gas Fixtures

MANY NEW LINES ADDED in our Building Materials and Mill Work Catalog. This catalog shows a big line of 1910 designs of Craftsman and Mission Doors, with a complete line of trim to match, and many other items that are strictly up to the minute.

WE SAVE YOU FROM 33 TO 50 PER CENT on all orders of mill work or building material. You can buy a door for 75 cents equal to the average \$2.00 door; a two-light check rail window for \$1.01, size, 24x28; quarter round molding which usually sells at from 50 cents to \$1.00 per 100 lineal feet, we sell at 24 cents per 100 lineal feet, and then remember that everything listed in this catalog is guaranteed to be exactly as we represent it. Your money and freight charges back if you are in any way dissatisfied.

DON'T DELAY, but write for this catalog at once. Simply say, "Mail me your 1910 Building Materials and Mill Work Catalog No. 69C19," and it will be sent free.

Sears, Roebuck and Co., Chicago

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

needing local selling agents and readers of this paper are advised to send particulars. The current advertisement this company offer on another page contains an interesting announcement of special inducements that are offered to carpenters putting on the first Mastic roof in their locality.

Victory for Milwaukee Corrugating Co.

Chicago, Ill., Oct. 8.—In a suit of Ferdinand Dieckmann vs. Milwaukee Corrugating Company, for infringement of patent No. 540584, for "sheet metal elbow and process of making same," of June 4, 1895, on final hearing January 6, 1908, Circuit Judge Seaman ordered the bill dismissed for want of equity. This decision was appealed to the United States Circuit Court of Appeals for the Seventh circuit, which affirmed the decision made by the United States Circuit Court, Eastern district of Wisconsin.

The officers of the Milwaukee Corrugating Company are Louis Kuehn, president, and August J. Luedke, secretary, with offices at 76 South Bay street.

"Their Misfortune Your Opportunity"

Under the above title the Washington and Choctaw Land Company, Times building, St. Louis, Mo., are explaining in an interesting little booklet the facts concerning Alabama railroad lands now being offered for sale to investors and settlers.

It appears that it has been an unfortunate thing for the south, and especially Alabama, that so much of her beautiful lands have been tied up under timber leases for so many years. More than anything else has this very cause retarded the development of that resourceful state.

"At the same time," we read, "it is an ill wind that blows nobody good, and the very fact of this retarded development has made it possible to purchase at this late day and age

some of the very best and most productive farm lands in this country at \$17.50 per acre.

"This price seems all the more incredible when lands such as the Washington and Choctaw reservation are the ones offered, because here conditions of market and transportation, together with elevation, climate and ample natural rainfall are added to the opportunities of the soil.

"The Washington and Choctaw lands, now opened for settlement for the first time, have been tied up with timber leases for many years. No one could buy the land until a few weeks ago when the ownership changed.

"Naturally, there will be a big rush to take up these farms, and as there is less than 100,000 acres, over half of which is within one and one-half miles of railway, it will not nearly go around. Like every other good chance in this world, a few far-seeing investors and settlers who are quick will get the property.

"Some of them will move upon the land, erect homes, cultivate the soil, and grow rich in a few years.

"Others will buy as an investment or speculation and resell again in a year or so at tremendous profit.

"Be among the progressive element and you will profit exceedingly as either a settler or investor.

"It is only a few years ago that Illinois lands were offered at a few dollars per acre; your father well remembers it.

"Now it is worth \$250 an acre.

"And Illinois land is only one-crop-a-year land. This land of ours is capable of from two to five crops a year.

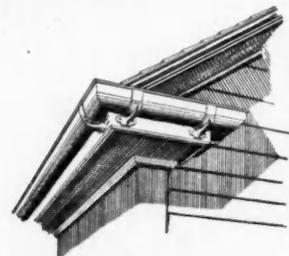
"Population increased slowly those times; now it is increasing at the rate of twenty persons a minute. Just think of it! Where must land soar to?

"It is predicted that this W. and C. land, with its superior railroad facilities, its nearness to markets, its healthy climate and its productive soil, must quickly advance to \$300 an

Cast Iron Gutters Last



Easily put up. Once up, always up. Do not bend or break by pressure of ladder against them. Will stand greater weight of snow or accumulation of ice than any other gutter. Not affected by acid fumes that in some vicinities play hob with all other metal gutters. They are adaptable to any kind of building or type of construction. Cast with moulded face to form part of cornice, or rounded to serve as a hanging gutter. Used almost exclusively in England and all over Europe. Supplied in 6 feet lengths. Joints fitted ready to erect. No soldering required. Send at once for circular and prices.



HITCHINGS @ COMPANY, Elizabeth, N. J.

THE WINTHROP SOLID TAPERED ASPHALT SHINGLES

ARE OF A COOL, GRAY SLATE COLOR

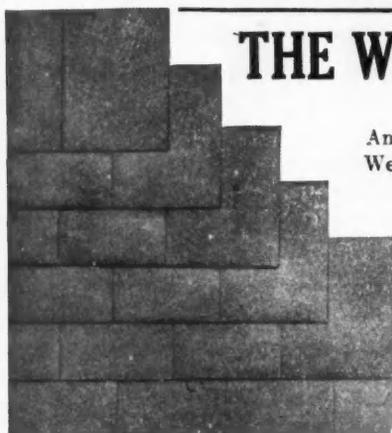
And have all the Durability of Asphalt—the Fine Appearance of Slate and the Light Weight and Low Cost of Wood Shingles. Laid with regular Shingle Nails, the same as Wood Shingles. **NEVER REQUIRE PAINTING.**

Write for Free Booklet and

**SPECIAL INDUCEMENTS TO THOSE WHO APPLY
FIRST ROOF IN EACH TOWN**

Winthrop Asphalt Shingles are Fire-resisting, Weather-proof, Wind- and Sun-proof, and never Crack, Break or Fall Off.

**WINTHROP ASPHALT SHINGLE CO. 1101 The Temple
CHICAGO, ILL.**





Asbestos "Century" Shingle Roof
 Universalist Church and Parsonage, Waltham, Mass. E.
 W. P. Leavitt Sons Co., Newton, Mass., Contractors

Asbestos "Century" Shingles

"The Roof that Outlives the Building"

Who gets the blame when a house-owner's roof rusts, or rots, or cracks, or needs painting, or does anything that annoys him, or costs him money?

The owner forgets his insistence on "saving"—and comes back on the architect or builder who let him buy such a roof.

Asbestos "Century" Shingles preserve good feeling all around. Their first cost is no higher than any other roofing regarded as first class, and there is no cost of upkeep—no painting or repairs. They cannot decay. They are proof against fire.

Asbestos "Century" Shingles are dense and elastic shingle-like sheets of asbestos-fibre cement. Made in three colors—Newport Gray (silver gray), Slate (blue black), and Indian Red, in numerous shapes and several sizes. Ask your Roofer for new quotations. Write for Booklet "Roofing 1909."

The KEASBEY & MATTISON COMPANY, Factors, Ambler, Pennsylvania

BIG ORDERS—BUSY MEN

Our very biggest orders come from the very busiest men. They haven't the time to waste with cheap ready roofings of questionable quality. They roof with

GAL-VA-NITE

because they know then that the owner will be satisfied. They use this famous "mica-plated--triple asphalt-coated" ready roofing because they know that it is easiest to put and the best to depend on.

Don't risk your reputation by using a poor roofing. GAL-VA-NITE will stand up under the most adverse climatic conditions.

We want every good live contractor, carpenter and builder in the country to know GAL-VAN-ITE.

The manufacturers

Union Roofing & Mfg. Co.

1109 E. 7th Street, St. Paul, Minnesota



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The Pump That Pumps
 SPRAY PUMPS
 Double-acting, Lift, Tank and Spray
MYERS PUMPS
 Store Ladders Etc.
 Hay Tools of all kinds
 Write for circulars and prices.

Myers Stayon Flexible Door Hangers
 with steel roller bearings, easy to push and to pull, cannot be thrown off the track—hence its name—"Stayon." Write for descriptive circular and prices. Exclusive agency given to right party who will buy in quantity.
F. E. MYERS & BRO.
 Ashland, Ohio.

Noiseless Cushion Tire
LADDERS

DUMB WAITERS AND HAND ELEVATORS
 OF THE MOST IMPROVED AUTOMATIC CONSTRUCTION

INVALID LIFTS
 TRUNK, CARRIAGE, SIDEWALK AND FREIGHT ELEVATORS

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CATALOGS AND ESTIMATES FURNISHED
 SEE SWEET'S INDEX

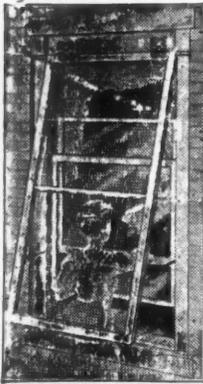
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acre—and then up and up. "And you get this land now for \$17.50 an acre."

The Washington and Choctaw Land Company, Times building, St. Louis, Mo., will gladly send full information concerning this opportunity to all interested parties.

Gossett Hinge vs. The Housefly

"Hitherto the fly has been regarded complacently as a harmless nuisance, and considered to be an annoying creature with great persistence and excessive familiarity. Regarded in the light of recent knowledge, the fly is more dangerous than the tiger or the cobra. Worse than that, he is, at least in our climate, much more to be feared than the mosquito, and may easily be classed the world over, as the most dangerous animal on earth."



Scientific investigation has demonstrated that twenty-five to thirty thousand deaths in this country each year are directly traceable to the common house fly.

The fly spreads diseases of a distinctly dangerous nature—typhoid fever, dysentery, tuberculosis, all the children's diseases, and practically all of the com-

plaints from which people most do suffer in the summer months.

On its fuzzy, hairy little legs and body it can carry millions of bacteria. It does not infect by its bite. It merely trails through the filth that it loves. Then it strews the gathered bacilli on our food, on the baby's face, or wherever it happens to light.

Public health officers are urging the adoption of unusual precautions for cleanliness. All possible breeding places of the pest should be destroyed.

Flies travel long distances. In self-defence every householder should screen the doors and windows to keep the flies from entering and infecting the food, milk and water.

Screens which cover only the lower part of the windows will not keep out all the flies. If the windows are lowered from the top or raised part way from the bottom, half screens leave openings through which the flies enter.

Entire screens are the only real protection. Outside screens cover the entire window. Then only can the windows be raised or lowered to permit a free circulation of air, without the slightest danger or annoyance from flies or mosquitoes.

Entire screens also protect the window from hail.

These screens are inexpensive, and can be made by any carpenter or planing mill.

But there is a wrong way to attach full length screens. Screens attached with common hinges, turn buttons or screws,

EVERY DEMAND

that possibly could be made of a galvanized sheet is best met in our



APOLLO BEST BLOOM Galvanized Sheets

"A product without a peer"

These sheets will always be found durable, uniform, easy to work—and in every way a superior product. Sold by important jobbers everywhere. Our Apollo Weight Card giving sizes, weights and gauges will be sent free upon request.

AMERICAN SHEET AND TIN PLATE COMPANY

FRICK BUILDING



PITTSBURGH, PA.

GENUINE BANGOR

Roofing Slate
Structural Slate
Blackboards

Large Facilities, Prompt Deliveries

EAST BANGOR CONSOLIDATED SLATE CO.

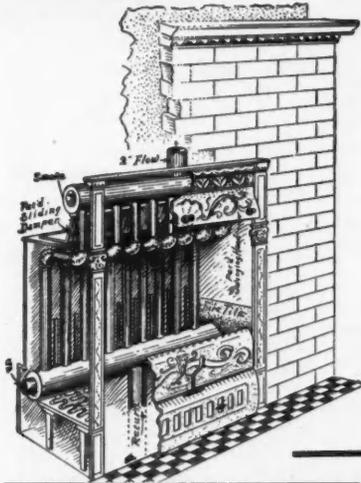
East Bangor, Pa.



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.

BIG MONEY FOR LIVE AGENTS.
 We want a live, wideawake hustler to represent us in every community. Exclusive territory given. A well organized "Sales System" aids the agent in his work. Write today for large illustrated catalogue and further particulars.

THE STANDARD-GILLETT LIGHT COMPANY, 6 West Michigan Street, CHICAGO, ILL.



Mantels of Wood, Brick or Tile

furnished direct from factory at attractive prices, freight paid

TILE and GRATES of every description

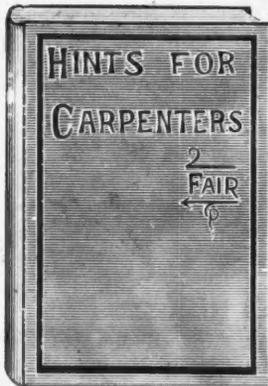
Our No. 51 Grate is guaranteed to heat from 8,000 to 10,000 cubic feet of space in zero weather.

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.



HINTS FOR CARPENTERS

A BRAND new book, containing a collection of useful practical hints, ideas, shop notes, and suggestions, giving directions for making various tools and appliances that will enable the carpenter and joiner to do more and better work in less time.

Compiled by **ALBERT FAIR**

The book contains 144 large (5x7-inch) pages, illustrated by 100 engravings in the text, finely printed on ivory-finish paper and handsomely bound in green art canvas. You run no risk in ordering this book, as we will cheerfully refund your money if you are not pleased.

PRICE ONLY 50 CENTS POSTPAID

THE object of this book is to bring together in a convenient form some of the best schemes contributed by various practical men, not a mere one-man or one-idea book, but the ideas of various bright carpenters, all carefully verified and edited by a well-known writer on carpentry subjects.

One of the most useful books of shop notes ever gotten out. Get a copy and start anywhere, and you will get some good useful ideas to apply to your daily work.

Many rules and recipes for carpenters are given; among them, how to make tools, keeping tools from rusting, filing saws, planing, oil stones, scrapers, levels, bench stops, 10 designs of tool boxes, nails, screws, glue pots, scaffold brackets, fitting doors, door holders, door checks, floors, fire proof wood, removing dents, cement for wood, polishing wood, shelves, flour bins, truck, siding hints, roof framing hints, spacing balusters, transoms, saving windows, removing putty, looking into dark places, removing splinters, ropes, and many other hints and schemes that will lessen the work of the carpenter and joiner, etc., etc.

Industrial Book Co., 178 Fulton St., New York

are not easily put in place or taken off. A ladder and tools must be used. This work must be done every time the windows are washed as well as in the spring and fall.

On the other hand full length screens hung with Gossett hinges can be put in place and taken off in a jiffy. Simply swing the screens out and unhook them at the top. No ladder or tools are needed even on upper stories. Yet they are always perfectly secure.

When fly time comes the screens are simply hooked into place. When it is over they are unhooked and removed just as easily. Any one can do this.

The screens last longer, for they will not be exposed to the weather after their season is past.

A "Gossett hinge" consists of two separate pieces. One part is attached to the screen and the other to the window casing. Two hinges like the illustration constitute a set or pair.

When once they are screwed into place it is never necessary to remove them. There are no loose pins or other parts to rust tight, or to be lost or misplaced.

The side flanges on the upper halves guide the lower parts into place. This feature is patented.

The hinges are made of stamped steel, amply strong. They never break. Every part is japanned, even the screws. The japan is baked on, so they will not rust.

Some have been in use for nine years, and are still as good as new.

The housewife's convenience is best served by this arrangement. When the windows are to be washed, the screens can be swung out instantly, or they can be removed, whichever is most convenient.

They can be instantly swung out to brush off flies (the only easy way to get them out). It is seldom necessary to do this, however, with full length screens, for no flies can

enter through the windows. They must come through the doors.

