

- WITH HOME BUILDERS' SECTION

DEC 31 1913

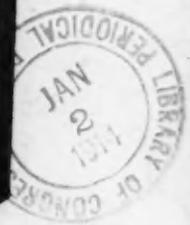
DECEMBER 1913

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

A Christmas Suggestion—



Radford's Cyclopaedia of Construction
Carpentry—Building—Architecture

Thousands of Ambitious Carpenters are ordering "Radford's Cyclopaedia" as a Christmas Gift either for themselves or for some other member of the family, for Home Study these long Winter nights, and it is helping them to Increase their Earning Powers.

See Insert following Page 142 for Special Holiday Premium Offer.
Order Today so that we may send you a Set at this Reduced Price.

Price 20 Cents

Merry Christmas



Now is the time to sweeten up your saw kit. Get some new saws for Christmas. Would you rather have a lot of jimcracks in your Christmas stocking or a really fine

ATKINS *SILVER* STEEL SAW

Then show this advertisement to your wife or sweetheart. Tell her "That's what I want." Then you'll have something to gladden your heart every hour in the day.

You really need saws like these, that will save your time and strength and make the day's work easier for you throughout the whole year. You need a saw that runs fast and easy, even in wet lumber. So get some ATKINS SILVER STEEL SAWS for Christmas. They'll make good.

Your dealer has them—or will get them for you from his wholesale house. Try Atkins this Christmas. Take no other, for there are none "just as good" as Atkins. Insist on the Genuine, with our name on the blade. Then you will have a Merry Christmas for sure.

E. C. ATKINS & CO., Ltd.

The Silver Steel Saw People

Home Office and Factory, Indianapolis, Ind.
Canadian Factory - Hamilton, Ontario

Branches Carrying Complete Stocks in the Following Cities
Address E. C. ATKINS & CO.

Atlanta
Chicago

Memphis
Minneapolis

New Orleans
New York City

Portland
San Francisco

Seattle
Vancouver, B. C.

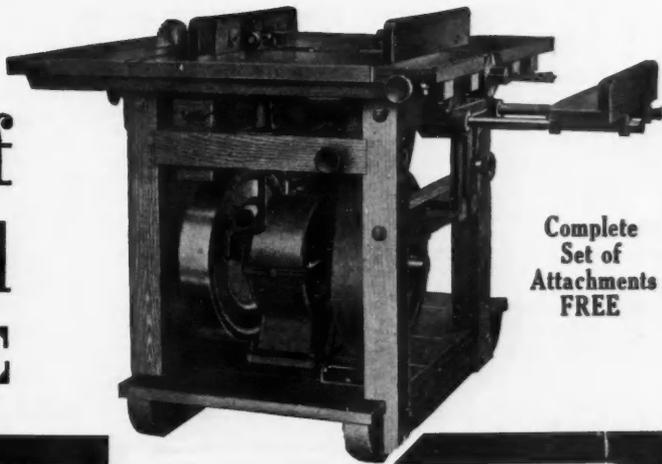
Sydney, N. S. W.

JOHN W. SHAW & SONS, Wolverhampton, Ltd., Agents for Great Britain
3 Rue Scribe, Paris, France

52 Kaiser Wilhelmstrasse, Hamburg, Germany

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

HERE Is a PRODUCT of BRAINS and EXPERIENCE



Complete
Set of
Attachments
FREE

THE "EVEREADY" SAW RIG is the result of carefully matured thought—the successful outcome of intelligent "team work" by an organization of highly skilled technical men who have proved by every practical test the correctness of the principle embodied in their masterpiece, the



EVEREADY SAW RIG

Practical -- Durable -- Reliable

The Mixer
with the
Effective
"4-way" Mix



Also Built for Steam or
Electric Power

Wonderfully powerful, easy-running and economical in operation. The "EVEREADY" RIG saves time consumed in hand sawing and ripping, and by cutting out exorbitant mill charges should save you hundreds of dollars. Write for our SPECIAL 6-DAY FREE TRIAL OFFER. And don't forget the

OSHKOSH MIXER

Here is the PERFECT Mixer. Its "4-way" mixing principle is original—different—better than anything ever before thought out. It is a mixer "made by men of brains for men of brains." Write for prices on our full line, guarantee, etc.

OSHKOSH MANUFACTURING CO.

316 SOUTH MAIN ST., OSHKOSH, WIS.

Branch Dealers in Saw Rigs and Mixers

CHICAGO, 1452 Monadnock Bldg.
ATLANTA, GA., SOUTHERN SALES OFFICE, 604 Walton Bldg.
CINCINNATI, OHIO, S. O. Holder Supply Co., 1007 Commercial
Tribune Bldg.
PORTLAND, ORE., G. A. Saunders, Builders Exchange, Second and Alder
DETROIT, MICH., Claude Wadsworth, Jr., 963 Woodward Ave.,
EVANSVILLE, IND., Indiana Builders Supply Co., Furniture Exchange
Bldg.
KANSAS CITY, MO., King Supply Company, 1201 Searritt Bldg.
LOS ANGELES, CAL., Arthur E. Banks, 1006 Wright & Callender Bldg.

PHILADELPHIA, Dodge & Dodge, 118 Maplewood St., Eastern Sales
Agents
MILWAUKEE, WIS., W. A. Lewis Company, Loan & Trust Bldg.
NEW ORLEANS, LA., Henry J. Malocnee, 802 Ferrin Bldg.
PITTSBURGH, PA., F. W. Paterson's Sons, 326 Diamond St.
RICHMOND, VA., I. Bluford & Company, 1538 East Cary Street.
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Second South St.
SAN FRANCISCO, CAL., J. E. Dwan & Co., 445-447 Turk St.
SEATTLE, WASH., Harold G. Stern & Co., 524 First Ave., South.

ST. PAUL, MINN., Raymer Hardware Co., 373 Roberts St.

OMAHA, NEB., Sunderland Mch. & Supply Co.

SAW RIGS EXCLUSIVELY

MIXERS EXCLUSIVELY

NEW YORK, Dodge & Dodge, 1133 Broadway, Eastern Sales Agents.

Live Agents Wanted in Open Territory

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

FOR SURFACING AND POILSHING HARDWOOD FLOORS
The American Floor Surfacing Machine

IS NO EXPERIMENT. Its work since 1903 has established a standard for finely surfaced and polished floors. It is the only machine whose work is specified by leading architects and used in the best government buildings and will surface and polish any kind of a floor from common pine to finest parquetry.

IT IS THE ORIGINAL and only two-roll, self-propelled, dust-collecting machine, that surfaces close to the wall and can be used in small rooms. Anyone can operate it.

ITS WORK IS RAPID, regular, smooth and even because the power that drives the rolls also propels the machine at the same ratio of speed. It has surfaced and polished millions of square feet of the best floors in America and Europe.

GET A MACHINE that does first-class work and in paying quantities, that is fully guaranteed and sold on its merits. Don't be fooled with an imitation.

We sell direct to the users. Write for our free book "Surfacing Floors as a Business"

Use Our Champion Double Disc Machine for Cement, Terrazzo and Marble Floors.

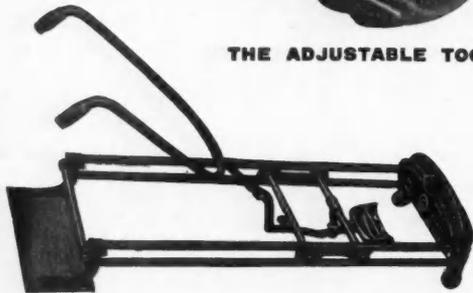
Manufactured by **The American Floor Surfacing Machine Co., Toledo, O.**



\$25.85



THE ADJUSTABLE TOOL



The Haven Planing Floor Scraper

THE
Haven Planing Floor Scraper
 Becomes the **STANDARD TOOL ON THE JOB**

wherever it is used. Builders have awakened to the fact that it solves the problem for good. Our machine differs entirely from all others. The secret of our splendid success rests on the following points:—

- (1) The scraping tool is a true plane, the world's standard leveler.
- (2) A light running carriage.
- (3) A smooth trackway for carriage.
- (4) A shearing cut on the instant.
- (5) Machine remains stationary while scraping enclosed area.
- (6) Angle of blade and thickness of shaving regulated with ease.
- (7) All woods are alike easy.
- (8) No man-killing truck to pull or push; you rest on the return stroke.
- (9) Planes and scrapes simultaneously.
- (10) No chattering, waving or gouging.
- (11) The planing head does better work than the usual hand work, and from four to six times as much.

If you have tried other machines and been disappointed, then TRY OURS AND BE CONVINCED THAT WE HAVE THE GOODS. A TRIAL COSTS YOU NOTHING. DON'T BUY AN INFERIOR MACHINE WHEN YOU CAN GET THE BEST ON EARTH FOR \$25.85. Send for booklet and complete information concerning our guaranteed machine and free trial offer.

THE HAVEN MFG. CO.

RACINE, WIS.

STERN FLOOR SCRAPER

Whether you can afford a larger, more expensive machine is not the question. Cost and size are not indications of better work. No machine made will scrape floors better than the Stern. Quality is the first consideration. Price? The Stern is low-priced. So much the better. You save money and get a machine that will do the work as well or better.

For your own benefit let us tell you our side of the story. We're prejudiced in favor of our machine.

We know what it has done under every condition. Your opinion is unbiased. Let us send you our circular. Use your own judgment as to the merits of the Stern.

Write today or tomorrow—
Better today.



STERN MFG. CO.
LANCASTER, PA.

Holds Any
Blade Up
to 3 1/2 x 7
Inch

Scrape Your Floors With
 this **LITTLE GIANT**—

You Can Try It
 At Our
 Expense



A floor scraper is now a necessity with every builder. In this Little Giant you get a floor scraper you can always depend upon to do its work properly. It is easy to operate. Scrapes floors rapidly, perfectly and economically. We'll let you try this Little Giant before you buy it—a fair proposition—and you can prove to yourself just what it can do. Write us NOW for our special offer for YOU.

The **THOR Electric Home Laundry Machine**

should be in every home. This machine does away with all laundry troubles. Home owners and builders appreciate their convenience and usefulness and it is good policy on your part to install them for your clients. There are now more than 62,000 in use. Sizes, designs and prices to meet every requirement. Sold on liberal FREE TRIAL EASY PAYMENT Plan.

Electric Washers from \$30 up

You ought to have our circular matter describing our Little Giant Scrapers and THOR Washing Machines. Write for this NOW.

Hurley Machine Company

New York 1008 Flat Iron Building
 37 S. Clinton Street, Chicago



WOOD



FREE TRIAL
 5,000 in use

RAPID, FLEXIBLE, SELF-
 PROPELLING WHEN
 RAISING HANDLE

Send for our new
 list and free trial
 proposition.

M. L. Schlueter

107 N. Canal St.
 Chicago, Ill.

Made in three sizes:
 8 x 15, 8 x 15 and 8 x 12 in. Flexible Roller.
 Edge Roller easily adjusted to either side.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

**Pay Me
As It
Pays You!**



Pay Me As It Pays You!

YOU don't have to put up any money to get my scraper. Just make a small deposit five days after arrival; then five days later start making monthly payments. These payments will hardly exceed ordinary daily rental fees—and

The WEBER DOUBLE ACTING Floor Scraper

can easily be made to earn enough extra profits to more than take care of them. Write for my *free trial offer* today if you want to get a good scraper and *get it right!*

Wanted—One Good Agent In Each Town

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

If What We Say Is True---

If our Floor Scraper is the most perfect made today—

If we do sell it *without a fancy price—*

You ought to know about it. Ask us.

We have a special proposition for you.



Fox Supply Co.

Manufacturers

Dept. A

Brooklyn,
Wis.

\$.04 a Minute
\$ 2.40 an Hour
\$19.20 a Day

Not "Just Figures"
But the Actual Earnings of a

TRIPLE "A" FLOORSMOOTHER

In the Hands of An Experienced Workman.



We have proved by six months' actual test that the average earning of the TRIPLE "A" FLOORSMOOTHER is \$20.00 a day. Floor finishing nets from 1 to 3 cents a square foot. The TRIPLE "A" will easily finish 18 squares a day. That means your profits over and above your wages, will be \$15 or more a day.

SPRING DRIVEN

The TRIPLE "A" is the only floor smoother that has the SPRING DRIVE. It lessens the work fully two-thirds. Works quickly and never tires the operator. Push the machine forward; it stops automatically and the spring starts it back on the cutting stroke. Takes off a shaving as wide as your hand and of uniform thickness. Leaves the floor as smooth as satin—without wave or chatter.

**COMPLETE MACHINE
NO EXTRAS TO BUY**

When you buy the TRIPLE "A" you've got all the equipment you need to start in finishing floors as well as it can be done. No extra fixings to buy; no power attachments. The TRIPLE "A" is a hand machine—the easiest running machine made. Everything goes with the machine—adjustable weights, sander, 6 blades (12 cutting edges), and a FREE KIT OF TOOLS, nicely packed in a neat wooden box.

SOLD ON EASY PAYMENTS

Mail the COUPON today. Let us tell you more about the TRIPLE "A" and how you can buy it at a LOW PRICE on EASY MONTHLY PAYMENTS. Don't hesitate. You can make more money with the TRIPLE "A" than you ever thought was possible. Ask us how.

TRIPLE "A" MACHINE CO.,

Room 309—300 W. Indiana Street,
CHICAGO, ILL.

TRIPLE "A" MACHINE CO.,
Room 309, 300 W. Indiana Street,
Chicago, Ill.

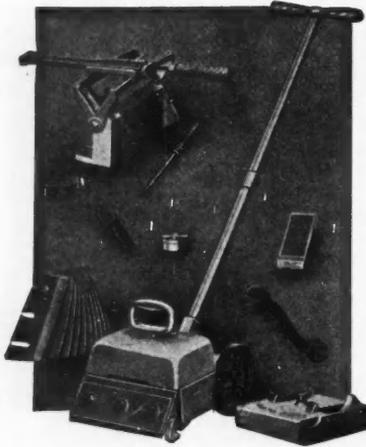
If your machine is all that you claim for it, please send me full particulars. I do not obligate myself in any way to buy.

Name

Address

Town and State

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder



Perfect Work—Minimum Cost

You want both—you need both, in order to increase your business, in order to be successful financially.

The Miotke Floor Scraping Outfit

does perfect work and at a minimum cost. Thousands of satisfied users attest these facts. If you try the MIOTKE OUTFIT you'll need it. Say the word and I will send you my outfit for a WEEK'S FREE TRIAL. Ask me about my special offer.

JOSEPH MIOTKE, 247 Lake Street, Milwaukee, Wis.

Get the Roof that Lasts

—the kind that never fades, never wears out, never needs any painting, re-coating or repairing every few years and never absorbs any water

Genuine Franklin Tunnel Slate

—the strongest, the most uniform in color, the best hand-selected, made from the best slate deposits makes the "Roof that Lasts a Lifetime" and

Guarantees Freedom from all roofing Troubles

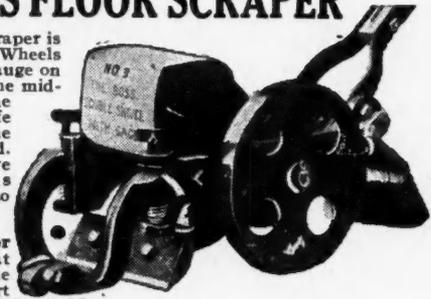
Plan NOW to roof RIGHT. Begin by sending to-day for our new Catalogue. Just out. It points the way to immense roof saving. Write for your copy to-day. Sent Free

Slatington Slate Co., SLATINGTON, PA.

Established 1852
Sole Manufacturers Genuine Franklin Tunnel Slate

THE BOSS FLOOR SCRAPER

The Boss Floor Scraper is like a Plane, the Wheels at the rear and Gauge on Front. Knife in the middle makes a Plane out of it. The Knife can not follow the grain of the wood. It does not leave Waves or Marks where you start to scrape.



One Floor Scraper to any man that finds a mark in the floor where I start to scrape, and \$5.00 in Gold Write for Prices.

G. J. KEPPLINGER.

Factories in Dwight, Ill., and London, Canada

It is cheaper to make things in quantities than in small lots.

As sales increase, costs decrease and lower prices are possible.

You are paying for the **Adjustable** right now but you don't know it.

You are paying for it in time lost, labor lost, inconvenience and the costly old round-about way of scraping floors by hand.

The **Adjustable** is the only Floor Scraper having the adjustments which make it possible to meet every condition of wood floors, hard or soft, old or new; and do **good work always**, swiftly, easily and economically. Does more and **better work** than five men.

Pays for Itself on One Job



The Adjustable Floor Scraper and Sander Attachment

are made on a quantity basis.

Every unnecessary item of expense is eliminated, yet the highest standard of excellence is maintained.

Besides, I have arranged to produce three times as many this year as last, thereby still further reducing my manufacturing costs and permitting of a big cut in the selling price.

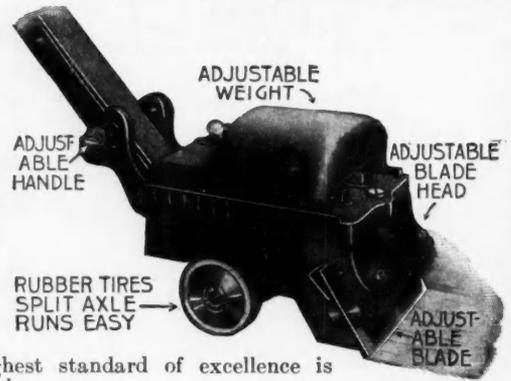
Let me tell you what the **Adjustable** will do for you and my

Special Holiday Offer

Guarantee

If it fails to do your work in a satisfactory manner at any time or for any cause within reason, you may return it and GET YOUR MONEY BACK

H. P. DIDRICKSEN, Anderson, Ind.
Tell me about the **Adjustable**.
Name
Address
State



You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

SAVE 50 to 100 %

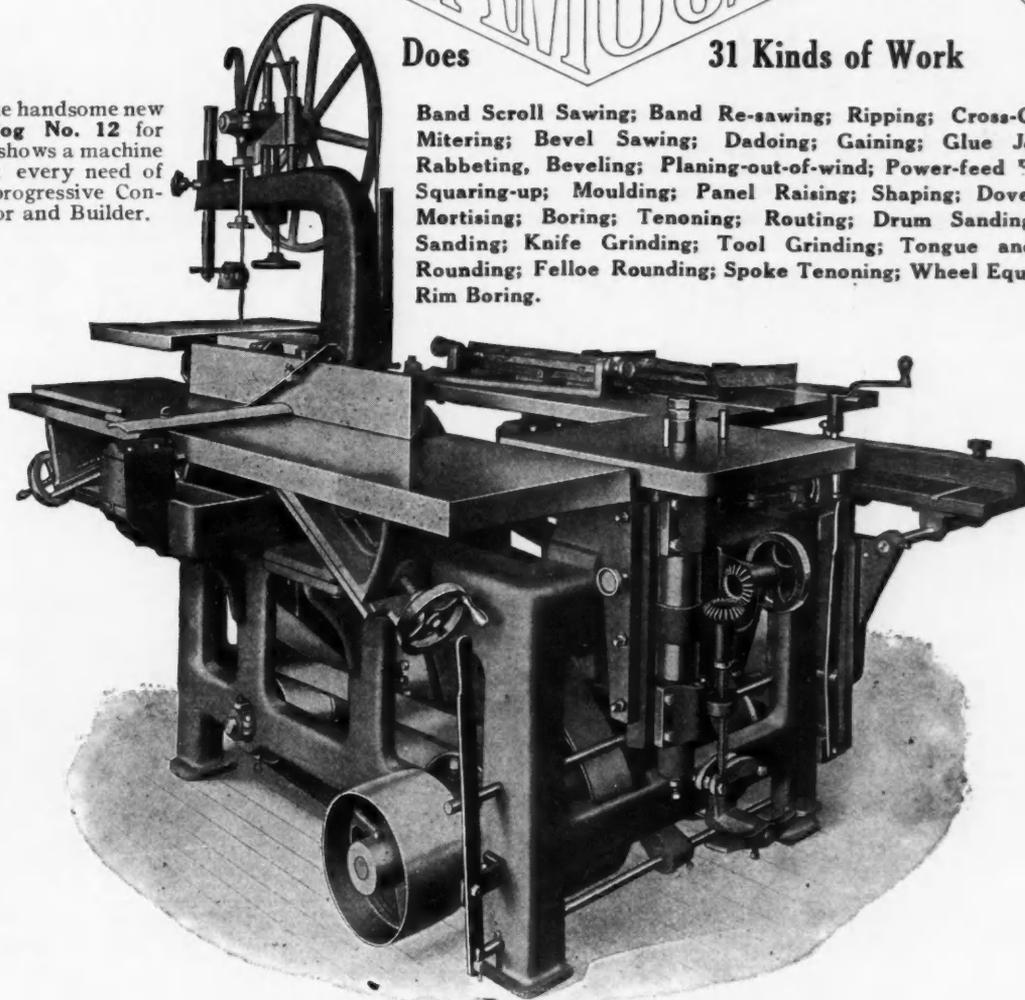
**On Your Millwork and Carpentry with
a 1914 MODEL FAMOUS "31"
UNIVERSAL WOODWORKER—**

Over 2,000 others save with
the Famous—why not you?

The **FAMOUS** "31"

Does 31 Kinds of Work

The handsome new
Catalog No. 12 for
1914 shows a machine
to fit every need of
the progressive Con-
tractor and Builder.



Band Scroll Sawing; Band Re-sawing; Ripping; Cross-Cutting;
Mitering; Bevel Sawing; Dadoing; Gaining; Glue Jointing;
Rabbeting, Beveling; Planing-out-of-wind; Power-feed Planing;
Squaring-up; Moulding; Panel Raising; Shaping; Dovetailing;
Mortising; Boring; Tenoning; Routing; Drum Sanding; Disc
Sanding; Knife Grinding; Tool Grinding; Tongue and Pole
Rounding; Felloe Rounding; Spoke Tenoning; Wheel Equalizing;
Rim Boring.

The Famous "31" is furnished in any combination necessary to fit *your* needs; 27
or 32 in. Band Saw, 12 or 16 in. Jointer, Rip and Cut-off Saw Table, Shaper, Borer
and other attachments to do up to 31 or more different kinds of work. Tell us what
your wants are and get our proposition. Remember, we manufacture separate
machines too.

THE SIDNEY TOOL COMPANY
Chief Offices and Factories **SIDNEY, OHIO** U.S.A.
AGENCIES AND DISTRIBUTING CENTERS THROUGHOUT THE UNITED STATES AND ABROAD

The Sidney Tool Co., Sidney, Ohio.
Send me your new 1914
Catalog No. 12 of Famous
Woodworkers and Separate Ma-
chines—and show me how to save 50
to 100% on my Millwork and Carpentry.
I am interested in
..... (state whether combination or separate machines, and what)
CUT HERE

Name.....
Address.....

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

"OHIO EXTRA" AUGER BITS are High Grade Single Twist Bits, carefully made from specially selected auger bit steel. They are the Most Rapid and Cutting and Perfect Clearing Bits on the market today and are fully warranted.



"OHIO" CHISELS, PLANES, ETC.

All "Ohio" Tools are made with the same painstaking care that has built up our present reputation for making only high grade tools. We use in our Edge Tools high grade steel, treated and tempered by the most improved process, which insures Uniformity and Correctness of Temper, and a Keen, Tough and Lasting Cutting Edge. If you appreciate Good Tools it will pay you to insist on having "Ohio" Tools from your Dealer.



Write for our special Carpenters' Catalogue of High Grade Tools and Benches

OHIO TOOL CO. (Dept. 15) Columbus, O.



Let Us Quote You On
**Several Styles of
Combination Machines**

Lowest Possible Prices

United Machinery Company
136 Liberty St. NEW YORK CITY



No. 8 "UNION" COMBI-NATION SAW

\$30⁰⁰₁₀₀

A well-built, light power machine, at a low cost, and has a wide range for work will rip stuff up to 3½ inches thick, also cutoff, mitre, and with attachments, bore, edge-mould, groove, dado, etc.

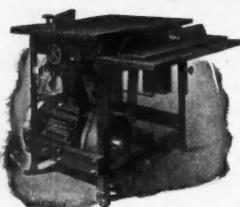
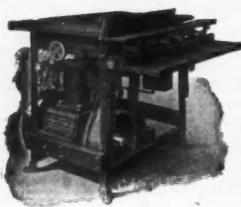
The No. 8 Union Saw may be easily connected to electric motor or gasoline engine and complete outfit mounted on skids to move from one job to another.

SEND FOR CATALOG A

describing our line of Foot and Light Power Wood-working Machinery.

THE SENECA FALLS MFG. CO., 218 Water St., Seneca Falls, N. Y., U. S. A.

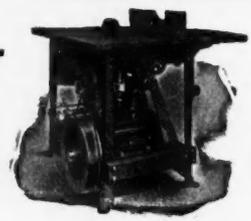
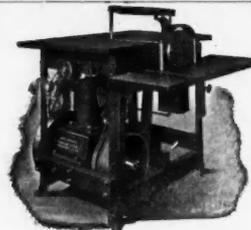
275



Standard Portable
Combination
Woodworker

9 Machines in 1
6 P. P. ENGINE

SEND FOR CATALOG G
ATLANTIC ENGINE CO.
Meadville - Penna.



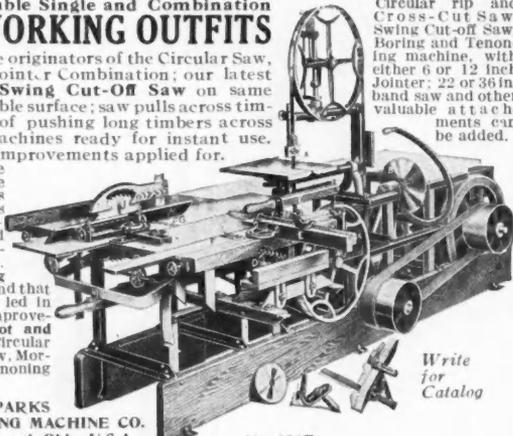
**Parks Portable Single and Combination
WOODWORKING OUTFITS**

We are the originators of the Circular Saw, Band Saw, Jointer Combination; our latest innovation, **Swing Cut-Off Saw** on same base; long table surface; saw pulls across timber instead of pushing long timbers across saw. All machines ready for instant use. Patents on improvements applied for.

Machines are made in large quantities which enables us to sell at lowest prices and make immediate shipment. Ask for catalog and you will find that we have also led in the greatest improvements in Foot and Hand Power Circular Saw, Band Saw, Mortising and Tenoning Machines.

THE PARKS
BALL BEARING MACHINE CO.
Sta. A, Cincinnati, Ohio, U.S.A.

No. 398P



Circular rip and Cross-Cut Saw, Swing Cut-off Saw, Boring and Tenoning machine, with either 6 or 12 inch Jointer, 22 or 36 in. band saw and other valuable attachments can be added.

Write for Catalog

CARPENTERS

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

**Barnes' Hand and Foot
Power Machinery**

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

SEND FOR OUR
NEW CATALOGUE

W. F. & John Barnes Co.
74 RUBY ST. ROCKFORD, ILL.

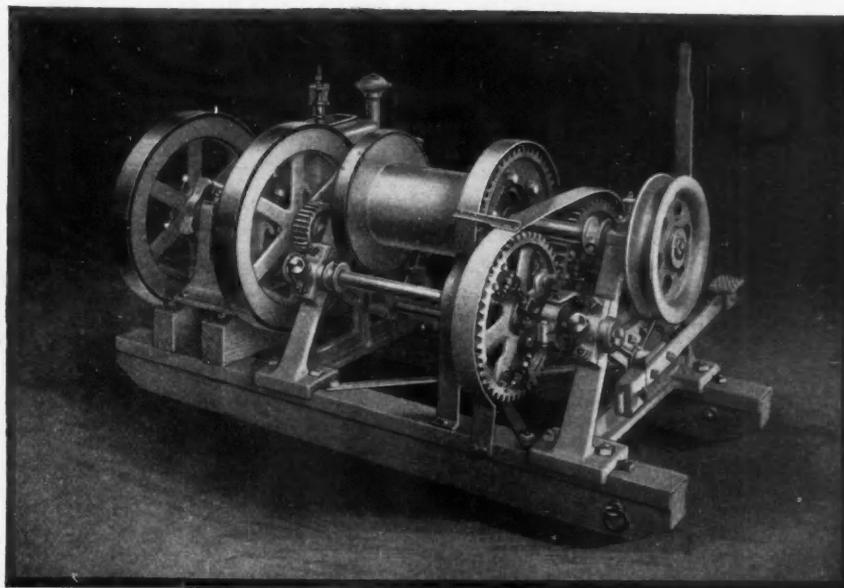
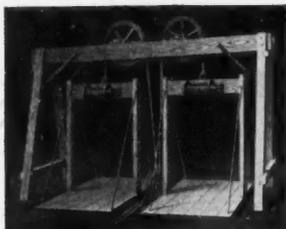


You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

BUILDERS'-HOIST

PORTABLE
SAW RIGS,
PUMPS, ENGINES,
MIXERS, ETC.

WRITE US

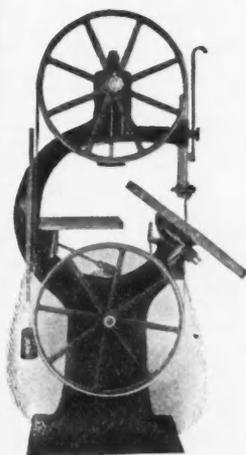


C. H. & E. MANUFACTURING CO., INC.
322 MINERAL ST., MILWAUKEE, WIS.

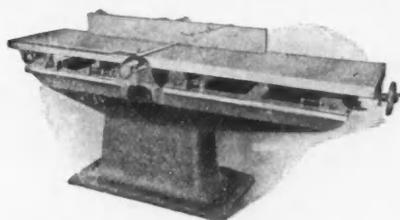


Section of Main Floor Exhibit and Salesrooms

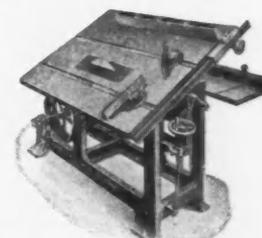
Machines of Quality
FOR THE CONTRACTOR AND BUILDER



Chicago Band Saws
27-32-36 inch wheels



Chicago Jointers
8-12-16 inch



Chicago No. 9 Combination
Saw

Get our Special Prices

Chicago Machinery Exchange
1215-1223 Washington Blvd. :: CHICAGO

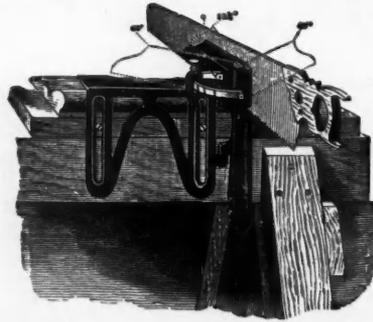
You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

One of the Most Acceptable and Practical Gifts
YOU CAN MAKE TO A CARPENTER IS THIS

**"RED-DEVIL"
SEAVEY PATENT MITRE BOX**

It's an appliance he has daily use for and is something he will always appreciate.

"RED DEVIL" Mitre Boxes are sold by hardware dealers everywhere.



With a **"RED DEVIL"**

Mitre Box and any saw you can cut any angle any place.

It's all metal. Weighs but 2 lbs. Folds up and can be carried in the tool chest.

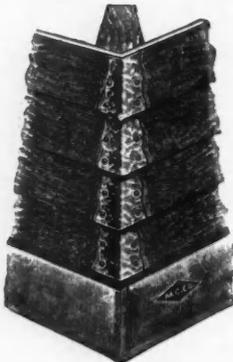
It's the only perfect mitre box made.

If your local dealer cannot supply the "Red Devil," send us his name and \$2.00 and one only mitre box will be sent you prepaid

SMITH & HEMENWAY COMPANY 150 Chambers St., New York
240 Lemoine St., Montreal, Canada

(Ask your dealer for "Red Devil" Pliers, Snips and Glass Cutters)

Prestige THE REFLECTION OF Quality



SHOWING OUTSIDE CORNER APPLIED

"MILCOR"

METAL BUILDING CORNERS

Metal Corners are being very extensively used and are very popular with the carpenter. They take the place of Corner-boards to finish the corner of the building when weather-board or lap siding is used. Time and expense is saved because it is not necessary to mitre the Weather-board siding. The mitre effect is perfect and the appearance superior to wood Corner-board.

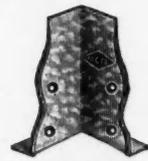
Made from tight coated galvanized steel. Furnished in two sizes. 4 inch and 6 inch inside and outside. Packed 500 corners per box.

WRITE FOR SAMPLES AND PRICES

MILWAUKEE CORRUGATING COMPANY

BRANCH, KANSAS CITY, MO.

MILWAUKEE, WIS.



INSIDE CORNER



OUTSIDE CORNER

1853 **BUCK**  **BROS.** 1913

Fine Beveled Edge Shank and Socket

Chisels



**Tang and Socket
Butt Chisels**

Plain and Beveled Edges

Send for illustrated Catalog

Buck Bros., Millbury, Mass.

Architects—Contractors—Builders

Perhaps you do not use a steel tape often, but one would come in handy many times, wouldn't it? And occasionally you need one badly, and an accurate one, a

LUFKIN STEEL TAPE

Our tapes embody many exclusive features and are guaranteed to give complete satisfaction.

CATALOG ON REQUEST

THE LUFKIN RULE CO. Saginaw, Mich.
New York



**THE MYERS GIANT
ADJUSTABLE TANDEM
DOOR HANGER**

for TUBULAR GIRDER TRACK is adjustable to and from the building, and up or down as necessary. Has flexible engine truck with steel rollers revolving on steel roller bearings. The adjustable features prevent trouble from weather conditions or sagging of building. Storms, sleet or ice do not affect it, owing to complete protection afforded by the tubular track. Track and Hanger are constructed to carry and operate heavy doors easily.

This and other styles of Tubular and "Stayon" Door Hangers are shown in our Door Hanger Booklet. Copy mailed on request.

F. E. MYERS & BRO.
ASHLAND, OHIO

**"Last a Lifetime and Give Satisfaction
To the End"**



BUTT CHISEL

TRADE MARK



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

THE CELEBRATED BARTON TOOLS

Send direct for catalogue and our free story book, True Stories. Be sure to specify "CARPENTER'S CATALOGUE."

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

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



The DOLLARS are there. Go after them with a
CRESCENT UNIVERSAL WOOD-WORKER

Only one thing stands between you and more contracts. That is close figuring. The closer you can figure on a contract, the sooner you can complete it, the more chance you have of getting it.

Getting right down to "brass tacks," you'll find the Crescent Universal Woodworker will get you more contracts; will help you finish them in tip-top shape, and will save you a great deal of money on each job.

What You Can Do on the CRESCENT

- Re-Sawing
- Cutting Off
- Tenoning
- Moulding
- Panel Raising
- Knife Grinding
- Mortising
- Pole Rounding
- Disc Grinding
- Rabbetting
- Boring
- Grooving
- Dadoing
- Jointing
- Band Sawing
- Ripping
- Sanding

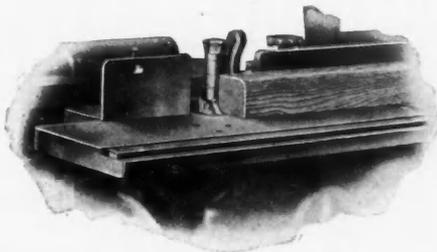
Poles and shafts can easily be rounded on the Shaper Spindle. This feature will appeal to the wagon and carriage builder. All you need to do this work are the special knives.

Do Your Own Mill Work

There's no use handing half your profits to the planing mill. The Crescent is so complete that you can make all your interior trim, grille work, stair rails and spindles, window and door frames, etc., right in your own shop. In the winter you can prepare your material for the busy summer season.

WHAT THE CRESCENT IS

The base of the Crescent Universal Woodworker is one single casting. This forms a steady, solid mounting for the various parts. The machine has five units,—a band saw, a jointer, a shaper, a saw table and a borer. Each unit is a separate machine and can be run independently or in combination with the others. Other attachments can be added to make the Crescent adaptable as a re-saw, hand-feed molder, tenoner, panel-raiser, pole-rounder, disk-grinder, knife-grinder, plain grinder, and hollow chisel mortiser.

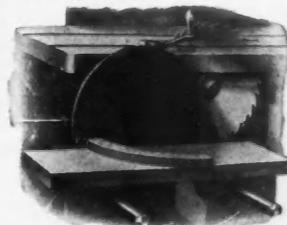


SEND FOR FREE CATALOG

The price of the Crescent is within reach of all. Whether you are a carpenter, builder, contractor, or a general repair man, you can use the Crescent to increase your capacity and enlarge your business and profits.

Send for our fine 125 page Catalog.

We want you to read it. It contains some fine information on wood-working machinery. The illustrations and descriptions of our line of wood-workers will interest you.

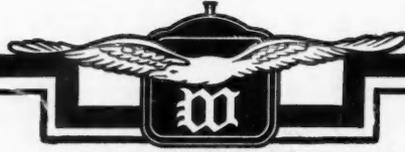


A good view of the Disc Grinder. The disk is 14 inches in diameter. Table can be raised or lowered to suit the work being done.

Our Catalog is FREE. Write for it TODAY.

The CRESCENT MACHINE CO.
 224 Main Street :: LEETONIA, OHIO

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



A WHITE TRUCK

Is Your Best Advertisement

YOUR ownership of a White guarantees to your customers the most prompt and efficient delivery system money can buy. A White Truck will cost you a little more to begin with, because it is built a little better, but it will cost so much less to operate and maintain that it is by far the best investment in the end. Always ready to run, good twenty-four hours of the day in all seasons, in a White Truck the dependability of your service to your customers is always assured.

What Lumber Companies Say

"We are satisfied with the White Truck because it has given us good results considering the hills we must climb with it. We have been able to take orders from people living in other towns which we could not do before we had the truck."

Clark Brothers & Company
Plymouth, Pa.

"We purchased a three-ton White Truck from you on Nov. 13, 1912, which has been in continual service since, and up to this writing have had no expense for repairs connected therewith, and is giving entire satisfaction."

West Lumber and Manufacturing Co.
Plymouth, Pa.

THE WHITE  COMPANY

Manufacturers of Gasoline Motor Cars, Trucks and Taxicabs

CLEVELAND

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

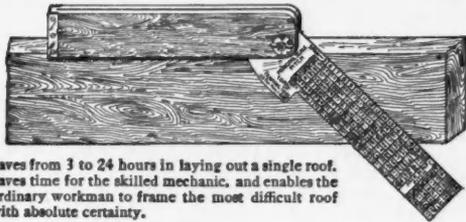
MASTER SLIDE RULE PREVENTS MEASURING MISTAKES

QUICKEST, most accurate, and best for all inside or outside measurements. Made of boxwood and trimmed with brass plated steel. Rigid when extended. Opens and closes quickly and easily. A handy, strong rule at a very low price.



A SUITABLE XMAS PRESENT for father, husband, brother or best fellow. Make him happy by giving him a MASTER SLIDE RULE. Price, 15 cents per lineal foot in 4, 5 and 6 ft. lengths. Sent postpaid. Write for free circulars. DAHL MFG. CO., 51G East 42d St., NEW YORK CITY

Topp's Framing Tool



A Perfect Tool, and the Best Tool for the Purpose Ever Invented.

Price, \$1.75

Saves from 3 to 24 hours in laying out a single roof. Saves time for the skilled mechanic, and enables the ordinary workman to frame the most difficult roof with absolute certainty.

IT DOES ALL THIS { It gives angles for any pitch. It gives lengths for any rafters. It prevents all mistakes. It is accurate. It gives cuts for principals, jacks, hips, valleys and cripples.

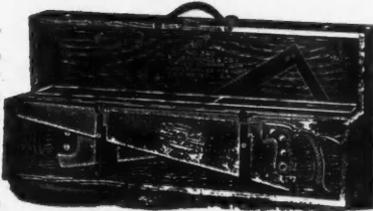
G. A. TOPP & CO., Indianapolis, Ind. See Tool at Your Hardware Dealer. Circular on request

C. E. JENNINGS & CO.'S 71-73 MURRAY ST., N. Y., U. S. A.

TRADE MARK.

Carpenters' New Hand Tool Case No. 340 With Tools

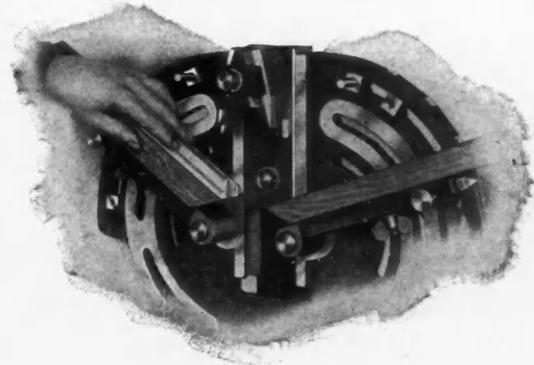
Patent Applied for
Made of selected hard wood, handsomely finished and with paneled sides. Furnished with brass lock, leather handle with rings for strap to pass over shoulder, metal clasps, metal corners, saw rack for holding four Saws (the Hand Saws narrow plate), hooks for Brace and Coping Saw, wood button of Try Square, partitioned tray for Bits, Chisels and small tools, space in bottom to hold Planes, Levels, etc.



	Length	Height	Width
Outside dimensions.....	31 3/4 in.	14 in.	6 in.
Inside dimensions.....	30 in.	13 3/4 in.	5 in.
Removable Tray, Inside....	29 1/4 in.	1 in.	4 1/4 in.

Weight empty, about 14 lbs. Weight with tools, 18 lbs.

This Case is made to take our narrow plate Saws A7 1/2. The No. 340 contains one A7 1/2 Hand Saw, 26-inch; one A7 1/2 Rip Saw, 26-inch, and one Steel Square, No. 18B, a beautifully finished (Gun Metal Finish with Yellow Markings) Square, 18-inch body, 12-inch tongue. It is not made for wide plate Saws and large Square, but enables the mechanic to carry a lighter and smaller case than our No. 35, and a lighter kit of tools. Packed one or more in a crate.

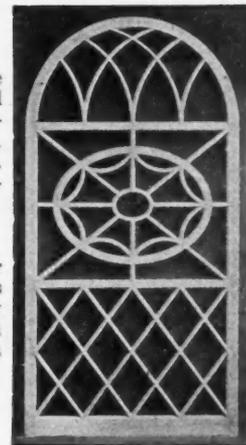


Save Your Money

By cutting down your Production Costs.

The American Sash Trimmer

Will save you many dollars in a year.



Throw out the old-fashioned way of trimming by hand. Be up-to-date. Use labor-saving methods.

This Trimmer will save its cost many times over in the course of a year.

The quality of work turned out by The American Sash Trimmer is far ahead of any hand-cutting. Every cut is clean, true and uniform, and the work can be turned out in one-fifth of the time required by the old way.

Simple, economical, nothing to get out of order.

We send you this on 30 DAYS approval

You have nothing to lose—write for particulars.

The Heald Machine Co.

2 New Bond Street

WORCESTER :: MASSACHUSETTS

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



HERE IS A Can't Slip Screw Driver

It Is The Mayhew "Peerless" No. 510

As this Peerless Screw Driver will not slip from screw slot it prevents any marring of work

Any one who uses a screw driver—whether a good many times every day or just once in awhile—should try out a Mayhew "Peerless" Screw Driver.

You will find this No. 510 "Peerless" very easy to use, it is not tiring to hand or wrist, it is made thoroughly and of A No. 1 materials, and the special "Peerless" point prevents any slipping from screw slot.

No. 510 and No. 511 "Peerless" Screw Drivers have blades forged from fine tool steel and riveted through ferrule. Ferrule is drawn steel, nickel plated. Handle is hard wood, fluted. The blade extends slightly through handle end and allows pounding without damaging handle.

No. 510 comes in regular sizes from 2 to 12 inches
No. 511 comes in cabinet sizes from 2 1/4 to 12 1/2 inches

THE BUSINESS END OF
A Peerless Screw Driver

You will get complete satisfaction and thorough service from any Mayhew tools. We manufacture Drills and Braces, Breast Drills, Ratchet Drills, Bits, Gimlets, Counter Sinks, Reamers, Screw Drivers, Nail Sets, Punches, Awls, etc., etc.

The next time you buy any tool ask for a Mayhew. If your dealer does not handle Mayhew tools write to us and we will tell you the dealer of your locality who does

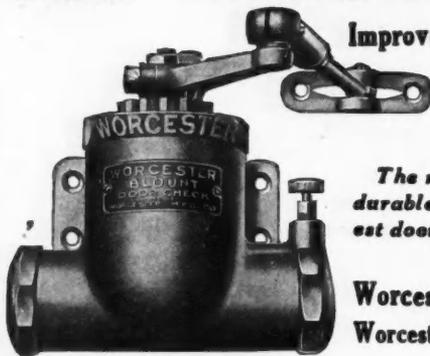
Why not drop us a line anyway for information about our tools?



An enlarged view of Peerless Screw Driver point. Note that point is non-slipping.

H. H. MAYHEW COMPANY, Shelburne Falls, Mass.

THE WORCESTER



Improved **BLOUNT**
DOOR
CHECK

*The most certain,
durable and strong-
est door check built.*

Worcester Mfg. Co.
Worcester : Mass.

CALDWELL SASH BALANCE



Does away with weights and cords, and **VASTLY** more durable.

Makes sashes work perfectly.

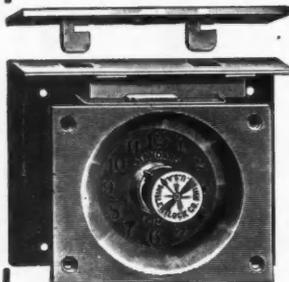
Permits greater window space in new work, as box frames are not necessary.

May be applied to old windows without altering sashes or frames.

Write for circular to the

Caldwell Mfg. Co.
15 Jones Street, - Rochester, N. Y.

Carpenters! Protect Your Valuable Tools



No. 3390 all Brass
Size 4x3 inches

by using a

"STANDARD TIME"
Keyless Chest Lock

Operated by knob in 3 seconds. Can be opened in the dark. Locks automatically as lid is closed.

Absolute Security

One cost only. No keys to lose. Fully guaranteed. Made to fit chests from 1/4 inch thick and up.

Write Us Today for Prices and Particulars

Miller Lock Co. Frankford, Philadelphia, U. S. A.

BUTTS

that save

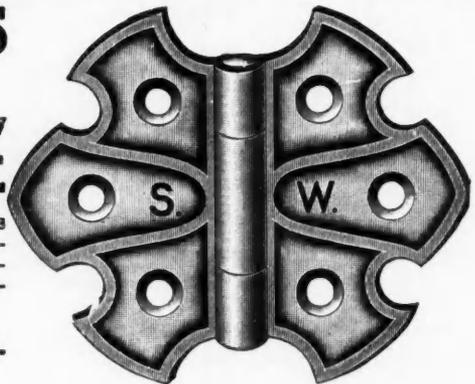
Time & Money

FREE

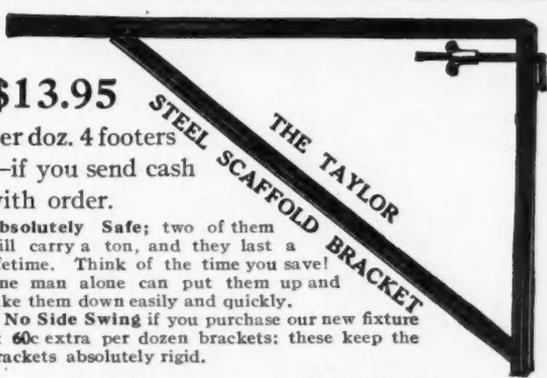
No. 5 Builders Catalog to Contractors, Carpenters and Material Men.

REHM Hardware Co.

1501 Blue Island Av. CHICAGO No. 3979. Surface Hinges Antique Copper finish Per Dozen Pr.....95c



You will get **SPECIAL ATTENTION** if you tell Advertisers you read American Carpenter and Builder.



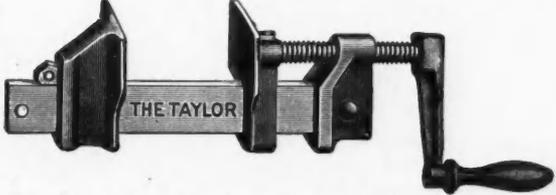
\$13.95
per doz. 4 footers
—if you send cash
with order.

THE TAYLOR
STEEL SCAFFOLD BRACKET

Absolutely Safe; two of them will carry a ton, and they last a lifetime. Think of the time you save! One man alone can put them up and take them down easily and quickly.

No Side Swing if you purchase our new fixture at 60c extra per dozen brackets; these keep the brackets absolutely rigid.

Write for Catalog of Builders' Specialties!



THE TAYLOR

About clamps—the sliding jaw on each of ours can be moved in an instant **DIRECTLY AGAINST** the work operated on, so that half a turn of the fine specially threaded screw will apply the power.

Think of the time this saves!

The grip is positive, and special grade of steel in the bar more than doubles the strength of the clamp.

Our No. 10 catalogue shows some very interesting price reductions on four of the most wanted styles. It will pay you to write for it at once.

James L. Taylor Mfg. Co.
Poughkeepsie, N. Y., U. S. A.

Every Woodshop Needs Me



I will take care of all planing, jointing, rabbeting, etc., in small shops.

I will do the small jobs in large shops.

I will turn out perfectly smooth work because my safety head is round, runs true and is fitted with thin, air-hardened "Tungsten" steel knives.

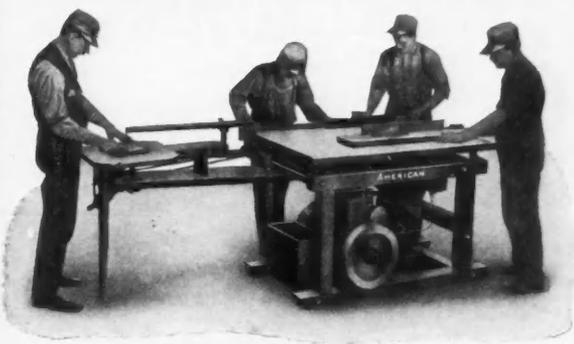
I have made money for every shop in which I am used.

I am the **FAY-EGAN "LIGHTNING"** No. 254 Bench Hand Planer and Jointer.

Write for Bulletin 7-H

J. A. Fay & Egan Co., 545-565 W. Front Street
CINCINNATI, OHIO

Some Distinctive Features
OF THE
"AMERICAN"
Contractors' Portable Variety
WOOD-WORKER



Note this exclusive "Four-Man" feature of the "American"

A ribbed iron top, 30 x 54 inches, carefully planed.

Will rip a 26-inch plank through the center without removing the saw guide.

Has an adjustable bevel ripping gauge, with fine adjustment and solid locking device.

Has an independent hand jointer with every adjustment found on the highest-priced machines.

Has a 6-inch jointer head slotted on two sides for all kinds of bits and knives.

Has heavy chain-oiling arbor bearings, yoked together by a solid casting.

Gauges can be removed in a few seconds, for cross-cutting.

Four men can work on it at four operations at one time, without interference.

Engine or motor of ample power for the heaviest work.

Construction strong enough and heavy enough to stand the most severe service.

Get the "American" Pamphlet

American Saw Mill Machinery Co.

80 Main Street 1360 Hudson Terminal
HACKETTSTOWN, N. J. NEW YORK CITY

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



Stair Work Made Easy

Starrett

Patent

Stair

Gage

This gage is to be used in connection with any carpenter's steel square, and can be adjusted to any pitch or angle desired. For cutting in rafters, braces, stairs, etc., it will soon pay its cost and prove one of the most valuable tools in a carpenter's kit.

The attachment is furnished either plain or graduated in inches, 4ths, 12ths, and 24ths.

It is made in the shape of a steel angle, $\frac{3}{4} \times \frac{3}{4}$, $\frac{1}{2}$ inch thick, ground straight and nickel plated.

PRICES.
 No. 110A Plain, 18 inch, nickel plated... \$1.00
 No. 110B Plain, 28 inch, nickel plated... \$1.50
 No. 110C Graduated, 18 inch, nickel plated... \$1.50
 No. 110D Graduated, 28 inch, nickel plated... \$2.25
 Sent plain unless otherwise ordered.

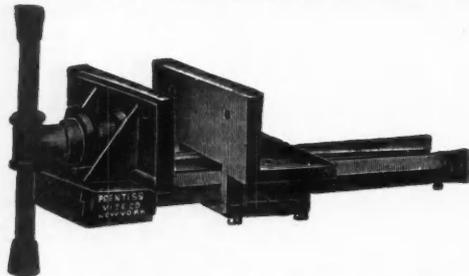
Starrett Tools are Sold at all Good Hardware Stores

The L. S. Starrett Company

ATHOL, MASS.

42-31

BLAKE QUICK ACTING VISE



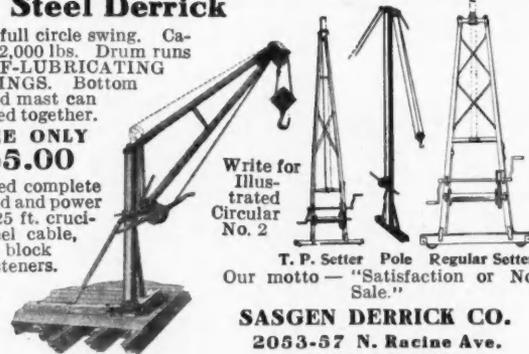
For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best
 Send for Catalogue of all kinds of Vises
PRENTISS VISE COMPANY, MAKERS
 106-110 La Fayette St., New York, U. S. A.

Introducing the New Sasgen Peerless Steel Derrick

with a full circle swing. Capacity 2,000 lbs. Drum runs in SELF-LUBRICATING BEARINGS. Bottom sills and mast can be folded together.

PRICE ONLY \$45.00

equipped complete for hand and power with 125 ft. crucible steel cable, swivel block and fasteners. \$2.00 less for hand power only.



Write for Illustrated Circular No. 2

T. P. Setter Pole Regular Setter
 Our motto — "Satisfaction or No Sale."

SASGEN DERRICK CO.
 2053-57 N. Racine Ave.
 CHICAGO, ILL.

"Peerless"
 CANADIAN OFFICE, 13 JARVIS STREET, TORONTO, ONT.

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

"SILVER LAKE"

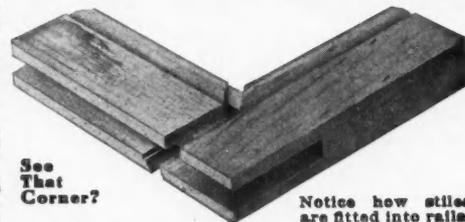
and see that he gives it to you. It is impossible to



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.

MADE TO ORDER Fly Screens and Screen Doors

We use the best grades of wire cloth, black enamel, galvanized, pearl and copper bronze, fastened by the improved Standard Shoulder Strip Method, which makes the wire drum tight and firm, can not sag or pull away.



See That Corner?

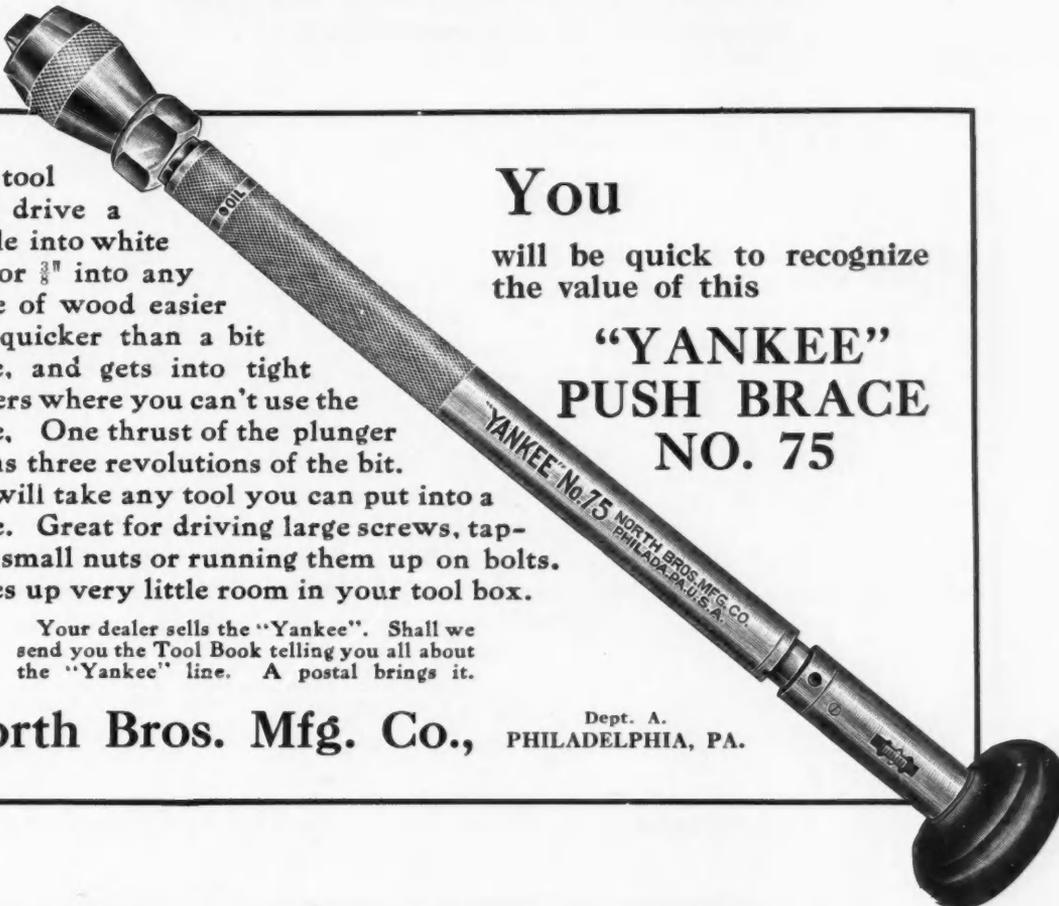
Notice how stiles are fitted into rails.

Dealers, Carpenters, Contractors and Builders, write for a free copy of our 1913 illustrated catalog

STANDARD SCREEN CO., 1848-50 W. 14th St., Chicago, Ill.

Our screens are all mortised, tenoned, joined with waterproof glue and pinned with steel pins, will last a lifetime.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



This tool will drive a $\frac{3}{8}$ " hole into white pine or $\frac{3}{8}$ " into any grade of wood easier and quicker than a bit brace, and gets into tight corners where you can't use the brace. One thrust of the plunger means three revolutions of the bit.

It will take any tool you can put into a brace. Great for driving large screws, tapping small nuts or running them up on bolts. Takes up very little room in your tool box.

Your dealer sells the "Yankee". Shall we send you the Tool Book telling you all about the "Yankee" line. A postal brings it.

You will be quick to recognize the value of this

**"YANKEE"
PUSH BRACE
NO. 75**

North Bros. Mfg. Co., Dept. A. PHILADELPHIA, PA.



Making Secure Fastenings

in hard substances, such as brick, stone and concrete has been a stumbling block to mechanics for years. The old wooden plug method and the hot lead were never satisfactory. Today **SEBCO Expansion Bolts** and **Screw Anchors** have taken their place, saving time, labor and expense. After the bolt or screw is tightened the fixture becomes part of the material to which it is fastened never to come down unless purposely removed.

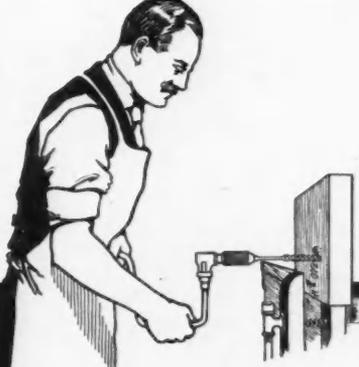
SEBCO EXPANSION BOLTS are made of malleable iron for use with either lag screws or machine bolts and are used for fastening machinery, radiators, large pipes and all other heavy objects.

SEBCO SCREW ANCHORS are made of non-rusting composition metal for use with any ordinary wood screw. For fastening bathroom and small fixtures to marble, tile or any place where it is necessary that no rust stains shall appear.

SEBCO TOGGLE BOLTS The ideal method of making secure fastenings to hollow brick, tile or plaster walls.

SEND FOR SAMPLES AND FREE CATALOGS FREE

STAR EXPANSION BOLT COMPANY
120 W. Lake St., Chicago 147-149 Cedar St., New York



Satisfaction

When you get tired of using bits that clog in the thread, that choke with chips, and that don't bore true, try a set of

Russell Jennings Auger Bits

and see if you don't get satisfaction. We know you will. They are the only bits made of genuine crucible steel and they are made right for all kinds of boring. Don't forget the Precision Turned Shank Bit which cannot pull out of the chuck. Our bits are sold at all good hardware stores.

Russell Jennings Mfg. Co.
Chester, Conn. 21-123

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

Bishops Refined "Greyhound" Steel Saw—A Masterpiece

Of the Saw Maker's Art. We are proud of its quality and guarantee it to cut faster and run easier in all kinds of wood, to hold its sharpness and set longer than any other good saws.

It's the Your-Money-Back-If-Not-Satisfied Saw

30 Days' Trial Will Prove Our Guarantee

The "Greyhound" is the result of years of experimenting to originate a purity of steel with fine grain and tough body.



Made in both Straight and Skew Back

Length Each	18	20	22	24	26	28	30 inches
	\$2.35	\$2.50	\$2.65	\$2.80	\$3.00	\$3.30	\$3.65 net

Packed One in a Box



GEO. H. BISHOP & COMPANY
LAWRENCEBURG, IND.

"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

Supercedes 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.



ROOF SLATES

STRUCTURAL SLATE BLACKBOARDS

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

E. J. JOHNSON
38 Park Row New York
Quarry Operator
BLACK, GREEN, PURPLE, RED

Booklet, Samples and Prices on Application



No. 330



No. 909



No. 335

Of Interest to Carpenters

We have purchased the business of The Ducharmes and Company, long located at Shelbourne Falls, Massachusetts, and known as manufacturers of high grade hammer forged Screw Drivers, Awls, Punches, and other forged tools, and hereafter their entire product will be handled exclusively by us.

This new line is being shown and fully described in our New No. 11 Tool Book, and no carpenter who appreciates good tools should be without a copy.

Send for one today.

Goodell-Pratt Company

Toolsmiths

Greenfield, Mass., U.S.A.



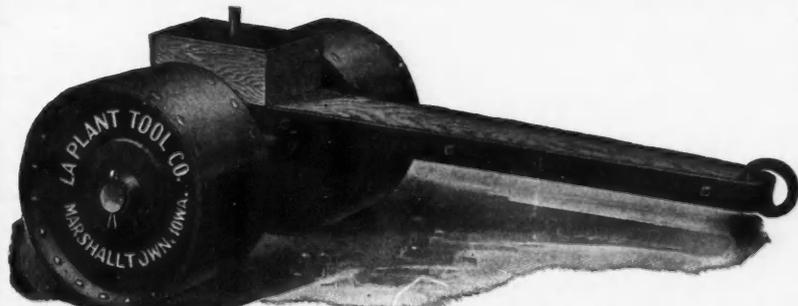
No. 331



No. 347



No. 350



LA PLANT TOOL CO. MARSHALLTOWN IOWA

THE LA PLANT HEAVY HOUSE MOVING TRUCKS

When you get a job with an old building on the lot—move it with the La Plant Trucks to another place—instead of wrecking it. There is more profit in it for you.

La Plant Heavy House Moving Trucks are made of steel—on scientific lines—are interchangeable so they can be worked singly, in pairs or in fours.

Write for catalogue O and see how easy it is to wheel a building a mile in a day—and how little the cost is for La Plant outfit compared with the profit to be made in moving houses instead of wrecking them.

LA PLANT TOOL CO.

1100 E. Nevada St.

Marshalltown, Iowa

PHOENIX

INSIDE SLIDING BLINDS

WILKES BARRE, PA.

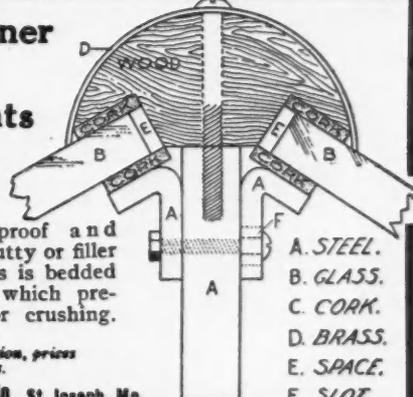
The Phoenix Sliding Blind Co.
Enclosed find my check for blinds. I am pleased with them and sorry I did not have them put throughout the whole house.
C. W. BURT.

Comfort!
Economy!
Convenience!

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

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

Shultz Corner Posts For Store Fronts



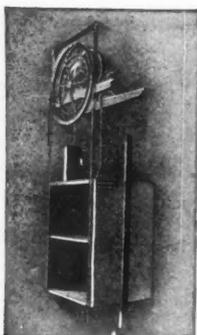
make a strong, handsome and practical joint. They are water-proof and dust-proof and never rot. No putty or filler is used. The glass is bedded on Spanish cork which prevents cracking or crushing. Not expensive.

Write us for description, prices or estimates.

All Steel Corner Post Co., St. Joseph, Mo.

- A. STEEL.
- B. GLASS.
- C. CORK.
- D. BRASS.
- E. SPACE.
- F. SLOT.

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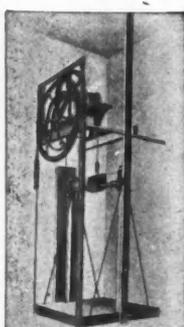
Geared Dumbwaiter

SEE THIS FRAME?

IT'S ENTIRELY OF IRON
IT'S COMPACT AND COMPLETE AND IT'S SIMPLE

MADE IN MANY SIZES
100 LBS. TO 3000 LBS.
CAPACITY

USED IN BOTH DUMB-WAITERS AND ELEVATORS



Side Post Elevator

SEE THIS FRAME?

IT'S MADE SO FULL DIAMETER WHEELS CAN BE USED

LET US SEND YOU OUR CATALOG FREE AND TELL YOU MORE ABOUT IT.

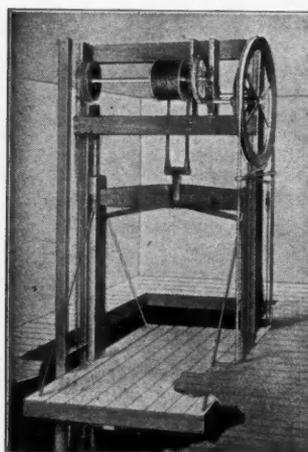
CHELSEA ELEVATOR CO.

332 W. 26th St., NEW YORK, N. Y.

A Good Elevator

Is a Good Investment

Saves Time and Labor



Our product includes *Dumb-Waiters, Carriage, Auto and Store Elevators* — Hand and Power.

These machines are serviceable and will pay for themselves in a very short time. Being practically self-contained, they can be erected by any carpenter or "handyman" in a few hours. Plans for erecting furnished with each elevator.

The Reasonable Cost Will Interest You

Write to us today stating your requirements, giving style of machine wanted, size of platform and number of feet travel and we will name you a money-saving price on equipment made to serve you well.

SIDNEY ELEVATOR MFG. CO. - SIDNEY, OHIO

TRADE **Sedgwick** MARK ELEVATORS AND DUMB WAITERS

—HAND POWER—

Standard of Quality the World Over

SEDGWICK MACHINE WORKS

82 Carroll St.,
Poughkeepsie, N. Y.

New York Office,
132 Liberty St.



CARPENTERS WANTED AS AGENTS
During Fall and Winter Months. Big Money;
Ready Seller.

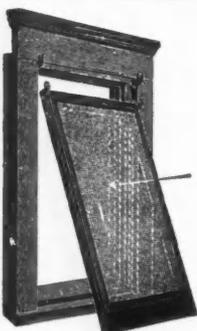
SANITARY AUTOMATIC DUMBWAITER
saves carrying food to and from the cellar. Perfectly ventilated; screened openings; finished inside with durable white enamel. Keeps food perfectly. Top lies flush with kitchen floor. You can walk over it. Operates with push button or lever. Also furnished as a Refrigerated Dumb Waiter. Write for Particulars and Price.
YORK AUTOMATIC DUMBWAITER WORKS
639 W. Market St. YORK, PA.



THE COLUMBIA

DUMB WAITERS ELEVATORS
CELLAR HOISTS
JUMPER DISAPPEARING DUMB WAITERS
CHAIN HOISTS, CRANES and TROLLEYS
SEND FOR CATALOGUE.

J. G. SPIEDEL, Reading, Pa.



Use these E. Z. Way Hangers in putting up screens, storm sash and basement windows. They are time savers and all owners want them on their buildings. Kindly note the E. Z. Way Hangers can be applied from the inside of the house, which is an advantage that no other hanger in the market has. We are also large manufacturers of Screen Mouldings and "Clincher" Felt Weather Strip. Be sure and specify the DENNIS quality if you want the kind that is **MADE RIGHT.**

Manufactured only by

W. J. Dennis & Co. - 2226 W. Lake St., Chicago
Free Sample to any address for your Hardware dealers' name

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

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

STANDARD CLAMP



A Steel Screw and a Wide, Strong Frame are

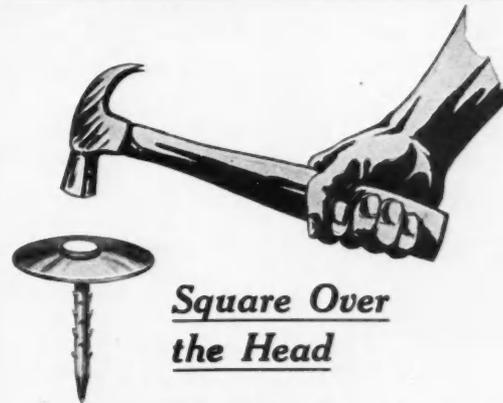
the two features which give the Hargrave Standard Clamps the utmost resistance to wear and failure.