The remarkable popularity of Gossett hinges proves their excellence. In 1900 only 400 dozen pairs were used. The sales increased by leaps and bounds so that in '08 32,000 dozen pairs were sold. Sales during the first five months of 1909 exceeded the entire sales for the year before.

The price is no more than for ordinary hinges, and only a little more than for turn-buttons and screws. The time they save in a single season is worth much more than they cost. They can be put on screens which are now attached with other fittings.

Gossett hinges may be obtained from dealers in hardware and building materials, or direct from the factory. Samples for actual trial will be sent on request. Address F. D. Kees Manufacturing Company, Box 523, Beatrice, Neb.

A Permanent, Dependable Roof

The factory of the Montross Metal Shingle Company, Camden, N. J., is working day and night to fill the increased amount of business recently secured for their metal shingles. A large order for 1,000 squares was received from a prominent contractor and builder of Oregon, to be used on some public buildings being erected in that state. A large Philadelphia firm ordered three carloads. Numerous orders are being received from persons all over the country, who are erecting houses, barns and other buildings, and who recognize the superior value of Montross metal shingles over all other kinds of roofing.

Montross metal shingles are fire, lightning and stormproof; light, attractive and inexpensive. With proper care they will last the life of the building. They are very easily laid with hammer and nails, and have a special locking device which prevents them from rattling, besides making them give much better service. No soldering is needed. They make a very

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How**

**You Can Put Every Cent of the Dealer's
Profit Into Your Own Pocket**

You can save not only the dealer's profits but his excessive charges for installation and repairs.
You can deal direct with the manufacturers.

The Jahant Down-Draft Furnace

Only Ten Dollars Down and Ten Dollars a Month With
Freight Prepaid East of the Mississippi River.

This wonderful furnace has proven its superiority over others during the last **thirty years**. It is without a doubt the best heating system ever devised.

It saves from one-third to one-half in fuel bills, because the patented down-draft burns hard or soft coal, wood or lignite, without cinders or clinkers, giving the full heating value of every particle of fuel.

THE JAHANT DOWN-DRAFT FURNACE

is scientifically correct. Every part is cast of the best New Gray Pig Iron; no sheet steel is used; the fire pot will last a lifetime; **cracking is impossible**.

A strong "Guaranty Bond" goes with every JAHANT, which allows a **three hundred and sixty day free use of the furnace**.

You run no risk, as we supply special plans, full instructions and give free, all necessary tools, so that any man who can drive a nail can successfully install a JAHANT.

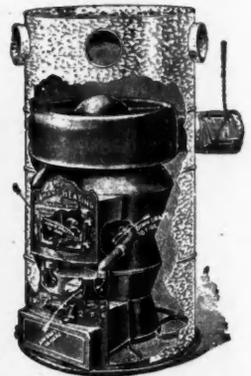
Let us tell you something about the conveniences and good points of our furnace, its economy, its healthfulness and how you can save money.

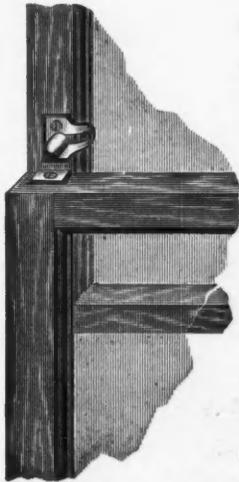
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"Building furnaces for thirty years".

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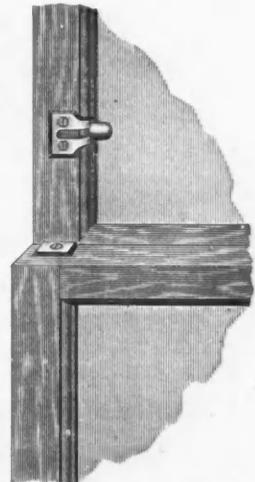
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A safeguard for ventilating rooms, allowing windows to be left open at the top, the bottom, or both top and bottom with entire security against intrusion, a permanent fixture easily applied and quickly operated, affording three times more protection to the window than the ordinary sash fastener.

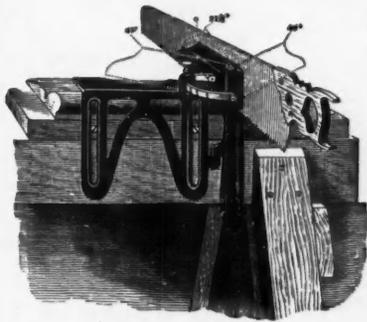
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The *only* Mitre Box.

Made so that it is attachable to inside or outside work without a special attachment.

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Pioneer Roofing has stood the test of time—since 1888. Beginning in a small way, the Company manufactured ready roofings and sold them locally. The business extended, until today Pioneer "Rubber Sanded" and Pioneer "Rubber Flaxine" Roofings cover the coast—from Mexico City to Alaska, and are rapidly gaining headway east of the Rocky Mountains.

Write for Booklet "A"—samples of Roofing—and name of your nearest agent.

REFINERS OF ASPHALT

The Pioneer Roll Paper Company are refiners of Asphalt, and manufacturers of Asphalt Paint—which they supply direct from their factory in Los Angeles.

California Agents for Northwestern Compo-Board Company.

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Dept. 21 Los Angeles, California

Storm Sash and Screen Hanger No. 1



The time is drawing near at hand when carpenters and builders begin putting up storm sash and it might be well to say that the **best and most convenient** goods are always the cheapest in the end.

We make the only Ball and Socket Hangers on the market. One trial will convince you that they are the best.

Our No. 1 Fastener is made of the best steel wire. It holds the Sash firmly against the bling stop and prevents rattling.

MANUFACTURED BY THE
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SHEBOYGAN, WIS.

Storm Sash and Screen Hanger No. 2

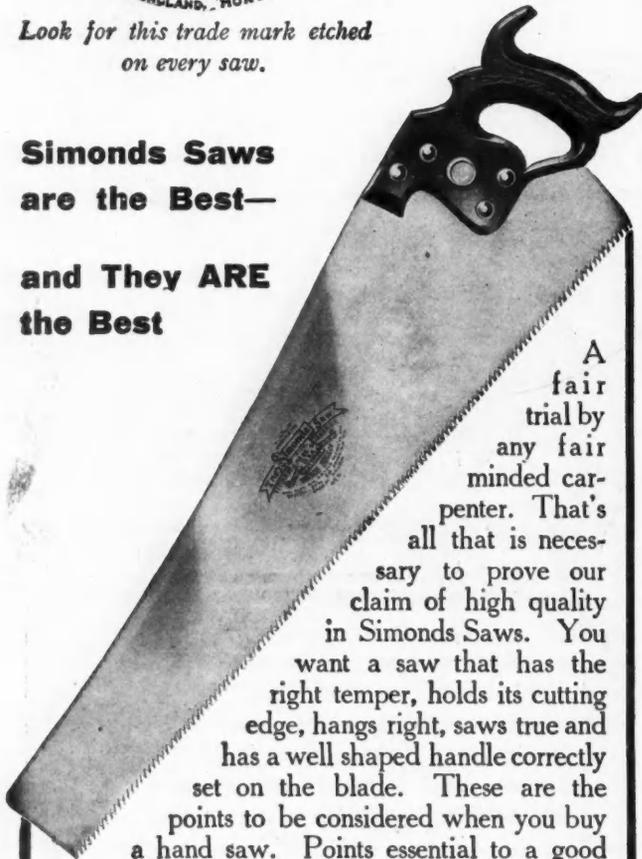




Look for this trade mark etched on every saw.

Simonds Saws are the Best—

and They ARE the Best



A fair trial by any fair minded carpenter. That's all that is necessary to prove our claim of high quality in Simonds Saws. You want a saw that has the right temper, holds its cutting edge, hangs right, saws true and has a well shaped handle correctly set on the blade. These are the points to be considered when you buy a hand saw. Points essential to a good saw. Points that will be found in Simonds Saws.

Made of Simonds Steel

Simonds Steel is made in a Simonds Steel mill exclusively for saws. We make any size or point, straight or skew back, hand, panel, or rip saw also compass keyhole and back saws. Tell us what saw you want and we will send address of Hardware Dealer near you handling Simonds Saws and will also send you a free copy of Simonds Carpenter Guide.

SIMONDS MFG. CO.
FITCHBURG, MASS.

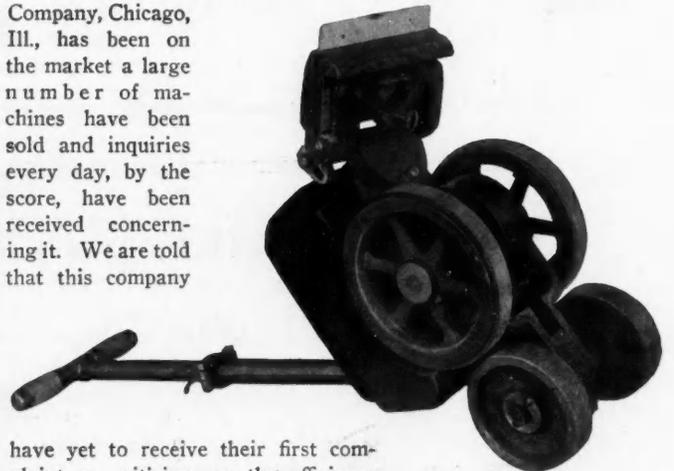
Chicago New York New Orleans Montreal
San Francisco Portland Seattle London

attractive appearance, being embossed in conventional designs, and are lighter than slate roofs. They outclass wood shingles in every particular.

The manufacturers will be pleased to send to anyone their catalogue, giving prices, testimonials, many illustrations and detailed information why it is better to lay Montross metal shingles than any other kind of roofing. Write to them today.

Triple "A" Floor Smoothers Well Liked

We are informed that already in the three months the "Spring-Driven" floor smoother of the Triple "A" Machine Company, Chicago, Ill., has been on the market a large number of machines have been sold and inquiries every day, by the score, have been received concerning it. We are told that this company



have yet to receive their first complaint or criticism on the efficiency of the "Spring-Driven" floor smoother.

The general opinion of practical men who see and use this machine seems to be that it covers everything that could be required in a practical floor surfacing machine and that it is the very thing that has been needed for this line of work.

It is a well-known fact that floor scraping has been one of the most difficult problems that the people connected with the building trades have had to solve. There is nothing about a building or an apartment that stands out more prominently than the floors, and nothing is more pleasing to the eye than a well-finished job of floor surfacing. It is the strongest advertising card that a contractor can place upon a building.

In the course of many years' experience, the inventor of this machine has found that there are three very essential require-



ments that go to make up a practical floor surfacing machine.

They are, namely: weight, adjustability and power. Lacking any of these, a floor smoothing machine cannot do first-class and profitable work for the contractor.

The great secret of success in the Anderson automatic adjustable floor smoother lies in its powerful motor spring, which pulls more than half the load on the cutting stroke and aids the operator in a simple and most effective manner.

Ordinarily, the work of operating a floor scraper comes

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E. C. S. Carpenter Pencils

The kind that good workmen need.
They don't break just in the midst of some particular layout—don't scratch—work easily and smoothly and are tough as iron.
The wood is straight-grained, selected cedar.
These pencils are put out by the makers of the famous Keen Kutter Tools and are consequently made for quality only.
If you have been annoyed with the shortcomings of ordinary kinds, ask for the E. C. S. Carpenter Pencils.
If your dealer does not have them we will tell you where they may be purchased in your vicinity. Write for free sample.

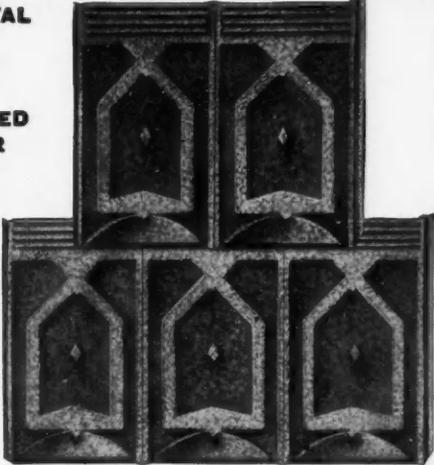
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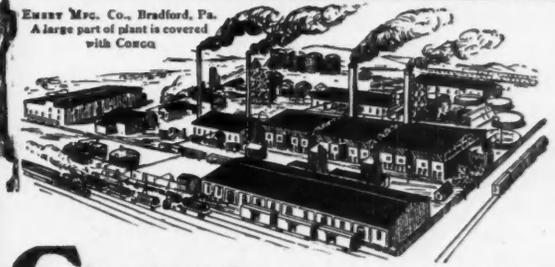


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One of the most attractive features about Congo is that you get a genuine Surety Bond with every roll. This Bond is issued by the National Surety Company. Every roll of 3-ply Congo is guaranteed for a period of 10 years if printed directions are followed.

Thus the buyer is protected for a long time by the strongest guarantee ever issued, backed by a Surety Company whose bond is as good as the Government's.

That Congo is made of the right stuff—durable and lasting, is attested to by the fact that the Surety Company was willing to back it, and for so long a period.

Congo is really a better purchase than ever before.

In addition to the Surety Bond, we furnish with every roll galvanized caps, instead of the tin caps or nails supplied by others. The galvanized caps can't rust or bend or break. Liquid cement is also furnished free.

We mean to get the roofing trade of the country and think these special features will come pretty near landing it.

Send today for free sample of Congo and a copy of the Guarantee Bond.

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who considers both safety and appearance when choosing a bar for his new store front will insist on the Petz Bar.

It allows you to have handsome and artistic display windows, but at the same time insures safety to your plate glass, thereby reducing the cost of your plate glass insurance and freeing you from the delays and annoyances often caused by broken glass.

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FOR A FLY
WONT GO DOWN

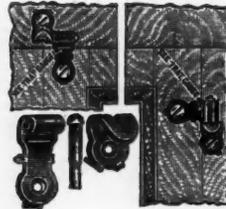
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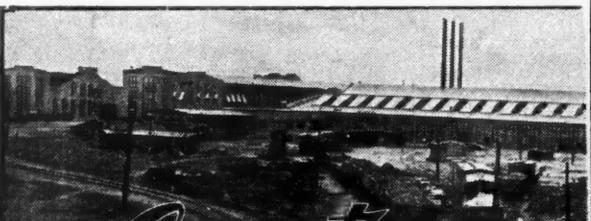
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**WATROUS
NO. 17
SCREEN
HANGER**

Thesame pieces,
arranged to suit,
will hang either
a full or a half screen
from either the top or side.
Storm sash should be
hung from the top, but
this is the only way to
hang a screen.

Only four screws to set
instead of twelve, a saving in labor of two-thirds. A gauge
mark locates the piece instantly, and makes mistakes im-
possible. A carpenter who has bought other hangers,
could afford to throw them away, buy the Watrous No. 17,
and make more money on the
job. Mounted working model
sent free postpaid to dealers or
carpenters. Write to-day.
Finish either japanned or gal-
vanized, with galvanized screws.



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DES MOINES : : IOWA



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No Other ROOFING Roofing Has Such a Record

The ordinary ready roofing roll of 110 square feet is about half the diameter of a roll of **Granite Roofing**. This is because Granite Roofing is so much thicker and stronger and contains so much more material. **Granite Roofing** is not a light-weight, flimsy paper, but a high-grade permanent roofing, adapted for structures of all kinds.