These Clamps are just as carefully made as all of the Hargrave Tools.

Catalogue?

Dept. H

THE CINCINNATI TOOL CO.
Norwood, Cincinnati, Ohio



**Square Over
the Head**

SIMPLEX NAILS DRIVE STRAIGHT

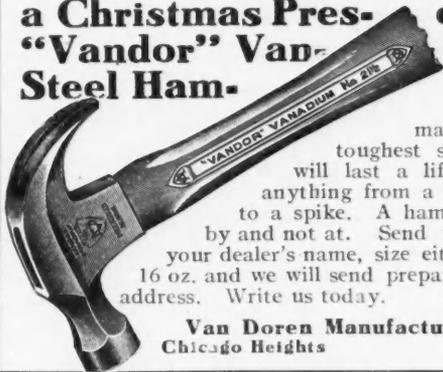
The Shank extends THROUGH the Head. The hammer blow does not glance, as the blow falls directly on the head of the nail shank—not on the curved dome.

Trade **SIMPLEX** Mark
Reg. U. S. Pat. Office
ROOFING NAILS

Have four times the head area of so-called large headed wire nails: hence four times the holding power. **ONE PIECE**—not two piece. Head cannot loosen. Made in two sizes—1 inch and 1 1/2 inch. Insist that your prepared roofing be furnished with **SIMPLEX NAILS**. Free sample on request.

H. B. SHERMAN MFG. CO.
BATTLE CREEK MICHIGAN

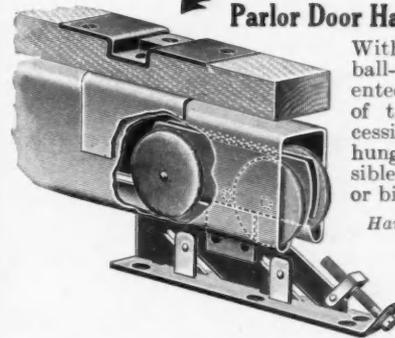
Make your friend or yourself a Christmas Present of a "Vandor" Vanadium Steel Hammer—



made from the toughest steel known—will last a lifetime. Pulls anything from a headless brad to a spike. A hammer to swear by and not at. Send us \$1.00 and your dealer's name, size either 13 oz. or 16 oz. and we will send prepaid to any address. Write us today.

Van Doren Manufacturing Co.
Chicago Heights Illinois

LANE'S TROLLEY Parlor Door Hangers and Track



With bicycle quality ball-bearings and patented side adjustment of track (readily accessible after it is hung) makes it impossible for door to scrape or bind.

Have you our Catalog?

LANE BROS. COMPANY
Cherry St.,
POUGHKEEPSIE,
N. Y.

Miller's Lock Mortiser TWO MINUTES

Will cut an opening in a door for a mortise lock
IMPROVED AND UP-TO-DATE

cuts true, in any kind of wood for any size lock from 1/2" to 1" thick. Easy to operate, durable in construction. Builders use it everywhere.

Sent subject to trial.



A. W. Miller Mfg. Co.
Riverside, Calif. :: Cincinnati, Ohio

Our Butt Mortiser and Rule Gauge for 75c., Postpaid

R-W BARN DOOR HANGER



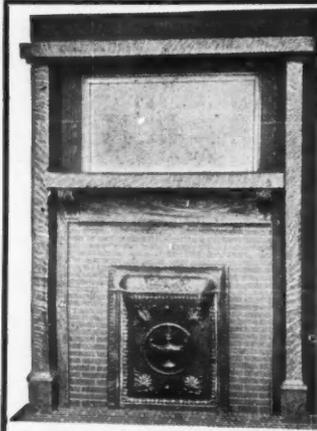
A Trolley Hanger that yields the utmost in Satisfactory service. Operates smoothly, and without the jamming and binding usual to ordinary door hangers.

R-W Trolley Barn Door Hangers give years of service. They are a necessity in hanging barn doors properly. Made from excellent material and sold at as low a price as many inferior grades.

Catalog Sent Free

Richards-Wilcox Mfg. Co.
Aurora, Illinois

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



\$27.00 Our Price to You

For Mantel as illustrated with trimmings

Mantel is made of solid oak with 18x36 bevel mirror at price quoted we include any shade enameled tiling for facing and hearth, with recess grate and plated grate frame and front—Tile Facing 42x39 inches.

ILLUSTRATED CATALOGUE FREE ON APPLICATION

MOORMANN & OTTEN

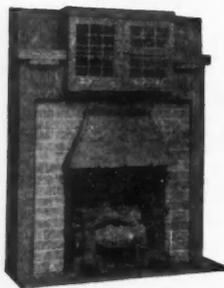
611-613 Main Street

CINCINNATI, OHIO

MAKE MONEY

BY SELLING

FIRE PLACES



**TILES and
MOSAICS**

for **FLOORS**
and **WALLS**

Write for our Large Illustrated Catalogue of Fire Places in Tile, Wood, and Brick Andirons, Gas Logs, Consoles and Colonnades Sent Free on Request.

Write For Discounts to Carpenters and Builders

CHAS. F. LORENZEN & CO.

REAPER BLOCK

Cor. Clark & Washington Sts., CHICAGO

Send for the Catalogs that Interest You

We manufacture, import and sell, wood, tile and cement mantels; andirons; fenders, spark guards; the Jackson ventilating grate, heating on two floors; Franklin stove for use where there is no chimney; cleanout doors, ash dumps and dampers for fireplaces; iron column plinth bases.



The Majestic coal chute for foundation walls.

Edwin A. Jackson & Bro., Inc.

51 E. Beekman Street

New York



\$20.00

in
Yellow Pine,
Oak or Birch,
in the White.

Any size
up to 8x8.

Freight paid
to your station

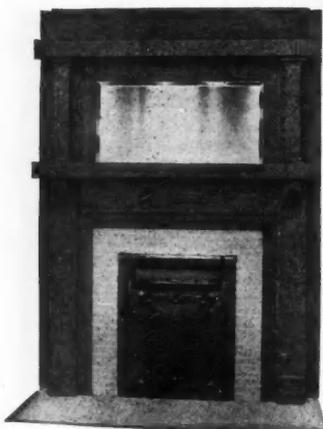
This COLONNADE

consists of Columns, Pedestals and Beam Brackets. The workmanship and materials are first class in every respect. We offer this colonnade for \$20 for a limited time only. Send your order today, give exact width and height of opening. State what kind of wood. F.O.B. Your Station.

Chicago Grille Works

828-838 Wells Street

Chicago, Ill.



\$22.50 "From Factory to You"

For this elegant massive, selected oak or birch, mahogany finished mantel. Beveled Mirror 18x36

Price includes our "Queen" Coal Grate with best quality enameled tile for facing and hearth. Mantel is 82 inches high, 5 feet wide. Furnished with round or square columns, as shown in cut. Dealer's price not less than \$35.00.

Catalogue Free—Will send our 100 page catalogue, the finest ever issued, free, to carpenters, builders and those building a home.

CENTRAL MANTEL COMPANY

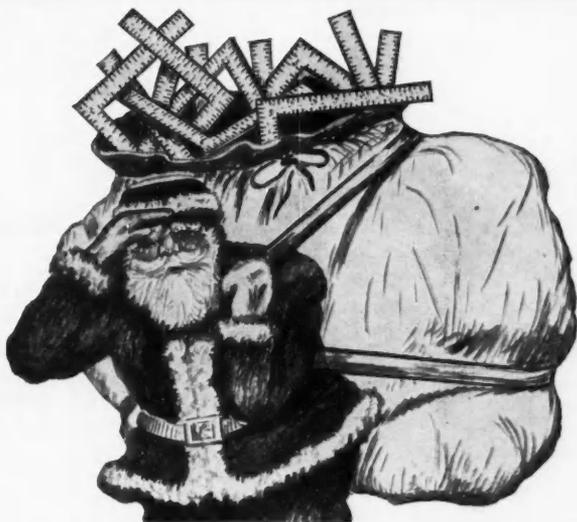
1247 Olive Street

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St. Louis, Mo.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



A GOOD XMAS PRESENT

One of Our
RAFTER FRAMING SQUARES
or One of Our
TAKE-DOWN SQUARES

They give the length and cuts of all rafters. If your dealer will not supply you we will ship by parcels post upon receipt of price.

No. 100 R—Polished, \$2.00 Ox. Copper, \$2.25
Take-Down— “ 3.00 “ 3.25

Send for our little book explaining this rule—IT'S FREE.

NICHOLLS MFG. CO., OTTUMWA, IOWA



This Pearson's Automatic SHINGLE NAILER WILL PAY FOR ITSELF ON FIRST JOB

Do your nailing fast—faster than ever before. You can use this Pearson's Nailer on any pitch roof. Wear mittens, gloves, etc. This "Hand Nailer" is the only Nailer—throw nails in by the handful—then start nailing. Nails easily driven through tin or quite heavy sheet iron.

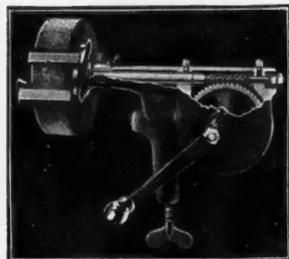
These nailers are made in two sizes—The BLUE Nailer for 3d common No. 14 gauge wire nails. The RED Nailer for 3d galvanized No. 13 gauge 1 1/4 inch wire nails.

It will come right to your door quick, by insured parcel post, all prepaid for only \$5.00.

IT MAKES GOOD.

PEARSON MFG. CO. - ROBBINSDALE, MINN.

Wonderful Tool Sharpener



Luther's "Best Maide" Hand Tool Grinder owes its success to the DIMO-GRIT Wheel, perfectly cut worm gear and shaft, and tilting frame. Ball bearings take up all side thrust. Our new patented feature for swivelling the frame allows quick and accurate adjustment to any angle. Body of wheel is medium grit for quick grinding—keen edge finishing is done on fine grit side face. Dime-Grit Wheels cut steel as emery cuts soft copper—make tool sharpening easy—outlast any number of emery wheels or grindstones—will not draw temper.

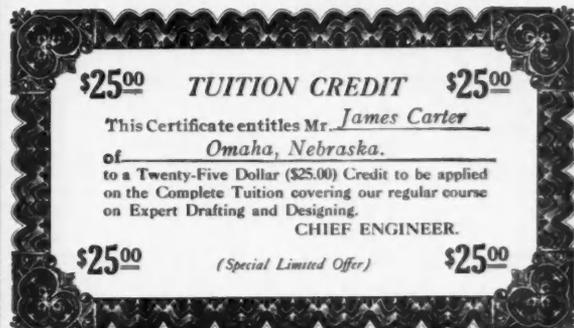
If your dealer doesn't sell the "BEST MAIDE" Grinder and you will make a report to us, stating why he does not, and will also give us the name of the line of grinders he does carry, we will send you free a handy Dime-Grit pocket hone in leather case.

LUTHER GRINDER MFG., CO. 751 Point St. Milwaukee, Wis.

EXTRA!

This \$25.00 Tuition Credit **FREE!** in Drafting and Designing

OFFER LIMITED—Write at Once for Details



MORE TRAINED DRAFTSMEN ARE NEEDED ALL OVER THE COUNTRY. BIG SALARIES ARE PAID TO MEN WHO REALLY KNOW DRAFTING AND DESIGNING. WE ARE MAKING THIS GREAT SPECIAL OFFER TO AMBITIOUS MEN (YOUNG AND OLD) WHO WANT TO TAKE UP THIS WORK.

Learn to be an expert draftsman **RIGHT IN YOUR OWN HOME.** Keep your present position—just devote your spare moments to this work. Send the free coupon right away for free book and complete information.

Be a Draftsman! Earn \$75 to \$200 per Month

That's what men earn who possess the training we give you on this most liberal offer. The big companies are willing to pay handsome salaries to get the right kind of men. The work is light, profitable and interesting. You are paid for what you **KNOW**, not the quantity of hard work you do. Our practical method of instruction enables you to **BECOME EXPERT DRAFTSMAN AND DESIGNER** in an amazingly short time. Learn just as quickly and easily at home as in the drafting room. **EXPERT DRAFTSMEN AND DESIGNERS GIVE YOU "PERSONAL" INSTRUCTION.**

GUARANTEE

We guarantee to instruct you until placed in a position paying from \$75 to \$200 per month. Our Employment Bureau places students in positions free.

\$17.50 Set of Drawing Instruments FREE!

If you write at once we will give you in addition to the free tuition credit a magnificent set of drawing instruments, valued at \$17.50. Handy size, leather bound pocket case. You can use this set of instruments for years—when you are occupying a position as expert draftsman at a good salary.

Experts Will Instruct You

Our course is prepared by men who have succeeded as expert draftsmen—who know just the training you must have in order to fill the best positions. You will receive "PERSONAL" attention.

Mail This Coupon for Full Information

Hurry! Hurry! Don't pass up this exceptional opportunity. Be one of the men whose services are always in demand at a big salary. If you write at once you will receive this \$25.00 tuition credit **FREE.** Send the coupon for our free book and details of this great offer. No obligations—so send it immediately.

FREE COUPON

Chief Engineer

Room 539
Engineering Bldg.

CHICAGO ILL.

CHIEF ENGINEER,
Room 539 Engineering Bldg.,
CHICAGO, ILL.

Dear Sir: Without any obligations on me, please send me your free book and complete information about your great \$25.00 free tuition credit offer.

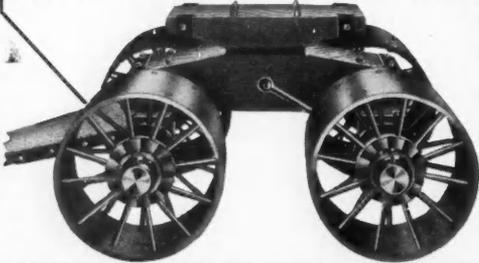
Name

Address

You will get **SPECIAL ATTENTION** if you tell Advertisers you read American Carpenter and Builder.

10-ROOM HOUSE MOVED 5 MILES IN 10 DAYS!

Over country roads and broken fields at that—LITTLE WONDER TRUCKS did it. Are you dissatisfied with your present moving equipment? Is it continually giving you trouble, breaking down when wanted most? You can get away from all that with Little Wonder Trucks. Built to Last. Low prices—we sell direct to you—why not save money on the first cost as well as profit on your operations?



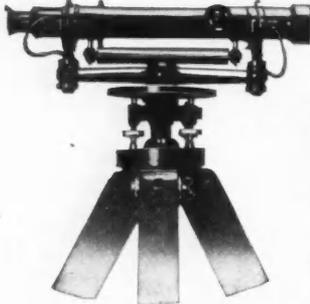

Here's the Little Wonder

Let us furnish your complete House Moving Equipment—everything from Little Wonder Trucks to rollers, jacks, etc. Get our catalog "B" right away. Don't delay. Just a postcard brings it in a hurry.

HOUSE MOVERS SUPPLY CO. Cedar Rapids, Iowa

Queen Architects' Level

For Architects and Builders



A precision Level with high grade telescope, 12 inches long with sensitive bubble. Capable of doing the most accurate work. Moderate price. Send for catalogue.

QUEEN-GRAY COMPANY, 616-618 Chestnut St., Philadelphia, Pa.



It's Guaranteed!!!

White's Improved Level

is especially designed for work where a general-purpose level is required. Telescope is 12 inches long with magnifying power 25 diameters. Will detect an error of $\frac{1}{4}$ " in 300 feet. Shipped on approval to your address, express charges prepaid. Ask today for circular X giving price and full information—Ask today!!

DAVID WHITE COMPANY, Dept. C, 419 East Water Street, Milwaukee, Wis.

"STERLING" Transits and Levels

MADE BY **Warren-Knight Co.**



A line of instruments specially adapted to the needs of the Contractor and Builder!

Illustrated Catalogue S.W. upon request.

Special 10 days' trial offer this month.

Engineering and Drafting Supplies

136 N. 12th Street Philadelphia, U. S. A.
Successors to Iszard-Warren Co.



BECKMANN INSTRUMENTS

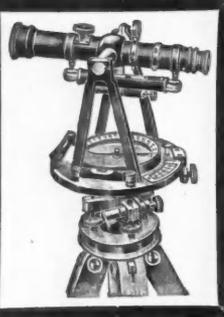
are sold to give satisfaction. Our guarantee means **Your Money Back** if you want it.

Send for our Circular Y and let us know the work you are engaged in.

The L. Beckmann Co.
500 Adams St., Toledo, Ohio
—Established 1874—

Convertible Level

Why Carry A Heavy Transit?



Architects, Contractors, and Builders, this is the serviceable instrument for you. A portable transit that is of special light design. It is easily carried and handled. Is thoroughly accurate and especially adapted for fast work. Built upon practical substantial lines. We manufacture a complete line of surveying instruments in various sizes and at a wide range of prices.

All instruments guaranteed by us. Our circular No. 27 will explain our instruments to you in detail. It will pay you to get it before deciding upon any surveying instruments.

KOLESCH & COMPANY, 138 Fulton Street, NEW YORK
Surveying Instrument Makers. Established 1885.

INTRODUCTORY TRIAL OFFER

If the SELF-SETTING PLANES are not sold in your town and you write us saying, "I saw your trial offer in A. C. & B., we will send you particulars, a carpenter's pencil and our \$1.00 Certificate, which we will receive as \$1.00 in payment for a SELF-SETTING PLANE as stated in our \$1.00 Certificate, and if this S. S. Plane is unsatisfactory and returned to us at our expense, we will send you \$1.00 more than you sent us, as the \$1.00 Certificate says.

As this paper guarantees we will do as our advertisement says, you know the plane must be O. K. ALL WE ASK is to have you TRY the SELF-SETTING PLANE on your own bench, in your own way, with or against the grain, on the WORST cross-grained easy, knurley, knotty, hard or soft wood you can find, THAT IS FREE FROM SAND OR DIRT. If it is not worth to YOU, OR YOUR MEN, TWICE ITS COST, return it at our expense as above stated.

If you send us the addresses of ten carpenters, no matter where they live we will send you another hard, tough carpenter's pencil.

Give the SELF-SETTING PLANE a chance to PROVE ITS WORTH, if it FAILS, return it and we will return your money.

Carpenter's Hard, Tough Pencils, 30c per dozen, postage prepaid.

GAGE TOOL CO., Vineland, N. J.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

MONITOR SASH LOCKS



(PATENTED)

NEVER BREAK

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

If the upper plate 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

RELIABLE FOLDING Scaffold Bracket

Strong and safe; requires only a few minutes to attach. No holes to bore. Four 10-d or 16-d nails fasten them securely. Positively rigid; no vibration.

The Low Price of these Brackets can be saved in time and material on the first two jobs.

ELITE MFG. COMPANY
100 Ohio Street ASHLAND, O.

GOODELL MITRE BOX
Made of STEEL - Cannot Break

First in Quality and Improvements Automatic Steps for holding up saw. Corrugated Backs Graduated. Gauge for duplicate cuts and many other features

Send for Circular "C"

GOODELL MFG. CO., Greenfield, Mass.

Stanley Tools



No. 289

Stanley Skew Cutter Filletster and Rabbet Plane

A Plane that is fast finding its way into the "kit" of every lover of good tools.

It has an extra wide cutter (1 $\frac{3}{4}$ inches) which is set on a *skew*.

It is provided with a *Fence* and a *Depth Gauge* which can be attached to either side, so that the Plane can be used equally well for right or left hand work.

Furthermore, the Fence is so hung that it slides under the bottom, enabling the user to regulate the width of the cut.

It has two adjustable spurs, one on each side, a valuable feature. By removing the Fence and Arm a very superior Rabbet Plane is obtained.

8 $\frac{1}{2}$ inches long, weighs 3 $\frac{1}{4}$ pounds.

List price, **\$1.75.**

Ask your Hardware Dealer to let you see it.

Made by

STANLEY RULE & LEVEL CO.
NEW BRITAIN, CONN. U.S.A.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



This Is IT! THE MASTER RATCHET BRACE



Preferred by mechanics everywhere because it is known to be the most dependable tool of its class made.

Has ball bearing head and thrust bearing; dust covered ratchet; unbreakable jaw socket, and the most reliable and serviceable chuck known, with lip reinforced to stand the heavy strain at that part; jaws that open on parallel lines and grip the shank of the bit securely, centering all round shanks from $\frac{1}{8}$ inch to $\frac{1}{2}$ inch, No. 1 Morse Taper and all sizes of Bit Stock and Expansion Bit Shanks.

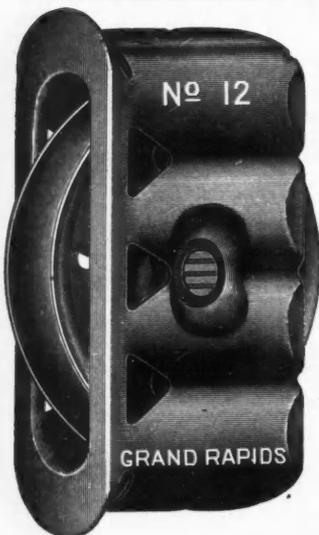
This is one of the most popular tools in our line, and deservedly so, as no tool we make is better suited to the work it is intended to perform than this one.

Send for catalog.



MILLERS FALLS COMPANY

28 Warren Street
NEW YORK



"GRAND RAPIDS" ALL STEEL SASH PULLEYS

No Nails No Screws
Just Bore 4 Holes

The time saved by the "Grand Rapids" will actually pay for the pulleys.

You can't afford to use old style pulleys.

Write for free samples and prices.



Grand Rapids Hardware Co.
Manufacturers
158 11th Street, GRAND RAPIDS, MICH.

This fastening is more secure than any number of screws or nails could make it saves about 15 per cent, too.
**S O R E W S
C O S T M O N E Y**

Hotel Cumberland New York

Broadway at 54th Street
Near 50th St. Subway Station and 53d St. L



"Broadway" Cars from Grand Central Depot pass the door; also 7th Ave. cars from Pennsylvania Station.

New and Fireproof

Best Hotel Accommodation in New York at Reasonable Rates.

\$2.50 with Bath and up.

European Plan. All Hardwood Floors and Oriental Rugs.

Ten minutes' walk to 30 Theatres

Excellent Restaurant

Prices moderate

SEND FOR BOOKLET

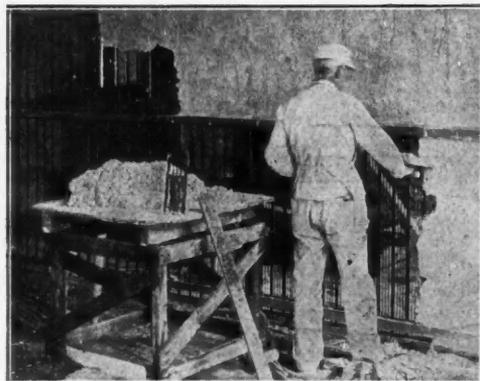
HARRY P. STIMSON, Formerly with Hotel Imperial.

Only New York Hotel Window Screened Throughout.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

HY-RIB Does Away With Channels and Wiring in Partitions and Ceilings

Partitions built of HY-RIB save space and are easily and quickly erected. HY-RIB combines both lath and studs. Merely fasten at floor and ceiling and Plaster both sides.



HY-RIB Partitions (no studs required.) Note Grounds for baseboard and chair-rail.

In Ceilings HY-RIB does away with the small stiffening channels required with metal lath; saving expensive wiring. HY-RIB Ceilings are easy to plaster and do not crack or streak.



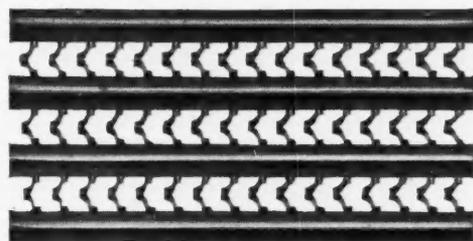
HY-RIB eliminates steel studding and wiring in Walls and Sidings. Does away with forms and rigidly reinforces Concrete Roofs and Floors. Low cost—light weight—saves space—monolithic. More economical than all other constructions of brick concrete masonry, corrugated iron or wood.

RIB LATH is exceptionally stiff and rigid because of beaded ribs that span between studs. Provides a perfect clinch for the plaster. Saves time, labor and material in erection. Furnished in three types and nine different weights. Also Detroit Diamond Lath, Rib Studs for Hollow Partitions, and Corner Beads for protection of plaster corners.

VALUABLE HANDBOOKS, containing details, specifications, tables, illustrations, etc., furnished FREE to those interested in building.

Trussed Concrete Steel Company
644 Trussed Concrete Building
Detroit, Michigan

Reinforcing, Hy-Rib and Lath, Steel Sash, Etc.

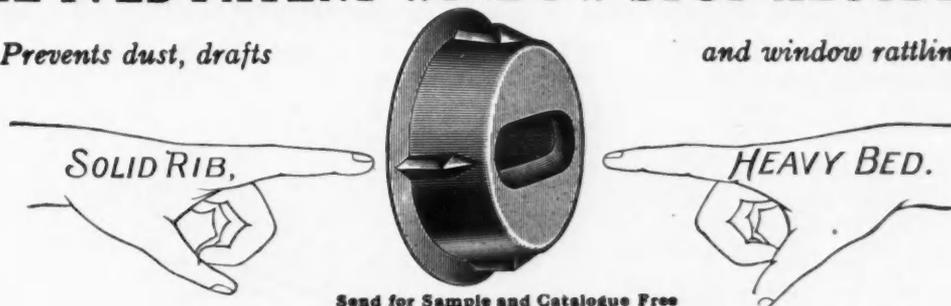


Beaded Plate Rib Lath

THE IVES PATENT WINDOW STOP ADJUSTER

Prevents dust, drafts

and window rattling



Send for Sample and Catalogue Free

1 piece of metal, will not cup, bend or turn in tightening screw.

THE H. B. IVES CO., Sole Mfrs. New Haven, Conn. U. S. A.

Huther Bros. Patent Groover or Dado Head

Will Save Its Cost in Three Days' Time



Showing Arrangement of Cutters

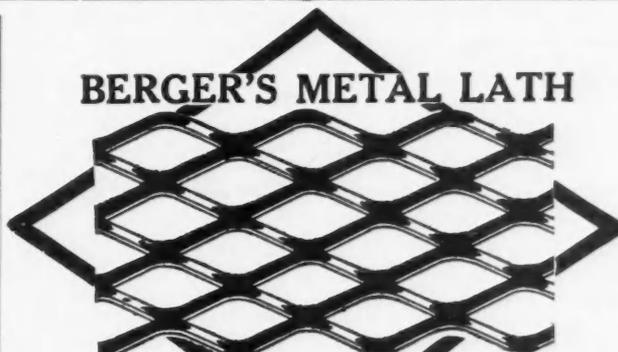
Can be used on any Circular Saw Mandrel. For cutting any width groove from 1/2" to 2" or over. Will cut a perfect groove, either with or across the grain, and leave edges smooth. Will ship to any responsible firm on ten days' approval; if not satisfactory you are

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 cut; Grooving Saws for all kinds of special work; Lock, Corner Cutters, Concave Saws, etc.

Try our Scraper Blades and you will use no others.

HUTHER BROS. SAW MFG. CO., 1101 University Ave., Rochester, N. Y.

BERGER'S METAL LATH

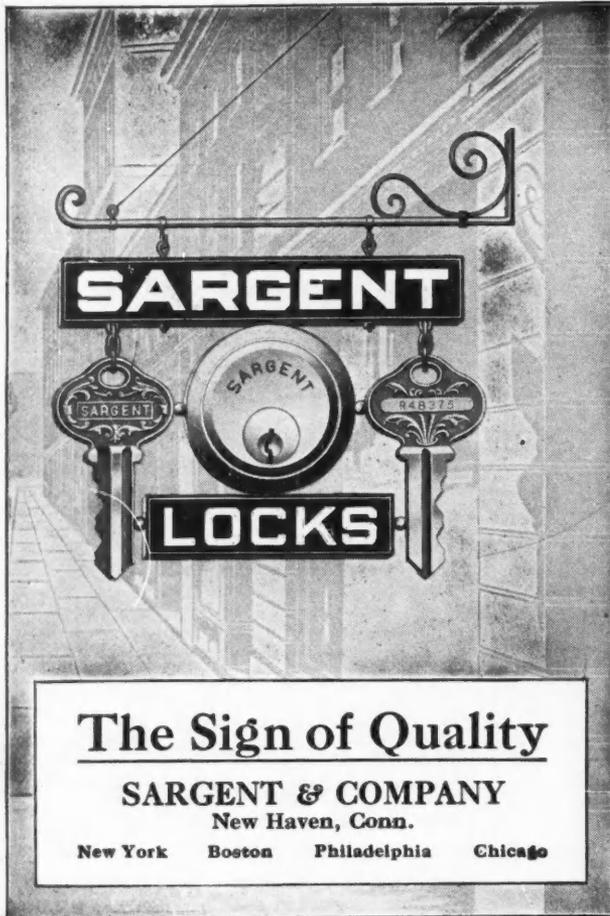


The Berger Mfg. Co., Canton, Ohio

Write for Catalog.

New York Boston Minneapolis St. Louis San Francisco Philadelphia

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SARGENT
LOCKS

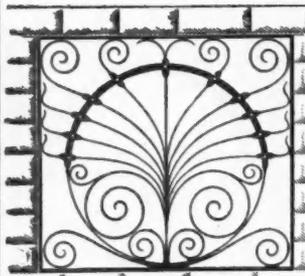
The Sign of Quality
SARGENT & COMPANY
New Haven, Conn.
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Wire Window Guards



Counter Railings
Elevator Enclosures
Tubular Hand Rails
Brass and Bronze Work

The Cincinnati Mfg. Co. Cincinnati, O.

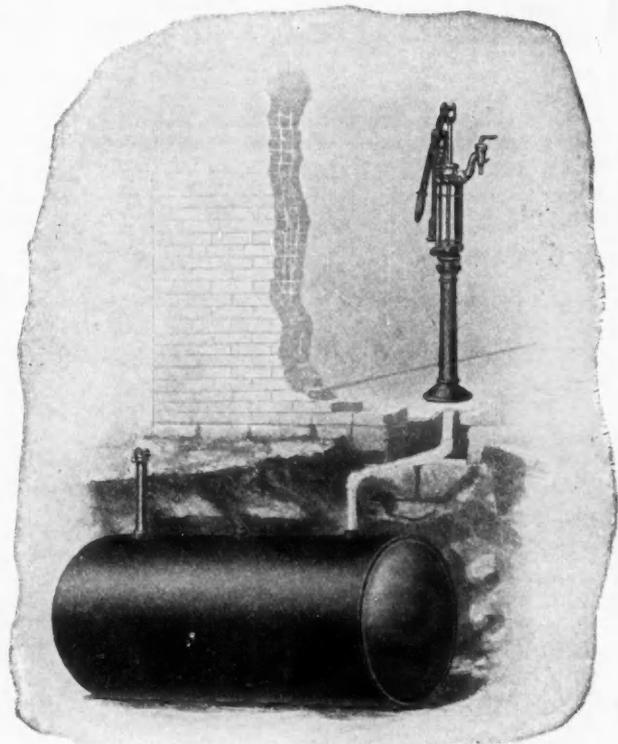


Mr. Builder:— If you are lucky enough to read this advertisement, and wise enough to write and tell us what you buy in

IRON, BRASS and BRONZE

we will send you catalog that is attractive enough to go in any man's library. Do you want it?

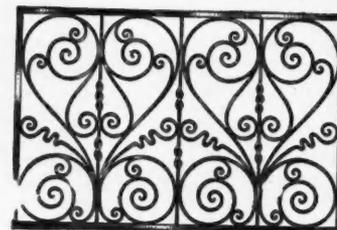
DOW WIRE & IRON WORKS
Incorporated
Louisville, Kentucky



We manufacture a full line of Self-Measuring and Non-Measuring GASOLINE AND OIL STORAGE OUTFITS, suitable for Public and Private Garages Service Stations and Factories. ALL "AIR-TIGHT" tanks are of seamless construction and are made of $\frac{3}{4}$ " in OPEN HEARTH STEEL. Write for catalog and prices

Air-Tight Steel Tank Company
Mansion Street, Pittsburgh, Pa.
Chicago Office: 2422 Michigan Avenue Tel. Calumet 306

Send Us Your Plans for Estimates
—ORNAMENTAL IRON—



Iron Stairs
Railings
Balconies
Elevator Enclosures
Fire Escapes
Side Walk Doors
Etc.

OUR PRICES WILL INTEREST YOU

THE MACK IRON & WIRE WKS. CO.
Sandusky, Ohio

SOMETHING NEW

The Universal Clothes Drier

The kitchen wonder.—Indispensable to every housewife. Can be attached to wall or casing. Easily removed. Contains 30 feet of drying surface. Adjustable to suit convenience of operator. Does away with lines and the cumbersome clotheshorse. No kitchen or laundry complete without a UNIVERSAL-DRIER. Neat, durable, irresistible. Every demonstration a sale.

Retails for \$1.50—Special inducement to agents through our Co-operative selling plan. Write today!



Can be raised to ceiling as shown by dotted lines

The Universal Clothes Drier Co.

Factory: Rutherford, N. J. Sales Dept. Ordway Bldg., Newark, N. J.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

This is the Finest Hand Saw Made



THE Disston Works first made the American Hand Saw famous. Since then every real improvement, either in pattern or quality, has been produced by us.

Here is the latest and finest product of the Disston Works—our **No. D115 Hand Saw**.

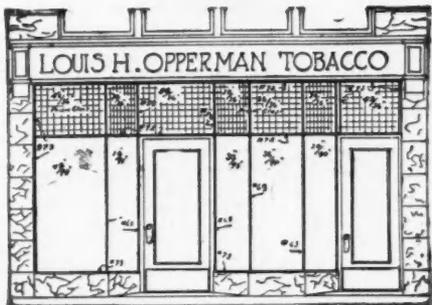
Genuine Rosewood handle, carved and polished. The blade is Disston Skewback design, exceptionally high finish, made from Disston Crucible Steel and fastened in the handle with nickel-plated screws. Our many years' experience, and wide knowledge in the making of a perfect saw steel, has enabled us to produce a blade for this saw that cannot be duplicated.

The Disston No. D115 Saws can be obtained in the regular lengths as either a **Rip, Hand, or Panel Saw**; are neatly packed in a handsome box, and will make a welcome and enduring Christmas gift to the practical man.

HENRY DISSTON & SONS, Inc.

Keystone Saw, Tool, Steel and File Works

PHILADELPHIA, U. S. A.



The Bar with a Steel Backbone

The success of that modern store front you are planning depends on the bar you select.

We have yet to hear of a contractor or architect who has specified Petz Bars and been sorry for it afterwards. On the contrary, we have hundreds of letters praising the Petz Bar for its staunchness, artistic appearance, and its ease of installation. Never known to break glass.

Our latest Booklet on "Modern Store Front Construction" gives all the facts. Write for a copy today.

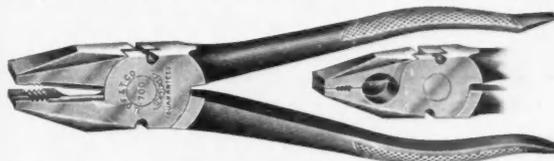
DETROIT SHOW CASE CO.

491 West Fort Street

Detroit, Michigan

Particular! High-Grade Workmen

Are the men you'll find using **Utica Pliers**, because a good workman knows that he cannot produce his best work with inferior tools. He knows the plier that slips easily into his hand when it is in its natural grasping position, on which he can exert great pressure when necessary without hurting the tender muscles of his hand, is the tool that makes him a better mechanic; he knows those keen, strong cutting edges can't be found on anything but a **Utica Plier**.



He knows he can rely on it at all times to stand by him and help him to do more and better work, whether he's a Carpenter, Lineman, Plumber, Electrician, Wire Worker, Tinner, Metal Worker, Farmer, Concrete Worker, Jeweler or Autoist. We make **Utica efficiency Pliers** for them all and you can see them at the best of dealers in hardware and electrical supplies.

"Insist on 'Utica Pliers'; they're the Best."

We would like to send you a copy of "Plier Pointers", Free May we? A post-card will bring it.

Utica Drop Forge & Tool Company
UTICA, NEW YORK

You will get **SPECIAL ATTENTION** if you tell Advertisers you read American Carpenter and Builder.



Conservative Capacity Ninety Cubic Yards Per Day

Saves 60 to 90 cents on every yard. Pays for itself several times each season. Gives you the edge on your competitors. So light that two men can carry it. Big savings in freight and handling. Can always be set to discharge direct into forms. Saves all wheeling of wet mixture from machine. This alone saves one-third the labor necessary to operate other mixers.

Sold on Trial—Satisfaction Guaranteed

Simple, Compact, Handy, Substantial

New Principle.
Quick Charging.

Quick Action.
Quick Discharge.

Its 20 mixing blades have a criss-cross, kneading, plowing, hoeing motion which press and fold the entire batch over upon itself many times every second. Insures a quick and thorough mix. You will be proud to say you have a Northfield Hand Batch Mixer, once you see its work. Mixes 4 cu. ft. of finished wet concrete per batch. A batch per minute or 90 cu. yds. per day is easily possible under favorable conditions. 30 to 60 cu. yds. per day is a fair average on ordinary abutment, floor, wall or bridge work. Over 10 cu. yds. per hour have been averaged with this mixer. When equipped with power attachment—one man alone can mix mortar fast enough for a crew of 20 brick-layers. It is not a man-killer. Two men operate it easily and do not work as hard as the shovelers. A pump engine will run it. It is not necessary to have a big, expensive power mixer to economically mix concrete. No job is too big or too small for the Northfield. No better mixer can be had, even at ten times its price. Price within reach of all. Get your order in early if you want one this season.

Write direct to factory for catalogue, price and terms.

NORTHFIELD IRON COMPANY

402 Water Street - Northfield, Minn., U. S. A.



We Can Save You Money In Your Mortar Mixing

Mr. G. Ed. Berry, a Harrisburg, Ill. contractor, writes us that with the Blystone Mixer, "One man has slaked my lime and made mortar for eight and ten masons besides having time to spare for other work. I have saved the cost of at least one man's wages and a gain of ten per cent more mortar per barrel of lime over the old way of mixing."

Is YOUR mortar or plaster mixing a profit eater. Why not make it a profit producer. Our Blystone Batch Mixer is a mortar and plaster mixer as well as a concrete mixer. It can save you time, labor and material on every mortar or plastering job you do.

The Blystone Mixer operates very easily. It is filled while in motion and material is discharged while machine is in motion. It mixes material in full view, insuring an absolutely accurate mix. The reverse spiral paddle system of the Blystone mixes rapidly, turning material over forty times in ONE minute. Blystone Mixers are furnished with gasoline engine power equipment, or for belt driving. Mounted on skids or portable hand trucks.

BUILDERS—Get The Facts About The Blystone

Let us send you our catalogs and other matter explaining in detail just how the Blystone can save YOU money.

Write us for this information right now—while you have it in mind. Asking us for details puts YOU under NO obligations.

THE BLYSTONE MACHINERY CO.

19 Carpenter St. : CAMBRIDGE SPRINGS, PA.

Buy The SIMPLEX 1913 Model MIXER



Combining the good features of both batch and continuous mixers in the one machine.

The best feature of the Batch Mixers is the rolling of the materials. The greatest advantage of the Continuous Mixer is the automatic measuring and feeding of the materials.

Only one machine combines these two features—the SIMPLEX. It's the happy medium between the two types of mixers, giving the points of advantage claimed by each, and eliminating the faults of both.

Write for New Complete Catalog.

The Miles Mfg. Co.

309 E. Franklin St.

JACKSON, MICH.

Concrete—Your Chance!

Letting the other fellow take the concrete work? Don't do it. Concrete is *your chance*. The industry is young. Competition isn't as keen as it will be later. The business is an easy one to learn and the investment required is small.

Some wheelbarrows, a few small tools and a SMITH HAND MIXER, will start you out. It's a batch mixer, specially designed for sidewalks, small foundations, culverts, silos, etc. Three easy turns mix perfect concrete. Holds 2½ cu. ft. Output, 25-30 cu. yds. per day. The time is now. Write for our booklet No. 17.

THE T. L. SMITH CO.

1138 32nd Street

MILWAUKEE, WISCONSIN



You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

Cutting Concrete Costs

Several years ago brick and lumber was the cheapest building material but now concrete has replaced them. It is not only the cheapest, but it is the best in the long run, as concrete will outlast any other building material, but yet there is still room for cutting the labor cost required for mixing high grade concrete.

Labor is the chief cost in mixing concrete and it is to this end that concrete mixers are used in cutting labor cost. It is a known fact that more and better concrete can be mixed by machine than can be mixed by hand, and for this very reason do we say that with "The STANDARD" simple Low Charging Mixers contractors are able to mix more concrete in less time, with less labor and less power.

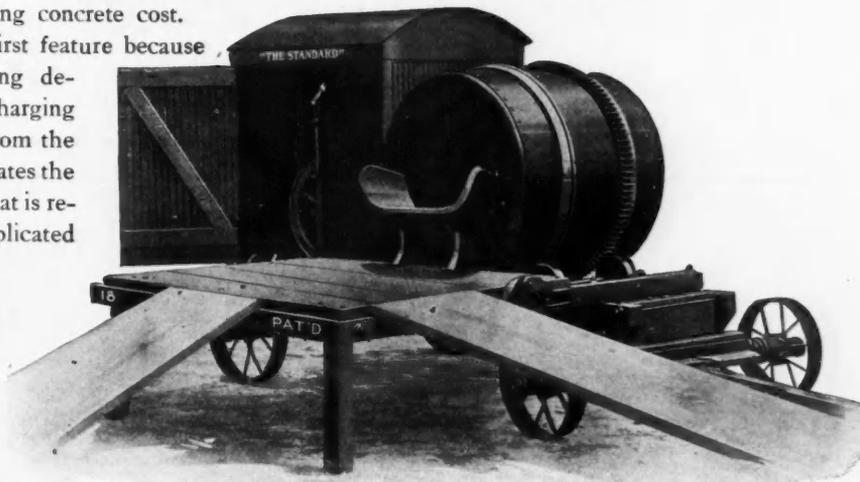
You only have to figure it out to see that this is logical. Why relay your material thru loading arrangements when you can charge directly from the barrows. We therefore claim that

"The STANDARD" LOW CHARGING Concrete Mixer

has four features for cutting concrete cost.

Low Charging is the first feature because

it eliminates the loading devices and allows the charging of the mixers directly from the barrows. It also eliminates the extra power and labor that is required to operate complicated loading machinery. By cutting out the loader you cut out one third the purchase price of the mixers, and three-thirds of the repair bills and delays.



Semi - Automatic

Discharge can be operated from either side of the drum and eliminates the extra man which is required on tilting or other complicated discharge methods.

Open Drum allows the entire batch to be seen during it's mixing, assuring uniform high grade mix each batch. Many contractors have to give their mixer a few extra turns per batch before discharging so they can be sure of securing a uniform mix. With "The STANDARD" this is not necessary.

Simplicity of construction and operation eliminates the necessity of skilled labor or extra power.

"The STANDARD" is built sturdy but not complicated and is adapted to all classes of work. Will mix besides Concrete, Cement Mortar, Plaster, Tarvia, Westrumite, etc.

The Standard Scale & Supply Co.

Manufacturers High Grade Contractors' Equipment

CHICAGO PITTSBURGH PHILADELPHIA NEW YORK
1345-47 Wab. Ave. 243-5 Water St. 35 So. Fourth St. 136 W. Broadway

Write for our New Catalogue No. 44

Do It Now!

Send Catalog No. 44 on "The STANDARD" Mixers also catalogs on

Cars Carts

Gasoline Engines

Steam Engines

Wheelbarrows

Hoists Pumps

Trucks Crushers

Scales Dump Wagons

Derricks Elevators

Name

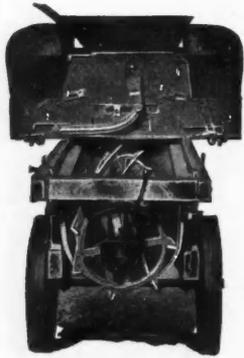
Address

City

State

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

On One Month's Run Differed Only 2 Bags Cement From Estimate



Winfield Junction, N. Y., Aug. 17, 1913.

The New York Purchasing Agency, Inc., 76 Pine Street New York City.

Mr. H. H. Neals, Pres., Dear Sir:—With no solicitation on your part, we beg to offer a few words of recommendation for the Coltrin Mixer No. 12 purchased from you some time ago.

This Mixer was used continuously for six months every day, excepting Sundays, on sidewalk, curb and sewer work. No delays due to broken or worn parts were experienced, and a uniform mixture was obtained at all times. From observation of one month run, the proportion of materials used through the mechanical feeding device as compared to the theoretical, differed by only two bags of cement. The cost as compared to hand labor was about 30% less.

For simplicity of operation, its equal is not to be had.

Yours very truly,

THE COURTNEY DEVELOPMENT CO.

(Signed) Per J. F. Courtney.

It is the Ability to Save Money

that is proving to users of mixers the greater economy of the Coltrin.

THE KNICKERBOCKER COMPANY

Jackson, Michigan



A FREE BOOK On Concrete Machinery

It isn't exactly a catalog because it gives you the cost of making concrete Blocks, Bricks, Porches and Chimneys. It tells all about making Drain Tile, Sewer Pipe. How to make them at a good profit, etc

You should have this 64 page book if interested in concrete. Write at once indicating machine you are mostly interested in

Price \$40

W. E. DUNN MFG. CO., 4132 Fillmore St. Chicago

All About Concrete

Blocks
Bricks
Porches
Chimneys
Drain Tile
Sewer Pipe
Mixers



Send us two or more names of persons who are interested in or want to buy Hot Water Heating Plants and we will send you this scale. Back inches are divided into 6, 10, 12, 20, and 40 parts. Also free catalog on request. Mention this paper

Andrews Heating Co., 1340 Heating Bldg Minneapolis, Minn.

GENUINE BANGOR

Roofing Slate
Structural Slate
Blackboards

Large Facilities, Prompt Deliveries
EAST BANGOR CONSOLIDATED SLATE CO.

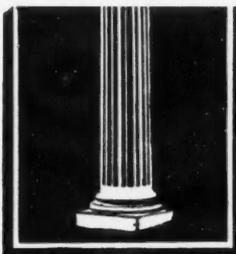
East Bangor, Pa.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



These reinforced concrete standards are handsome, durable, artistic and inexpensive. They do not rust like cast iron, become dented like sheet metal, or rot like wood. They require neither painting nor repairs, and are not affected by weather conditions.

CONCRETE LIGHTING STANDARDS



We have numerous beautiful designs, and make the standards of different kinds of concrete. Our sparkling granite concrete rivals natural granite in its beauty.

Write for booklet on "Ornamental Illumination." FREE.

THE PETTYJOHN COMPANY
534 No. Sixth Street TERRE HAUTE, IND.

ALFRED W. WOODS

Architect

LINCOLN :: NEBRASKA



I AM LOOKING FOR
BUSINESS

I DO GENERAL ARCHITECTURAL WORK BUT MY SPECIALTY IS

CHURCH WORK

CORRESPONDENCE SOLICITED



A Smile of Satisfaction

comes to every contractor who has a "Big-an-Little" mixer on the job. They know the value of this labor-saving machine. It helps build the bank account.

If you employ labor to mix concrete on a mixing board, a "Big-an-Little" mixer will interest you. This mixer will fit in any job—big or little.

Labor is expensive. Compare its cost with the operation of a "Big-an-Little" mixer. Who wants to mix concrete by hand, when a trifle like 30 cents a day will do it and give a bigger and better output.

You can't afford to do without a "Big-an-Little" mixer, that's clear. We guarantee satisfaction. We guarantee the mixer. You gain by getting a "Big-an-Little" mixer to work for you.

"A MIX A MINUTE"

is a safe average. Capacity 4 to 6 cu. ft. per batch or two wheelbarrow loads—50 yards per day. Saves \$3.00 to \$20.00 per day over hand mixing.

Eight real advantages make the "Big-an-Little" mixer a money-maker. Write for them.

You'll find its aid worth more than the money invested.



Basic U. S. Letters Patent No. 782,700

JAEGER MACHINE CO.

318 W. Rich Street Columbus, Ohio

Pacific Coast Representatives: Edward R. Bacon Co., San Francisco, California.
Eastern Representatives: E. B. Kelley Co., 50 Church Street, New York, N. Y.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

THERE is one name by which you can identify **QUALITY** in every kind and style of the most desirable material for outside walls. It is

Hy-tex Brick

You want a brick you can identify---the maker's name makes him directly responsible to you. And Hy-tex is the only name which stands for universal quality in brick---and for that only.

All other brick trade-marks mean some one color or some one texture. The Hy-tex trade-mark means simply best brick. And there's a Hy-tex brick in every color and every texture known to brick-burning.

*Somewhere in the Hy-tex line
there is just the brick you want.*

HYDRAULIC-PRESS BRICK COMPANY

Dept. Y12 St. Louis, Missouri

BRANCH OFFICES AND EXHIBIT ROOMS:

Baltimore, Maryland, Title Building.	Minneapolis, Minnesota, 211 South Fourth St.
Chicago, Illinois, Chamber of Commerce Bldg.	New York City, 381 Fourth Avenue.
Cincinnati, Ohio, Fourth National Bank Bldg.	Omaha, Nebraska, Woodmen of the World Bldg.
Cleveland, Ohio, Schofield Building.	Philadelphia, Pennsylvania, Real Estate Trust Building.
Davenport, Iowa, Putnam Building.	Toledo, Ohio, Ohio Building.
Indianapolis, Indiana, Board of Trade Bldg.	Washington, D. C., Colorado Building.
Kansas City, Missouri, Rialto Building.	

Get in touch with us—and let us co-operate with you.

You will get **SPECIAL ATTENTION** if you tell Advertisers you read American Carpenter and Builder.



A Full Thanksgiving and a Merry Christmas

BUILDERS are seldom troubled with a lack of appetite. So what we hope is, that every one of Our Folks had his share of light and dark meat, of stuffin' and cranberry sauce at the recent Thanksgiving festivities.

All of us have lots to be thankful for;—good health and friends and honest work to do. There is nothing finer in life than to feel really thankful for all of the good things that are ours to enjoy in such abundance.

A merry Christmas season is almost on us. We wish you all the heartiest good cheer. May every one of Our Folks have someone near and dear to whom he can play Santa Claus. It's lots more fun to give than to get; and gifts that are really useful and not costly are always most enjoyed.

The AMERICAN CARPENTER AND BUILDER wishes every one of its readers and friends the merriest of merry Christmases.

Home Study Pays

WE can remember back to the time, a long while ago, when folks were skeptical about home study.

It was a new idea and so, of course, it was no good.

But home study has more than proven itself. The achievements that have been made by correspondence school students

and the remarkable upward progress of those who have worked over standard home study books and cyclopedias, have fully converted the doubting-thomases.

Tens of thousands of ambitious men in all lines of work and especially in the building trades, owe their success to home study.

Probably the greatest help to carpenters and builders has been "Radford's Cyclopedia of Construction," a new, up-to-date work, especially written and illustrated for home study by expert authorities. This practical set of books has played the part of technical high school and college for thousands of ambitious carpenters, builders and draftsmen. It is made up of twelve big volumes, and covers the entire field of modern building construction: carpentry work, masonry, concrete construction, steel construction, heating and ventilating, plumbing, electric wiring, painting and decorating, paper hanging, builders' hardware, builders' contracts and legal forms, estimating. One entire volume is devoted to drafting, drafting-room practice and the drawing of plans. Specification writing is fully covered. There is a big advantage in having all of these subjects included in a single set of books in that the general index makes it easy to quickly locate the explanation of any subject connected with modern building. For quick and ready reference,

this is a great help, much better than having to hunt through half a dozen different books in order to find what you are after.

Turn these long winter evenings to your account by studying and learning more about your work. The man who knows is the man who gets the big money. Get ready, this winter, for better wages and bigger contracts next spring.

Hurry, Hurry—for the "A. C. & B." Convention!

THE Letter Convention of Our Folks, announced on page 39 of the November number, is evidently making a big hit. The delegates are arriving (through the good offices of Uncle Sam), at the rate of 40 and 50 a day, and it is a regular family reunion around the Editor's desk.

If you haven't already done so, turn now to your November AMERICAN CARPENTER AND BUILDER, page 39, and see if you don't want to help us along by sending in the information requested. You stand a chance of winning one of the fifty cash prizes. However, we appreciate the fact that that doesn't mean so much to our readers as the knowledge that they have been able to be of some assistance toward making their building magazine bigger and more practical. Turn to page 39, November issue, now. We do as much or more for you any time.

Very cordially yours,
Editor AMERICAN CARPENTER AND BUILDER.

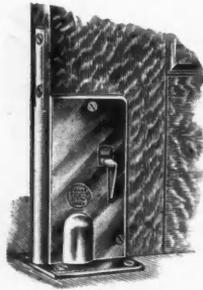
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CHICAGO SPRING BUTTS

REPUTATION

Do you specify a spring hinge with distinctive features which will appeal to your client and assure satisfaction to all concerned?



Chicago "Relax" Spring Hinges

are in great demand. They are substantial in construction and readily applied. The EXCLUSIVE FEATURE of spring action release, allowing the door to be placed at any desired position and automatically re-engaging when the door is closed, is of recognized merit and utility.

Send for Catalogue C 29. It fully illustrates and describes the most complete line of Spring Hinges manufactured.

Chicago Spring Butt Company

CHICAGO



NEW YORK

Yes! the World does Move!
Facts are Stubborn Things



Don't Buy
SPRING HINGES
OF
OBSOLETE
CONSTRUCTION



ONLY

Bommer

DOUBLE ACTING

Spring Butt Hinges

Carry the load on the true bearings

and look alike at both sides of the opening when both doors of a pair of doors are opened in or out. The carpenter can scribe for both doors of a pair from the same side, and avoid guesswork, as he can see what he is doing while fitting the doors.

YOUR HARDWARE MERCHANT CAN SUPPLY THEM

Bommer Bros., Manufacturers Brooklyn, N.Y.

Cabot's Sheathing and Deadening Quilt



The Cold-proof, Heat-proof, Sound-proof and Fire-retarding Lining

"Quilt" is a matting filled with dead air spaces, and one layer is as warm as twenty-eight layers of common building paper. A house lined with it will always be warm and save coal. Floors and partitions lined with it will stop the passage of sound. Roofs lined with it will keep cool

in summer and prevent heat from escaping in winter. It will save coal enough to pay for itself every two winters as long as the house stands.

Send for a sample and catalog.

SAMUEL CABOT, Inc., Manufacturing Chemists, Boston
24 W. Kinzie St., Chicago - 1133 Broadway, N. Y.

Cabot's Creosote Shingle Stains; Stucco and Brick Stains, Conservo Wood Preservative.

Set Your Saw Right--- If you want to take the wrong set out of your Saw and put in the right set at one operation you should use the

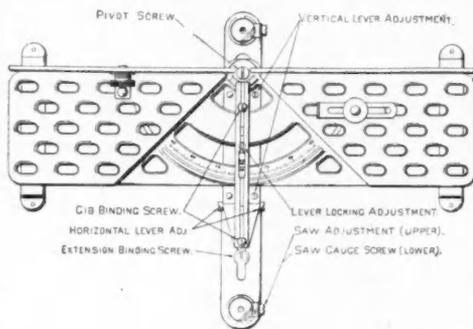
MORRILL SAW SET



A mechanically perfect Saw Set that will set any Saw not over 16 gauge.

Send for FREE Booklet "Saw Points"

Chas. Morrill
94 Lafayette St.
NEW YORK



MARSH AYER PRESSED STEEL MITER BOX

The lever adjustments will true up a box that has for any reason become inaccurate.

Our circular shows all of the new features of this remarkable pressed steel box.

H. C. Marsh Co., 606 Race St., Rockford, Ill.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

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The
**World's Greatest
Building Paper**

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When your subscription expires, renew at once, using the blank enclosed in your final copy. If it expires with this issue your renewal must reach us before December 25 to avoid missing the January number. Use P. O. or Express Money Order if possible, but bills or 2-cent stamps may be sent at our risk.

The
**World's Greatest
Building Paper**

American Carpenter and Builder

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The publishers of the American Carpenter and Builder will not knowingly publish any advertisement of a misleading character nor accept advertising from any individual, firm or company whose business methods are open to question.

We often receive inquiries from readers who desire information about concerns that formerly used the advertising pages of the American Carpenter and Builder, but are no longer doing so. They want to know if these former advertisers are still in business, if they can send them orders with the assurance that they will be filled, and a variety of other questions.

The American Carpenter and Builder will use every legitimate means to safeguard the interests of its readers and to protect them from fraudulent or unreliable concerns. Where the slightest doubt exists our readers should write the publishers for information. It may save them money, time and worry.

In all cases in writing to advertisers say: "I saw your advertisement in the American Carpenter and Builder."

VOL. XVI.

DECEMBER, 1913.

No. 3

Preserve This Number

THERE are many good and cogent reasons why this number of the AMERICAN CARPENTER AND BUILDER should be carefully saved for future reference. Builders realize the permanent value of the material presented in these pages every month. Some value one feature most, some another. All unite in agreeing that this is a home study instruction book and an up-to-date trade directory for carpenters and builders, too valuable ever to throw away.

There is one special feature in this December number added to all the rest, which should not be overlooked or mislaid, namely, the 12-page Birch Announcement. Read this carefully and preserve it for future reference.

The association of birch producers have chosen this method of putting the complete "Story of Birch" in the hands of representative, wide-awake contractors, builders and carpenters. You will find this story worth while. You will find many occasions to use the information it contains. ❖

The Architect and the Contractor

IN one case where a number of local firms bid on a large building for an architect who was well known always to rule in favor of his client irrespective

of the merits of the case, the successful bidder, after figuring full measure on all quantities, added this item:—Humor architect. This item was 10 per cent of the contract. It is safe to presume that other bidders placed this contingency at a higher figure."

The above extract from a paper read by Leonard C. Wason before the Boston Society of Civil Engineers, calls for serious consideration. An architect or engineer who is handling a large job has to settle many questions regarding details, which are not made explicit in the specifications. It is in his power to make things run smoothly and with a minimum of expense, if he so wills it. He may, on the other hand, by lack of good judgment, so impede the smooth completion of the work as to cause serious loss to the contractor who has taken the job on a lump sum basis, or corresponding loss to the building owner where the contract is upon the cost-plus-percentage or cost-plus-fixed-profit basis.

The example quoted above is by no means exceptional. Long experience in the work of various architects and engineers teaches a contractor just what can be expected from those men in given contingencies—establishes their "personal equations," in other words. It is obvious that the best results can be obtained both

in expense and in lack of friction where the guiding mind is an eminently impartial and judicial mind, and works for the best interest of the client, irrespective of the exigencies of the moment. It is quite apparent that deciding everything in favor of his client is not to the best interest of the latter, nor of his own reputation or business volume; this for the reason that his peculiarities become quickly known to contractors, and are always allowed for in the preparation of a bid.



A Quick Rise in "Architectural Building" By W. C. Kashner

FOUR years ago we took our first contract. It was remodelling an old, run-down house for an old skin-flint that was on the lookout for flaws to defer payment.

We pleased him so well that he was ready to tell anybody of our ability to do good work.

He had been used to letting work go to the low man—and getting stung in return. Our policy was, and still is, "Get our price and do work right."

Through his recommendations we landed another house to build. The next year we built four houses, aggregating \$18,000.

The next year saw the crisis in our business. Strong

opposition had sprung up. We figured \$65,000 worth of work and did not get a single contract, until late in June. Things were looking blue, but we took a new hitch in our determination to win out on the lines that we began business on.

At last a doctor friend of ours wanted an \$8,000 residence built in the heart of



Looking for Flaws

the aristocratic section of the city. We drew the plans and built this house and made another good advertiser.

Through his recommendation, we secured the contract for a Christian Scientist Church. On the building committee was the richest man in the city, and he was contemplating the erection of a residence befitting his wealth.

He gave us to understand that the manner in which we executed our contract would determine whether we built his residence or not. Needless to say, he was well pleased, and gave us the contract on a percentage basis months before the plans were completed.

We now have arrived, and are figuring on \$200,000 worth of work for next year. In connection with the building business, we have established a lucrative architectural practice.

We have only this to say, that there are many temptations and pitfalls in the building business that may promise temporary gain, but in the end "murder will out" and the crooked contractor will go to the wall.

We are interested in the AMERICAN CARPENTER AND BUILDER for several reasons. Mainly, because we can pass it around among our employees and create a broader conception of up-to-date work.—Lafayette, Ind.



Architecturally Best

TWENTY public buildings, pronounced the best examples of architecture in the United States, are listed below. The list comes from the American Federation of Arts, which conducted a canvass of its own members—artists, sculptors and others whose opinions are of importance in answering such a question:

- Boston Public Library.
- Capitol at Washington.
- New York Public Library.
- Pennsylvania Railroad Station, New York.
- Trinity Church, Boston.
- Columbia University Library.
- Congressional Library, Washington.
- J. P. Morgan's Art Museum, New York.
- Minnesota State House.
- Madison Square Garden.
- St. Patrick's Cathedral, New York.
- Cathedral of St. John the Divine, New York.
- West Point Military Academy.
- White House, Washington.
- New York City Hall.
- University of Virginia.
- Toledo Art Museum.
- Union Station, Washington.
- W. K. Vanderbilt's House, New York.
- Pan-American Building, Washington.

Four which closely followed the leading twenty are: Metropolitan Tower, University Club and Trinity Church, N. Y., and Museum of Fine Arts, Boston.

The Builders' Alphabet

Verses by A. D. Hunter, Drawings by P. J. Kinder



A stands for Architect, Collegel man;
Who gets ten per cent from the millionaire clan.
If twice five per cent makes his dear client worry,
He'll come down to five in a mighty big hurry.



B stands for Builder, Knowledgeful man;
Who builds houses and churches and schools when he can.
While buildings of this type are not under way,
He'll build barns or garages, and make darn good pay.



C stands for Carpenter, Practical man;
The Brains of the job is this artisan!
As journeyman, 'prentice or boss tanned and brown,
He's ambitious, hardworking—you can't keep him down.



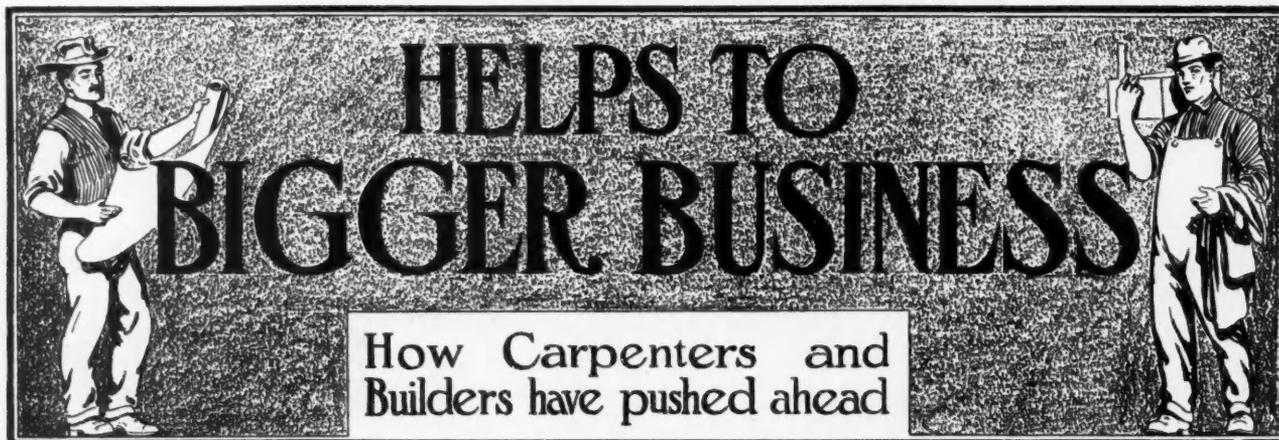
D stands for Dealer, Sociable chap;
Who sells building materials and other claptrap.
He's a good man to tie to—a good man to know;
For he gives long-time credit when collections are slow.



E stands for Experience—best teacher of all;
Without it the best of good workmen would fall.
It's not learned in school and it's not learned in college,
It comes but to those who have practical knowledge.



F stands for Framing, a mighty hard part
Of the Carpenter's business. In fact, it's an art
That few men acquire. So study with care
The mysteries deep of the old Steel Square.



Holding on to Your Customers

A BACK HANDED SWIPE AT THE CLOCK-WATCHERS AND A GOODLY HUNCH TO THE WAY OF BUILDING UP
A LASTING TRADE

By H. J. Blacklidge

IT seems to be the height of ambition with some carpenters to see how little they can do and still hold their jobs. Also, to see how quick they can get away from the job after the whistle blows. They sneak part of their tools to the box every time they get a chance after 3:33. I saw one stop planing midway in the length of a three foot board. Another left three turns of an escutcheon screw to be done next morning. But did you ever see one of these fellows on the job ready to start at the first "crack" of the whistle? You would think they would naturally be around with their aprons on and plane in hand or screwdriver uplifted so as to start as promptly as they left off. But, Oh, no! Not much! The fact is that nearly every one of this style men gets started just about five to ten minutes after eight or one.

But there is another peculiar thing about these same men. Did you ever notice that they never stay very long in one place? They lead a sort of butterfly life, apparently. No permanent, well-built business for

them. No gradual, healthy growth from helper to apprentice, from apprentice to carpenter, joiner, mechanic, foreman, contractor, builder, and perhaps small "miller"; possibly, architect. No solid, well-earned reputation for A-1 work; A-1 material; A-1 help; A-1 designs; convenient plans with easy steps, well-lighted rooms, no smoky fireplace, lots of closet room, no waste space!

No, he hasn't all of these. For these are some of the things which hold customers. And *he* does not



I saw one stop Planing in the Middle of a Three-Foot Board



Never mind the Kind! Tom will Know

hold his customers. In fact, all that *his* customers want is to get rid of him as soon as they can procure another man.

A carpenter should try to do his work so well and satisfactorily that the next time that person has any work to be done they will say, "Send down for Saw-view or Timothy," or whatever your name happens to be, "and tell him to come up and fix it right away;" instead of, "Send for a carpenter to fix it." Let me illustrate with a little example that came under my

observation. I was in a certain bank one day. The cashier was going to lunch. He knew that Contractor Eckerman (we'll call him), usually came in during the lunch hour. So he said to one of his assistants, "When Tom comes in, tell him to get us some signs for these windows. We want 'Paying,' 'Receiving,' 'Savings,' 'Coll. and Exch.' Tell him something *nice*." "What kind or style shall I tell him?" The cashier was going out the door. He turned back, impatiently.



Wanted a Plate Glass Front in His Old Store Building

"Never mind the kind. Tom will know what *kind*. You just tell him something neat. He'll know."

The thought struck me, Tom has sure got a timber hitch on this bank's work. And he had. When they wanted anything, all they had to do was to tell him, and he got it for them. Now there were half a dozen carpenters and contractors who had accounts there at that time. But TOM WAS HOLDING HIS CUSTOMERS. They did not ask him what it would cost, because they knew he would secure the signs as reasonably as they could be gotten, considering quality. They said nothing about how long—they knew he was prompt. They knew he would not try to "graft," because he was sure of their work; that he was in a word dependable, reasonable, and had excellent taste. They were not afraid that he would furnish tin signs with japanned lettering, neither sterling silver with embossed monograms.

A couple of years ago my partner and I were called to do a small job for a man who had the reputation of never getting his work done to suit him. I told Jack that we had better put the price high because I did not care much whether we got the job or not. Jack said, "Look here, old man, I've known old Emerson for a longtime and I am not a bit afraid of him. I don't believe he is half as hard to get along with as they say he is. And you know he has a good deal of work in the course of a year. If we can land him and HOLD him it is worth while, because he has the renting and repairing of about thirty houses that I

know of, besides his own." Well, somewhat doubtful, I consented to put in a reasonable figure. Emerson watched us like a hawk for the first two hours. I got so nervous that I had to go to the shop to file a saw (?). Then he went off and did not bother us any more. Two weeks later he came to us and said that he wanted to put a plate glass front in his old store building! Wanted US to do it, if you please! Talk about nearly fainting! Jack looked at me and said, "I told you so." Well, it was not long before a fire occurred in one of the houses he controlled. Ten minutes after the fire was out he was working the telephone to find us to come down and make an inspection and give an estimate on the cost of repair so that he could send it in to the insurance company.

Right then and there I "took a tumble," and began to study the "Art of Holding Your Customers."

Builders, there is hardly anything of any more importance to you and your business than this holding of customers. Make it a point to find out why you do not get all of a man's work. Some business men will not give all their work to one man. But that is a different thing entirely. Their own *feelings* do not enter into the propositions—it is a case of *policy*. You want your customers to FEEL that YOU are THEIR CARPENTER AND BUILDER. See?



Smooth Cutting Saws

No matter whether it is a portable rig on the job or a bench saw in the shop, smooth cutting with machine saws is fully as important as smooth cutting with your hand saws, and not a bit harder to get. Take it as a labor saving proposition and it is worth while.

Suppose you rip something that you are to joint to a smooth, true edge. If there are deep saw marks left on it you have from two to three times the work to do you should have with the plane, whereas, if your saw is made to cut perfectly smooth, so that there is nothing but a fuzziness, it only takes a little work with the plane to joint it off. It is easy enough to make a power driven saw cut smooth; it is simply a matter of going over the teeth carefully and seeing that all the corners are out evenly—and avoid setting too wide. A saw set too wide, whether a cross-cut or a rip saw, will chatter and cut rough, just the same as with your hand saw. By using cross-cuts with fine teeth, carefully set, you should be able to square off stock in even better shape on the machine than you can do it with a hand saw.