It is used by railroads, manufactories and on all kinds of brick and stone buildings, where it gives good service for ten to twenty years, **without requiring repairs of any kind**. Yet, although its price is low, no other ready roofing can compare with it for service.

Drop us a postal, and we will send you a free sample and booklet.

Eastern Granite Roofing Co.,
19 Battery Place, New York. Chicago. St. Louis.

altogether on the cutting stroke, and the limit of human power necessarily confines the operator of a "dead weight" to a small, light machine with a correspondingly small capacity. In the "Spring-Driven" floor smoother, where the effort is equalized between the push and the pull a larger and more effective machine can be used, which naturally will not jump and leave waves, and at the same time enables the operator to do twice the work with half the effort.

The powerful Spring-Driven floor smoother has opened a new field of floor scraping. A great many painters and others having old or varnished floors to refinish find it the most effective and economical device for this kind of work that has heretofore been offered.

Up to the introduction of the "Spring-Driven" the scraping of a varnished floor was regarded by practical men as an impossibility, but with a heavy scraper edge in this machine it is as simple a matter to scrape a varnished floor as any other kind.

Judging from the number of orders that this company are receiving from people who have other styles of machines in their possession, we feel justified in stating that the "Spring-Driven" floor smoother is a machine which fills the long felt want of a device of this kind to the entire satisfaction of everyone who has work of this kind to do.

Rothmotors

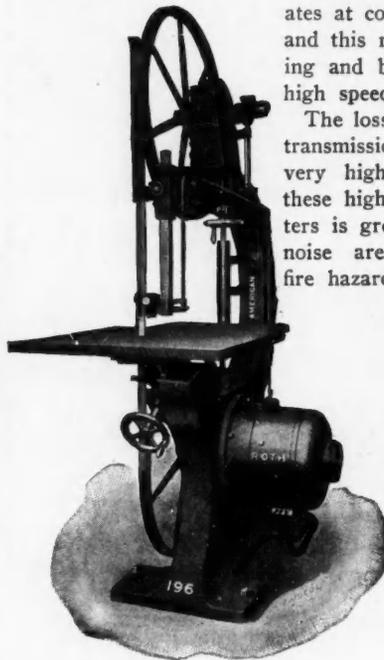
The use of electric motors for driving wood-working machinery has increased very much in the past few years. Most wood-working machinery operates at comparatively high speed, and this necessitates much shafting and belting, running also at high speeds.

The losses in shafting and belt transmission have been proved very high; the danger due to these high-speed power transmitters is great; the dust, dirt and noise are objectionable, and the fire hazard is also an important factor—these combined have been enough to make the benefits of electric motor drive easily apparent.

The band saw is one of the wood-working machines which can be very efficiently operated by individual motor. This machine is used in a large variety of works. In many cases it is the only wood-working machine in the establishment. Then, as a rule, it is usually best located at a point where the shafting is not easy to belt from.

At this point the individual motor drive suggests itself and in the cases where it has been adopted, has proved entirely satisfactory. Various ways of driving are in use: the earlier applications have been by simply belting from the motor pulley to the band-saw pulley,—then the motor has been set on the floor and connected to the band-saw shaft by means of gearing. Later the motor has been set on the floor, or on an extended part of the frame and the motor shaft coupled to the band-saw shaft.

The Roth way, as exemplified by wood-working machinery of Roth Bros. & Co., Chicago, Ill., is the latest type of mod-

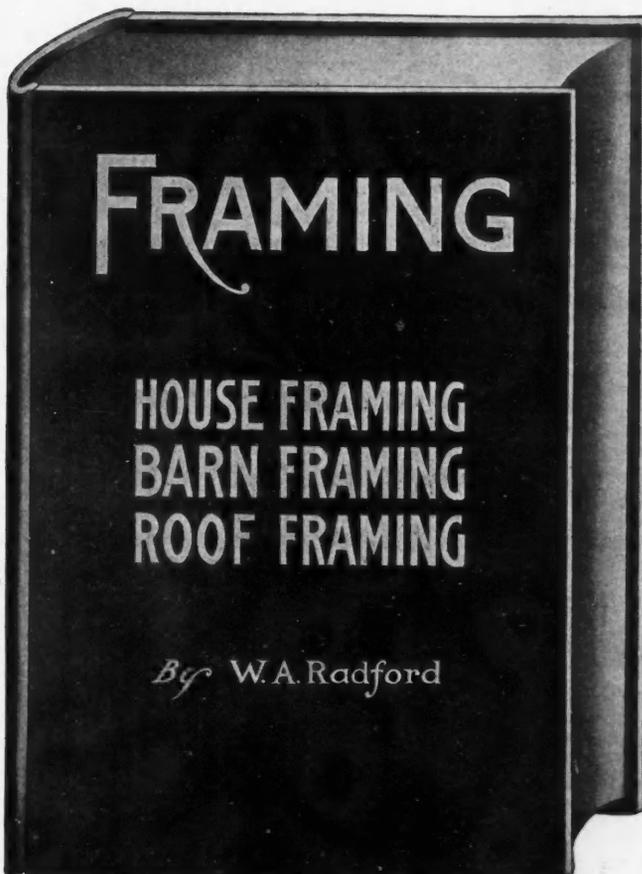


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"FRAMING" contains the boiled-down essence of all the accurate information on this subject possible to obtain. It is indispensable to the man who in any way has anything to do with construction. It deals with the problems of framing in its multitude of forms and designs in a most thorough manner.



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ern up-to-date direct-drive. The motor is of a special design, having a supporting ring at one end which is bolted against the band-saw frame. A special long bearing is used at the band wheel end, which extends through the band-saw frame, and the band wheel fits on the motor shaft close up to this bearing.

This motor runs at a slow speed so as to adapt it to directly driving the band-saw wheel. There are only two bearings, no pulley or belts; consequently the maximum efficiency of operation is obtained. The bearing which supports the shaft at the band wheel end is very long, and the shaft is of large diameter. Brass rings revolve with the shaft and dip into an oil chamber and carry the oil up into the oil grooves, thus insuring constant and good lubrication.

The motor is fully enclosed and protected against dust and mechanical injury. The general construction and materials entering into the manufacture of these Roth band-saw motors is up to the usual high standard of Roth apparatus. Steady power is obtained by this construction because there are no belts to slip, and this, with the elimination of vibration insures better work.

The floor space occupied is reduced to the minimum, and as the motor is up, out of the dirt, it will have a long life. Cleaning and sweeping around the machine is easy, and all parts of the machine are easily accessible. Being a self-contained and complete machine it can be set in any part of the shop, independent of line shaft, belts, etc., and having in view only the best location for efficient operation.

The neat and clean cut appearance of this outfit must appeal strongly to the buyer who desires the most efficient, up-to-date apparatus.

The Modern Kind of Roofing

There was a day when the words "ready roofing" meant some kind of painted paper which was only good enough for hen coops.

Later it meant a tough felted fabric which would last for 5 to 10 years, provided it is covered with a heavy coat of paint at regular intervals.

The third step in the progression is the advent of Amatite roofing which is made with two heavy layers of pitch (the material which forms the basis of most roofing paints), and a top surface of mineral matter. A roofing so constructed naturally requires no paint to protect it; and accordingly Amatite roofing is intended to be left unpainted. It may reasonably be expected to last for 10 years or more and in all that time will require no attention whatever.

The price is astonishingly low and our readers who buy roofings from time to time should become familiar with its merits.

A sample will be sent free for the asking to any inquirer. Address nearest office of the Barrett Manufacturing Company, New York, Chicago, Philadelphia, Boston, St. Louis, Cleveland, Pittsburg, Cincinnati, Kansas City, Minneapolis, New Orleans, London, England.

"Prong Lock" Steel Studs

We have received from the Berger Manufacturing Company, Canton, Ohio, a very interesting catalogue describing their "Prong Lock" steel studs and furring and telling how to use them. It might be stated that these "Prong Lock" steel studs (patented) in conjunction with expanded metal lath or wire lath form the Berger "Prong Lock" system for erecting partitions, ceilings and roofs. They are used also for light structures where the floor loads are not heavy.

These studs combine strength, lightness, ease of putting to place and efficiency. They increase the speed and ease of applying the lath, and giving satisfactory results. They effectively fasten the lath and secure a smooth, even surface for

METALLIC WEATHER STRIP

MEANS "SNUG-FIT WINDOWS"

**Keep Out the
Cold Wintry Blasts**



No more of that "Cold Air" coming in through doors and windows. Keeps out the dust, too, and the smoke and noise of street traffic. Stops rattling windows. Solid comfort for home, shop or office.

Pleased clients for architects and contractors recommending its use.

STATE AND COUNTY AGENTS WANTED.

Write for particulars.

Metallic Weather Strip Co.
211 Mercantile Place, LOS ANGELES, CAL.



Just a Common Job

Just a common job means just a common salary.

Imagine for a moment that from twenty to forty years have been added to your life—that you have reached the age of fifty or sixty.

What are you doing to-day that will enable you to forecast something better for this later period, than just a common job and a common salary.

Only one class of men are absolutely sure of being able to maintain their full earning capacity after fifty. These are the trained men—men who have fortified themselves in youth against the common job problem which confronts the untrained man at any time in life.

Why not give yourself the advantages of something better than a common education and insure against the common job problem before it is too late and you have lost ambition?

Don't give old age a chance. Let the American School train you so your services will be desired and sought after—not endured or overlooked.

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how to make Perfect Blocks at the Maximum Speed and at the Minimum Cost.

Our Machine makes Blocks which can't be beat in appearance—Blocks which will stand the test—Blocks which are accurate as to shape and size.

Write for booklet and descriptive literature.

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Successor to
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118 W. McPherson St.
Dayton, Ohio.

For over twenty years we have manufactured

MONTROSS METAL SHINGLES



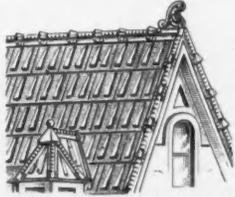
Octagon Metal Shingles

They last the life of the building, are ornamental, lighter than slate and very easily laid by carpenters. They outlast wood shingles and other roofings, insure against fire and lightning, are stormproof, inexpensive and offer your customers

a dependable, permanent roof

You make a good profit when you lay Montross Metal Shingle roofs, and they bring you more business. It will pay you to send for our catalogue, containing prices, testimonials, discounts and many illustrations; it explains fully their superior value over all other roofings.

Montross Metal Shingle Co.,
102 Erie Street Camden, N. J.



Montross Victor Metal Shingles

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Please send me your Bulletin and advise me how I can qualify for position marked "X."

- | | |
|---------------------------|--------------------------|
| ... Book-keeper | ... Draftsman |
| ... Stenographer | ... Architect |
| ... Accountant | ... Civil Engineer |
| ... Cost Accountant | ... Electrical Engineer |
| ... Systematizer | ... Mechanical Engineer |
| ... Cert'f'd Public Acc't | ... Sanitary Engineer |
| ... Auditor | ... Steam Engineer |
| ... Business Manager | ... Fire Insurance Eng'r |
| ... Commercial Law | ... College Preparatory |

NAME

ADDRESS

OCCUPATION

American Carp. & Bld., 11, '09.



Do You Wear a Blindfold?

If you use old-style saws, you're wasting time, muscle and money. Be fair to yourself! Try an Atkins—try it at our risk!

You don't buy cheap saws, Mr. Carpenter. You pay the price and you want the best—we know that! You may think you have the best—but you haven't, unless you own an Atkins.

If you want to know which is really the best saw, if you're willing to be shown, test the Atkins. Our guaranty protects you!

ATKINS Silver Steel SAWS

Made of Silver Steel—the finest crucible steel the world has ever known. Our secret formula. Better steel than you'll find in most of the high-grade razors.

The blade is light, flexible, and holds its edge longer than any other saw blade on the market.

It is taper-ground—thickest at the tooth-edge. We don't merely grind a little bevel along the back—the Atkins blade tapers **all the way** from tooth edge to back.

Wherever the teeth go, the rest of the blade follows without a struggle. No binding! No buckling!

The easiest running, fastest cutting saw you ever touched.

The Atkins Perfection Handle prevents strain on the wrist—more strength saved!

Here's Our Offer to You

Buy an Atkins Silver Steel Saw. If it isn't exactly what we claim, if it isn't the best saw you ever put through a board, take it back to your dealer and your money will be refunded.

That guaranty protects you. You don't risk a cent.

Be sure the blade bears our name and says "Silver Steel"—that's our best saw.

FREE to Carpenters

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 Carpenter's Department

E. C. Atkins & Co. Inc. Indianapolis, Ind.

Largest Exclusive Saw Manufacturers in the world.

the plasterer to work on. Result: Success, popularity and increasing demand.

"Prong Lock" steel studs are ordinarily made of Nos. 18 and 20 gauge steel sheet formed into various shapes, and with prongs punched out on the members for attaching metal lath. These prongs clinch over the lath and hold it rigidly and securely. All that is necessary to obtain this result is to hang the lath on the prongs and clinch them up over the lath with a hammer. The workman can get along twice as fast as if he had to wire the lath on. An additional advantage is that the lath is held securely even before the plaster hardens, which is not the case with the makeshift of wiring. Moreover, as the prongs are only about 4 inches apart, a greater number of fastenings are secured than is customary where lath is wired on, yet less time is taken.

The studs are held in position at top and bottom by individual sockets or by socket strips. They can hence be used for partition work in any type of building, whether reinforced concrete, steel skeleton or wood frame, where floors are self-sustaining; also in other structures when studs are specially designed for the purpose.

Weber Cabinet Scraper and Sandpaperer

What has been wanted and needed for years by carpenters, cabinet-makers and builders the world over has just made its appearance in the market, a cabinet scraper and sandpaperer that can be controlled absolutely.

The Weber cabinet scraper and sandpaperer, as it is called, is an entirely new departure and has features that have long been sought by the users of devices of this nature, and which are to be found in no other article of its kind.



It is the only one upon which a firm hold can be obtained, in the tightest corners, under the most adverse circumstances, the operator does not for one instant doubt his ability to control it.



The knife in the Weber cabinet scraper and sandpaperer is fastened with a clamp—has no holes or slots in it and any length of knife may be used until but a half inch of it remains.

Only an instant is required to reverse from a scraper to a sandpaperer and *vice versa*.

It works very easily and quickly, and specimens of work seen are certainly indicative of its efficiency. This handy little article can be purchased at dealer's or direct from its manufacturers, the Weber Manufacturing Company, 670 71st avenue, West Allis, Wis.

No More Fireplace Troubles!

No more smoke! No flimsy dampers to get out of order! No uneven heating of room! No soiling of hands or clothing while attempting to regulate drafts! That is the delightful state of affairs when the Colonial fireplace head is used. It is said to solve the problem of fireplace construction. It insures the greatest amount of heat radiation with the most

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.



Are YOU One of the "Hands"?

There are two classes of workers—head workers and hand workers. Are you one of the hands? **What you get on pay day determines it.** The man who works with his hands does imitative manual labor which thousands of others can do just as well. He is hired at will and may be discharged on a minute's notice. If he loses his time he loses his earnings. He has long hours, and receives low wages. The ranks of the hand workers are eminently honorable, but the man who stays in these ranks all his life greatly wrongs himself. He must advance as years go by to the head worker's class. A specially trained man holds a place hard to fill, is employed by the month or year, has regular vacations on full pay, short hours of work, and does not lose his salary on account of sickness.

It is by no means a difficult thing for the hand worker to become a head worker. The largest institution of its kind in the world has for the last 18 years been training hand workers to hold the high-salaried positions of the head workers. This great institution will take up your individual case and tell you how it can help you, in your spare time at home, to gain a better position, increased earnings, and a successful future. It puts you under no obligation to send the coupon. **Mail it today.**

International Correspondence Schools

Box 910, SCRANTON, PA.

Please explain, without further obligation on my part, how I can qualify for a larger salary and advancement to the position before which I have marked X.

Architect	Estimating Clerk	Foreman Machinist
Arch'l Draftsman	Bridge Engineer	Sh.-Met. Pat. Drfts.
Contractor & Build.	Civil Engineer	Mining Engineer
Building Inspector	Surveyor	Textile Expert
Structural Eng.	Mechanical Eng.	bookkeeper
Struct'l Draftsman	Mechan'l Drafts'n	Stenographer
Plum. & Heat. Con.	Stationary Eng.	Ad Writer
Supt. of Plumbing	Electrical Engineer	Window Trimmer
Form. Steam Fitter	Electrician	Illustrator
Plumbing Inspect'r	Elec.-Light, Supt.	Civ. Service Exams.
Heat. & Vent. Eng.	Elec.-Rail'y Supt.	Chemist

Name _____

Street and No. _____

City _____ State _____

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

perfect heat escapement. Draft is always under perfect control, and can be instantly regulated from the outside without the slightest possibility of soiling either the clothes or hands. With it is secured perfect combustion of fuel, making this the most economical fireplace head made. Very easy to set. Saves entire price by saving in cost of erection. Cast in one piece of the best gray iron stove casting. No chance of fire where fireplace facing is joined to the chimney.

Write today for free circular giving full and complete description with prices. Don't wait—send now. Colonial Fireplace Company, 12th street and 46th avenue, Dept. 6597, Chicago, Illinois.

Increase Profits From the Use of Machinery

Every wideawake contractor is on the alert to discover where he can use machinery in place of day labor on any part of a contract, realizing that any work that can be done by machinery is done not only very much better, but at a fraction of the cost of hand labor.

The demands for better floors in all classes of buildings such as residences, office buildings, storerooms, etc., which but a few years ago were considered a luxury, have now become a necessity, whereby comparatively few modern buildings will be accepted unless the floors are properly surfaced and finished to harmonize with the balance of the interior finish.

The ordinary method of scraping has always been unsatisfactory, as well as expensive, and various contrivances have been put on the market. Some of these are small machines, pushed around by hand, with a single abrading roll, which has proven unsatisfactory for the reason that it was impossible to regulate the speed of the machine to correspond with that of the space covered by pushing it over the floor. All



these machines are more or less crude imitations of the machine that was originally invented and put on the market in 1903 by the American Floor Surfacing Machine Company, which has been in general use from the Pacific coast to New England and from Quebec to Texas, as well as in the principal countries of Europe.

There are good reasons for its popularity, not only for its efficiency, but also from the fact that it is built of the best materials and is sold entirely on its merits. This machine is the original and only two-roll self-propelling, dust-collecting reversible floor surfacing machine, protected by the original and basic patents on floor-surfacing machines in the United States and foreign countries. The superiority of its work has been demonstrated for nearly seven years on millions of square feet of the finest floors in the best buildings in the world and its work is specified by leading architects wherever used.

Many carpenters now working by the day can, with this machine, make more in a week than it is possible to do in a month by hand labor. Besides they are building up and

This New Lorenzen Catalog

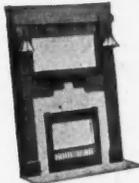
Shows 227 Fine Illustrations of Tile, Wood and Brick Mantels, Fireplaces, Parlor Consoles, Grilles, Etc.



Mailed Free



Each copy of this Catalog cost us \$2.50. It is a complete Mantel Salesroom.



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.

Because of our enormous output we can undersell any competitor. Our designs are distinctive and not easily duplicated. We have wood mantels as low as \$3.00 and as high as \$250.



The Entire Lorenzen Line is Sold Under Guaranteed Conditions

If you are an Architect—If you are a Contractor—If you are a Home Builder and you specify or purchase anything in **The Lorenzen Line**, you do so with our strict guarantee as to satisfaction or money refunded.



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.

Write today for Catalog which is Mailed Free.

Chas. F. Lorenzen & Co.,

719 N. Ashland Ave.,
CHICAGO



THE BRUSH RUNABOUT

No car in the world compares with the Brush Runabout in low cost of maintenance or in simplicity, durability, convenience, reliability and ease of riding.

We make these claims knowing our ground absolutely. They are based on facts we have proven during the many years we have been connected with the automobile business, as well as the two years we have been manufacturing and selling the Brush.

You are probably surprised at that statement. You may even say: "Why, I don't believe I ever saw one of your cars."

Well, we don't doubt it, even though there are almost 2,000 of them in use. When you distribute that number over the United States and eleven foreign countries they can't be very thick in every locality.

But in a few months you will see the Brush everywhere. Watch for the little gray car with the black stripes—and you will always see it deliver the goods.

There is a larger demand for the Brush this year than we can supply, even though we are running our factories twenty-one hours a day. This we know.

We know also that the car is right, so it's only a question of increasing our capacity to meet this demand for a simple, staunch, reliable runabout which will do all that is demanded of it.

Please understand this isn't a speed car—one of the mile-a-minute kind. It's not an imitation of a big automobile with the complications left in and the strength left out. It's a runabout.

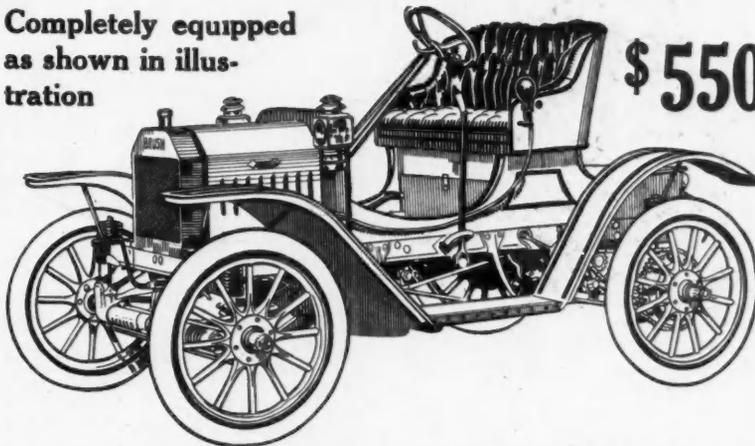
When Brush designed it, he didn't waste a minute trying to copy any of the big cars. His experience had taught him that more is expected of a runabout than of a big car, and that's why he spent over a year on the original design.

Don't lose sight of the fact that Brush is acknowledged to be the greatest of all small-car designers and that over twenty thousand automobiles of his design are in use.

Have you noticed what the foreign makers are doing? The manufacturers of such prominent machines as Renault, Clement, De Dion-Bouton and Darracq are building cars similar to the Brush.

Completely equipped as shown in illustration

\$550



No, possibly you are not interested in what the Frenchmen are doing; but you are interested in a tried and proven automobile that you can buy for \$550—

A car that will carry two passengers and baggage over any road (up Pike's Peak, if you want to go)—a car which is easily operated—one you can maintain for less than half what it costs to keep a horse and two-passenger vehicle.

If it were possible we would like nothing better than the opportunity to take you through our factories and show you how the Brush is made. This, with a chance to demonstrate the performance of the car, would settle the question to our mutual satisfaction.

Since this isn't possible, we want to send you the name of our nearest dealer, with descriptive literature containing illustrations and specifications; also a little story about how the car has won endurance and hill-climbing contests which no car at anything like the price has even entered, to say nothing about winning.

No matter whether you want a car for business or pleasure, or both, you will always find the Brush on the job. Its uses are legion. Let us show you what it will do for you.

You know, we can sell you exactly the same car on solid rubber tires for \$500.

BRUSH RUNABOUT CO.

761 Baltimore Ave., DETROIT, MICH.
Established 1906
Members A. M. C. M. A.



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



The Never Leak Metal Shingle

Made on a modern scientific principle, of Painted Tin and Apollo Vandergrift Galvanized Iron. Supersedes anything made. A sweeping statement—but read why.

UNIQUE FEATURES OF A UNIQUE ROOFING

First: A roof fitted with this shingle cannot leak. The interlocking principle is so complete that for water to get through the shingles is against the laws of nature. Water cannot run uphill, yet that's the only way it could enter a roof of "Never Leak" Shingles.

Cannot warp, rot, split or absorb water and remain damp. And, of course, they're fire-proof.

Cost Compared With Wood

Figure what wood shingles cost. Consider the repair bills and all around disadvantages. Compare the cost with everlasting "Never Leak" Shingles that remain as good as new as long as the building lasts. "Never Leak" Shingles are cheaper. Send for samples and be convinced.

About Metal Ceilings

Your success depends on the fit. Our construction makes thoroughly dust proof, invisible joints. Interesting Prices. Attractive Designs.

Get our catalog right away

THE TIFFIN ART METAL CO.
TIFFIN, OHIO

establishing a permanent business as stable as anything connected with the building trades. This they can do by making a specialty of surfacing floors for contractors, and especially by surfacing old floors, which are made as bright, clean, level and smooth as new.

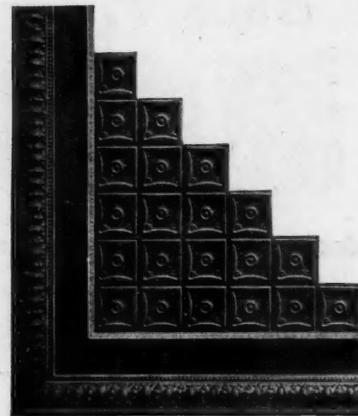
This machine is at present used in nearly all the principal countries of Europe. Inquiries for it from many places in South America and Mexico have been received with the result that the company has been obliged to steadily increase its working force and capacity for turning out this machine.

It will pay every contractor and hardwood floor company or mechanic who is seeking to establish a business of his own to get detailed information concerning it from the American Flooring Surfacing Machine Company, Toledo, Ohio.

The Problem Solved

"Your success is our necessity; we want to show you why." That is the interesting message that comes to the builder from the manufacturer. It has the ring of sincerity, of truth. It's different from many messages sent out nowadays, that are only curiosity excitors, originated by clever salesmen or advertising specialists.

This message refers to metal ceilings and side walls. Here as in other lines appear quality differences. All produce art designs. But the builder finds variations in the practical



application of different makers' ceilings. The successful contractor is successful for good reasons, one of which is his desire to use that material, which, other things being equal, is most simple, therefore most easily and most simply applied.

The solving of the problem of applying metal ceilings lies with the maker in deciding how the plates shall be joined. The lock joint has its supporters, the butt joint its followers and the standard single bead lap joint has many adherents. But it has remained for the manufacturer with the message to produce the double bead lap-lock. That is simplicity itself. Easy to fit, therefore economical to erect.

Most of the builder's success depends on the fit, much of his profit on the economy in applying the metal. That's why The Tiffin Art Metal Company, of Tiffin, Ohio, send out the message, "Your success is our necessity."

The company has another specialty of high quality, the Never-Leak galvanized metal shingle, advertised in this issue. Samples of Never-Leak shingles may be obtained, also illustrated printed matter referring to shingles and their complete catalogue of art metal ceilings and side walls may be had by addressing the company at its home office in Tiffin, Ohio.

Street Lighting for Small Towns

An innovation in street lighting that will be hailed with delight by those living in vilages and small towns is the

Radford's Stores and Flat Buildings

A Brand-New Book—Just Off the Press

Absolutely the first and only book of its kind ever published. No more valuable book could possibly be imagined for the use of any one contemplating building, or for the study of carpenters, contractors and builders. Every plan guaranteed to be complete and accurate in every detail.

The Latest Ideas in Two, Four, Six and Nine Flat Buildings, Stores and Lodge Halls, Bank Buildings and Double Houses.

This book illustrates over fifty popular designs in low-priced flats, store buildings, bank buildings and double houses in different constructions: cement plaster, concrete block, brick, stone, and frame. Every building illustrated was designed by a licensed architect standing at the head of his profession, who has made a study of economy in construction. Perspective views and floor plans of each and every design are shown, giving a picture of the completed building and detailed drawings of the interior arrangement.

Designs for Large or Small Towns

Included in this collection of designs are a large number of stores and bank buildings suitable for the small town or village as well as the large city. An approximate estimate of the cost of the building, together with a description, is given under each design.

Everything Brand New

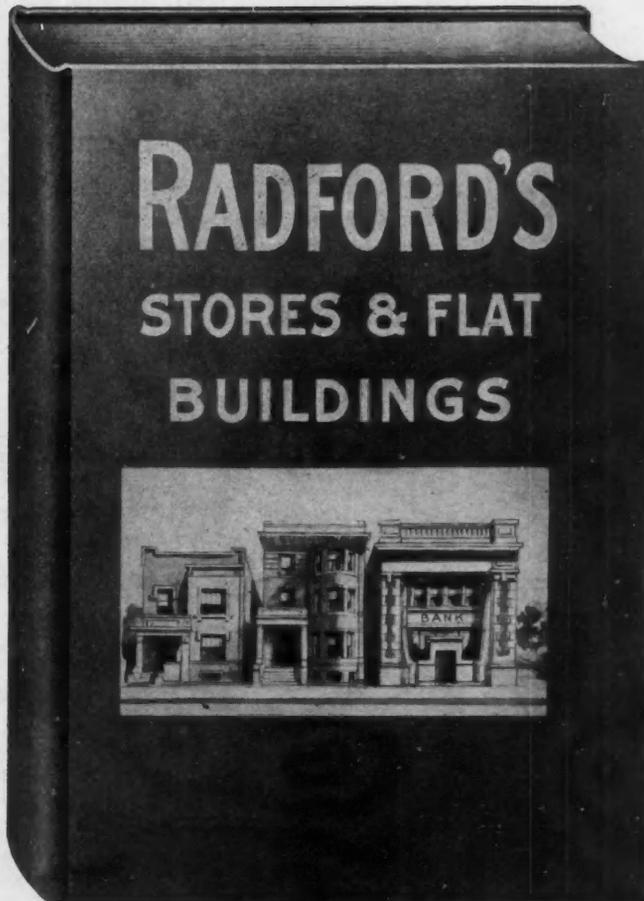
All of the perspective views and floor plans in this valuable book are brand-new. None have ever before been published. The illustrations and text are printed on the finest grade of enamel paper from the very best half-tones and zinc etchings.

Handsomely Bound in Silk Cloth. Price, \$1.00

**HOW TO OBTAIN THIS BOOK
OUR GREAT SPECIAL OFFER **FREE****

THE AMERICAN CARPENTER AND BUILDER will **give** a copy of this valuable book, "RADFORD'S STORES AND FLAT BUILDINGS," **absolutely free, postage prepaid**, to all new and old subscribers whose subscriptions or renewals are received before Dec. 1, 1909. In all cases cash in full to cover one year's subscription to the AMERICAN CARPENTER AND BUILDER (\$2.00) must accompany the order. All renewals will be credited from the date present subscriptions expire. Address

AMERICAN CARPENTER AND BUILDER
185 Jackson Boulevard CHICAGO



Why did *Simonds* Hand Saws win the *Grand Frize* at the *Seattle Exposition*?

Why were they judged *superior* to other older saws? Just this. The Jury consisted of five *thoroughly practical* men, men versed in the hardware and mechanical business, men of unquestioned integrity. They *made actual tests*. They knew *Simonds Saws* sold for a little more money and were by *actual reputation better Saws*. These men were willing to recognize the *new leader* among saws and voted the highest award of merit accordingly. Remember the *name is always SIMONDS*. There is never any nick name. *Simonds Saws* are sold by Hardware and Supply Dealers throughout the world. Made by

It's the saw with the ribbon etch.