In the planing mills they use machine saws to make the mitre joints, which every carpenter knows is a hard joint to make. You can do as good work with your saws if you will just take the pains to fit them for it. Make them cut smooth enough to square off siding as well as framing, and in this way they will save you lots of tedious hand work, and help reduce your cost in building.—J. CROW TAYLOR.

To keep the coming in during the winter months

Winter Work with Wall Board

SOME OF THE USES I HAVE PUT THIS HANDY MATERIAL TO

By Leonard Lytle

Lytle Construction Co., Sioux City, Iowa

THERE are many excellent kinds of wall board on the market, all of which are meeting with the success that a good article deserves. There was a demand for a material, light, easily worked and cheap, that could be used in some places instead of wood and in other cases as a substitute for plaster.

DRAWER BOTTOMS:—Wall boards are a fine thing to use for drawer bottoms, especially the bottoms of very large drawers, such as are used in blue print files. The writer has such a file, 4 feet wide and 6 feet long, with 26 drawers, 2 inches deep. No other

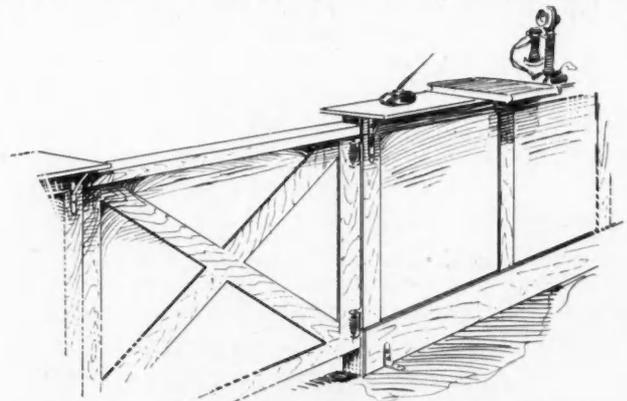


Wall Board Being Light and Strong, is Ideal for Large Drawer Bottoms

material could have served the purpose at anywhere near the same price.

OFFICE COUNTERS:—There are a great many small concerns who need a cheap office counter. The writer has built many such counters for dray lines, lumber yards, etc., having the frame work of 2 by 4's and a facing of some good wall board. A base board can be run along the floor line and the front of the counter can be panelled with wood strips about four inches wide. The top of the counter can be made of wood as desired. The writer finds that most concerns

like to have a counter 42 inches high with a width of from 2 to 16 inches, where the counter is used merely as a barrier to keep people from getting into the



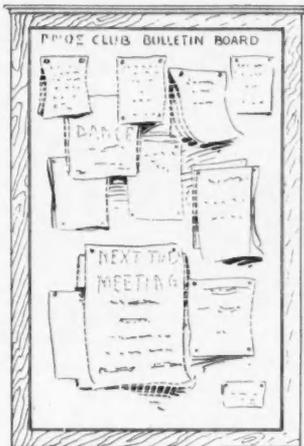
Light Office Rail Cheaply Made of Wall Board

inner office. It may be necessary to make a portion of the counter wider than this wherever there is a money drawer and much writing to do. There is one great advantage to this counter, it is cheap and quickly installed. Most of the work can be done at the shop and the counter installed in a few hours' time.

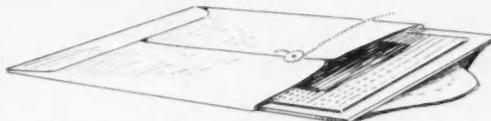
LIGHT PARTITIONS:—The writer has built a great many office partitions, telephone booths, stock rooms, dark rooms, etc., for different concerns, using a frame work of dressed 2 by 4's and wall board placed on one side only. At one time a large printing concern moved into a store room 50 by 150, and wanted a great many private



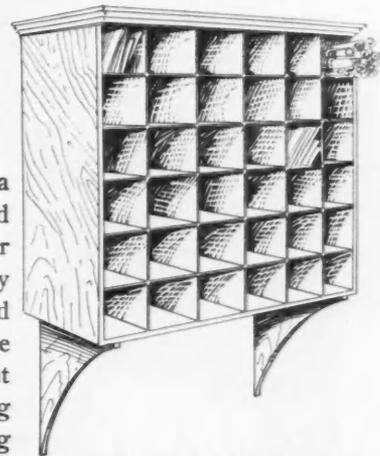
For Booths and Office Partitions Wall Board is the Stuff



The Material for Bulletin or Key Boards



To Send Drawings Safely, Wrap with Wall Board



Light Pigeon Holes Offer Another Use for Wall Board

offices and partitions erected in a way to be economical and cause the least annoyance, and that at the same time could be easily removed without damaging the building. Wall board solved the problem.

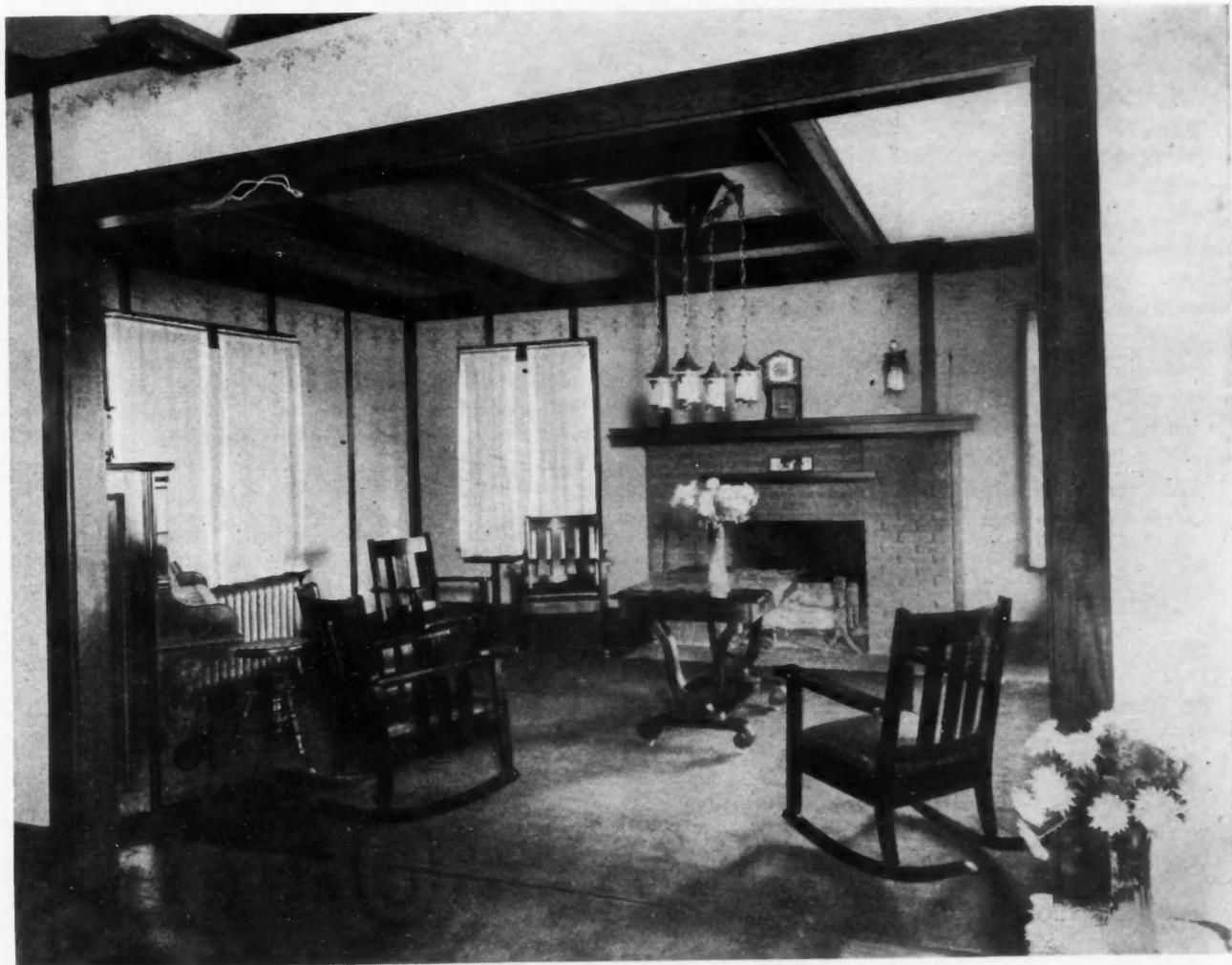
NOTICE BOARDS:

—Every carpenter shop has calls for bulletin boards for club houses, etc., and a piece of wall board with a neat casing or moulding makes a cheap article. The wall board does not warp and it is easy to tack notices to it. Every hotel or office building must have a key board or a key rack, and wall board will be found excellent material for this purpose.

Another use for wall board is as a protection to photographs or drawings when mailing the same.

Architects often use a small piece of wall board to hold a pad of paper which is held in place by thumb tacks. This pad can be slipped into the pocket and is excellent to use when taking measurements or taking estimates of fire losses, etc. Some businesses require cabinets that have hundreds of pigeon holes. Where the material placed in the pigeon holes is not heavy, wall board will be found an excellent substitute for wood for the partitions.

WALL BOARD FOR QUICK BUILDING:— In a much larger way wall board is used both for the finishing of attics or second stories, and also for taking the place of plaster all over the house. When a con-



A Typical Home Interior in Which Wall Board Has Been Used Throughout Instead of Lath and Plaster

To Keep the Dollars Coming In



Beautiful Living Room Finished with Flat Tone Oil Paints Applied Directly to Wall Board

tractor is called upon to build a farm house in the cold, winter months, and the work must be done quickly, he will be able to save a great deal of time and avoid waiting for plaster to dry, by using wall board. The writer has built many small farm houses in three weeks' time by using this material. These were cases where new houses were required to replace those burned down or a real estate agent had sold a farm on which there were no buildings.

NO NEED OF ROUGH FLOORS:—One of the chief reasons for using sheathing boards on joists in houses is to have something for the plasterers to walk on while they are applying the plaster to the walls and ceiling. After this part of the work is done the finished floor is laid which can then be scraped and finished. Now, if wall board is used the finished floor can be laid directly on to the joists, as there is no plastering done over the top of it. There being no dirt or sand about the wall board, it can be nailed onto the walls and ceiling without damaging the floors. They can then be scraped and finished.

FOR FINISHING ATTICS:—Builders are often called upon to finish up the attics of very fine homes for the use of servants or for billiard rooms, etc. The



Attic Room Finished off Easily and Cheaply with Wall Board

owner dislikes to have the dirty plastering mortar around, as it is almost sure to get over his lawn, and get tracked through the house, no matter how careful the builder might be. In a case like this the wall board can be carried up the front stairway. As it is perfectly clean, it will not damage anything that it touches. Enough can be taken up at one time to complete the job.

Money in Screen Work—NOW

To the Editor:

Chicago, Ill.

We have been reading with much interest the various suggestions for keeping the dollars coming in during the winter months, and have thoroughly enjoyed and appreciated the novel and ingenious methods used by some of the carpenters and builders to keep things humming while their usual work is at a standstill.

The winter income producer we want to urge—and we have seen it work out well for hundreds of carpenters and builders—is screen work. This is the time to make up window screens and door screens for use next summer.

With all the good work the "swat-the-fly" campaign has done, it is easier now than ever before to get every householder interested in screens. The growing love of outdoor air and use of open-air porches, both for sleeping and as summer living-rooms, play right into the "mit" of the resourceful carpenter and builder. If he is interested in screens he turns all these things to his own account.

Get around among the people this winter and find out what new screens they will need. Get them to place their orders now.



You can point out that the price is lower now, during the quiet season, than it will be along in the early summer when everybody is wanting their screens made up and hung all at once. We know of hundreds of men who are keeping busy practically all the latter part of the winter at this work.

To make up new screens and to re-wire old ones requires but little room and practically no investment whatever. The little money that is invested, comes back immediately and with big interest. Any carpenter or builder who has a shop big enough to lay out a door or full-length window screen is in a position to take up this work.

Here is one thing, too, that is nice about the screen business—it steadily grows; one satisfied customer this season, brings back two for next.

It is evident that a good many readers of the AMERICAN CARPENTER AND BUILDER have power wood-working machines in their shops. These can very profitably make up their own screens. Or the frames for door and window screens can be bought, ready made, cheaply, at any sash and door works. The screen cloth can be obtained from the hardware dealer; and, buying in quantities, builders usually get the advantage of close prices.

One thing we want to urge regarding screen cloth. Use good quality. If you want to build up a permanent, paying business you must build on quality and satisfaction. The best quality screen cloth costs only a little more and is decidedly worth while.

GILBERT AND BENNETT MFG. Co.



Possibilities of the Steel Square

ILLUSTRATING THE USE OF THE STEEL SQUARE BY MENTAL CALCULATION FOR FINDING THE LENGTH AND CUTS OF JACK RAFTERS FOR SQUARE AND OCTAGON CORNERED BUILDINGS

By A. W. Woods

WE are going to take for our subject this month mental calculation in connection with the use of the steel square. We are not going to cover a whole lot of ground, but stick close to one part of roof framing; that of finding the length and cuts of jack rafters.

It is surprising how few journeymen can readily handle the square in solving this part of roof framing. Yet, when we stop to think about it, it is not so strange either, since this part of the work is laid out by the boss carpenter who, as a class, is not very particular about showing the boys how he arrives at the calculations in obtaining correct results, and especially so when the same is found in connection with the steel square. Then again, the fellows that do the manual part of the work, too many are content to be sawyers of wood, doing just as they are told.

It is necessary that there should be a boss; we believe in bosses and we believe they should be responsible for their boss-ship, but the fellow who takes any pride in his work does not want to be always doing the same old grind—doing as he is told—he wants to be able to tell others. Too many are content to let the boss do all the thinking for them when they should be noting useful points, jotting the same down in memory's store-house ready to be drawn or when the occasion demands.

What we are going to say is not anything that requires a lot of figures to memorize, but rather a simple way of arriving at desired results without resorting to other than a mental calculation.

For example we will take the jacks for a square cornered building, since most all buildings are of that class. Suppose the roof has 9 inches rise to the foot. Then 12 and 9 on the square will give the seat and plumb cuts. This is simple enough. Everybody knows that; but right here is the beginning point of our subject that we wish to bring out—the finding of the length of the jack for different spacing.

Now, while 12 and 9 taken on the square give the seat and plumb cuts for the jack, the length of the diagonal (15 inches), that is, from 12 to 9 will represent its length for 12-inch spacing. We have now a

perfect sliding scale, simply by placing the square on the timber at the figures that give the seat and plumb cuts. Why? Because if 12 on the tongue represents the spacing for 12 inches, the same ratio must hold good for any of the other markings on that member. That being the case, we lay off the seat cut and we are ready to operate the sliding scale. If the length is wanted for a 6-inch spacing, simply slide the tongue along the seat cut line until 6 rests at the edge, or working line of the rafter, and that part covered by the square will represent the required length. If the length is wanted for a 16-inch spacing, then slide the tongue along the line until 16 rests on the working line and the true length of the jack or common difference will be found to be 20 inches, as shown in Fig. 1.

The reader will note that we take the run on the tongue of the square instead of the blade, as is the custom of most writers on the use of the square. The reason we do this, is by taking the arbitrary figures, such as the run and tangent for one foot, it gives a greater range for finding the lengths of the rafters, than can be had on the tongue, because of its being longer.

Now, suppose we want to find the length of the octagon jack, we proceed just the same as in the above, but instead of 15 being the length for a 12-inch spac-

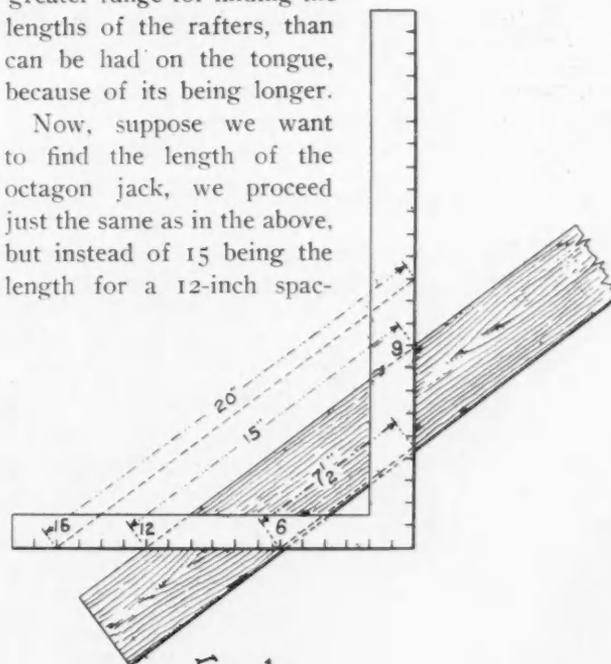


FIG. 1.

Figuring Jack Rafter Lengths with Steel Square

ing, it is that much for a 5-inch spacing. This makes it more difficult to arrive at by the sliding scale; and besides, the increase in the length is so much greater than the same spacing for a square cornered building, that the full scale is clear beyond the range of the

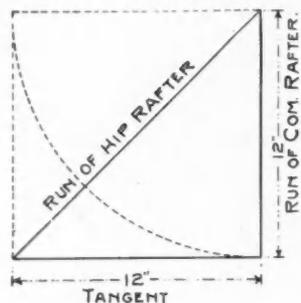


FIG. 2.

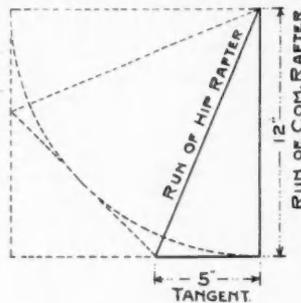


FIG. 3.

steel square. Thus at that rate, for a 16-inch spacing, the length would be 48 inches. So probably as simple a way as any to reckon the length is to find it by analysis, which runs something like this—since 15 is the length for 5-inch spacing, for one inch spacing,

it must be as 5 inches is contained into 15 inches, which is 3 inches. Thus having found the length for one inch spacing, it is an easy matter to find the length for any spacing, as for a 16-inch spacing, it is $3 \times 16 = 48$ inches, which represents the length of the first jack, or common difference.

The reader should bear in mind that 12 on the tongue is not used in the first example to represent the run of the common rafter for one foot, but because it represents the tangent for a one-foot run of the common rafter. In this case, the run and tangent being equal, it is misleading. This is clearly illustrated by referring to Figs. 2 and 3.

The tangent taken on the tongue and the length of the common rafter for a one-foot run taken on the blade, will give the angle across the back of the rafter for what is generally called the side cut, but we think would be more properly called the top cut. It should be remembered, too, that this rule applies to any pitch the roof may have; the blade in each case giving the angle for the cut.

October Ad. Puzzle Brings Out Heating Facts

HUNDREDS OF ENTHUSIASTIC READERS TELL WHY FURNACES AND OTHER HEATING PLANTS SHOULD BE ADVERTIZED IN THE "AMERICAN CARPENTER AND BUILDER"—THIRTEEN WIN PRIZES—ANOTHER PUZZLE CONTEST PRESENTED ON OPPOSITE PAGE

JUST as soon as the October issue was in the hands of the readers it was evident that a happy selection had been made in the Ad. Puzzle Contest offered. The puzzle solutions began to pour in at once. Our readers show a familiarity with trade marks and other advertising material used by the manufacturers of tools and building materials that is very gratifying.

As for the letters telling the advantages of the AMERICAN CARPENTER AND BUILDER as an advertising

Prize Winners in the October Ad. Puzzle Contest are the Following:

First prize, \$10.00 worth of goods selected from our ad. pages—

E. H. GREEN, Manager, Northern Lumber Co., Limited, Retail Lumber Dealers, Stenen, Sask.

Two second prizes consisting of \$5.00 worth of goods selected from our ad. pages—

B. W. RIBBLE, Secretary, Bangor Slate Mining Co., Bangor, Pa., and

THOS. W. COTHRAN, with Jno. J. Cain Construction Co., General Contractors and Engineers, Columbia, S. C.

Ten third prizes, each consisting of \$1.00 worth of goods selected from our ad. pages—

A. E. DURLAND, Seattle, Wash.

medium for furnaces and other heating plants, the only difficulty seemed to be to tell it all in one hundred words. This much is certain, gathered from all of these very interesting and instructive letters submitted: our readers are actively concerned in the basement heating-plant proposition. Many of them are themselves handling all heating contracts in connection with their work. Many more advise with their customers as to just what make and type of heater it is best to have put in.

HOMER R. MACBAIN, Building Contractor, Seneca Falls, New York.

E. L. MOUILLESSEAUX, Westwood, N. J.

T. J. CATHEY, Independence, Miss.

H. E. KNAPP, Architect and Builder, Guilford, Maine.

WILLIAM F. GIBBONS, Special Advertising, Scranton, Pa.

M. WM. HECKMANN, Dir. of Man. Tr., The Northern Normal and Industrial School, Aberdeen, S. Dak.

O. W. RIMBEY, Manchester, Ill.

LOUIS C. SEABRIGHT, Chief Draughtsman, the Stanton Heater Co., Martins Ferry, Ohio.

CHAS. H. ARTHUR, Architect, General Contractor and Builder, Lowville, N. Y.

Another Interesting Puzzle this Month

ON the opposite page we have made up a group of clippings from twenty-two advertisements appearing in this issue of the AMERICAN CARPENTER AND BUILDER. Study through all of the advertising announcements made in our pages this month. Take note of the exceptional offers your friends, the manufacturers of building materials, tools and builders' equipment, are making. They are eager to serve you.

When you have gone all through the advertisements

you will find it very easy to identify the clippings that go to make up this puzzle. Make a list of the names and addresses of the twenty-two concerns represented, and also state page number on which each ad. appears, and write us a letter of not less than one hundred words on this subject: "Metal Lath—Why I am Interested in It and How I Use It." For the best letter, accompanied by the correct solutions to the ad. puzzle, we will award prizes announced on opposite page.

Here are Fun and Prizes

FOR ALL WHO READ OUR ADVERTISING PAGES

December Ad. Puzzle Prize Contest

Above are fragments of 22 advertisements appearing in this issue. Can you identify them? Some are old friends; some you will have to hunt a little to locate. Study our advertising pages this month; read every offer. Then list the 22 ads. these were clipped from. Be sure to give the names and addresses and the page numbers. Also write a brief, straightforward letter, 100 words, on this subject: "Metal Lath—Why I am Interested in It and How I Use It"

WE WILL AWARD THESE PRIZES

13 Prizes

For the best letter (and correct Puzzle solution) \$10.00 worth of goods selected from our Ad. pages

\$30 in Prizes

For the 2 next best letters (and correct Puzzle solution) \$5.00 worth of goods selected from our Ad. pages

For the 10 next best letters (and correct Puzzle solution) \$1 worth of goods selected from our Ad. pages

When sending in your Puzzle Answer and Letter, be sure to state the goods you select from our Ad. Pages, in case you win a Prize; goods of ANY value may be selected, and prizes will apply either in whole or part payment on them.

This Contest Closes THURSDAY, JAN. 15th. Prize winners will be announced in February issue.

Address your letters to your friend, THE ADVERTISING EDITOR, American Carpenter and Builder, Chicago.



Builders Experiences in Handling Warm Air Furnace Work and Installing Steam and Hot Water Systems

Chimneys and Flues

THE OLD BUILDER TELLS OF SOME CHIMNEY EXPERIENCES AND POINTS OUT THE THINGS TO LOOK OUT FOR

By Cecil F. Herington

"THERE is one point in house heating," said the Old Builder after he had finished discussing vapor-systems, "in which every builder and general contractor is interested, and generally directly concerned. I am speaking now of the chimney. Chimneys are built of various shapes, forms and sizes and have the stove and heater connections made in various manners, but there are certain principles which apply to all chimneys and some very definite considerations that should govern their construction.

"Probably the most important or, at least the primary consideration, is the size of the flue." The Old Builder smiled and thoughtfully wagged his head. "I remember," he went on, "of one rather large house I built, in fact it was the largest job I had obtained up to that time, and without giving the matter any consideration whatever I put in an 8 by 8-inch flue assuming of course that as *all* my houses previous to this had gotten along with an 8 by 8-inch that there would be absolutely no trouble with this one; in fact, why should there be? Well, when we came to try to heat the place it was found that the 8 by 8-inch flue was inadequate and I was put to a whole lot of trouble and inconvenience (to say nothing of the expense and the undesirable notoriety of having built a house with an impracticable chimney).

"After this experience I looked into the matter of flues carefully and discovered a few notable facts. The first was the way the smoke and gases rise in a chimney. These always take on a general revolving or spiral motion when going up the flue and do not move in a solid straight column. In order to revolve they follow to a great extent a circular section and therefore do not utilize fully the corners of a square flue.

"On this account an 8 by 8-inch flue although having 64 square inches of area is hardly to be considered as of any greater capacity than an 8-inch round flue—and long and narrow flues say 4 inches wide by 12 inches long are of a shape which offers so much resistance to the spiral motion as to be quite undesirable. Figs. 1, 2 and 3 illustrate the path of the rising gases in round, square and oblong flues. This fact leads us to consider the method whereby the swirling action of the gas and smoke may be allowed to continue with the least amount of friction on the sides of the flue.

"The best way to relieve this friction is by the use of round flue lining and the next best way is by the use of the square flue lining. Of course we appreciate that it is much easier to lay brick around a square flue than it is around a round one, and this accounts for a great many builders using the square type in preference. This is all right if we consider the effective area of a square flue only as the area of an inscribed circle; or put it another way an 8-inch diameter flue is equal to an 8 by 8-inch square flue although a 10-inch diameter flue might be considered as equal to an 8 by 12-inch, the larger dimension the one way counterbalancing the smaller dimension the other way, and the gases rising in more of an oval path than that of the true circle.

"Since the tendency to rise in the chimney is occasioned only by the heated condition of the gases contained therein, it naturally follows that a chimney which is *too large* will lack the necessary intensity of draught sufficient to pull the air through a thick bed of coal, on account of the fact that the rising gases are to a greater extent cooled by the excessive chimney area and corresponding lower velocity before they reach the top.

"As a check on the size of a chimney there are several rules, most of them varying with the height. Roughly speaking for houses of ordinary height the size of the flue should range between $1/7$ and $1/10$ of the area of the grate and the smallest flue should not be less than 8 inches in diameter, or 8 by 8 inches

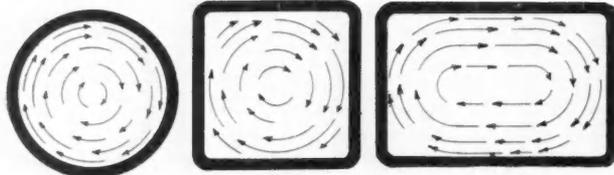
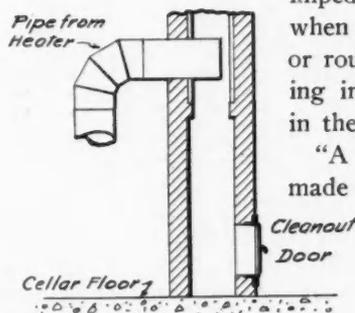
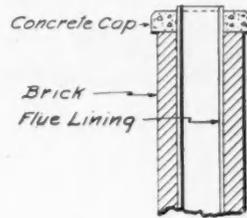


Fig. 1

Fig. 2
Spiral Motion of Flue Gases

Fig. 3

square. This smaller size of flue is sufficient for steam up to 400 square feet of radiation and for hot water up to 700 square feet; a 10-inch diameter flue or an 8 by 12-inch oblong will carry up to 700 square feet of steam or 1,200 square feet of hot water and a 12-inch flue or a 12 by 12-inch square will carry anything less than 1,200 square feet of steam or 2,100 square feet of hot water. These sizes increase gradu-



• Fig. 4. Vertical Section through Chimney, Showing a Frequent Cause of Trouble

ally up to 18 inches in diameter or a 16 by 20-inch oblong, which is good for 5,000 square feet of steam or 8,500 square feet of water.

“It should be remembered that any offsets or rough parts in a chimney flue do much to impede the draught so that when necessary to make bends or rough joints a corresponding increase should be made in the size of the flue.

“A very common mistake made in chimneys is one that causes lots of trouble and blame to fall on the builder, when in reality the carelessness is entirely due to the heating man who

makes the smoke connection at the flue outlet. This is illustrated in Fig. 4, which shows the smoke pipe shoved so far into the chimney as to obstruct it. This fault is very easily remedied after it is found out where the trouble lies, but oftentimes a chimney will seem to draw poorly and to be of insufficient size, whereas the true trouble is unsuspected and really lies in the connection as shown here.

“Another thing that is of great interest toward safer building is the use of flue linings. These not only render the passage of the smoke up the chimney much easier but they also serve as additional protection from sparks working out through poorly made mortar joints as sometimes happens. Where flue linings are used it is often permissible for low chimneys to be built with only 4-inch of brick around the lining; but it is a much better practice to use 8 inches and in all cases where flue linings are not used 8 inches is the only safe thickness to employ.

“Still another danger which may be caused by the omission of flue linings and by offsets in the chimney is the result of carelessness on the part of the mason. In case of a considerable amount of mortar being allowed to fall down the inside of the chimney, or one or two bricks, a lodgment may be secured on the rough interior and an obstruction formed which would be impossible with the smooth interior way provided with flue linings.

“At the base of a chimney a concrete footing about

12 inches thick should be provided and extending out beyond the line of the chimney for a distance of 12 inches all around. This will do much to prevent undue settlement, yet even with this safeguard the shrinkage of the chimney and the shrinkage of the timbers in frame construction are never the same. Good builders do not plaster directly on brick chimneys owing to the fact that the unequal shrinkage not only will crack the plaster but sometimes will be of sufficient amount to open crevices of considerable extent. Good practice consists of placing 2 by 2-inch furring strips vertically up and down the chimney and nailing lath to these strips so as to allow the chimney to slide up and down inside the furring to its heart's content without any effect whatever upon the enclosing lath and plaster.

“Another little detail is the cleanout door in the base of the chimney, as shown in Fig. 4, which is most advantageous to have owing to the fact that all the soot and cinders which ordinarily collect at the end of the stove pipe when the flue is not extended down will (with this arrangement) fall into the lower part of the chimney, thus protecting against stoppage for a great many years and requiring only the opening of the cast iron door at the bottom for removal.

“At the roof, flashings should be carefully provided at the time the chimney is built and it should be arranged with the idea that the chimney and the roof are not connected and that one or the other is always bound to pull away somewhat, making it necessary to get a flexible flashing connection between the two.

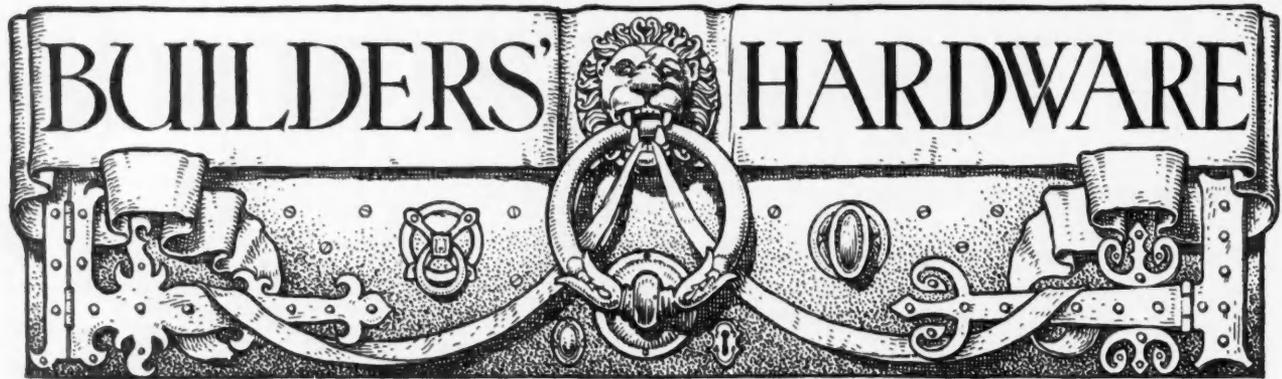
“Fig. 5 shows the general effect of a sloped roof on the wind passing over it, and the tendency of the wind to blow down the low chimney on the lower level.



Fig. 5. Effect of Sloped Roof on Chimney Draft

Had the chimney been located near the ridge as shown in dotted lines the downward direction of the air is almost entirely avoided.

“I have always found that a chimney run through the roof near the ridge and provided with a cement cap will stand up longer and give better service than any other arrangement. I would also recommend that chimneys throughout be built of cement mortar or at least the portions exposed to the weather. How many of the older houses can you see every day with the chimneys apparently tottering towards ruin from the washing out of the mortar between the bricks where exposed to the rain and snow?



The Garage Door Problem

PART I. THE HANGING OF FULL-FRONT SLIDING DOORS ON SMALL GARAGES

By E. J. G. Phillips

Engineer with the Richards-Wilcox Mfg. Co.

HOW shall we hang the garage doors, and how keep out the weather? This has become a vexing question to many since the advent of the automobile, bringing the garage with it. It is the purpose of this series of articles to call attention to a few methods which have been used to meet successfully a large number of varying conditions. The questions relating to the most suitable design, size, thickness and style of the doors will not be considered.

The old fashioned hinged door is occasionally seen but should not be used as it is a constant source of annoyance, especially if the doors are large and the opening is nearly the full width of the building. A

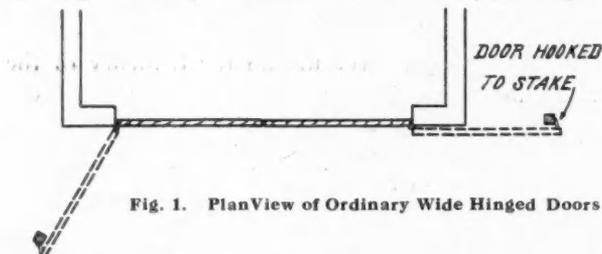


Fig. 1. Plan View of Ordinary Wide Hinged Doors

considerable space is required in which to swing the doors and when open, the doors are subject to winds blowing them back and forth with the consequent strains on the hinge fastenings and the door in general. Of course hooks may be provided as shown in the plan Fig. 1, to hold the doors open, but this requires extra time and effort and even though carefully attended to for a while, carelessness will eventually set in and the hooks will be neglected. Then again the principle itself of hanging large doors on hinges is wrong, as strains will be set up which will eventually cause the door to sag and get out of shape.

Right Angle Door Hangers for Small Garage

We will consider first the most common type of private garage intended only for one car and with the opening in the center of the front wall. On this class, especially the smaller ones, it is frequently desirable to make the opening nearly the full width of the building, allowing only jamb space sufficient to provide for the lap of the doors. This case is shown in Fig. 2 and is one which presents quite a difficulty to many builders

as well as architects, but can be handled satisfactorily by using two doors with right angle door hangers. With these fixtures, the doors when opened occupy positions along the side walls, as shown in dotted lines. Three runs of track are required for the door hangers, one of which is attached entirely across the inside of the front of building and extends into the wall 2 inches on each end. Another piece of track is attached to each side wall just above the first track and resting on top of it (Fig. 3) and with the front end extending into the wall 2 inches.

To erect these doors, first attach the hangers (which are usually made with an angle plate to fit over the corner of the door) to the doors. Single or two wheel hangers are required for the meeting stiles of the doors and four wheel hangers are used on the back end of the door. While four wheel hangers might be desirable for both ends of the door, an inspection of Fig. 3 at B, will show that this cannot be done because the wheels of both hangers projecting beyond the edge of the door would strike before the doors were entirely closed. The wheels cannot be set back farther from the edge of the door, due to the fact that the door would not clear the jamb in making the turn. Note interference shown in dotted lines at D, Fig. 3. The two wheel hangers run in the track across the opening and the four wheel hangers which are provided with extra long pendant bolts, run in the side tracks. Obviously the

angle plates of the two-wheel hangers must be set into the door flush to permit the two doors to close tight, but the hanger plates for the

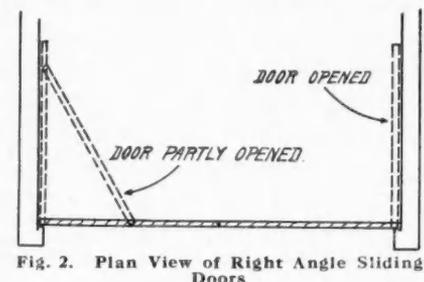
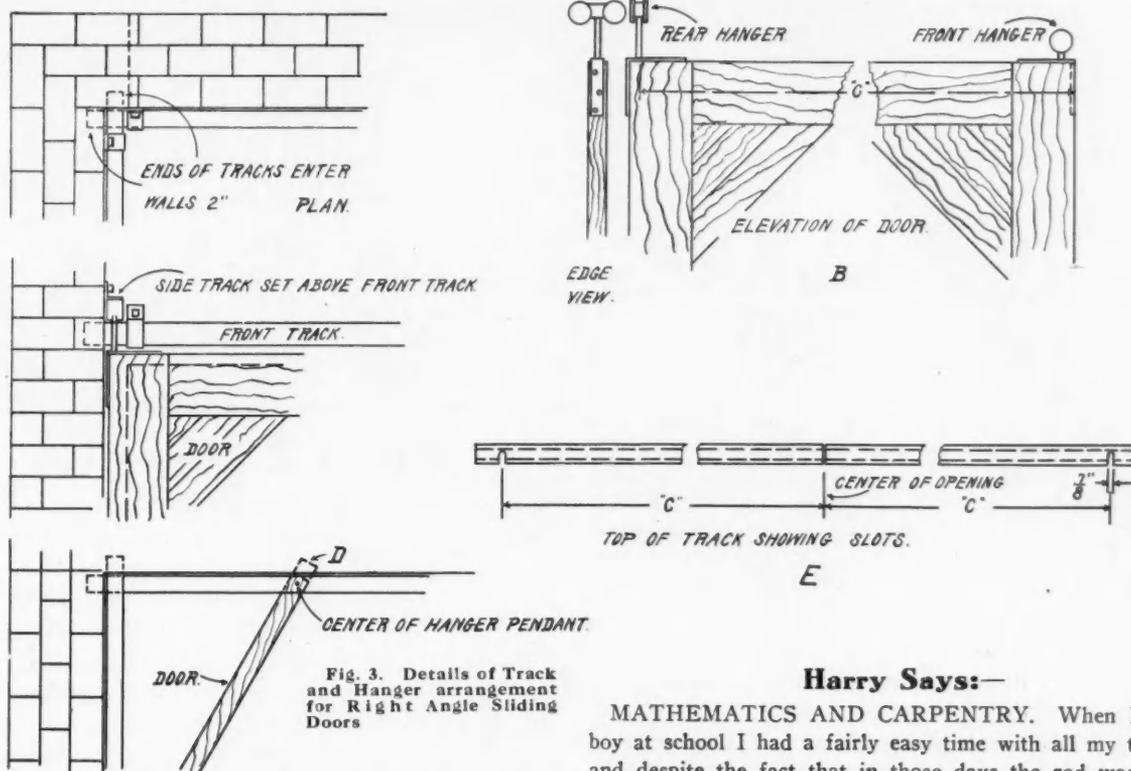


Fig. 2. Plan View of Right Angle Sliding Doors

back end of the door need not necessarily be flush.

Measure the distance "C" from the front edge of the door to the center of the pendant of the back hanger and lay off this distance on the front track.



measuring each way from the center. Then with a hack saw cut two slots $\frac{7}{8}$ inch wide, in the track, continuing them about $\frac{1}{2}$ inch beyond the center as shown in Fig. 3 E. This is necessary as it is evident that in closing the door the long pendant of the rear hanger would strike against the side of this track before the door closed tight against the jamb. The front track for convenience in erecting should be in two pieces. Attach one piece to the front wall letting it extend into the side wall two inches and at the proper height to allow sufficient working space for doors and hangers. Next raise the doors, slip front or two wheel hangers of both doors into the track already erected and proceed to attach the remaining piece of front track. Swing doors around into the position they are to occupy over the opening and if the work has been properly done the pendants of rear hangers will enter the slots cut in the track. Slip the side tracks over the rear hangers, allowing the front end to rest on top of front track and to enter front wall 2 inches. Attach to side wall with necessary brackets. The doors, after hangers are properly adjusted vertically, are ready for operation.

These fixtures with brackets for side wall attachment require about 8-inch headroom above the doors for doors of ordinary weight. If ceiling attachment brackets are used, the headroom can be reduced to 7 inches. For doors $2\frac{1}{4}$ inches or more in thickness and extra heavy, a larger size track should be used. This will require about $2\frac{3}{4}$ inches more headroom.

In hanging doors with any style of trolley track, the builder should be sure to use a sufficient number of brackets, spacing them 2 or 3 feet apart.

Next Month Mr. Phillips will discuss some other arrangements of sliding Garage Doors.

Harry Says:—

MATHEMATICS AND CARPENTRY. When I was a boy at school I had a fairly easy time with all my teachers, and despite the fact that in those days the rod was looked upon with favor as a corrective agent. But when I got up higher in mathematics I came under a teacher who would not tolerate indolence and my perversity in refusing to easily and thoroughly learn and apply the principle of square root brought me into my first disgrace and a good "hiding" with a rattan. It was singular how that licking loosened up my mental activities, and I was only a few minutes learning how to tell the distance from the lower corner of a room to the opposite upper corner when the length, height and width were given. In other words, I had "caned" into my mind the application of the rule of square root and how to obtain the hypotenuse of a right angle triangle.

As I saw it then, it was a terrible barbarity for a big man to lick a little fellow like me, but as I see it now with my building experience and my machine practice, it is a pity I did not stay with him a while longer to get a few more lickings if I could have had impressed on my mind as strongly some of the other problems of mathematics for which we find such oft recurring use in this business.

There is hardly a problem in mill building but that has its basis laid on this rule and that of the rule of three. Scarcely a building complete or any of the details down to the small moulding but what are grounded on the application of this principle. We cannot cut a brace, nor frame a rafter, nor erect a tower, nor even lay a foundation but that this principle is involved. True, much of this is done with a steel square, but the steel square is simply a mechanical means of adapting this rule to the work.

But suppose we have a stack to raise and want to fasten the guy lines to the stack before it is raised? With the distance from the eye bolt to the ground for the perpendicular and the distance from the same point to the anchor post, a pencil and paper will give the distance or length of line from eye to post to a fraction of an inch, by squaring the two dimensions found and extracting the square root of the sum by the two squares.

The length of a hip or valley rafter or any cut, regular or irregular, the length of the comb on a hip roof and, in fact, almost any building problem involves this rule which should be the fundamental study of any man who has an interest in mechanical work.

H. C. HANER.



Noon Hour Talks by the Boss Carpenter

Talk No. 17—Reinforced Concrete Footings

THE BOSS TELLS HOW TO FIGURE WALL FOOTINGS FOR USE IN SOFT SOILS OR WITH HEAVY LOADS—METHODS OF REINFORCING AND FORMULAS

“WHEN heavy loads are to be carried, either on foundation walls or by piers,” said the Boss, “the walls, piers, and footings previously shown will not in general be considered as of sufficient strength. This same condition may be met with in soft soils where even medium or light loads are to be supported. If the formula for width of footing, as stated in Talk No. 15, is used, and the width figured to allow the upward pressure of the earth to balance the downward weight, it may be found that the necessary thickness of footing at the line where it joins the foundation wall, if figured as previously indicated, will be quite a considerable amount. Such a construction as this will necessitate the use of a large amount of concrete to provide strength. This is poor economy, and will be likely to increase the cost of the structure unnecessarily. The conditions of heavy loads on firm soil, and light loads on soft soil, are thus seen to produce the same general effect in demanding wide footings for safety.

“Fig. 37 shows a means for doing away with excessive bending and shearing stresses in a wide footing by the use of stepped layers of concrete. In this construction, the unsupported length of projection is small; and the packed earth around so deep a footing has a helping influence in resisting failure. It will be noticed that the great depth in this footing provides a

safe condition against shear along the planes of the wall above. This construction also uses a large amount of concrete.

“If the formula used in Talk No. 15 for determining the thickness is examined, it will be seen that the allowable transverse unit-stress in concrete is very low. It should also be borne in mind at all times, even to hope to approach this value, the concrete must be of good quality, carefully placed and tamped, and allowed to set in such a manner that it may take on its natural strength. In the calculation in Talk No. 15, 40 lbs. per square inch was given as the working strength. A means of overcoming this need for excessive thickness or for stepped layers, is outlined in the following statements:

“A consideration of what actually takes place in the concrete, in case of a wide footing, is shown in Fig. 38. Let the upward action of the soil upon the footing be represented by the uniformly distributed small arrows, whose sum balances the big arrow representing the weight of the wall and footing and the weight to be carried. Consider that each projection of the footing is cut through along the lines where the footing joins the wall, as shown in the figure. Now pull these projections away from the main wall, and insert the two coil springs and rubber bands as shown in the figure. Now insert a small round bar near the

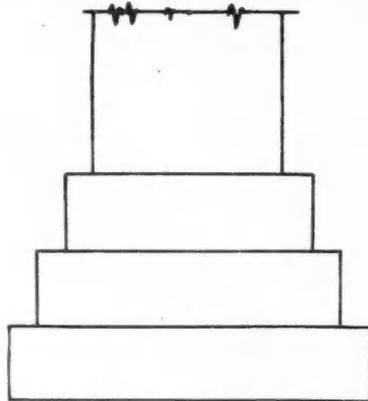


Fig. 37. Stepped Footing of Plain Concrete

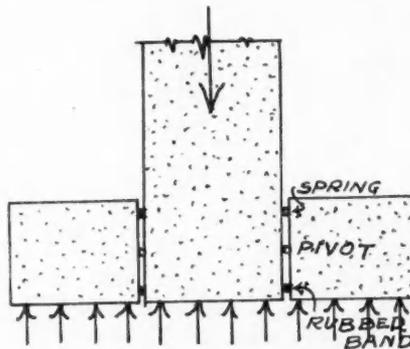


Fig. 38. Simile of Stress Conditions in Concrete Footing

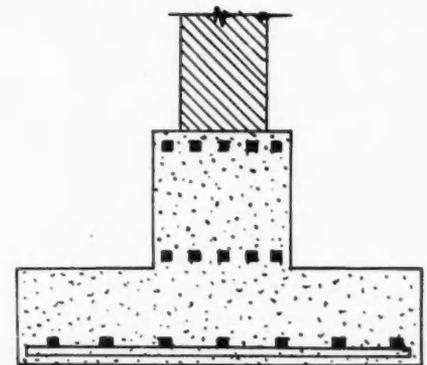


Fig. 39. Wall Footing Reinforced in Two Directions

middle of the depth, as shown, and allow the small arrows to act. It will be noticed that the springs compress and the bands elongate.

"This same result tends to take place in the footing in its original condition; but, since concrete is weak in resisting tension, and fairly strong in resisting compression, some material which will stand tension must be embedded in the concrete, so that an economical balance may be obtained for the compressive strength of the concrete.

"This manner of reinforcing is provided in many types, and in quantities varying with the stresses to be resisted. Footings under walls of considerable length, or where soft spots in the soil are likely to cause uneven upward resistance, are reinforced with longitudinal rods as well as cross-rods. These longitudinal rods are generally placed near the bottom with the cross-rods, in order to take the longitudinal tensile stresses if any occur. Fig. 39 shows a footing of this type which is often used with a heavy wall. It will be seen that the longitudinal bars in this figure serve two purposes. Those in the bottom serve as a strengthening medium over weak places under sections of the footing between the two walls perpendicular to the one shown; while the upper row serves a double purpose—that of confining the concrete directly under the loaded wall, and of providing a rein-

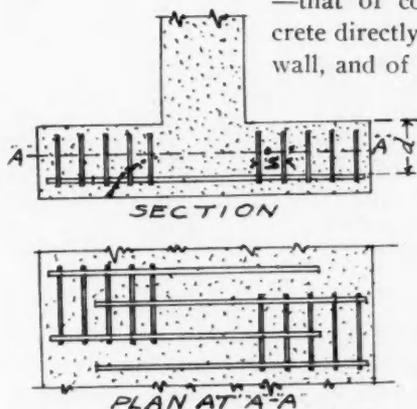


Fig. 40. Wall Footing Reinforced with Bars and Stirrups

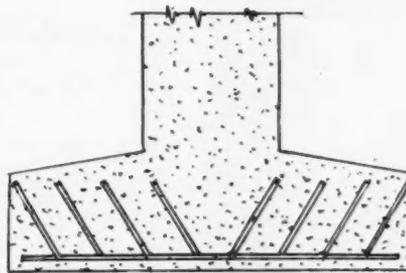


Fig. 41. Reinforcing to Prevent Failure by Diagonal Tension. Use of Trussed Bar

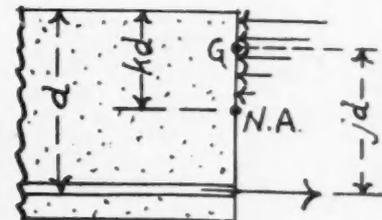


Fig. 42. Distribution of Stress in Reinforced Beam

forcement to resist tension in the top of the footing if an end of the wall should settle.

"A type of reinforced wall footing is shown in Fig. 40. As will be seen in the figure, alternating rods are placed so that the ends lap well over the wall line on each side. This provides a large amount of steel where the greatest bending due to the projecting footing occurs, without using unnecessary steel at the other parts of the footing where the bending tendency is small. This arrangement also allows for a large amount of steel where the vertical shearing tendency is the greatest. It is recommended that, in case of heavy loads on a footing of this type, stirrups or bent-up bars be used in connection with the rods shown, in order to prevent failure by horizontal shearing in the concrete, or failure by diagonal tension, as shown in Fig. 40. There are special reinforcing bars on the market, such as the Kahn, which provide this rein-

forcement and also aid in increasing the bond, or clinging tendency, between the concrete and steel rods. Fig. 41 shows a type.

"A method of determining the amount of steel needed in a footing, such as shown in Fig. 40, will now be given and illustrated by the solution of a problem. After the amount of reinforcing steel necessary to prevent failure by transverse bending is determined, the footing will be reinforced against failure by methods other than bending, such as shear, slipping between the concrete and steel, and failure of the stirrups or diagonal tension reinforcement, if such is needed.

"The footing may be considered as a number of concrete bars of rectangular cross-section laid side by side, each bar having a length equal to the width of the bottom of the footing, a breadth of 12 inches, or 1 foot of wall length, and a thickness equal to the thickness of the footing where it joins the wall. If Fig. 38 is inverted, it will be seen that these concrete bars are in the condition of a uniformly loaded cantilever on each side of the wall, the load consisting of the earth pressure necessary to resist the downward pressure of the wall on the footing.

"The formula for the bending moment at the wall line for a cantilever loaded uniformly is $\frac{1}{2}WL$, where $W =$ Total load on cantilever, in lbs.

$L =$ Length of cantilever, in inches.

"Let M represent this bending moment in inch-pounds in the following formulas:

"A committee composed of leading engineers and investigators have determined that the design of a beam of rectangular section may be based upon the following:

Steel ratio—

$$p = \frac{1}{2} \cdot \frac{f_s}{f_c} \left(\frac{f_s}{nf_c} + 1 \right) \dots \dots \dots (\text{Formula No. 12})$$

Stresses in concrete and steel—

$$f_s = \frac{M}{p j b d^2} \dots \dots \dots (12a)$$

$$f_c = \frac{2M}{j k b d^2} \dots \dots \dots (12b)$$

$$\text{Arm of resisting couple formed by internal stresses—} \\ j = 1 - \frac{1}{3} k \dots \dots \dots (12c)$$

"Position of neutral axis, or the depth below top surface of footing at which the balancing rod is imagined to be placed, as described in connection with

Reinforced Concrete Footings

Fig. 38, is determined by:

$$k = \sqrt{2pn + (pn)^2} - pn \dots \dots \dots (12d)$$

"For a working strength in the steel rods equal to 16,000 lbs. per square inch, and a concrete whose working compressive strength is about 650 lbs. per square inch, *j* may be used as $\frac{7}{8}$.

"In the above formulas,

p = Ratio of section area of steel bars needed, as compared with section area of strip of footing 12 inches long and *d* inches deep at wall line. Total depth = (*d* + 2) inches.

f_s = Working unit tensile strength of steel, in lbs. per sq. inch.

f_c = Working unit compressive strength of concrete, in lbs. per sq. inch.

n = 15 for a good grade of concrete.

M = Internal resisting moment which balances external bending moment, in inch-pounds.

j = Ratio of lever arm of resisting moment to *d*.

b = 12 inches.

d = Depth from top of footing at wall line to center of steel rods, in inches.

k = Ratio of depth of neutral axis to depth *d*.

"Fig. 42 shows the location of some of these quantities. The point marked *NA* corresponds to the location of the rod about which the spring and bands balance, as referred to in Fig. 38. *G* represents the location of the resultant of the unit compressive stresses, and corresponds to the spring of Fig. 38. The rod shown corresponds to the rubber bands.

"An examination of these formulas will show that if the grade of concrete to be used is decided upon—say a 1:2:4 mixture for this class of work, where mass is to be done away with and strength substituted—the percentage of steel to be used may be found from Formula No. 12 by substituting suitable working values for the strength of concrete and steel. A value ranging from 500 to 650 lbs. per square inch may be used for this grade of concrete in compression; and 16,000 lbs. per square inch is a fair working tensile value for steel. The tensile strength of the concrete on the steel side of the balancing axis is neglected.

"As an example of the application of these formulas, suppose that we have a wall footing similar to Fig. 40 to design, which is to carry a 24-inch thick foundation wall, the load per foot of length of footing to be 15 tons. By experiment, the soil on which this footing was to be placed, showed a bearing capacity of 2½ tons per square foot. The concrete is to be a 1:2:4 mixture, thus allowing a working unit compressive stress of 650 lbs. per square inch.

"First, by the formula stated in Talk No. 15, the necessary width of footing per foot of length will be:

$$1 \times b \times 2\frac{1}{2} = 15; \text{ or, } b = 6 \text{ ft.}$$

"This would allow for a length of cantilever equal to 2 feet on each side of the wall line. Consider this cantilever as uniformly loaded by the upward pressure of the soil.

"From (*M* = ½ *WL*), we have:

$$M = \frac{1}{2} (2 \times 1 \times 2\frac{1}{2} \times 2000) \times (2 \times 12) \\ = 120,000 \text{ inch-pounds.}$$

"Substituting values in (Formula No. 12), we have for *p*:

$$p = \frac{1}{2} \cdot \frac{1}{\frac{16000}{650} \left(\frac{16000}{15 \times 650} + 1 \right)} = .008$$

"From (12*d*) we have:

$$k = \sqrt{2 \times .008 \times 15 + (.008 \times 15)^2} - .008 \times 15 \\ = .38$$

"From (12*c*):

$$j = 1 - \frac{1}{3} \times .38 = .87.$$

"Now substituting the above values in (12*a*):

$$16,000 = \frac{120,000}{.088 \times .87 \times 12 \times d^2}$$

and solving for *d*², we have:

$$d^2 = 90; \text{ or, } d = 10 \text{ inches approximately.}$$

This makes the area of the concrete above the center of the rods, in each one of the 1-foot wide strips of footing, equal:

$$10 \times 12 = 120 \text{ square inches.}$$

"To determine the amount of steel necessary,

$$.008 \times 120 = .96 \text{ square inches cross section of steel.}$$

The number of rods needed to make up this area of cross-section may be found in any steel handbook. For square bars four ½-inch bars might be used to each foot of length of footing.

"These should be equally spaced in the footing, taking care, in choosing the size of rods, to see that the distance between centers of parallel rods is at least 2½ diameters of rod. In choosing the number and size of rods, care must be taken to provide sufficient surface area of rods to insure a suitable bond stress between the steel and concrete. This will be illustrated later in the problem.

"Since the bending moment grows less toward the outside edges of the footing, the reinforcing bars may be placed as shown in Fig. 40. Thus the length of each bar would be 5 feet. The top of the footing may also be sloped as shown in Fig. 41, but not too great an amount. Calculations may be made by using the bending moments at different distances out in connection with (12*b*), but care must be taken to provide depth enough to take care of the vertical shear and bond stress.

"If this footing is tested for strength in shear by the formula:

$$v = \frac{V}{bjd} \dots \dots \dots$$

where *v* = Unit shearing stress,

V = Total shear on one cantilever just described, the result obtained at the wall line, or position of maximum shear, is

$$v = \frac{2 \times 2\frac{1}{2} \times 2000}{12 \times .87 \times 10} = 96 \text{ lbs. square inch.}$$

This is within the limit of 120 lbs. per square inch allowed in beams thoroughly reinforced for shear, but

indicates that some form of reinforcement must be used to provide against failure by horizontal shear or diagonal tension. If v had been 40 or less, the footing would be safe against this method of failure.

"The reinforcing for horizontal shear or diagonal tension will be accomplished in this particular case by placing vertical stirrups in the footing, as indicated in Fig. 40. In determining the amount of steel needed for this form of reinforcement, the concrete may be assumed to carry one-third of the shear. It now remains to provide the necessary amount of stirrups, and space them properly.

"There will be a distance away from the wall line at which vertical stirrups are not needed, on account of the unit-shear decreasing to the allowable 40 lbs. per square inch for plain concrete. This will depend largely upon the slope given to the upper surface, which should in general be small.

"There is a rule that the spacing of these vertical stirrups shall not be greater than $\frac{3}{4}$ depth of beam. Bearing this in mind, find the size of stirrups and the spacing as follows:

$$\frac{\text{Area of stirrup bar}}{\text{Circumference of same}} = .6 \times \frac{80}{16,000} \times d \dots (12f)$$

$$= .03$$

For a round bar:

$$\frac{\text{Area}}{\text{Circumference}} = \frac{1}{4} \text{ diameter of bar} \dots (12g)$$

Therefore, the diameter of stirrup rod needed above is:

$$4 \times .03 = .12.$$

Better use a $\frac{1}{4}$ -inch rod, bent into a U-shape.

"The spacing of these should be determined by the following formulas:

$$s = \frac{3 A_s f_s j d}{2 V} \dots (12h)$$

where s = Spacing of stirrups, in inches.

A_s = Total sectional area of one stirrup, in sq. in.

$$s = \frac{3 \times .10 \times 16,000 \times .87 \times 10}{2 \times 10,000} = 2 \text{ in.}$$

"While it is not necessary, this spacing may be continued in cases like Fig. 40 from the wall line outwards for a distance equal to x , determined by:

$$\frac{w(1-x)}{b j d} = 40 \dots (12i)$$

Where l = Length of projection in inches.

w = Earth pressure in pounds on a section of footing 12 inches long and 1 inch wide.

d = Depth of section to rods.

"These vertical stirrups should be placed in a manner similar in general to that in the case of those shown in Fig. 40, the object being to carry each U-shaped member under and around a group of horizontal rods, in such a manner that there may be two upward projecting prongs in each width "s" per foot length of footing. These prongs are carried well up to the top surface. The first stirrup may be placed $\frac{1}{2}s$ out from the wall line.

"The test for bond stress in the horizontal rods is determined by:

$$u = \frac{V}{j d o} \dots (12j)$$

where u = Bond stress per unit-surface area of bar;

o = Total perimeter of bars used.

"For the problem given, with $\frac{1}{2}$ -inch square bars:

$$u = \frac{10,000}{.87 \times 10 \times 4 \times 2} = 143 \text{ lbs. per square inch.}$$

This value is a little large, but would probably be safe. A working value recommended by many is 80 lbs. per square inch. Our value may be reduced by using a larger number of smaller rods. It would be better to use deformed bars in a case of this kind, or form loops in the ends of all plain bars.



Open Air Tuberculosis Camp

Living out in the open air all the time, both waking and sleeping, is curing tuberculosis. Down in Alabama the society women of Montgomery have established a camp sanitarium. It is out in the pine woods—an ideal place for fighting lung trouble.



Montgomery, Ala., Tuberculosis Camp; Each House is Supported by One of the Society Women of this City

The little individual cottages are constructed so that they are open to the weather on all four sides. Canvas curtains can be let down to keep out the storm. These little buildings are built up high and dry from the ground on brick piers. The lower part of the side walls is shingled.

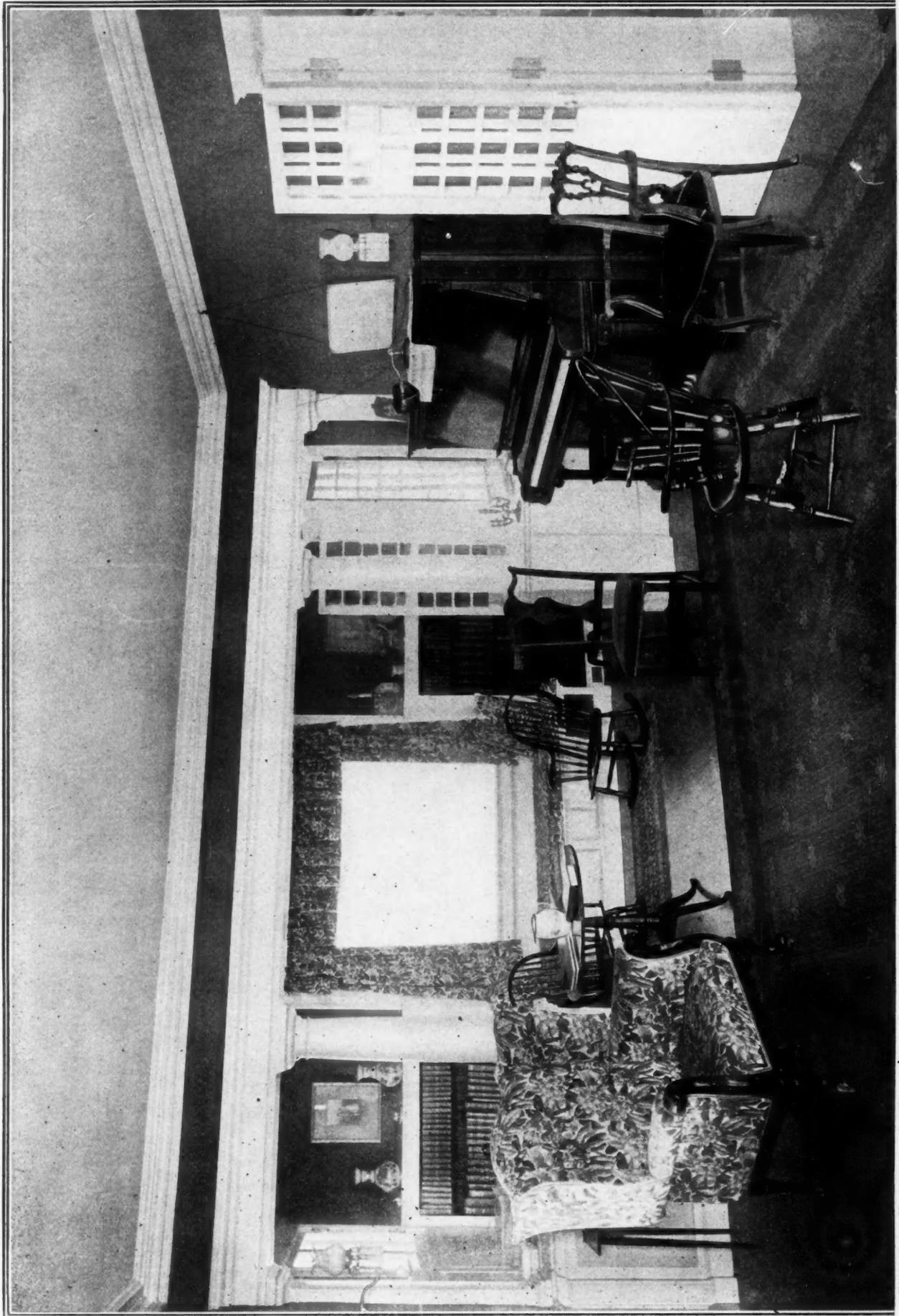


Forest Notes

Canada cuts about 2 million cords of pulp wood annually, about half of which is exported for manufacture in the United States.

It is claimed that some of the eucalyptus of Australia are taller than the California redwoods, hitherto considered the highest trees in the world.

There are 55 oaks in the United States, about evenly divided between the East and the West. The eastern species and particularly white oaks are the most valuable.



Wide-Open Homes are the Thing These Days. The Interiors are Roomy and Generous, the Divisions Between Rooms Often Merely Indicated. Here is a Library and Music-Room Group. The Colonnade with Table-Height Side Rails is all that Separates the Two Rooms. This is a Fine Example of White Enamel Finish. Double Doors are Glazed in Upper Part

HOME BUILDERS SECTION

A Timely and Reliable Guide to All that is Practical, Satisfactory and Attractive in the Planning Building, Finishing, and Furnishing of the Up-to-Date American Home

Textiles For Wall Covering

By
Mary H. Northend

THE prudent housewife weighs the question carefully as to whether textiles or wall paper is the most economical to use. The first cost of the former is more than the latter, yet there are many things to be taken into consideration in deciding this subject.

Wall paper is easily soiled and torn. While it can be patched, the matching of old and new is conspicuous. Textile permits of retinting, can be brushed at any time, and is sanitary.

The pioneer of textiles was burlap canvas, rough in weave and costing 10 cents a square yard. It was fastened by brass headed tacks, ornamental, but not satisfactory.

In the early days the only shades procurable were a muddy brown, strong pronounced tints of red, green and yellow. This material is still obtainable, but in much improved condition. The weave is firmer, harder and closer. It does not roughen up or hold the dust. The range of coloring has been extended to such an extent that it is possible to match the fabric to any color scheme. The brass headed tacks of yesterday are done away with, it being hung like any ordinary wall paper.

The price varies with quality. Burlap of a rough, coarse weave, 36 inches wide, is 15 cents a yard. Firmly woven, 50 inches wide, comes as high as 60 cents. There is advantage, however, in the purchase of the greater width, as it does away with frequent joinings and is easier to hang. This latter has a prepared back that adheres readily to the wall. The cheaper grades, ranging from 15 to 30 cents, lack stiffness, and have no backing. These latter are pasted to the wall over a first coat of newspaper. An advantage is that it will not sag or pull, and stands any amount of wear and tear.

The worst fault is its fading quality. Green and red are particularly trying. They require frequent retinting. The most durable shades are tan and golden brown. They are easily retinted to harmonize with any color. Paint is more



Tapestry (Reduced One-half)

easily applied than dye, and, carefully done, the appearance is satisfactory.

The only fadeless textile is arras cloth. This is an imported fabric com-

posed of jute and linen. The strands of jute, taking the color more readily than linen, the result is a mottled effect, irregular and attractive. This cloth comes 50 inches wide, three times the width of wall paper, and is \$1.00 a yard. It ranges from olive green to golden brown; Venetian red to camera blue.

Japanese grass cloth is very popular. This comes in rolls like wall paper, each roll containing 8 yards, 36 inches in width and costing \$3.00 per roll. It is more beautiful than any other fabric, having a satiny sheen and a wonderful weave, the irregularities of which produce shadowy and seductive effects. This is found in pastel tones, low and restrained, silvery grays, greens and tans, as well as golden brown, old blue and soft Pompeian reds.

Other fabrics in vogue are buckram and canvas, the former has a slightly irregular surface, such as is noticed in linen commonly used in book bindings. The colors are fairly durable, it has a firm surface that can be restored by the use of oil paint and water colors. The same width as Japanese grass cloth, it costs 50 cents a yard.

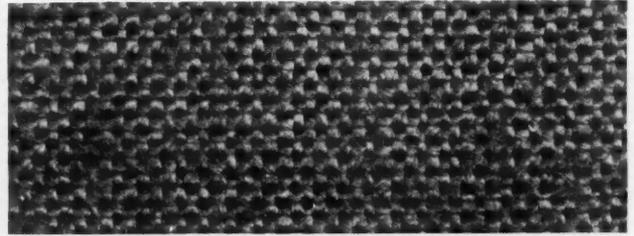


Bedroom Walls Hung with Heavy Crepe Paper

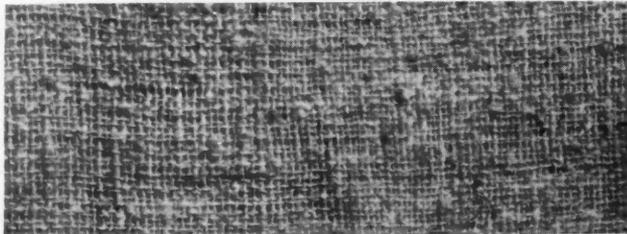
Textiles for Wall Coverings



Arras Cloth—One of the Newer Fabrics



Burlap Comes in Many Colors and Can Be Painted



Linen—a Delightful Background for Pictures



Craftsman Cloth—A Very Artistic New Wall Fabric

A firmly woven fabric known as canvas is offered in a line of attractive colorings. It may be used to cover the entire side wall or it may be harmoniously combined in wainscot, wall paper or plain tints in paints or calcimine. The plain surface being well adapted to stencil effects.

For popular use in chambers, nothing is so fashionable as figured chintzes and cretonnes. They vary in width as well

as price. Pretty weaves in fast colors of domestic manufactures can be purchased as low as 15 cents a yard; imported English chintzes cost \$3.50. Decorative wall coverings are of linen. Hand woven linen web, fresh from the loom, without bleaching, gives a wonderful background. Coarse as canvas and repulsive to touch, it shows a blended hue of grays, browns, and yellows that make a wonderful neutral coloring not found

in other material.

Then there are plain, domestic linens in blue, green and tan that give a good background. English figured linens printed in fast colors show patterns extremely quaint. They are copies of old designs found in English museums in curtains and chair coverings. They are 31 inches wide and cost from 75 cents upwards.

There are many other wall hangings



Dining Room with Circular Wall Very Beautifully Decorated with Grass Cloth above the Plate Rail; an Imitation Leather Below.



Dining Room Richly Paneled in Red Gum, Finished to Imitate Circassian Walnut. At the Ceiling Line is an Ornamental Fruit Band of Modeled Plaster Work, Tinted in Various Colors

which, while not strictly textiles, can be classed among other woven fabrics from their use. These include leatherole, oak panelling, etc. The effect of these is dignified without being somber.