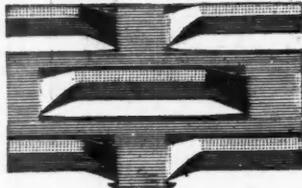


SIMONDS MFG. COMPANY

See advertisement in this paper.

See trade-mark etch for addresses.

SYKES METAL LATH



The lath that is positively different to anything else made; different because it combines more good features.

Cup lath is the only Expanded Metal Lath that can be plastered on either side — cannot be applied wrong because both sides are alike.

We make two kinds—Sykes Expanded Cup Lath, and Sykes Trough Lath. Both are supreme for their own purpose.

The top illustration shows Trough Lath, bottom cut depicts Cup Lath.

NO PICKLED LATH

Sykes Lath is absolutely guaranteed not to have been pickled in an acid bath. This means that the weight and thickness is not reduced and is less susceptible to rust. Requires no furring out from studs because it is self furring.

It has been approved by U. S. Government and by leading architects, carpenters and builders throughout the country. In fact, when we say it is the best ever made we are simply stating a proven fact.

Samples and prices mailed upon request.

Sykes Metal Lath & Roofing Co.
NILES, OHIO



“Standard” boulevard gasoline arc lamp made by the Standard-Gillett Light Company, Chicago, Ill. This gasoline, unit-system, arc lamp, without any question, will supply a want which has been severely felt by nearly all municipalities, cities, villages, large or small, in the United States today. The success which this company have had with their boulevard arcs which have already been distributed fully confirm the above statement.



Any town can have 1,200-candlepower boulevard arc lamps upon the streets at a cost of one-seventh of what the same electric power would cost, and with scarcely no investment in comparison.

This boulevard arc is constructed broadly upon the principles of the “Simplicity” gasoline lighting system. It contains within the post a tank holding two gallons of gasoline, a pump and a pressure gauge, and a patented automatic shut-off valve. The lantern part is of cast iron with porcelain enameled steel dome.

The gasoline is forced through the valve to the Simplicity generator, where it is transformed into gas and carried direct to the mantles overhead, where it is lighted like ordinary city gas might be. An accurate clock arrangement is furnished with each lamp, so that a village or town marshal may set the time at which he wishes to extinguish the light.

After winding up this clock he may go home, resting safely assured that the lights will be extinguished at the proper time. This is attributable entirely to the very effective valve, which has never failed to operate.

The party in charge of the nightly lighting of the lamps, after generating and lighting same, will wind up the clock, including the alarm, setting the alarm dial at the hour at which the lights are to be extinguished. After replacing the clock in the lower section of the lamp, and seeing that all is well with the light, he may retire with the assurance that at the hour set the lamp will be automatically extinguished by the Standard Automatic Shut-off. In other words but one visit per night is necessary to the light, for after lighting it takes care of itself. The one great feature of this shut-off outside of its automatic features is the wonderful saving in oil and time it represents. Some street lamps are allowed to burn all night, while others must be shut off by hand (which is always unreliable). In either case the waste of fuel and time would pay for an automatic shut-off many times over in one year.

The generator will not cool in the coldest weather, nor will the gas become chilled, owing to the fact that the gas is carried through an interior pipe to the mantles and this pipe carrying the mantles is encased in a larger pipe, forming a space between these two, so that the heat rising from the generator serves to keep the gas within the smaller pipe thoroughly heated until it reaches the mantles. An outlet pipe for the heat may be seen at the top of and to one side of the lamp.

Comparing the cost of gasoline lighting with electric (not considering at all the enormous difference in the first cost) we find the advantage all on the side of the gasoline system.

The price of electric lighting varies in different towns from 8c to 15c per 1,000 watts, but a good average anywhere is 10c per 1,000 watts.

An enclosed electric street arc, rated at 800-candlepower, consumes 550 watts per hour, costing, \$0.055.

An average burning is six hours per night for ten months in the year, allowing for moonlight nights, or 1,800 hours.

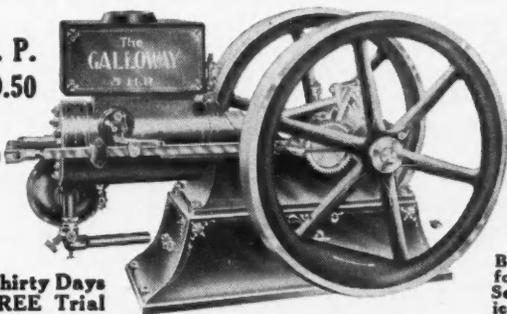
SKYLIGHTS

FOR ALL PURPOSES

Send Plans for
LOW PRICES

The Canton Art Metal Co., = Canton, Ohio

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, 5 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.

There is no doubt about what is in

Genasco Ready Roofing

It is Trinidad Lake Asphalt. We are not afraid to tell you.

There's no doubt about whether this asphalt will last. It has already lasted twenty-five years in streets and roofs.

There's no doubt that Genasco will last.

Smooth and mineral surface. Backed by a thirty-two-million-dollar guarantee. Look for the trade-mark. 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

PHILADELPHIA

New York San Francisco Chicago

BUY A BOVEE FURNACE



Direct from the Factory
AND SAVE \$50.00 TO \$100.00
ON YOUR HEATING PLANT
They Actually Save from One-third to
One-half of the Fuel

We have one of the best equipped furnace factories in the west and make more than 30 different furnaces of seven leading styles and can furnish our customers with practically any size or style of furnace they may desire, either Upright or Horizontal, sufficient to heat a large church or school house, down to a cottage heating plant complete with all pipe, registers and fittings for \$55.00.

Our furnaces are the only furnaces having a perfect ventilating system for every part of the house.

We ship our furnaces cut to fit. Any handy man can install them without the aid of a tinner.

Catalogue and full specifications free.

Bovee Grinder & Furnace Works
50, 8th Street Waterloo, Ia.



A Booklet telling how to get water Fresh from the well for suburban homes. How to avoid storage of water. The most economically operated independent water system, etc.

Sent Free on Request

UNITED PUMP & POWER CO.

495 Old Colony Bldg.

CHICAGO

total cost, \$99.00. A standard boulevard arc rated at 1,200-candlepower will consume one gallon of gasoline in fourteen hours. A good average cost per gallon is 15c; therefore, in 1,800 hours 129 gallons of gasoline will cost \$19.35.

The light of the Standard boulevard arc is white, steady and penetrating; of the electric arc, unsteady, blue, non-radiating. The cost of globes and labor in each is similar, and the cost of mantles offset by electric carbons.

Summed up on an equal candlepower basis, the electric arc costs more than seven times as much as the Standard boulevard arc.

Every mayor, president of village, councilman, alderman or public-spirited man should become apprised of the cheapness of operation and brilliancy of the lighting qualities of this device. It will save any municipality money and be decidedly an ornamental acquisition.

Write for complete catalogue of hydro-carbon lighting devices, systems and individual lights, addressing the Standard-Gillett Light Company, 9-11 West Michigan street, Chicago, Illinois.

Kno-Burn Lath for "Overcoating"

In another part of this magazine will be found an article describing how old frame houses are being made new by "Overcoating." Some very interesting illustrations are shown, being examples of this kind of rejuvenating work recently done.

Knowing that the Northwestern Expanded Metal Company has been quite the pioneer in this field and has vigorously advocated this method of reconstruction, we were not at all surprised to learn that their "Kno-Burn" expanded metal lath was the material used on two of the jobs illustrated. Mr. O. F. Kritznier, whose house at Niles, Mich., was recently made new by this process of overcoating, using cement plaster on Kno-Burn metal lath, writes as follows:

Niles, Mich., 907 Oak St., Sept. 20, 1909.

Northwestern Expanded Metal Company, Chicago, Ill.

Dear Sirs: I have finished overcoating my house. Considering that to the carpenters, the plasterers and myself it was entirely a new experience, the results are very satisfactory.

It may be of interest to you to know that the total cost for labor and all material was 62 cents per yard.

Respectfully,

O. F. KRITZNER.

Other letters of this kind show what is being accomplished by local mechanics, without previous experience, in "overcoating" an old dwelling by putting Kno-Burn expanded metal lath on the exterior and covering it with Portland cement plaster.

It may be explained that this Kno-Burn lath is the original small mesh metal lath with a mesh $\frac{1}{2}$ inch wide and with a considerable dip of a broad strand to retain the mortar.

This form of expanded metal lath permits enough mortar to go through so that a perfect key is formed and the mortar protects the metal nicely. Nothing is known today that protects steel so thoroughly as cement, and the form of strand and the form and size of mesh of Kno-Burn expanded metal plastering lath combine to make the protection ideal.

Kno-Burn expanded metal lath made by the Northwestern Expanded Metal Company requires less mortar per square yard than any other form, and none drops behind to be wasted.

"Overcoating" is a term applied to the finishing of old houses with cement-stucco mortar laid on metal lath. Brick as well as wooden houses are so treated.

Always use furring. This may be wooden lath or narrow wooden strips to which the lath is stapled, or better still, use crimped metal furring by stapling it directly to the old wooden siding, or to plugs in the brickwork joints.

When the overcoating is done over the old siding it is



The Peyton Building, Spokane, Wash.
Equipped with Mullins Metal
Fire Proof Windows.

The Peyton Building of Spokane, Washington, shown herewith, is one of the many hundred of modern fire proof buildings equipped with Mullins Windows.

Mullins Fireproof Windows are manufactured under the supervision of *Underwriter's 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 the same.

W. H. Mullins Company, 214 Franklin St., Salem, O.

"An Ounce of Prevention"

It is easier to *prevent* a disastrous fire than it is to *stop one.*

The weak point in all buildings is through the windows.

These openings can be made as fire proof as the walls themselves by installing **Mullins Fire Proof Windows.**

Mullins Fire Proof—Storm Proof—Dust Proof Windows

have successfully withstood the severest trials not only in factory experiments but in actual conflagrations.

Mullins Windows are perfect windows in every way.

Entire lock-seamed metal with no soldered joints in frame, sill or sash. They cannot warp or buckle and are not affected by heat, expansion or contraction.



We Want You to Get Metal Ceiling Orders for Us

A Large Profit for Contractors and Builders

Hundreds of Contractors and Builders in various parts of the country have taken advantage of our special offer to represent us in their city. These men always are in a position to sell them—they come into contact with the buyer every day. We have reduced the measurements and the erecting to a minimum, and explain in special drawings all that you should know. We want a man in every town where Ceilings can be sold.

Catalogue of Ceilings, Roofing and other **Sheet Metal Building Material** on request. Write today; be first in your town.

Our **Expanded Metal Lath** is the best on the market. Sample free.

The Kanneberg Roofing and Ceiling Co., Canton, Ohio

New York Detroit Chicago Kansas City Dallas Baltimore



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Wire & Iron Works

(Incorporated)

LOUISVILLE, KY.

IRON LINTELS

Beams, Angles, Anchors, Hangers.

Ornamental Cast Iron Fronts and Stairways.

Established over 57 Years.

THE ONLY PRODUCERS OF GENUINE

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FRANKLIN TUNNEL

Roofing Slate,
Blackboards and
Structural Slate.

SEND FOR PRICE LIST NO. 24, JUST FROM THE PRESS. IT CONTAINS VALUABLE INFORMATION.

SLATINGTON SLATE COMPANY, Slatington, Pa.

Give Your Shoulders FREE PLAY

Don't make them sore and tired by wearing the old-style rigid-back suspenders, which tug, strain, and chafe with every move you make. Get a pair of



President Suspenders

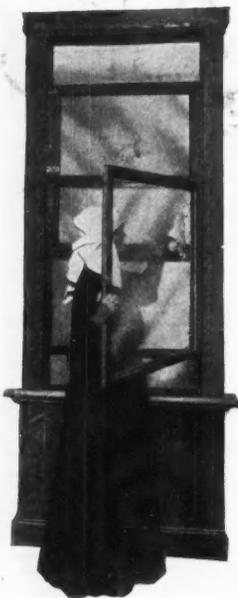
and learn what real suspender comfort is. The sliding cord in the back of President Suspenders (which is not found in any other suspender) permits them to "give and take" with every motion of the body. They rest lightly upon your shoulders and allow you perfect freedom of movement. The Extra Heavy Weight, made especially for workers, outlasts several pairs of ordinary suspenders. Light and medium weight for dress wear. Extra lengths for tall men. Every pair sold with the maker's guarantee—satisfaction, new pair or money back. If your store-keeper cannot supply you, we will, postpaid, upon receipt of price, 50c. Get a pair today.

THE C. A. EDGARTON MFG. CO.

739 Main Street : : : SHIRLEY, MASS.

Turnbull Universal Window

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.

TURNBULL CO., 771, 263 La Salle St., CHICAGO

necessary to bring out the door and window trim unless the plaster is to finish flush with the old trim. The furring then makes an air space between the old surface and the back of the plaster that will take care of moisture and condensation.

When the owner believes it will be better to keep the old frames and have them project it will be necessary to remove the siding and staple the crimped furring directly to the old studding.

Frequently the trim is removed and the lath brought around the casing, thus getting a recessed window with no wood showing.

Overcoated houses have all the advantages of cement exterior houses, and the appearance is so improved by this treatment that the fashion rapidly spreads in every city where old houses are so treated.

Every reader of the AMERICAN CARPENTER AND BUILDER should become acquainted with the possibilities with this modernizing and remodeling process. The Northwestern Expanded Metal Company, Chicago, Ill., has prepared a very interesting and valuable book, "Overcoated Houses," fully treating this work. It will be sent free on request.

Disston Improvements

The Disstons have just completed the first of a group of new additions to their already huge plant at Tacony. This latest addition is a complete machine shop, thoroughly modern in every detail. Its size and equipment is such that it can duplicate the largest machinery found anywhere in the great 50-acre plant.

The building itself is 180 feet long, by 80 feet wide, two stories high. Comparatively little brick is used, the major portion of the walls being composed of glass framing, which makes the interior as bright as daylight in every corner.

The first floor is completely served with narrow-gauge railway tracks—the latter connecting at the main entrance with a 40-foot railroad spur, running lengthwise of the structure, a 10-ton electric crane lifts from truck and serves any machine on the first floor, or to the landing platforms of the second floor galleries.

The usual machine equipment of a complete modern plant is found within the four walls, planers, grinding machines, lathes, shapers, milling machines, drill presses, boring mills, etc., etc., of the latest pattern are built by the best machine tool builders. The heavier machines are, of course, on foundations. The lighter machines are bolted to the concrete floor, while the array of lighter tools are placed in the galleries.

Mr. Charleton, the superintendent, drew particular attention not only to the arrangement of the tools, but also to the ease and comfort in which the workmen could go about their special tasks. From the "floor plate" to the uttermost corner there is a flood of daylight.

The whole plant is operated with electric power, coming from a central station. Further economy is gained through running the various machines in groups.

The Disston management's experience that the best class of workmanship is gained where the comfort of the workmen is attended to is evinced in not a few details. A good heating and ventilating plant keeps the atmosphere clean and fresh, never permitting it to go below a temperature of 70 degrees even when the thermometer outside registers zero.

In the basement under the office end of the shop a men's room is completely equipped with individual metal lockers, modern toilet arrangements and washstands.

Capping the full length of the roof is a monster electric sign, 6-foot letters forming "Disston Saws," which is visible at night for miles up and down the Delaware, New Jersey and over Tacony.

Over the office on the first floor will be a reading room.



Daylight in Dark Places

LUXFER PRISMS focus daylight. The light rays from the sky are drawn to basements or any dark place. The use of artificial light is minimized.

LUXFER PRISMS are best for all buildings. They are the most practical for Transoms, Canopies, Skylights, Floors and Sidewalks.

Our free booklet, "Daylighting," explains facts that every contractor and owner should know. Write for it.

MAIN OFFICE, CHICAGO

BRANCH OFFICES

BOSTON, 49 Federal St. BALTIMORE, 25 Old Builders' Ex. CLEVELAND, 1022 Garfield Bldg. CINCINNATI, 37 Thoms Bldg. DALLAS, Builders' Exchange DULUTH, 106 West Michigan St. INDIANAPOLIS, 342 E. Washington St.	KANSAS CITY, 918 New York Life Bldg. LOS ANGELES, 232 Bradbury Bldg. MILWAUKEE, 1112 Railway Exchange NEW YORK, 507 West Broadway NEW ORLEANS, 904 Hennen Bldg. PITTSBURG, 1022 Fulton Bldg. PHILADELPHIA, 807 Chestnut St.	ROCHESTER, 38 Exchange St. ST. PAUL, 615 Ryan Bldg. SAN FRANCISCO, 151 Tehama St. SEATTLE, 23 Maynard Bldg.
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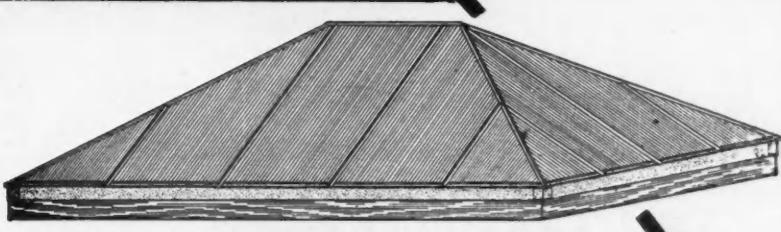
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1600 HEYWORTH BLDG., CHICAGO



"LET THERE BE LIGHT"

OUR KNOCK-DOWN SKYLIGHTS
with metal frames and glazing bars
GIVE SATISFACTION
They won't leak. Are easily installed by anyone with screw-driver and hammer.

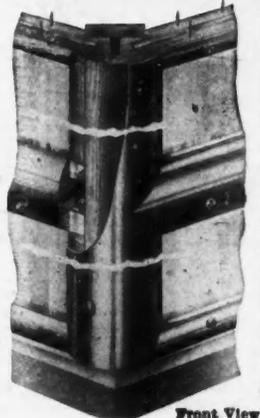
**NO SOLDERING:
NO PUTTY:
LOWEST FREIGHT RATE**



"AND THERE WAS LIGHT"

Ask for "MORE LIGHT" on the subject.

GALESBURG CORNICE WORKS, EAST FERRIS STREET, GALESBURG, ILLINOIS

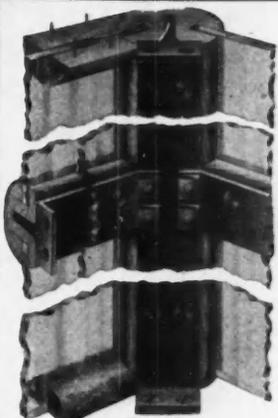


COULSON

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



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Here the standard mechanical journals and trade papers are provided for the use of the men.

"Most Heat for the Least Money"

If it be true that wisdom lies in a multitude of counsel, the task of the average buyer of a heating plant ought to be easy. He has but to answer a few advertisements, letting the makers and dealers know he is in the market, and he is forthwith furnished with more heating information than he thought was in the world.

The trouble is, the average man who reads a furnace catalogue is not in a position to distinguish between furnace wisdom and furnace folly. He cannot separate the wheat from the chaff. He has no experience to enable him to detect the flaws in a fine-spun theory—to determine how much of a manufacturer's argument is founded on common sense, and how much is but the sounding brass of advertising exaggera-

tion. Furnace selection becomes, under such conditions, not a choice of the proven best, but merely a belief in the most plausible argument. The real issue is lost sight of in consideration of conflicting theories and mechanical details, and it is often the best salesman, not the best furnace, that takes the order.

Realizing these difficulties of the intending purchaser, and realizing, too, that a furnace is not by any means the whole of a heating installation, the Jahant Heating Company, Akron, Ohio, have evolved a selling plan which is said absolutely to eliminate all risk, and to base your dealings with them on the heat they prove they can deliver in each room of your home or building.

In a new and very interesting catalogue just received concerning their well-known "Down-Draft" furnaces, their proposition and selling plan are fully explained. Referring to this selling plan, we read as follows:

"But we do not ask you to judge the Jahant down-draft furnace by what we say about it.

"We ask you to judge it only by what you yourself know it will do—by what you can find out in an entire year of actual use of the furnace at our expense.

"The Jahant down-draft furnace is the safest furnace for you to buy, not merely because it is made right, but because it is sold right—because we design a complete equipment to fit your building, sell it to you at a small advance over actual factory cost, arrange easy terms of payment, give you plenty of time to test the installation, and then refund your money if at the end of a year you are not perfectly satisfied with your bargain."

Town Moved by Train

Moving small town or settlements bodily seems to be a growing item of railroad traffic in the western states, several instances having already been recorded. The creosote tie plant of the Missouri, Kansas & Texas railroad at Greenville, Tex., was recently destroyed by fire. A decision to rebuild the plant at Denison, Tex., necessitated the moving of the homes of the men to that locality. Consequently, homes and portions of homes were loaded onto a train of 20 flat cars.

BISHOPRIC WALL BOARD

Better and Cheaper than Lath and Plaster. No Dirt, Cracks or Damp Walls. You Yourself Can Nail it to Studding—All Ready for Paper or Paint

THIS wonder worker in building construction is used as a substitute for lath and plaster; also as sheathing. It is made of kiln-dried, dressed lath, imbedded in hot Asphalt Mastic, and surfaced with sized cardboard. It is cut at the factory in 4x4 ft. sheets, which are nailed to studding all ready for wall paper or paint.

Bishopric Wall Board is clean, sanitary and odorless; is guaranteed not to shrink, warp, crack, flake or blister; is proof against moisture, vermin, heat or cold. Being a non-conductor, it saves fuel in winter and keeps the building cool in summer. It also deadens sound.

Bishopric Wall Board is suitable for costly dwellings, modest cottages, bungalows, flats, pleasure and health resort buildings, office and factory buildings, new partitions in old buildings, finishing attics, back porches, laundries, cellar ceilings, garages, poultry houses, dairy barns and buildings.

As a sheathing nothing equals Bishopric Wall Board. Ideal material for many purposes.

Write today for Free Sample, descriptive booklet and prices, freight paid from Cincinnati or factories in New Orleans, La., and Alma, Mich.



"Bishopric" Roofing Requires No Paint

STANDARD QUALITY
BISHOPRIC
ASPHALT MASTIC
ROOFING

Bishopric Roofing is composed of Asphalt Mastic (a patented discovery) and woolen felt, surfaced on both sides with flaked mica.

The only Asphalt Roofing that is self-protecting, requiring no paint. Most durable and handsome. Proof against cold,

heat, moisture, wind, weather and acid. Best fire retardent. Unaffected by climatic conditions. No cost of up-keep. Easy to lay.

We Pay the Freight

east of west line of Minnesota, Iowa, Missouri, Oklahoma, Texas. Sold direct at factory prices—3-ply, \$2.50; 2-ply, \$2.25; 1-ply, \$1.75 per square of 108 square feet.

Free cement and nails in each roll. Order from this ad. Prompt and safe delivery guaranteed. Money back if not just as represented.

Write to-day for FREE samples of Wall Board and Roofing, and illustrated Booklet.

The Mastic Wall Board and Roofing Mfg. Co.

38 East Third Street,

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SLATE WE HAVE WHAT YOU WANT

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

SATISFACTION GUARANTEED IN QUALITY AND PRICE

ASK FOR DELIVERED PRICES

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H. J. KICHLINE, Sales Agent

DO YOU WANT SLATE?

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



**Miracle
One-Man
Brick
Machine
Price
\$100**

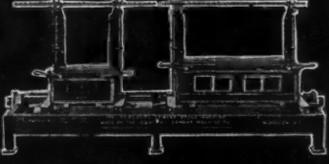
**Rapid,
Durable,
Strong,
Everlast-
ing.**

Ask for our Catalogue "K" covering full line of Concrete Tools, Machinery, Pipe Molds, Culvert Forms, Concrete Mixers (batch and continuous), and all kinds of equipment for Cement workers everywhere.

Miracle Pressed Stone Co.
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Largest Mfrs. of Concrete Machinery in the World.

**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.

**THE HERCULES
POWER TAMPER**
Excels All Others

Requires practically no floor space.
Can be used in any position.
Delivers a rapid, powerful stroke without vibration.

**JUST WHAT YOU
HAVE BEEN LOOK-
ING FOR—A MA-
CHINE LOW IN
PRICE, HIGH IN
EFFICIENCY.**

For Catalogue of Her-
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or Tampers—Address

**Century Cement
Machine Co.**
268-278 St. Paul St.
ROCHESTER, N. Y.

INVESTIGATE!

The Acme Cement Block Machine
ADOPTED BY THE U. S. GOVERNMENT



Notice the advantages offered in this machine, the practical points embodied, the great value it is. Makes blocks face down and in various sizes from 8x8x16 to 8x12x24. All on the same frame, with the substitution of plates. Either wood or iron pallets may be used, and blocks can be made with either a dry, medium, or wet mixture.

\$40.00 Complete Outfit 8x8x16
Liberal Free Trial Offer

To give contractors an opportunity of investigating the superiority of the Acme we offer to send it on 10 days trial. Send for catalogue of Blocks and Brick Machines, Concrete Mixers, and Ornamental Moulds.

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ROOFING SLATE	MARBLEIZED SLATE—
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Send for Catalogue of Marbleized Slate Mantels and Price List

THE EXCELSIOR SLATE CO.
PEN ARGYL, PA.

**PLATE GLASS
Bath Room Fixtures**
FOR RESIDENCES, HOTELS, OFFICE AND APARTMENT
BUILDINGS

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

PLATE GLASS TOWEL BAR



Price \$1.50

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

Round glass towel bars, \$2.00
Adjustable glass towel shelves, \$3.50, \$4.00, \$6.00

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

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Manufacturers and Jobbers of Plate Glass Specialties
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CASH MUST ALWAYS ACCOMPANY ORDER

For Sale.

"EUREKA" Specifications for Brick Dwellings, with heating and plumbing, postpaid 50 cents; Specifications for Frame Dwellings, with heating and plumbing, postpaid 40 cents. Copyrighted 1909. Every builder saves time by using. Prevents forgetting something. E. G. SOLTMANN, 121 E. 42d St., New York.

Patents.

C. L. PARKER, Solicitor of Patents, McGill Bldg., Washington, D. C. Handbook for investors sent free upon request.

Wanted.

WANTED—Foreman for planing mill doing mostly special work; must be capable of estimating from plans and specifications, make cutting bills for mill. State age, experience, salary expected, married or single. Address E, No. 8, care American Carpenter and Builder.

CONNECTICUT ARCHITECTURAL STUDIO—Artistic designs prepared for bungalows, residences, etc. Prompt attention. ARCHITECT, STUDIO, 50 Winter St., New Haven, Conn.

CARPENTERS' Ready Reference for Roof Framing

Is a copyrighted book that gives lengths of common, hip valley and jack rafters, and the figures to use on square for all cuts for the following 1 1 1 3 5 3 pitches: Also octagon rafters for same pitches 4 3 2 8 8 4 and a scale for polygon miters up to ten sides. Can be carried in vest pocket. A handy and time-saving book for anyone to have. Sent postpaid for 25c. Address Dept. A. C. B.

E. OEHRLER, 2567 Dodge Street, Omaha, Neb.

"Creole" }
"Etowah" } **Georgia Marble**
"Cherokee" }
"Kennesaw" }

THE GEORGIA MARBLE CO., TATE, GA.



SCALE FREE Send us two or more names of persons who are interested or want to buy Hot Water Heating Plants and we will send you our Architect's scale. Back inches are divided into 8, 10, 12, 16, 20 and 40 parts. Also free catalogue on request. See our two-page advertisement in the February, 1909, issue of the American Carpenter and Builder

Andrews Heating Co. 949 Heating Bldg., Minneapolis. 978 La Salle Bldg., Chicago, Ill.

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.

Sold Under Our Absolute Guarantee

It will pay you to find out just how much a Weber Engine will increase the capacity of your shop and at an actual saving of cost in operation. Write us today for our new illustrated catalog and allow us to send a list of the inexpensive time saving, labor saving shop machinery you can operate with a Weber.

Sheffield Gas Power Co.
127 Winchester Place Kansas City, Mo.

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
Moux City, Iowa.

22,000 Sheldon Steel Rack Vises

Sold on approval, an unconditional money back guarantee.

SHELDON'S STEEL BAR CLAMPS

Guaranteed Indestructible

We solicit privilege of sending samples and our complete catalogue.

E. H. SHELDON & CO.
84 N. May St., Chicago

RAPID-ACTING WOODWORKER'S VISE No. 3

IF IT'S ART GLASS WE MAKE IT



MANUFACTURERS OF EXCLUSIVE DESIGNS IN
BEVEL PLATE, MITRE PLATE, CRYSTAL SHEET
 OR COLOR IN LEAD AND COPPER SETTING —
LAMP SHADES — CHURCH AND MEMORIAL
WINDOWS OUR SPECIALTY. :: :: :: :: ::
 WRITE AT ONCE FOR DESIGNS AND PRICES



SCHULER - MUELLER CO. Long Distance Phone RANDOLPH 2939 **S. E. Cor. State and Kinzie Sts., Chicago, Ills.**

ZIMMERMAN'S



ANTI-SAG STRAP HINGE

SEE THIS FLANGE CANNOT SAG OR TWIST

TWO BOLTS WHERE THE WEIGHT IS CARRIED

ATTACHED BY STANDARD BOLT OR LAG SCREW

Ask your jobber or write us.

Highest Award Jamestown Exposition.
 Easily attached for Heavy Barn and Fire Doors, Gates, Fire Shutters. 22 sizes, 6 inches to 6 feet. The strongest hinge ever offered: superior to blacksmith hinge.

HARRY ZIMMERMAN & CO., Patentees,
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ANTI-SAG STRAP HINGE

ALFRED W. WOODS' KEY TO THE STEEL SQUARE.



This is it.

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

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

Price \$1.50, Postpaid

American Carpenter and Builder
 185 Jackson Boulevard, CHICAGO

NO MORE FIREPLACE TROUBLES !

No more smoke! No flimsy dampers to get out of order. No uneven heating of room. No soiling of hands or clothing while attempting to regulate draft.

The COLONIAL FIREPLACE HEAD



solves the problem of fireplace construction. It insures the greatest amount of heat radiation with the most perfect heat escapement. Draft always under perfect control, and can be instantly regulated from the outside without the slightest possibility of soiling either the clothes or hands. Perfect combustion of fuel. Most economical fireplace head made. Very easy to set. Saves entire price by saving in cost of erection. Cast in one piece of the best gray iron stove casting. No chance of fire where fireplace facing is joined to the chimney.

WRITE today for free circular giving full and complete description with prices. Don't wait—send now.