Oilcloth is good for bathrooms, kitchens, and the service portion of the house. It makes a neat, attractive covering in tile effect, but is also pleasing in plain tints. Thoroughly washable and serviceable, it comes in 12-yard rolls, 47 inches wide, costing from \$5.00 to \$10.00, according to quality.

A good substitute for grass cloth to be used in dining-rooms, is the Japanese wood fiber. It is really a thin veneer of wood mounted on paper. This fiber is a beautiful tint of silvery gray or a pleasing shade of yellow tan. The rolls are 12 yards long, the same width as grass cloth, costing \$3.00 a roll.

There is nothing prettier than a Japanese matting. This is especially good in bungalows. It allows of hand decoration; and a stencil design repeated around the top edge gives a wonderfully beautiful and unusual effect.

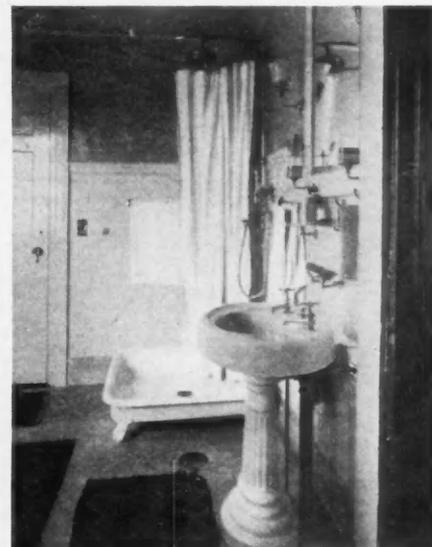
There are textiles suitable for painting that come in the form of panels.

They give a distinctive note of individuality that is so often lacking in our home decoration. A panel like this may fill the chimney breast about the mantel shelf and can be removed when necessary. Fitted vertically between doors or windows, it is most attractive.

No hard and fast rules can be laid down as to the proper kind of textiles to be used. For the reception room, grass cloth, arras cloth, Japanese fiber or book linen are appropriate. For the living room, burlap, Japanese matting, grass cloth and canvas are used. For the library, burlap, pictorial tapestry, or leatherole, while for the dining-room grass cloth, book linen or Japanese wood fiber. The most appropriate material for the den is burlap or canvas. There is a latitude of choices for the chamber, such as chintz, cretonne, linen, dimity or mercerized fabrics. In a country house, where much wicker or willow furniture is shown, no textile can be more charming than the figured English linen, while for the bungalow, burlap is most reliable.

Many housekeepers have found that these materials, when brushed, are as cleanly as wall paper, more durable and

economical in the long run. The effect of a wall hung in textile is richer in tone, the initial cost and labor of hanging is greater, but it must be remembered that when once in place, it is there to stay permanently.



Modern Bathroom Finished in White, the Floor and Wainscoting in Tile—Oilcloth Waterproof Paper Covers Upper Walls and Ceiling

The Plan Shop

Practical House Designs "That are Different"



Three Low-Cost Bungalows

Photos and Plans of Some Interesting Residences That Have Pleased Without Bankrupting Their Owners

Cottage with a Dutch Roof

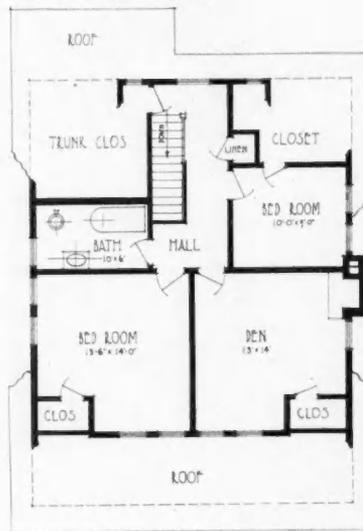
THIS cottage, while not a bungalow in the strict sense of the word, has the general appearance of one, and combines the low lines and broad, sweeping roof of the true bungalow, with the compactness and convenience of a well designed, up-to-date cottage. Its main feature, from a structural standpoint, is the Dutch type of roof, which extends over the front porch in such a way as to provide a surprising amount of room in the upper story, while at

the same time it lends to the exterior a modesty not easily obtained in a real two-story house. The space in the second story is, of course, obtained by the wide, flat dormer in front, but in this treatment the roof can be built low, and the dormer, although in reality the main part of the second floor, has the appearance of being merely a secondary row of windows added for the sake of their attractive appearance.

The body of the house is finished with bevelled siding on the exterior of the first story, the upper part being shingled. The siding is painted a tan color, while the corner boards and exterior trim are white, lending a pleasing contrast. The windows are well grouped, and are wide and low, giving a home-like appearance not to be obtained in any other way. The porch buttresses are cemented from the rail to the ground, and the foundations, of hollow tile, are also cemented. The gable projections are supported by white brackets, perfectly plain and square, which help the general effect considerably. In the upper story at one end of the house is a row of three windows and, at the other end, a massive chimney breast of brick give character to that elevation.



First Floor Plan



Second Floor Plan



Seven-Room Cottage with Dutch Roof Built for \$4500, at Sandy Hook Bay, N. J. the Property of Mr. J. C. Oberle



The Dining-Room is Finished in White, with Dark Green Burlap Panels, and Light Green Upper Walls

The front door is of the Dutch type, divided across the center, so that either the top or bottom can be opened without opening the other half. In front, the porch columns, four in number, are of cement, with small pieces of "peanut" stone embedded in the cement. This peanut, or pudding stone, as it is called, is of a deep brown color, with small pebbles embedded in it.

The house is entered through the front door into the living room. The

trim in the living room is of a plain cabinet head type, and is finished in flat white. At one end of the room is a fireplace, with white colonial mantel. The walls are rough plastered and tinted snuff color. The ceiling is cream. These colors correspond very well with the white trim and give the room a very artistic appearance. One end of the room is divided from the rest by a columned opening, and forms a sort of music room. The columns are six inches square and set out about three feet from the wall on buttresses. The stairs ascend from beside this opening, two of the steps projecting into the room. A columned opening leads from the living room to the dining room.

This is the most attractive room in the house. A plate shelf runs around the room, and beneath it the wall is divided into panels. The centers of the panels are covered with dark green burlap. The panel strips, plate shelf and other trim in the dining room are flat white. All of the wood is plain, with no grooves or mouldings. The ceiling is crossed by two pairs of beams, at right angles, dividing it into panels. The walls above the plate shelf and the ceiling are rough plastered and tinted a pale green.

The kitchen is one of the features of the house. Its arrangement is ideal. A pair of windows provide light at the side of the room, and beneath these windows are situated the sink and drain-board, and the tubs. Across the room

side, or place it on the range at the other side. When the food is cooked it is removed directly from the range to the cupboard, the water poured into the sink on the other side, and the food returned to the cupboard counter, the whole operation requiring only a few steps. In washing dishes, the wash tubs and the cupboard are handy and within easy reach to set a drain pan or soiled dishes on, whence they can be moved to or from the sink with hardly a step.

Six-Room Cottage for \$2,400

THE accompanying photo and plans show a six-room cottage built by John J. Roe at Roe Park, Patchogue, L. I., from plans drawn by himself. It was sold for \$2,800, this price including a lot valued at \$400.

The house is 25 feet in width and 22 feet in depth, exclusive of porches. The cellar is of novel construction, being excavated a little smaller than the full size of house, the sides sloping

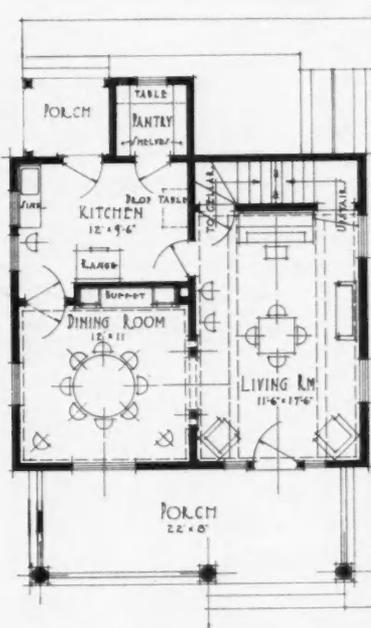


Six-Room Shingled Cottage Built and Sold by John J. Roe, at Patchogue, L. I., for \$2800

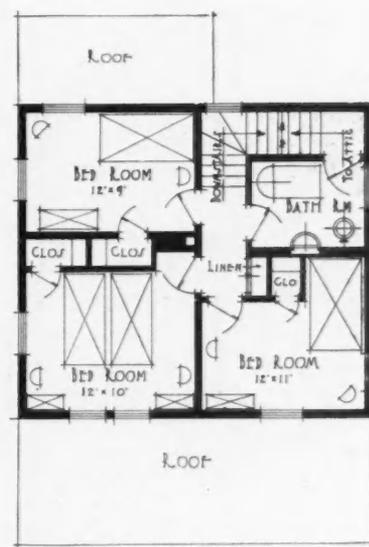


View from Living Room into Music Room, Showing Stairway in Oberle Cottage

is a gas range and a gas water heater. In addition, there is a 30-gallon hot water boiler, which is attached with a pipe coil to the hot water heating plant in the cellar. At the end of the room, between the gas range and the sink, is a kitchen cabinet. At the opposite end of the room, next to the entrance door, there is a good-sized pantry. The convenience of the kitchen consists in the fact that the mistress of the house can take her materials from the pantry to the kitchen cupboard, prepare it there, get water from the sink at one



First Floor Plan



Second Floor Plan

This cottage is situated at Mardean, an attractive bungalow colony overlooking Sandy Hook Bay, in Monmouth County, N. J., and is the property of Mr. J. C. Oberle. It was designed and built by Mr. L. Jerome Aimar, architect, of Navesink, N. J. The cost was about \$4,500.

towards the bottom. The sides are then covered with concrete, which prevents caving, and at the same time saves the expense of additional excavation and heavier foundation walls. The first floor contains large living room with platform stairs leading to second floor, and stairs to cellar.

Three Low Cost Bungalows



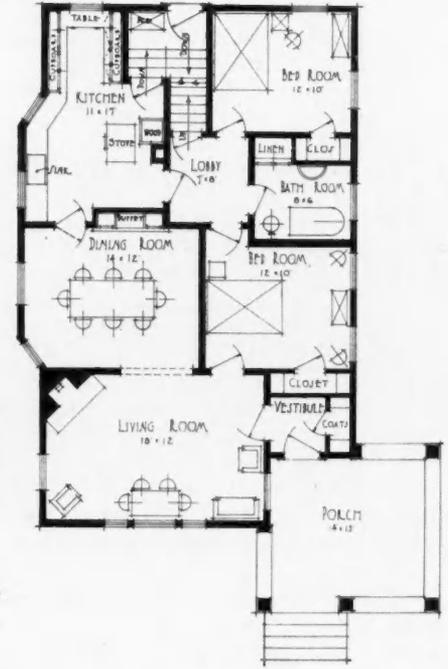
Snug Little Bungalow Built at Skowhegan, Maine, for Less than \$3,000

The dining room connects with living room with suitable arch. The kitchen is supplied with range, stationary tubs, enamel sink, boiler, etc. At the rear of the kitchen is a good sized pantry, and back piazza, all under one roof. The second floor contains three bedrooms, each with good closet, also bath room with tile floor and open nickel plumbing. Stairs go up out of the bath room to attic. The house is lighted throughout by electric lights, and heated by steam. The interior is N. C. pine throughout, and finished natural color. The exterior is covered with Washing-

home builders in New England. With this in view, the cost must necessarily exceed what it would be if built in a warmer climate. F. A. Benner, of Skowhegan, Maine, has, however, provided for warmth, also for beauty, and now has a bungalow that cost, entirely finished, less than \$3,000.

The bungalow has one story, but there is room above for a storage room. It has a bedroom 10 by 13 feet; one 11 by 13 feet; a bathroom; hall; kitchen 9 by 11 feet; dining room, 12 by 15 feet; living room, 12 by 25 feet; a screened porch on the back; a closet in each bedroom and in the vestibule; also a linen closet in bathroom.

A feature of the bungalow is the veranda on the northeast corner. The exterior of the bungalow is of shingles, stained green, and set off by white trim. On the inside the finish is of cypress, a beautifully grained wood from Dixie. The floors are of yellow birch. The foundation of the bungalow is of concrete, solid below ground and molded blocks above, with the cellar bottom also cemented. The bungalow is provided with electric lights and a hot air furnace.



Floor Plan

Like most houses in this country, where we burn wood, the wood room adjoins the kitchen and is under the same roof.

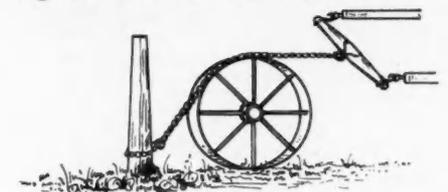
I cut a hole through the wall of the kitchen right handy to the stove, cased it and hung the woodbox, in the same style as a flour-bin, on the base board. It is big enough to hold quite a supply of 16-inch wood, takes up no room in the house, and leaves no litter. I nosed the edge of the base and made a slot in bin to fit, but it would do as well hinged.

My daddy, an old carpenter, stood around and laughed at it while I was working on it, but had to admit afterward that it was all O. K.

CHARLES HOLLINGSWORTH,
Brownsville, Oregon.

To Lift the Post

In the November issue, I saw a device for pulling posts. I am sending one which I think is better.



Home-Made Rig for Pulling Posts

Take a wheel from a corn planter, or any wheel with a wide face; put the chain around the post, close to the ground, then over the wheel, and you would be surprised to see how easy it is to pull the post, as the wheel starts to rolling as soon as the power is applied.

L. E. FOSTER,
Randolph, Ia.



Three Window Group with Comfortable Built-in Seat in Living Room

ton red cedar shingles. All timbers are of spruce.

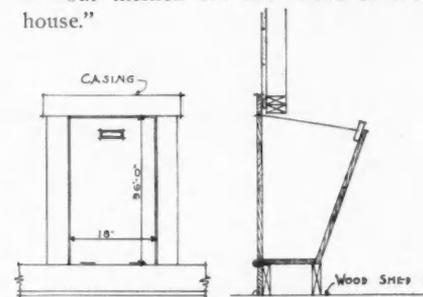
The cost of such a house is very reasonable, considering the fact that Long Island is not a part of a trunk line railroad system, and does not obtain the advantages of building materials at low prices. Carpenters and painters are paid at the rate of \$3.50 per day, masons and plasterers at \$4.50 per day.

Bungalow in Cold Climate for \$3000

TO build a house that will keep out the most cold is the aim of most

A Handy Woodbox

HERE is a woodbox which I put in our kitchen for the "head of the house."

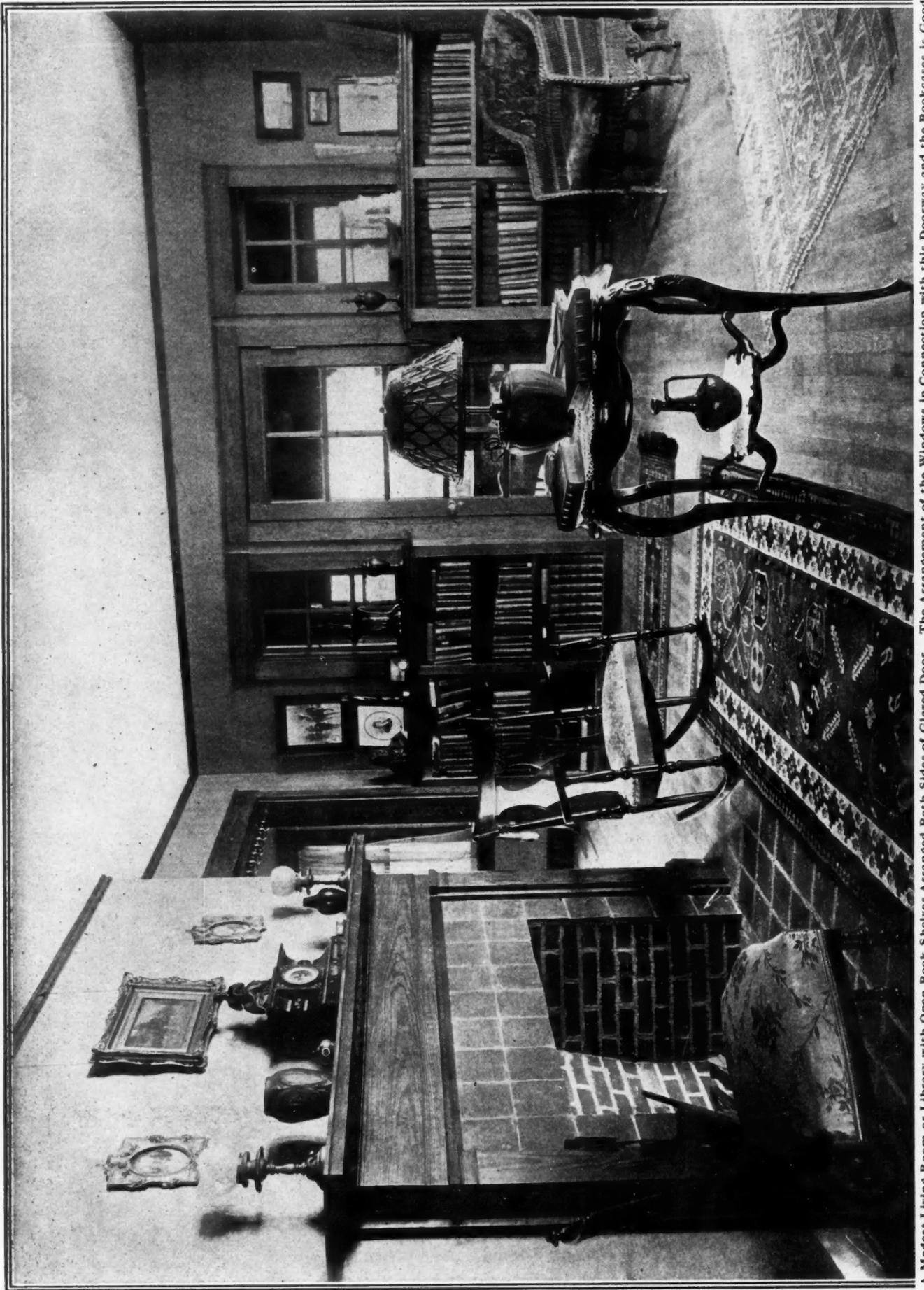


Ingenuous Woodbox Built in Wall Between Kitchen and Woodshed



Nothing Gives a Richer Effect than Real Wood Paneling. This Sumptuous Dining-Room is Strikingly Designed with High Wood Panels and Stenciled Border Design, Filling all the Space Up to the Continuous Head Trim. The Built-in-Place Sideboard Deserves Study. Leaded and Art Glass Used with Restraint, Adds Immensely to the Beauty of any Buffet or Bookcase.

HOME BUILDERS SECTION



A Modest Living Room or Library with Open Book Shelves Arranged Both Sides of Glazed Door. The Arrangement of the Windows in Connection with this Doorway and the Bookcases is Good. The Trim in this Room is Very Simple. The Open Fireplace with Hearth and Mantel Facing of Square Tiles is a Prominent Feature



How to Do Work Fast

STUDDING UP GABLE ENDS—GABLE FRIEZE WORK—CUTTING STAIR STRINGERS

By I. P. Hicks

IN studding up the gable end of a house, it frequently happens that it is more or less difficult to nail the studding to the rafters, because the nailing is out of reach and apparently there is nothing to climb up on. Often you will hear a carpenter say: "How are you going to get up there to nail the studding?"

It is easy when you know how to manage it, and by knowing how, you can make quick work of it, too.

Referring to the sketch, Fig. 1, the first dotted lines represent the second-floor joists. After raising the gable rafters, one can always reach from the second-floor joists to nail two or three studding. Nail in what you can reach on both sides of the gable, working toward the center from each outside. When you get as far as you can reach from both sides, nail on a beam on the inside of the studs already raised, letting it project in toward the center, far enough to receive two or three more studding as they are raised. These

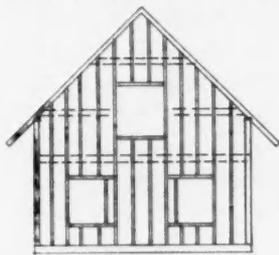


Fig. 1

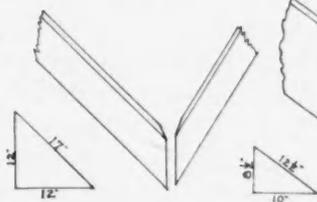


Fig. 2

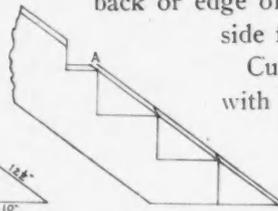


Fig. 3

boards are shown by the second rows of dotted lines. The studding can be nailed to these boards as they are raised. This stays the studding and makes a safe foothold to climb up on to nail the tops to the rafters, and enables you to go still farther toward the center. This will also enable you to get the headers in for the second-story windows, and from this you can nail another board across, as shown by dotted lines, and go to the top with the studding. By the use of these temporary boards nailed to the studding, as they may be needed for a foot-hold, one can stud up gables of any height, without any difficulty, and it can be quickly done.

Some will plan and scheme some way to scaffold the gable, but by our method two men will stud it as quick as the scaffold could be built, and the work is really done quicker without the scaffold. It needs

two men to work to an advantage on this kind of a job. The man at the top should stay at the top, and not be obliged to climb up and down. The man below should do the cutting and raising of the studs. The man at the top should just have the marking and top-nailing to do. Care should always be taken in nailing the tops of studding to rafters, and not spring the rafters up. The tendency is to spring the rafters up, unless this part is carefully watched.

Fig. 2 shows how to miter a gable frieze with a level frieze. Our sketch shows a half-pitch roof. For the plumb cut on the gable frieze, lay the square on 12 and 12. For the cut across the back, lay the square on with 12 on the tongue and 17 on the blade, and the blade will give the cut. The level frieze will be the regular square miter cut. It is the run of the rafter on the tongue of the square and the length of the rafter on the blade that give the cut across the back or edge of the gable frieze, and it is the blade side for the cut.

Cutting out the string boards for stairs with mitered risers can be quickly done in the same manner. Referring to Fig. 3, we will take a flight of steps with $7\frac{1}{2}$ -inch rise and a 10-inch run per step. Lay the square on the string board $7\frac{1}{2}$ by 10 and the $7\frac{1}{2}$ represents the rise and the 10 the tread cut of the step. Now, for the cut across the top edge of the string. Measure across the square on the diagonal from $7\frac{1}{2}$ to 10, and we find it very nearly $12\frac{1}{2}$ inches; then take 10 inches on the tongue of the square and $12\frac{1}{2}$ inches on the blade; and the blade gives the cut. This method is perfectly easy and always correct.

The same principle will apply to any pitch of roof or to any pitch of stairs; but different figures will result every time the pitch is changed. Of course, every time you have a different diagonal, but it will always work out correctly. Every time you change the rise and run of your stair string you get a different diagonal, but it will always work out right.

Many of the inexperienced saw a notch in the stair

A Modest Living Room or Library with Open Book Shelves Arranged Both Sides of Glazed Door. The Arrangement of the Windows in Connection with this Doorway and the Bookcases is Good. The Trim in this Room is Very Simple. The Open Fireplace with Hearth and Mantel Facing of Square Tiles is a Prominent Feature.

string for each step, as shown at A in Fig. 3, and then apply a miter square to it to obtain the cut. A miter square will not give the proper cut unless applied on the step line; this is why it is necessary to cut out a notch for each step when the work is done in this way. Get the bevels by the square as we have described, then set a bevel to the bevel already found

and mark out your string board by it without sawing a notch for each step; there is no need for this extra amount of sawing. Do your work the easiest, quickest and most scientific way. There is science and system to all work and it is in knowing how to apply these that makes work easier and progress faster. Every builder should make a study of these.

The Uses of Birch

INTERESTING INFORMATION OF HIGHEST AUTHORITY, REPRINTED FROM U. S. DEPT. OF AGRICULTURE BULLETIN
No. 12, "USES OF COMMERCIAL WOODS."

BIRCH is so popular for interior finish that our readers will doubtless appreciate an authentic statement of the properties and uses of this versatile wood. Fortunately, we are able to give them this information based upon a recent bulletin of the United States Forest Service.

The bulletin speaks of "sweet" birch, meaning the species known botanically as *betula lenta*, but since a great deal of the so-called "sweet" birch used in the factories is simply the red heartwood of yellow birch (*betula lutea*), the information given is of interest to every producer of birch throughout the United States. We quote from the bulletin as follows:

Early Uses

Though in early times sweet birch was used chiefly for fuel, there is evidence that it was on the market as timber more than a century ago. As early as 1791 shipments were going regularly to Clyde and Liverpool.

Birch is believed to have been the first wood employed as an imitation of mahogany in this country, but the exact date is uncertain. Boston furniture makers were putting it to that service very early. It is still so used, and one of its commercial names is mahogany birch, given it because of its success as a counterfeit. Cherry birch is another of its names, due to its success as a substitute for cherry. It is sometimes called red birch and white birch, the first name bestowed because the heartwood is red, and the second because the sapwood is white.

While Boston was staining birch and selling it as mahogany in furniture and musical instruments, New York carriage makers were building fine panels of it and finding ready sale for their product without hiding it under false names. The artistic front of many a chest of drawers passed for mahogany a century ago (and may still pass as such in antique collections), though the wood grew in Massachusetts, New York or Pennsylvania.

Furniture

Among the earliest recorded attempts to make high-grade furniture of sweet birch were those successfully carried out at Boston. Hand-carved arms for chairs were turned out in attractive designs. The early hand

processes expanded and developed into manufacturing as the term is now understood. Sweet birch, being a wood of high grade, has been prominent in furniture manufacture from the first successful attempts. It is physically equal to nearly any wood; it is heavy, dense, of good milling qualities, lends itself to stains and fillers, and holds finish well. There is probably no important line of furniture produced in this country which does not make use of some birch. The earliest furniture of this wood seems to have been chairs, and at this day chairs are of sufficient importance to claim first place. The range rises from the cheap camp chair or stool to the finest rocker. The entire article is not necessarily birch; in fact, it seldom is. This wood may supply only the back, the seat, the arms, the rockers, or some of the slats, rounds, or spindles. A special place for it is found in opera chairs, in which three or five ply veneer, the visible wood being birch, is shaped for seats and backs. School desks in large numbers are manufactured in similar patterns. Morris chairs, of which the arms at least are of this wood, are widely sold, and a still higher grade is found in upholstered and plain parlor suites, including davenport, sofas, settees, squabs, and lounges. The heavier of these articles are on casters, which are often of birch, as its hardness and strength fit it for such service.

Several important places in church furniture and fittings are admirably filled by sweet birch, although it is not so extensively employed as oak. It is made into pews, pulpits, communion tables, contribution plates, pulpit chairs, and Bible stands.

It is a popular cabinet wood and enters into the construction of a long list of articles, from kitchen tables and cupboards to elastic bookcases and filing cabinets. It is not always the outside wood, but usually is, especially the richly colored heartwood. It should be borne in mind that there are two kinds of sweet birch, as the cabinet-maker views it—heartwood and sapwood. The difference in color is apparent at a glance, and the workman selects his material for the sake of color. He selects it as carefully for another reason, if he employs glue to fasten the parts together. Birch does not nail readily, because of its tendency to split,

and much of it is either dovetailed or glued. If it is glued the best results are attained only when sapwood is glued to sapwood and heartwood to heartwood. Birch appears in many kinds of desks, not only as an imitation of cherry or mahogany but on its own merit. Smoking stands and card tables of this wood are also popular. Children's cribs, folding beds, china closets, extension tables, wall cases, hall trees, taborets, umbrella stands, chiffoniers, and dressers of sweet birch are listed by many factories.

Flooring and Finishing

Sweet birch is a satisfactory wood for flooring, whether the purpose is ornament or long service, or both. The wood is handsome, it stands well when thoroughly seasoned, and it lasts a long time. Large quantities of this flooring are made in the Lake States and it finds service in houses of the better class in practically all of the Eastern and some of the Western states. A smaller amount is manufactured into parquet floors and into wood carpet. The dark heartwood is much valued for the last-named commodities, because it forms pleasing contrasts with woods of lighter color. Ornamental columns of sweet birch find place indoors. Newel posts of the same wood and the associated rails, spindles, and steps of stairways belong in the same class, along with brackets, capitals, chairboards, moldings, grills and mantels. Window frames, door frames, and blinds of birch are exquisite finish when a dark, rich effect is desired. Birch doors are a special article—that is, particular pains are taken to finish them in the most attractive style, after selecting choice material. Curly birch is often seen to best advantage in this class of work. The wavy grains and figures are matched in the panels, stiles, rails, and mullions. The curly wood is frequently cut into veneer for the double purpose of making it go farther and securing better seasoning. It is not uncommon to equip birch doors with knobs of the same wood. Many birch knobs, however, are used elsewhere than on doors; furniture makers find many places for them. Ceiling is little less important than flooring in the quantity of birch used. A considerable amount of the birch ceiling listed is intended for porches. The wood shows to good advantage in wainscoting, where the dark wood of the heart is sometimes alternated with a white wood such as maple. Floors and ceilings are often made in the same way.

Fixtures for offices, stores, banks, bars, and hotels require many high-grade woods, and sweet birch is in the list with walnut, cedar, mahogany, oak, cherry, and others. Among the places in which birch is found are counter and bar tops, standing desks for bookkeepers, partitions, cabinets for drugs or other merchandise, show cases, display tables and racks, shelves, and grille work, cold-storage rooms, refrigerators, and soda fountains.



At Least One

"Every one has some secret sorrow," says a philosophizing friend. "Even the fattest and jolliest of us has a skeleton in his midst."—*Cleveland Plain Dealer*.

Unselfish

Henry Yallerby—"Aftah we's married, we'll hab chicken foh dinnah ebery day, honey."

Melinda Johnson—"Oh, yo' deary! But I wouldn't ask yo' to run no sech risks foh mah sake."—*Puck*.

Earning His Pay

Sportsman (who has missed everything he has fired at)—"Did I hit him?"

Keeper (anxious to please)—"Not 'xactly 'it 'im, sir; I can't say that. But, my word! I never see a rabbit wuss scared."—*London Tattler*.

Not Stationary

A carpenter who had been engaged to build a cabinet for paper, envelopes and other office supplies in a local commission house, was busy at his task when one of the bookkeepers inquired:

"Is that going to be a stationery cabinet?"

"No, I don't think so," replied the worker. "At least I have instructions to put casters on it."—*Cleveland Plain Dealer*.

Evident

In a registration booth in San Francisco an old colored woman had just finished registering for the first time.

"Am you shore," she asked the clerk, "dat I'se done all I has to do?"

"Quite sure," replied the clerk; "you see it's very simple."

"I'd ought to knowed it," said the old woman. "If those fool men folks been doing it all dese years, I might 'a' knowed it was a powerful simple process."—*Life*.

Meant All Right

A clergyman who advertised for an organist received this reply:

"Dear Sir:

I notice you have a vacancy for an organist and music teacher—either lady or gentleman. Having been both for several years, I beg to apply for the position."

The Breaking Size

Dr. Brown, a dignified and somewhat portly gentleman, had been commissioned to buy a shirtwaist at a bargain sale which his wife was unable to attend. The task was a novel and not wholly congenial one, but he finally got the attention of a saleswoman and made his wishes known.

"What bust?" she asked.

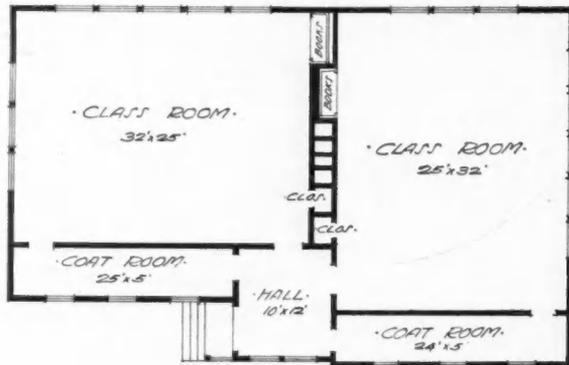
The doctor glanced around with nervous apprehension.

"Why—er—I didn't hear anything!"

Attractive Two-Room Village School

AT this time, when village and country life problems are receiving so much attention and when special thought is being given our public school work, a consideration of this improved two-room school design will be profitable.

Our children who go to school in small buildings deserve to have just as many advantages as the city



Main Floor Plan of Two-Room School

children who go for their schooling to buildings of a hundred rooms or more. The essentials of proper lighting, heating, and ventilation should be just as carefully taken care of in the small building as in the large. Coat room accommodations should be just as ample.

Mr. G. W. Ashby, the well-known schoolhouse architect of Chicago, has designed this two-room vil-

lage or country school building to show what can be done in the way of an improved schoolhouse without undue burden on the tax payers. This building should be constructed of cement plaster on metal lath. The gable end is ornamented with exposed timbers. Two standard-size class-rooms are contained, each with coat room opening both from the entrance hall and from the class-room. No space is wasted in this building and no expense has been added to bring out any architectural effect. The design has been worked out on simple business lines, and the result is highly pleasing because of the inherent harmony of the various parts.

Ventilation by Blowers

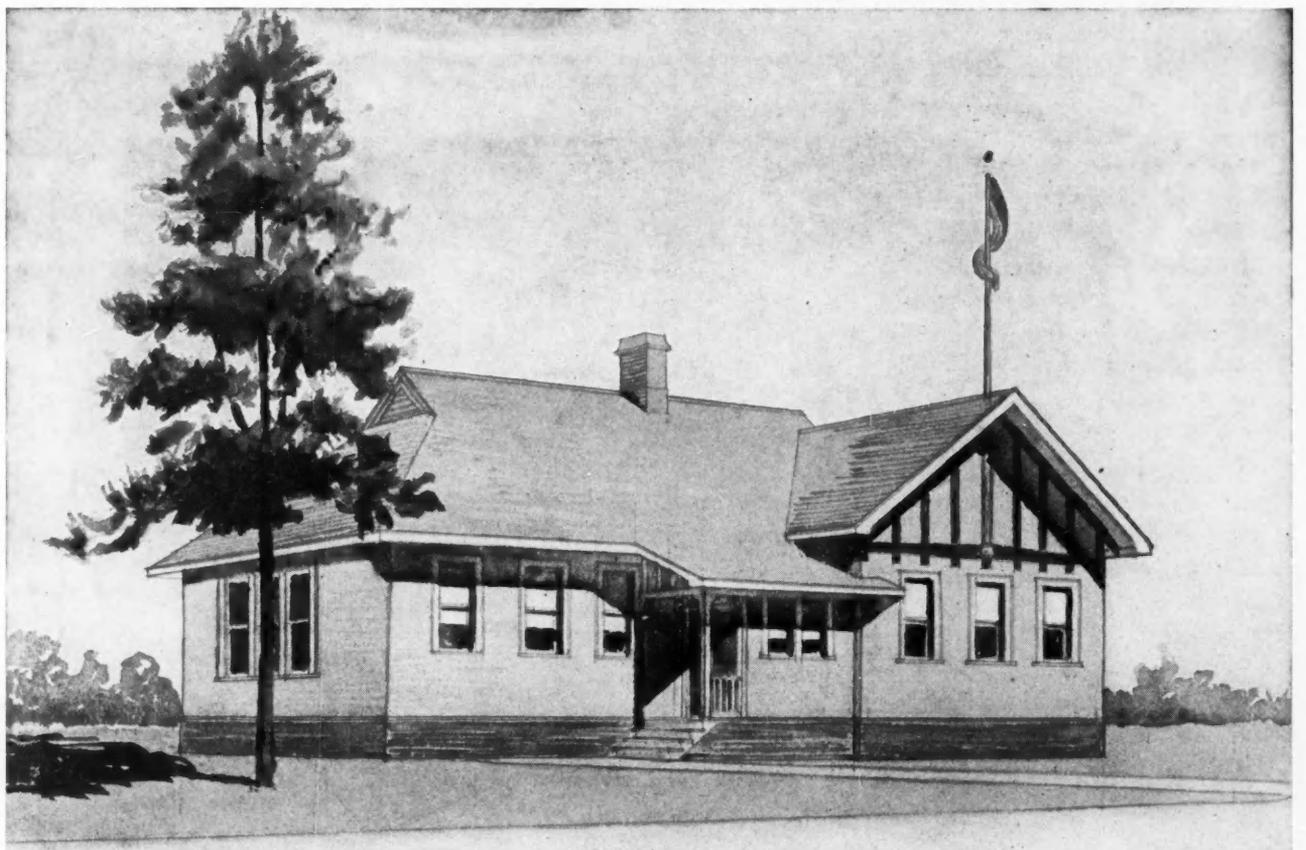
ARRANGEMENT OF APPARATUS FOR VENTILATING AND HEATING SCHOOLS AND OTHER PUBLIC BUILDINGS

By Harold L. Alt, M. E.