COLONIAL FIREPLACE COMPANY
 6598 12th Street CHICAGO

Manufacturers of Ornamental Glass in its Various Forms Art Shades	SCHULER ART GLASS CO. Art Glass for Churches, Residences, Etc. MADISON AND CANAL STS., CHICAGO, ILL. TELEPHONE, MAIN 5181	Specialties in Art Designing and Suggestions Mosaic Domes
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BLACKBOARDS

The E. J. Johnson Co.
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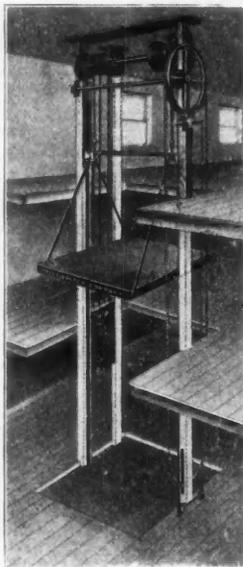
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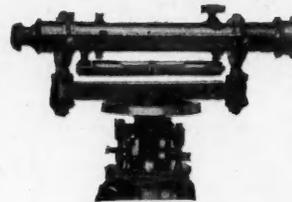
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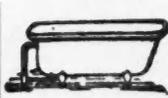
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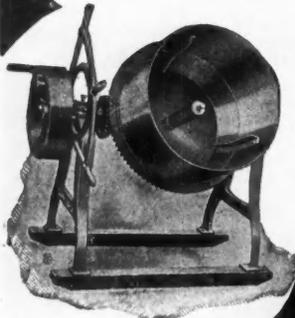
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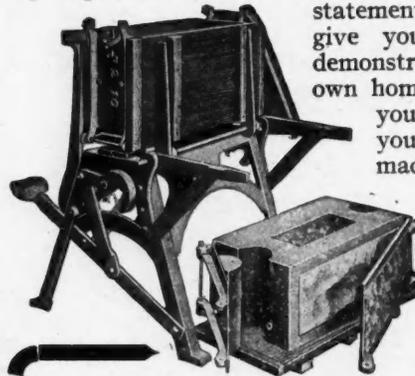
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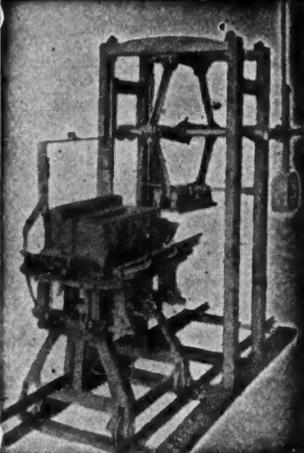
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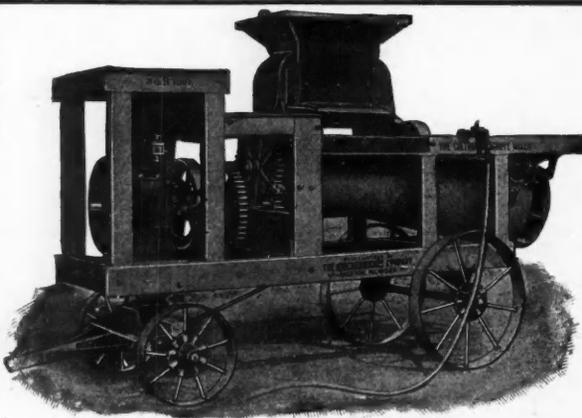
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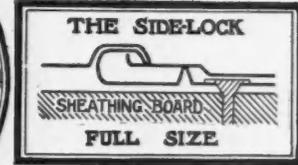
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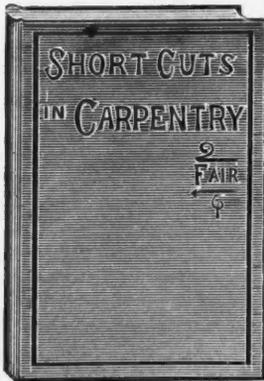
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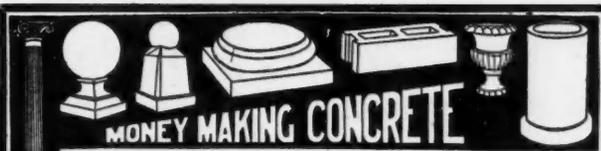
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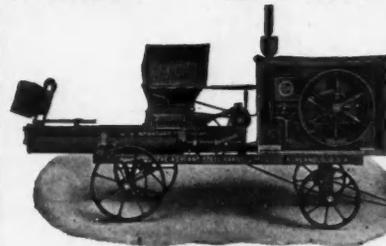
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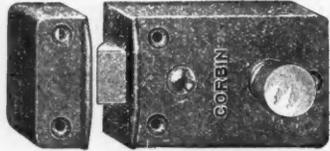
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No. HA 33 With screws. Each, **5c**
Per dozen, **50c**



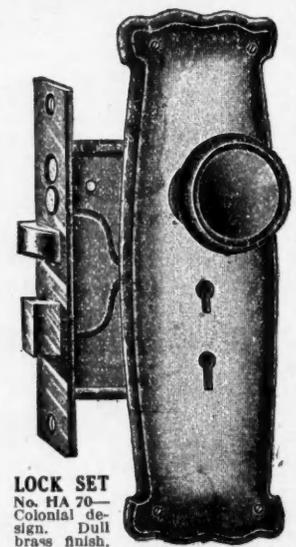
HOOK SASH LIFT
No. HA 32—Antique Copper Finish, including screws, each, **2c**
Per dozen, with screws... **20c**



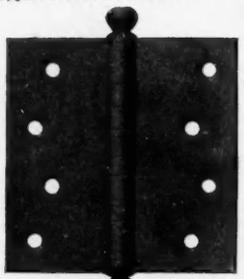
SASH FASTENER
No. HA 34—Antique Copper, with screws match. Price each... **5c**
By the dozen... **55c**



CUPBOARD TURNS
No. HA 31—Wrought Steel Antique Copper Finish, including screws Each... **12c**



LOCK SET
No. HA 70—Colonial design. Dull brass finish. Beautiful design. Mortise lock 5x3 1/4 in. wrought steel case front and strike. Night latch and dead bolt... **\$1.76**
Cut shows front door set. Inside No. HA 71, same design, lock 3 1/4 x 3 1/4... **57c**



LOOSE PIN BUTTS
No. HA 24—Ball tipped and reversible Antique Copper Finish, with screws 1 1/2 x 3 1/4. Price, pair **17c**

Write For Books Today. We Will Mail Them FREE

With the new Gordon-Van Tine Hardware Catalog and the Grand Builders' Catalog of 5,000 Bargains in Building Material before you, you can tell to a penny how much you can save, whether you are building a modest cottage or a palatial residence. Thousands of pleased customers are constantly re-ordering. Write for the catalogs today.

GORDON-VAN TINE COMPANY

500 FEDERAL STREET : : DAVENPORT, IOWA

We Will Fill Orders Direct From This Page
Send us a trial order from this advertisement. We guarantee absolute satisfaction, or your money instantly refunded. Everything is bright and new. You will make no mistake, no matter how large your order. Our guarantee is good as gold.

CONTENTS FOR NOVEMBER, 1909

	Page		Page		Page
Advice for Mr. Knowlton.....	234	He Wants It on the Square.....	232	Old Houses Made New by "Overcoat-	186
Aluminum Gives Way to Wood for Air	234	Hole Will Shrink, The.....	180	ing".....	186
Ships.....	198	Home Workshop, The.....	209	Plank Splicing Question.....	234
Annual Convention of Architects.....	211	Hot Shot From "P. D. Q.".....	239	Portland Cement Grindstone for Glass.....	197
Application, The.....	180	House Design.....	234	Practical Carpentry.....	191
Baldwin Breaks Dirigible Height Rec-	201	How to Build a Boat.....	231	Prize Designs for Cement Show.....	192
ords.....	201	How to Develop Corner Brackets.....	233	Public Buildings.....	212
Building and Loan Associations Prosper	179	How to Lay Out a Square Corner.....	196	Residences.....	222
Cartoon.....	181	How to Make a Utility Chair.....	210	Sheet Metal as a Roofing Material.....	215
Church Roofing Problem.....	239	How to Use the Steel Square.....	194	Silver Plating Without a Battery.....	211
Claims to Simplify Degree Framing.....	233	Interesting Problem.....	239	Slap and a Hunch, A.....	233
Complete Plans for Seven-Room Cottage	222	Large Combination Stock Barn.....	219	Spanish Tiles—Old and New.....	182
Correspondence.....	231	Machine Woodworking.....	220	Starting the New Furnace Right.....	190
Cutting Pockets in Jambes.....	234	Memoranda of a Machine Woodworker.....	220	Steel Square.....	194
Design for Four-Room City School.....	212	Mission Cabinet Design.....	240	Suggestions Wanted.....	240
Designs for Piano Bench and Chair.....	209	Modern Successful Residence Designs.....	202	Swiss Chalet, The.....	226
Details of Modern Framing.....	191	Mr. Schneider Hopes This Settles It.....	233	To Cut Jack Rafter in a Miter Box.....	240
Details for Window Seat.....	231	Mr. Talbot Has a Last Word.....	232	Truss for Church Roof.....	231
Device for Squaring Frames.....	239	Mr. Worm Turns.....	231	Typical American Homes.....	202
Editorial.....	179	Nailing Hints.....	240	Water Hammer in Steam Heating Pipes.....	200
Farm Buildings.....	218	New Word Coined, A.....	234	Water-proof Stable Floors.....	232
Framing for Projecting Bay.....	240	Notable Country Home at Rowley, Mass.....	228	Which Is Your Way?.....	231
France Prohibits White Lead in Paint.....	150			Wisconsin's Model Country School.....	213

INDEX TO ADVERTISEMENTS, NOVEMBER, 1909

	Page		Page		Page
Ackermann & Co., J. B.....	159	Gage Tool Co.....	168	Parker Co., The Chas.....	168
Adjustable Hanger Co.....	169	Galesburg Cornice Works.....	283	Parks Ball Bearing Machine Co.....	168
American Floor Surfacing Co.....	162	Galloway Co., Wm.....	279	Peck, Stow & Wilcox Co.....	247
American Luxfer Prism Co.....	283	Georgia Marble Co.....	286	Peerless Brick Machine Co.....	294
American Rolling Mill Co.....	170	Goodell Mfg. Co.....	163	Perfection Mfg. Co.....	176
American School of Correspondence.....	271	Goodell-Pratt Co.....	172	Pettyjohn Co., The.....	295
American School of Correspondence.....	291	Gordon, Van Tine & Co.....	296	Phillips Co., A. J.....	171
American Sheet & Tin Plate Co.....	262	Grand Rapids Hardware Co.....	172	Phoenix Sliding Blind Co.....	174
Anchor Concrete Stone Co.....	294	Gregg Hardware Co.....	175	Pioneer Roll Paper Co.....	265
Anderson & Co., Geo. H.....	285	Hanover Hinge Co.....	171	Prentiss Vise Co.....	156
Andrews Heating Co.....	286	Hardin, John.....	290	Progressive Mfg. Co.....	158
Ashby, Geo. W.....	273	Haven, Walter S. M. D.....	156	Pullman Mfg. Co.....	178
Ashland Steel Range & Mfg. Co.....	295	Hayden Automatic Block Machine Co.....	290	Rechtin, Theodore E.....	286
Atkins Saw Co., E. C.....	272	Heitland Grate & Mantel Co.....	263	Rehm Hardware Co.....	175
Automatic Sash & Holder Co.....	166	Hess Warning & Ventilating Co.....	253-254	Rodgers & Co., R. M.....	163
		Hitchings & Co.....	260	Roth Bros. & Co.....	164
Bachmann, Geo. J.....	161	Hower, J. K.....	284	Russell-Jennings Mfg. Co.....	162
Barber Asphalt Paving Co.....	280	Hurley Machine Co.....	161	Sackett Plaster Board Co.....	243
Barnes Co., W. F. & Jno.....	162	Huther Bros.....	169	Samson Cordage Works.....	170
Bates & Edmonds Motor Co.....	161	Industrial Publication Co.....	263-295	Sargent & Co.....	160
Berger Mfg. Co., The.....	276	International Correspondence Schools.....	274	Sasgen Bros.....	156
Bishop & Co., Geo.....	174	Interstate Equipment & Engineering Co.....	155	Schaller-Hoerr Co.....	289
Bovee Grinder and Furnace Works.....	280	Izard-Warren Co.....	160	Schuler Art Glass Co.....	287
Bradt Publishing Co.....	288	Ires Co., The H. B.....	265	Schuler-Mueller Co.....	287
Braunsdorf-Mueller Co.....	164	Jahant Heating Co.....	264	Sears, Roebuck & Co.....	259
Bridgeport Wood-Finishing Co.....	270	Johnson Co., The E. J.....	287	Sedgwick Machine Works.....	261
Brush Runabout Co.....	275	Johnson & Son, S. C.....	244-245	Seneca Falls Mfg. Co.....	169
Caldwell & Drake Iron Works.....	288	Kanneberg Roofing & Ceiling Co.....	281	Sheffield Gas Power Co.....	286
Canton Art Metal Co.....	279	Karol, B. B.....	171	Shelby Spring Hinge Co.....	174
Canton Mfg. Co.....	267	Kawneer Mfg. Co.....	242	Sheldon, E. H.....	286
Carborundum Co.....	258	Keasbey & Mattison.....	261	Shultz, C. H.....	293
Carey Co., The Philip.....	251	Kees Mfg. Co., F. D.....	158	Sidney Elevator Mfg. Co.....	173
Central Mantel Co.....	279	Knickerbocker Co., The.....	292	Sidney Tool Co., The.....	156
Century Cement Machine Co.....	285	La Reclama Cuban Factory.....	178	Silver Lake Co.....	169
Champion Safety Lock Co.....	172	Lorenzen & Co., Chas. F.....	275	Simmons Hardware Co.....	267
Chicago & Alton R. R.....	291	Lufkin Rule Co.....	160	Simonds Manufacturing Co.....	266
Chicago Grille Works.....	289	McKenna, David.....	284	Slatington Slate Co.....	281
Chicago House Wrecking Co.....	248-249	Mack & Co.....	158	Smith & Hemenway Co.....	265
Chicago Machinery Exchange.....	167	Mallory Mfg. Co.....	166	Smith Machine Co., H. B.....	167
Chicago Spring Butt Co.....	178	Marsh, H. C.....	178	Soltman, E. G.....	286
Chicago Wrecking & Supply Co.....	167	Marshalltown Trowel Co.....	160	Somers Bros.....	292
Cincinnati Tool Co.....	176	Mattison Machine Works, C.....	174	South Bend Machine Mfg. Co.....	290
Colgan Machinery & Supply Co.....	285	Maxwell-Briscoe Motor Co.....	Cover	Standard-Gillett Light Co.....	263
Colonial Fire Place Co.....	287	Mayhew Co., H. H.....	166	Stanley Rule & Level Co.....	171
Commonwealth Hotel.....	284	Metallic Weatherstrip Co.....	271	Starrett & Co., L. S.....	162
Concrete Stone Mould & Machine Co.....	293	Miles Mfg. Co., P. B.....	292	Star Expansion Bolt Co.....	169
Cortright Metal Roofing Co.....	293	Millers Falls Co.....	163-173	Star Scraper Co.....	161
Coulson & Co., J. W.....	283	Miller Mfg. Co., A. W.....	165	Stebbins Hardware Co.....	176
Crescent Machine Co.....	164	Milwaukee Corrugating Co.....	156	Stoddard, Dwight L.....	228
Crescent Machine Works.....	158	Miotke, Jos.....	157	Sykes Metal Lath & Roofing Co.....	278
Crookston Tool Co.....	165	Miracle Pressed Stone Co.....	285	Taylor Coal Chute & Mfg. Co.....	176
Dayton Concrete Machine Co.....	271	Montross Metal Shingle Co.....	271	Taylor Mfg. Co., James L.....	168
Defiance Machine Works, The.....	173	Morrill, Chas.....	178	Tiffin Art Metal Co.....	276
Detroit Decorative Supply Co.....	293	Mullins Co., The W. H.....	281	Tower & Lyon Co.....	164
Detroit Show Case Co.....	267	Mulvey Mfg. Co., Chas.....	175	Triple A Machine Co.....	159
Diehl Novelty Co.....	265	Myers & Bro., F. E.....	261	Trussed Concrete Steel Co.....	294
Diffin, C. A. & F. G.....	162	National Manufacturing Co.....	Cover	Turnbull Co.....	282
Diaston & Sons Co., Henry.....	175	National Roofing Materials Co.....	252	Union Roofing & Mfg. Co.....	261
Dixon Crucible Co., Jos.....	175	National Sheet Metal Roofing Co.....	292	United Pump & Power Co.....	280
Dow Wire & Iron Works.....	281	Nicholls Manufacturing Co.....	159	United Roofing & Mfg. Co.....	267
Dunn & Co., W. E.....	290	North Bros. Mfg. Co.....	163	Universal Mfg. Co.....	292
East Bangor Consolidated Slate Co.....	262	Northwestern Compo Board Co.....	170	Universal Portland Cement Co.....	292
Eastern Granite Roofing Co.....	268	Northwestern Expanded Metal Co.....	256	Washington & Choctaw Land Co.....	298
Edgerton Mfg. Co., C. A.....	282	Northwestern Grille Works.....	166	Watrous Mfg. Co., E. L.....	268
Edwards Mfg. Co., The.....	Cover	Oehrl, E.....	286	Weber Mfg. Co.....	161
Eller Mfg. Co., The.....	291	Ohio Tool Co.....	168	White Co., David.....	288
Engineers' Equipment Co.....	250	Orr & Lockett Hardware Co.....	158	Winthrop Asphalt Shingle Co.....	260
Excelsior Slate Co.....	285	Otis Elevator Co.....	289	Woods, A. W.....	287
Foots Foundry Co., J. B.....	165			Zimmermann & Co., Harry.....	267
Ford Mfg. Co.....	255				
Foas Gasoline Engine Co.....	176				
Foster & Sons Co., Wm.....	293				

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 November 20 in order to insure insertion in December number.

A 10-Acre Farm For You

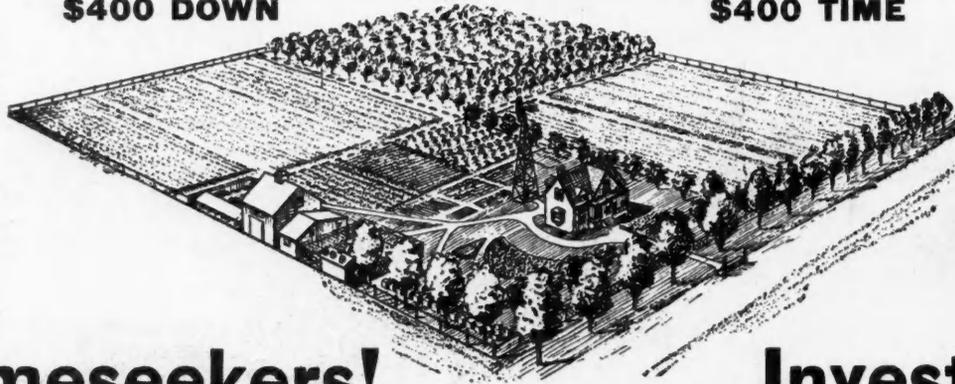
WITH SEVEN-ROOM HOUSE

WILL
YIELD
PROFIT
OF
\$3,000
PER
YEAR
AND UP

\$400 DOWN

\$400 TIME

YOU
CAN
AFFORD
A
SPECIAL
WINTER
HOME
HERE



Homeseekers!

Investors!

JUST THINK OF IT! Ten acres of productive land located near town-sites along the W. & C. Railroad, with a fine 7-room house ready for occupancy—all for \$400 down and \$400 on long time—if you ACT NOW. Or a 10-acre tract with 4-room house for \$500—\$250 down, balance on time.

What A Northern Man Says:

Mr. Herman H. Wefel, Jr., who went south and located near the Washington and Choctaw lands, in a letter to this company, says, in part:

*"This section must become one of the Nation's most productive and valuable properties * * * I am personally familiar with the tract of land you have just purchased at Yellow Pine, Alabama, and consider it one of the best agricultural propositions in the whole Southeast Gulf Coast. * * * Resources are practically boundless and opportunities to make money in farming and investment unsurpassed."*

PEACHES

The largest peach orchard of the South is near this tract of land, which furnished a wonderful crop this season—selling at wonderful profit.

PECANS

Even pecan nuts and wild peanuts furnish a considerable source of income.

There is no limit here to the possibilities of fruit, nuts and vegetables.

This is a three and four-crop-a-year country, with ideal climate and National Fame as a **Health Resort**.

It's the only part of the country absolutely free from local diseases. THE LAND IS SITUATED AT YELLOW PINE, IN WASHINGTON COUNTY, ALABAMA.

This is a proposition that must appeal favorably to carpenters, woodworkers, mechanics and other men with a trade, to get 10 acres of ground and a house in this beautiful country where it will yield an income of \$3,000 to \$5,000 a year.

Doesn't this sound good to you—to you who have struggled along for years as a dependent, paying rent and saving little?

The Washington and Choctaw reservation has just been thrown open, after being relinquished by a lumber company that had cleared out all of the best lumber. They left the soil, however, and you will look a good way to find soil that is more productive.

Experience is not necessary. A city man can do it. It simply requires a moderate amount of brains and the nerve to get started.

This is a most inviting opportunity to procure at a very low price and on easy terms a home for yourself, where climate, natural rainfall and soil unite in creating bountiful harvests. Two, three and even four crops a year are grown on the same ground.

No swamps; no irrigation; no stones; no dry spells; mild, pleasant summers and balmy winters; sweet, pure water.

The soil is suitable for most anything—general farming, fruit, truck, livestock, nuts, poultry, etc.

There is over 100,000 acres in this tract, now being offered at \$17.50 an acre on easy terms.

There are only a few of these tracts bordering on townsites, with houses, so you should ACT without delay.

The investor won't get rich as quickly as the settler—but he'll get rich just the same.

OWN A WINTER HOME

Possibly you have good work in the north for nine months in the year, why not spend your winter months in this beautiful country developing your farm, and incidentally raise a crop or two.

WRITE TO-DAY FOR OUR FREE BOOKLET

It tells the story of this land truly and sincerely. It is sure to interest you. A postal will bring it.

Free transportation and freight over W. & C. Railroad, to settlers.

Washington and Choctaw Land Co.
6198 Times Building, - St. Louis, Mo.

What a Southern Man Says:

Hon. L. C. Irvine, of Mobile, says, in a letter to us, in part:

*"My study and experience with this country extend over 19 years * * * In that time I have beheld successive demonstrations of the production and controllable character of our soils * * * Their value is proven for fruits, nuts, vegetables, and especially corn, cotton, grain and grasses of the highest value * * * I know absolutely that modern machinery (very seldom seen here) * * * will make any man independently rich on ten acres in ten years."*

BUILDING

In this mild climate where lumber is cheap, it costs but little to construct a home.

MARKETS

Excellent markets. Sixty miles from the coast; 21 hours from St. Louis; 29 hours from Chicago. One railroad through the tract, one on the west and one on the east. Half the land within 1½ miles of a railroad.



the country club or golf links, for
 business or for family touring,
 for four passengers, no car
 as satisfactory as this new Maxwell

Benj. Briscoe PRES.

Maxwell
 Perfectly Simple — Simply Perfect

Model Q-3 Four Cylinder 22 H.P. Touring Car

The classiest of four-passenger touring cars—powerful on hills—speedy. Sliding gear transmission, 3 speeds forward, magneto equipped, 4 styles of body, namely, as a two-passenger runabout, \$850; with detachable rear seat for one, \$900; with detachable rear seat for two, \$950, and as a touring car, \$1,000.

Most Ever for \$1000

A Standard Every feature in this car is standard—every feature is recognized as the best by competent engineering authorities. Investigate and you will find a four-cylinder motor 3 3/4 x 4 inches, developing 22 actual horse-power; you will find a sliding gear transmission, three speeds forward, a type used on the highest priced cars; here is every Maxwell principle of unit construction, three-point suspension, disc clutch, thermo-siphon cooling, and straight line shaft drive—all a part of this \$1,000 car.

An Economical At every point you will find the factor of safety large; the tires, 30 x 3 1/2, are over-sized, but that means economy; the carburetor is economical in gasoline, the lubrication is automatic, the 3/4-scroll rear springs absorb the jars of rough roads, the brakes are large and powerful. At every point the car will prove up to your highest expectations. No car is so thoroughly satisfactory to own—no car costs so little to maintain.

A Public Test Eighteen months of testing showed us what this car could do. To prove publicly all our claims, we entered it in competition. At Wilkes Barre, Pa., on the famous hill Giants' Despair, we defeated every car in our class, winning the event. At Sunset Hill, Ossining, N. Y., this model furnished the surprise of the year by defeating the entire field of 11 American cars, three of which were of the six-cylinder type, costing \$3,000 and over. At Lowell, Mass., in the race for the Merrimac cup, this model finished second, third and sixth, the most consistent work of any team. We do not build racing cars, nor do we believe in racing, except as it shows reliability. Now the car is out—examine it—secure a demonstration, and you will realize as we do that for \$850 to \$1,000 (price depending on style of body) we have no competition.

What Do Owners Say The final analysis of the value of an automobile is the verdict of the man who owns one. Please read this letter:

Versailles, Ky., Aug. 16, '09

MAXWELL-BRISCOE MOTOR CO.

Gentlemen.—
 I desire to say that I purchased a Maxwell July 14, and have had it in active service every day. Have never been delayed on the road by any fault of the car, have had no tire trouble—not even a puncture to date. Motor is running splendidly, and the car has proven a joy and a delight.

Yours truly, W. C. McCauley.

Style That indefinable something called style is reflected in every line, yet we have not attempted to get the racing lines that in some cars provoke smiles on the part of those who really know. We do not believe that the American business man or his family desire a "freak car"—a cheap imitation of the racer, but rather a car in accordance with good taste, conservative yet stylish, one which avoids the extremes of the commonplace on one side and freakishness on the other—such a car is this new model.

We Also Make Model E, a big, powerful, roomy, 4-cylinder, 30 H. P. 5-passenger touring car, equipped with gas lamps, generator and magneto, \$1,500; also supplied as roadster with detachable tonneau if desired.

Our model A. A. 12 H. P. runabout at \$550—now magneto equipped—is even better this season—a perfect car for business and pleasure. Our catalogue fully describes all models. Write for it.

SALE OF MAXWELLS TO DATE

Sold to Aug. 31, '09	- - -	18,278
Sold during Sept., '09	- - -	681
Maxwells in use today	- - -	18,959

WATCH THE FIGURES GROW

Maxwell-Briscoe Motor Co.

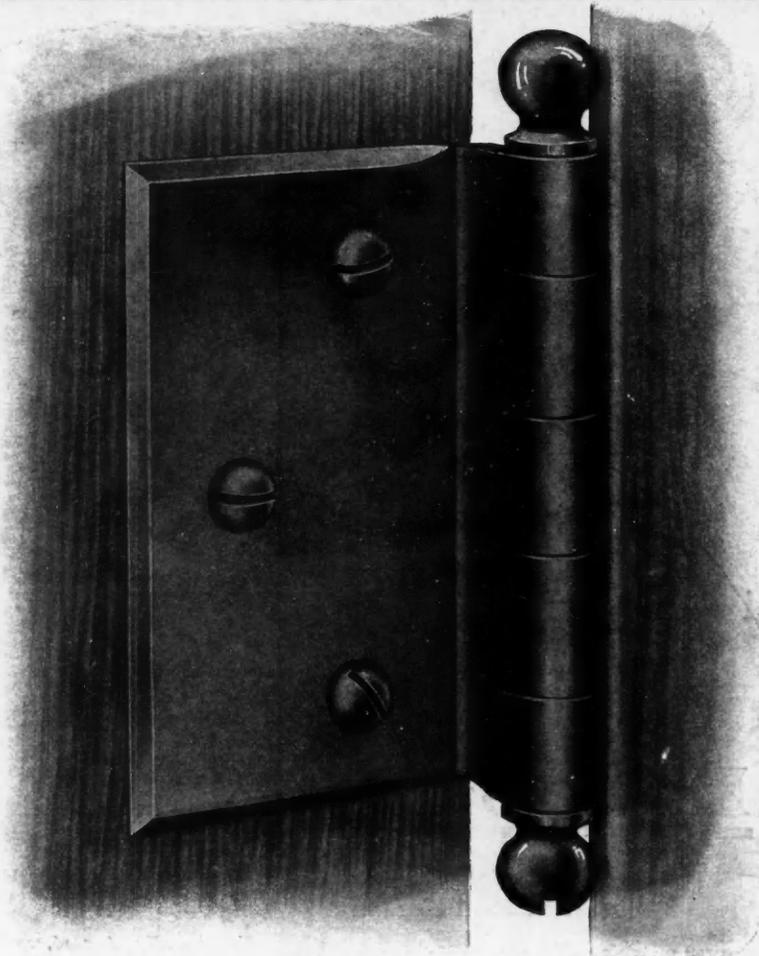
Main Office and Factory
 FORK STREET, TARRYTOWN, N. Y.

OTHER MAXWELL FACTORIES

NEW CASTLE, IND.
 PROVIDENCE, R. I.
 PAWTUCKET, R. I.
 KINGSLAND POINT, N. Y.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

WE INITIATE -- NEVER IMITATE
“National” Tips



No. 450B

“National” Butts can now be supplied with ball tips in all the usual sizes on both Common and Ornamental Butts.

The new false tip is **THREADED** and screws into the butt. The **SLOT** for a screw driver is also an exclusive feature. It makes it easy to remove the pin and shows also which is the bottom of the butt.

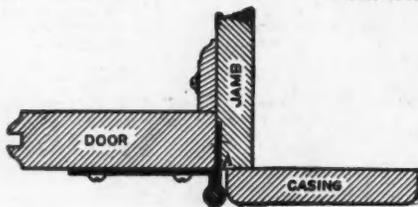


Style No. 450B,

Here illustrated, is the latest design and a beauty. It has beveled edges, is highly polished and double plated. All sizes from 1½-inch to 4-inch, inclusive. Any finish desired.

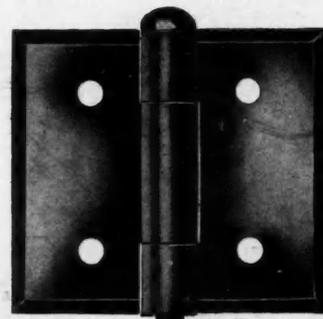
Ask for Booklet, “Ornamental Ideas,” and give us your dealer’s name.

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.



National Manufacturing Co. Sterling, Ill.