WITH the advance of the science of ventilation it was soon demonstrated that to obtain positive results at all times and in all conditions of weather some mechanical force was necessary to move the air. This force is produced by the rotation of a fan which drives the air into a system of ducts almost entirely independent of the outside weather conditions.

As may be supposed the expense to operate the fan so as to secure positive ventilation is higher than where the air is moved by gravity caused by the expansion only. These fans are driven by motors or by engines connected either by belt or directly to the fan.

On the other hand all the heating surface can be



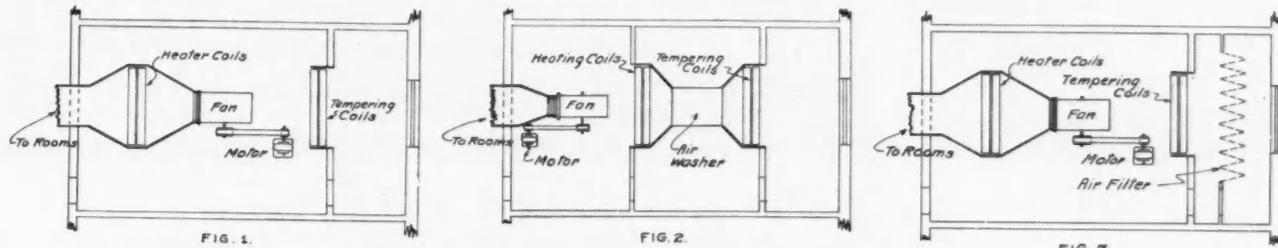
Improved Design for a Two-Room Village or Country School to Afford All Accommodations

concentrated at one or two points as shown in Fig. 1 and the steam piping is therefore much simplified.

Where a fan is installed it is usually arranged to stand between two sets of heaters as shown, the first

plates. This process causes a drop in temperature of the air of 10 to 20 degrees so that the use of the air washer means an increase in amount of heat required.

A cheaper substitute for the air washer is the air



Three Arrangements of Ventilating Fans and Heater Coils

set being known as the "tempering coils" and the second set as the "heating coils." The purpose of this is to modify the air temperature before it reaches the fan and to supply exactly the right amount of heat to it at the last possible point before it enters the ducts.

When an air washer is installed it is set sometimes between the tempering coil and the fan and sometimes between the tempering coil and the heating coil, as shown in Fig. 2, with the fan discharging directly into the ducts.

The purpose of the air washer is to cleanse the air and purify it by means of a fine water spray which is atomized by special nozzles being caught by baffle

filter which is made by building light frames over which cheese cloth or other material is stretched. The arrangement is then made as shown in Fig. 3, the air being drawn through this filter which strains but does not clean the air as thoroughly as a washer.

Any of these schemes insures a positive supply of fresh warmed air of a given and desired quantity delivered at the points where it is required. Therefore as far as positiveness goes the installation of a fan leaves nothing to be desired. In all the figures shown the air movement is in the same direction, drawn in through the outside window by the suction of the fan and discharged from the fan into the duct system.

SIMPLE TABLE FOR FINDING THE MAIN DIMENSIONS OF THE CLASSIC ORDERS OF ARCHITECTURE

	Doric		Ionic		Corinthian								
	GREEK Theseus	ROMAN Vignola	GREEK Vesta Eleusis	ROMAN Vignola	GREEK Lysicrates	ROMAN Pantheon							
Height of Column	5 1/7	8	9	9	10	9 3/4-10							
Flutes	20	24	24 fillets	24 fillets	24 fillets	—							
Upper Diameter	3/4	5/6	6/7	5/6	5/6	5/6							
Height of Base	—	1/2	1/2 Upper Diameter	1/2	1/2 Upper Diameter	1/2							
Projection of Base	—	1/4 Upper Diameter	1/5	1/5	1/4	1/5							
Abacus Width	1/2 Upper Diameter	1/2 Upper Diameter	1/6 Upper Diameter	1/3 Upper Diameter	1/2 and 1/7	1/2 and 1/6							
Capital Height	+ Hypotenuse 1/2	Top of necking } 1/2	Volute of } 3/4 Upper Abacus } Diameter	Volute of } 3/5 Upper Abacus } Diameter	1/2	1/4							
			Width across } 1 5/2	Width across } 1 5/12	Width across } 1 1/2	Width across } 1 1/5							
Entablature	2 1/6	2	2	2 1/4	2 1/3 then 1/3 for Anthemion	2 1/4 full							
Subdivisions of Entablature	Divide into 8 parts	Divide into 8 parts	Divide into 13 parts	Divide into 10 parts	Divide into 11 parts	Divide into 10 parts							
							Architrave	3 parts	2 parts	4 parts	3 parts	4 parts	3 parts
							Frieze	3 1/2 . .	3	4 . .	3 . .	3 . .	3 . .
Cornice	1 1/2 . .	3 . .	5 . .	4 . .	4 . .	4 . .							
Projection of Cornice	1/3 height	1 1/2 height	3/4 height	Equals height	Equals height	Equals height							

NOTE. UNLESS OTHERWISE MENTIONED, THE LOWER DIAMETER OF COLUMN IS THE STANDARD MEASUREMENT.

A Table of Very Useful Information for Architects, Draftsmen and Designers of Furniture; Reproduced by Courtesy of the "Furniture Manufacturer and Artisan"



How to Make an Arts-Craft Seat

COMPLETE DETAILED INSTRUCTIONS WITH WORKING DRAWINGS FOR MAKING AND FINISHING THIS INTERESTING PIECE

By Ira S. Griffith

THE seat shown here is to have a loose leather seat of a color to match the wood finish. The wood in this case was black walnut finished natural. The chair was built by Harry V. Johnson.

STOCK BILL FOR SEAT

Posts, 4 pieces, $1\frac{1}{2}$ by $1\frac{1}{2}$ by $28\frac{1}{2}$ inches, S-4-S.
 Rails, 4 pieces, $\frac{7}{8}$ by $2\frac{1}{4}$ by $17\frac{1}{2}$ inches, S-2-S.
 Rails, 2 pieces, $\frac{7}{8}$ by $3\frac{1}{4}$ by $31\frac{1}{2}$ inches, S-2-S.
 Stretcher, 1 piece, $\frac{3}{4}$ by $3\frac{1}{4}$ by 32 inches, S-2-S.
 Slats, 2 pieces, $\frac{3}{8}$ by $3\frac{1}{4}$ by $21\frac{1}{4}$ inches, S-2-S.
 Slats, 4 pieces, $\frac{3}{8}$ by $1\frac{3}{4}$ by $21\frac{1}{4}$ inches, S-2-S.
 Seat slats, 7 pieces, $\frac{3}{8}$ by 3 by $15\frac{1}{2}$ inches S-2-S.

The manner of proceeding with the work is not unusual. Since the posts are specified mill-planed to thickness and width, it is only necessary to remove the mill marks and square the ends to proper length. After this has been done the posts may be stood upon end and so placed that the best surfaces shall be visible in the finished piece. In other words, select the faces, which are to be turned in, of the less desirable surfaces. While the posts are still in this position mark roughly, as with penciled circle, the approximate locations of the intended mortises. Next, lay the pieces upon the bench top with the squared top ends evened and measure and mark accurately the ends of the mortises. In case of through mortises, a pencil will be used for scoring around the piece and the gauge used for scoring between the penciled lines. After

the gauge marks have been placed the penciled lines should be knifed between the gauge lines. This is to give the chisel a more accurate setting when cutting the ends of the mortises.

The rails may be squared to width and length and



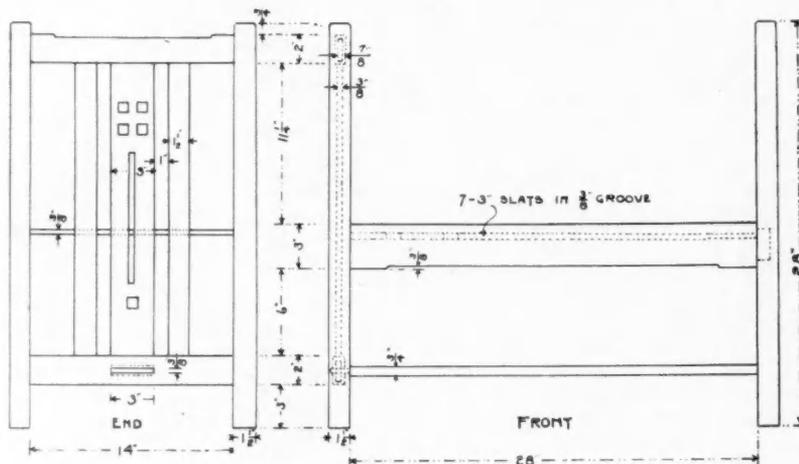
Roman Seat of Arts-Craft; Design Built of Black Walnut

the mill-marks removed from the broad surfaces. Like rails may be placed side by side upon the bench and the shoulders of the tenons located and scored upon face edges, after which, these lines may be scored about each piece. Gauge the various widths and thicknesses of tenons, making all possible use of the gauge before resetting it for a new dimension.

In laying out the mortises for the slats of the ends, make each large enough to take in the entire end of a slat. The pierced ornamentation on the middle slats is purely suggestive and may be omitted if desired. It may, too, be worked up as a piece of inlay work instead of a pierced ornament.

The curved edges of side rails and upper end rails are indicated clearly in the drawing.

Probably the easiest manner of



ROMAN SEAT.

Dimensioned Drawings of Arts-Craft Seat

attaching the seat slats is to plow, before assembling, grooves along the inner surfaces of a width sufficient to take in the ends.

The ends of the frame should be glued and clamped first. After the glue on these has dried the side rails and stretcher and seat slats may be placed.

How to Finish

If the piece is made of walnut, a most satisfactory

finish is obtained by covering the frame with paraffine oil, after it has been thoroughly scraped and sanded. This oil will bring out the richness of the color. Wipe off any surplus oil and allow it to stand forty-eight hours. Upon this apply a thin coating of shellac. Allow the shellac to harden over night and then sand it lightly with fine sandpaper. Upon the shellac apply and polish in the usual manner several coats of some good floor wax.

Paul Carabini—Master Craftsman

ONE learns wood carving in Italy. Just because one is a cabinet maker, why should he not also be the artist?

When a little boy has grown up in Florence—looking at real “old masters” every day of his life, art may become a part of him. Whatever material he works in—paints or marble or wood, will feel the artist touch.

Paul Carabini grew to manhood in Arizzo, just outside of Florence. He became a cabinet maker and a good one. There was no fine woodworking tool of which he was not the master. Wood carving became play to him.

Coming to America a few years ago, Yankee wood-working machinery couldn't stop him. They don't use much power machinery in the woodworking shops of Italy; but arrived here, it didn't take him long to figure out the why of every machine, and how to operate it. Thus did the skill and craftsmanship of old Florence add to the riches of American woodworking.

This jewel cabinet is made of black walnut. Every mould and every line in the cabinet is hand made; moulded and carved by this fine workman. In size it measures twelve by twenty-four inches and is eighteen inches high.



Paul Carabini



Top of Jewel Cabinet



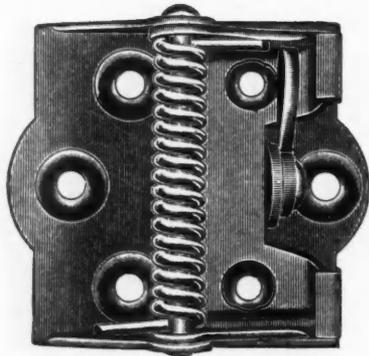
End and Side Views of Hand Carved Jewel Cabinet Made of Black Walnut



"Jiffy" Detachable Screen Door Hinge

It may be a little late in the season to talk about screen door hinges; but a new one has just been offered that seems so good, you can investigate it now and try it on next spring.

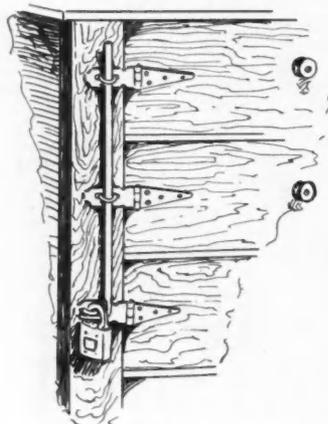
Once this hinge is fastened to the house and the door there is no further need for tools. By raising the little lever to a right angle with the door casing, the door may be lifted away, leaving just a smooth plate on the door casing. Anyone, a woman or a twelve-year-old child, can hang the screen door in a minute or two with these detachable hinges. The hinge is neat in construction and strong, made of pressed steel. All the working parts are contained in the portion attached to the door, so there is nothing left on the house to rust or corrode. These detachable door hinges seem to be the coming thing for popularity. Our readers should find out all about them.



"Jiffy" Detachable Screen Door Hinge

A Multiple Lock

The illustration shows an ingenious way of locking several drawers with one padlock. An ordinary hinge hasp with staple is screwed to each drawer, fastened on so that the staples line up all in a row. To lock, an iron bolt is run through all the staples and the padlock engages the loop at the end, locking it fast with the end staple.



Ingenious Arrangement for Locking Several Drawers with one Padlock

For shop tool cabinets or any other cases containing a series of drawers, this makes a strong and handy lock. It is much better than the ordinary light mortised lock on each drawer front. Additional security could be had by screwing on the hinges along the drawer sides, thus covering the screw heads when the drawers are closed.

Electric Scrubbing Apparatus

It is possible by the application of electric power to scrub 150 square feet of floor space in a minute. This is the remarkable speed of the new portable electric floor scrubbing and polishing machine as shown in operation at the City Hall in Philadelphia, Pa., in the accompanying illustration.

It is claimed that the electrical machine not only thoroughly scrubs any kind of a floor at the above speed (which is as



Electric Scrubbing Machine at Work in the City Hall, Philadelphia, Pa.

fast as the operator can conveniently walk up and down the room), but it sprays the floor with water, from tank on handle, and covers a space 27 inches in width at one time.

Not only has the electric scrubber and polisher been found a valuable labor saving device for renovating and polishing, but a heavy and more powerful machine is also built on the same principle for grinding and polishing marble, cement, terrazzo and composition floors, one double machine doing as much work as fifteen skilled workmen in a day, with better results. This grinding is accomplished by using carborundum blocks attached to revolving discs.

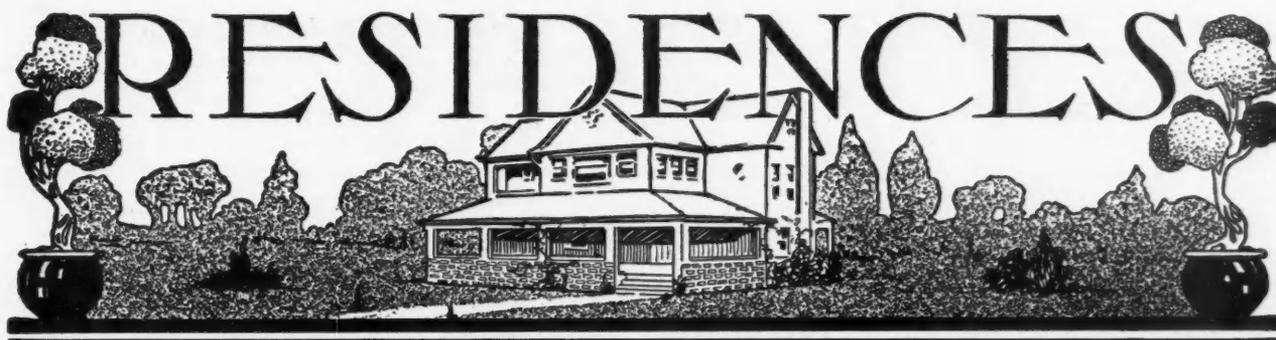
Both double and single machines have been designed. A $\frac{1}{4}$ -horse power motor is mounted on a shell containing a revolving base, and to this is automatically clamped a disc or brush as may be required. All working parts are enclosed in a dust and water-proof case. The gears and ball bearings are noiseless and require little attention. The machine can be operated from any electric lamp socket.

Largest Wood Pulley Block

The accompanying illustration shows one of the largest wood pulley blocks ever made. It is one of eight made for American Bridge Co., and was constructed at Pittsburgh. It is designed for a $2\frac{1}{2}$ Manilla rope of 60-ton capacity. It has a weight of 1,350 lbs.

The largest steel block ever made was built for $\frac{7}{8}$ steel cable of 100-ton capacity. It was one of four made for Carnegie Steel Co., with a weight of 2,875 pounds.





Plans for Stylish Nine-Room Brick Bungalow

COMPLETE SET OF ARCHITECT'S WORKING DRAWINGS REPRODUCED TO LARGE SIZE, SHOWING ARRANGEMENT AND CONSTRUCTION OF MODERN DESIGNED STORY-AND-A-HALF DWELLING

A VERY attractive dwelling 32 by 38 feet in outside dimensions, not including front porch, is illustrated on this page; and the full set of working drawings for it are presented on the pages following. It is a brick veneered and stuccoed structure, designed along the ornamented bungalow lines, now so popular.

The foundation walls up to grade line are of concrete, 13 inches thick, resting upon 24 by 12-inch concrete footings. A 13-inch brick foundation wall extends up to support the first floor joists. Above this a regular balloon frame is erected and then sided with a veneer of face brick up to the second-story window sills. The gable ends are cement plaster, laid

off into panels by exposed timbering, according to the English style.

The main floor is very conveniently arranged, containing large parlor with connecting dining-room, a cozy little den, first-floor bedroom and toilet room, kitchen, pantries, central stairway hall, etc. On the second floor are two bedrooms of good size and two smaller ones. Each has a good-sized clothes closet. There is also a closet off the bathroom. The basement is arranged for heating plant and coal room, laundry with set tubs, vegetable cellar, work shop, soft water cistern, etc.

A careful study of these plans will reveal many desirable arrangements. The drawings are rather

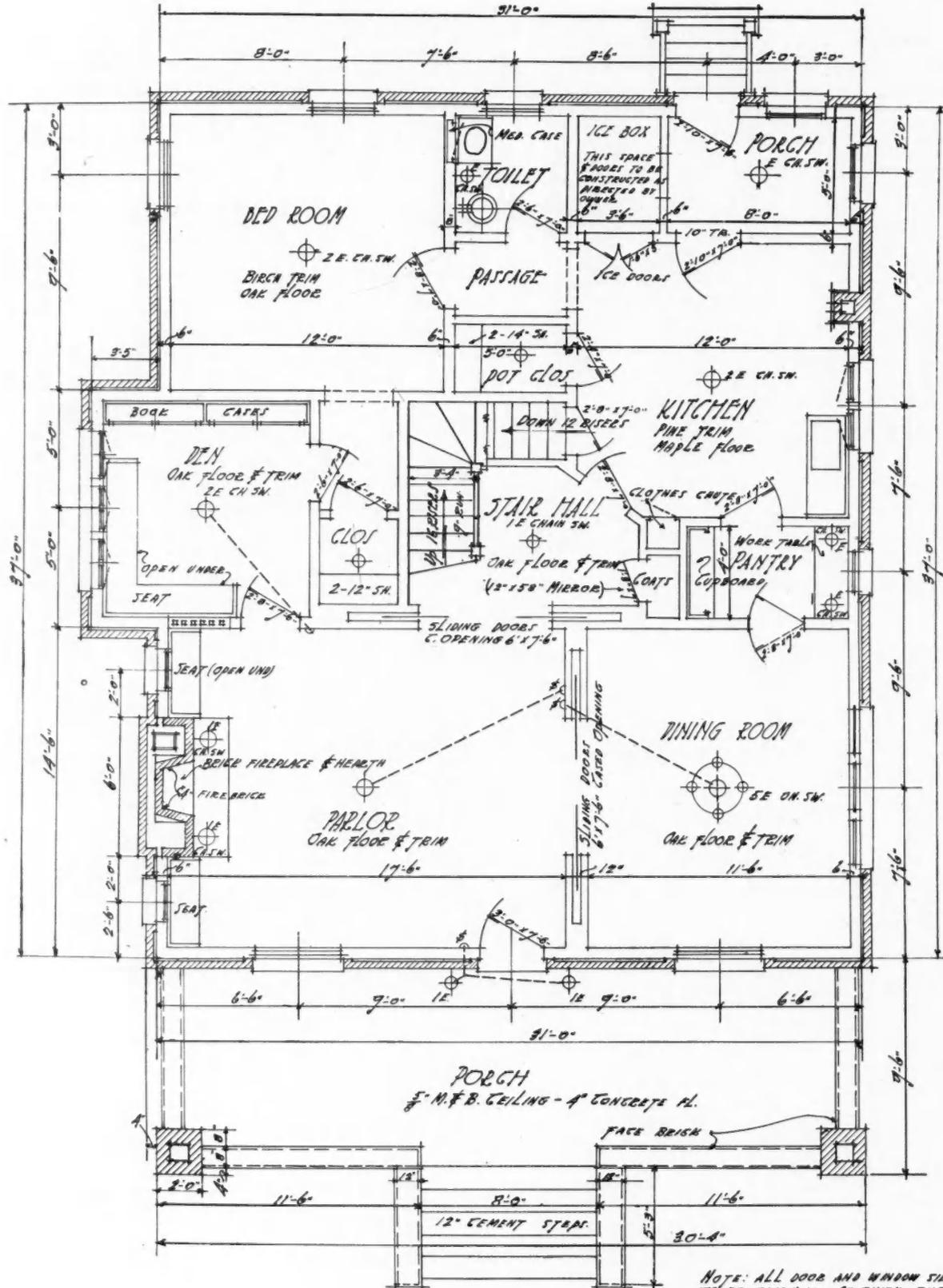


Brick Bungalow Containing Nine Rooms. Designed for Mr. Carl Barnes, Richland Center, Wis.
COMPLETE WORKING DRAWINGS FOR THIS HOUSE ARE PRESENTED ON THE SIX PAGES FOLLOWING

fully detailed, showing electric wiring, etc. The details of exterior construction and also of interior finish, including special built-in features, are very complete.

Counter-Shafting Suggestions

When you are putting up or resetting a counter- or line-shaft in your shop, you might just as well do it right while you are about it and take advantage



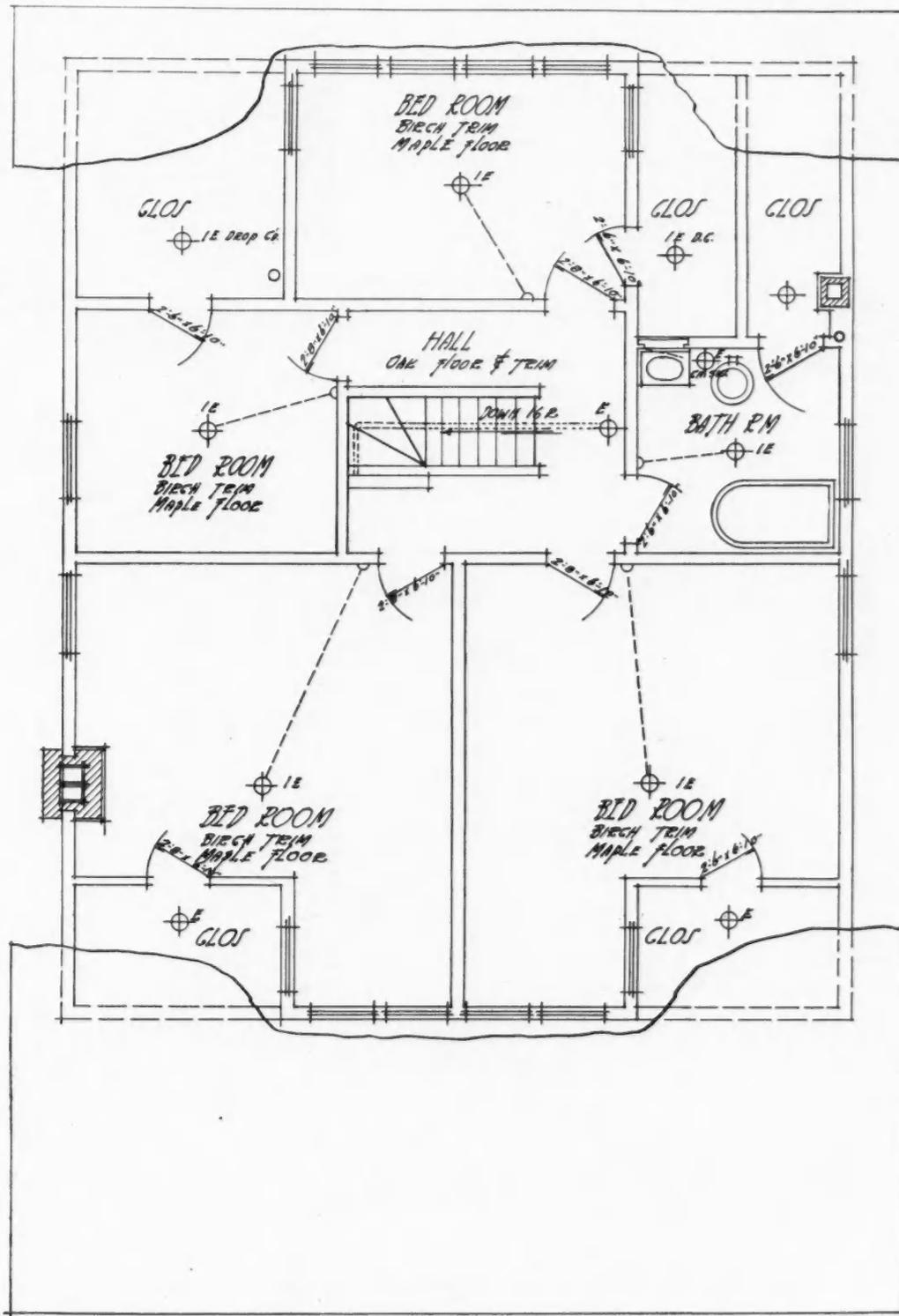
• FIRST FLOOR PLAN •

(For Perspective View, See Page 73)

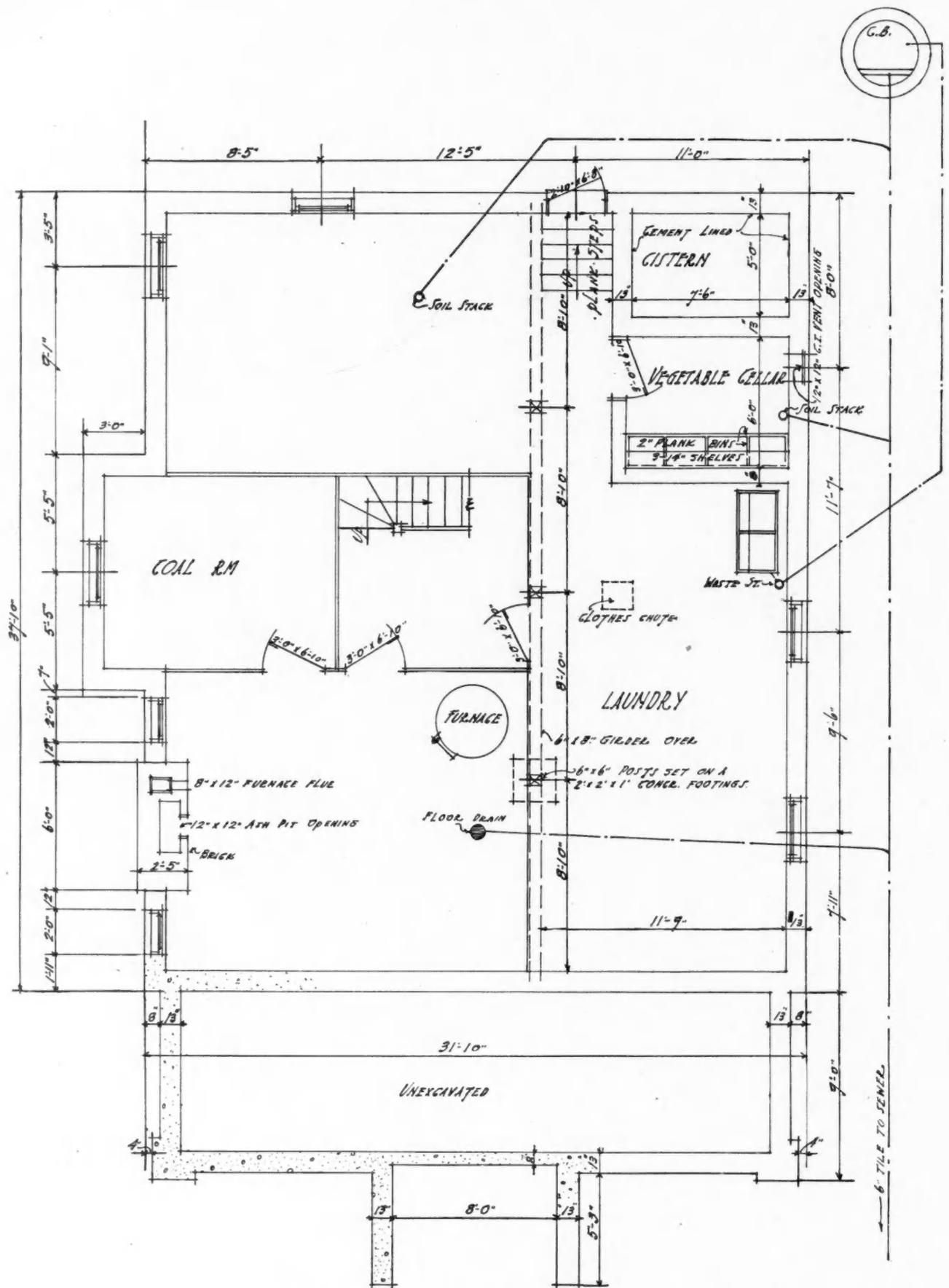
of all suggestions you can get that promise to help out.

If you are driving several small machines from one power unit, whether it be an electric motor or a gasoline engine, the first suggestion is that you get the power unit in the center and extend the shaft on each side of it. This permits you to use the lightest possible shaft, which makes less friction and saves power.

The old time way was to hang the engine or motor onto one end, or if there was a belt drive from the power to the line or counter shaft, to make this at one end. That may be convenient for some things, but it is wrong in principle. Get your motive power in the center, and if you are driving with a belt to the line of shafting, get this belt drive in the center instead of at one end and you can save power and use lighter shafting. Another thing, too, it enables

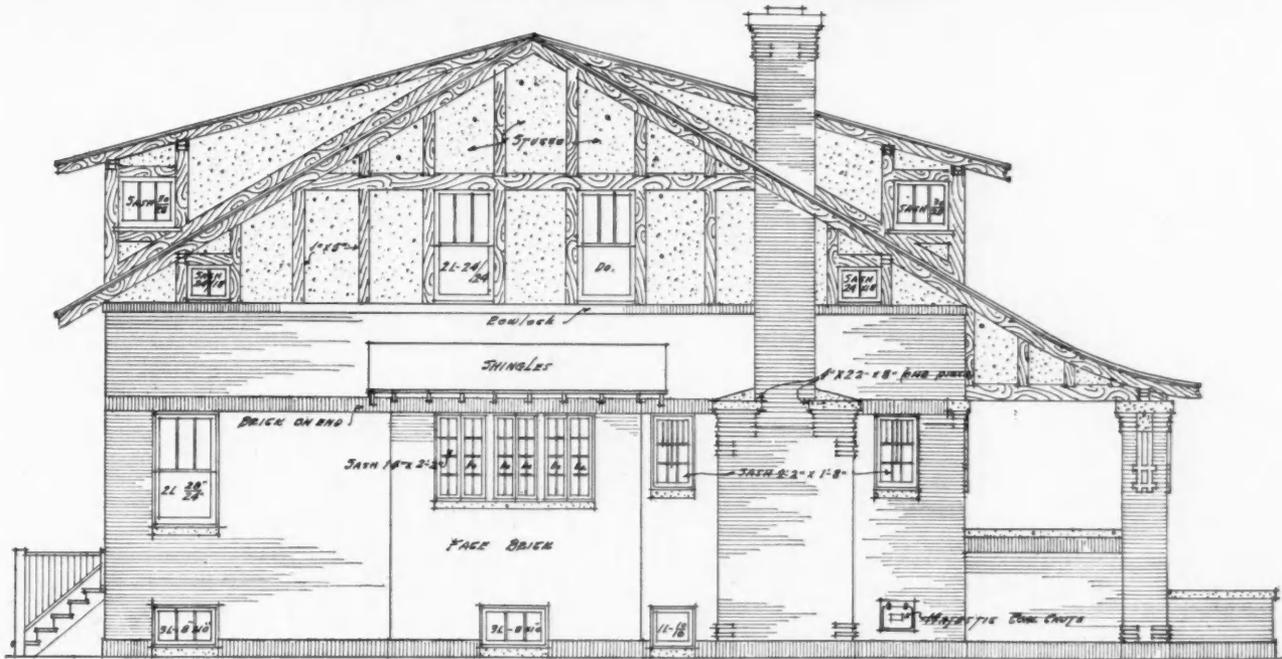


• SECOND FLOOR PLAN •
 (For Perspective View, See Page 73)



BASEMENT AND FOUNDATION PLAN

(For Perspective View, See Page 73)



• SOUTH ELEVATION •

you, by the use of couplings or friction clutches, to run either half independently and thus save again in power when only one half is needed.

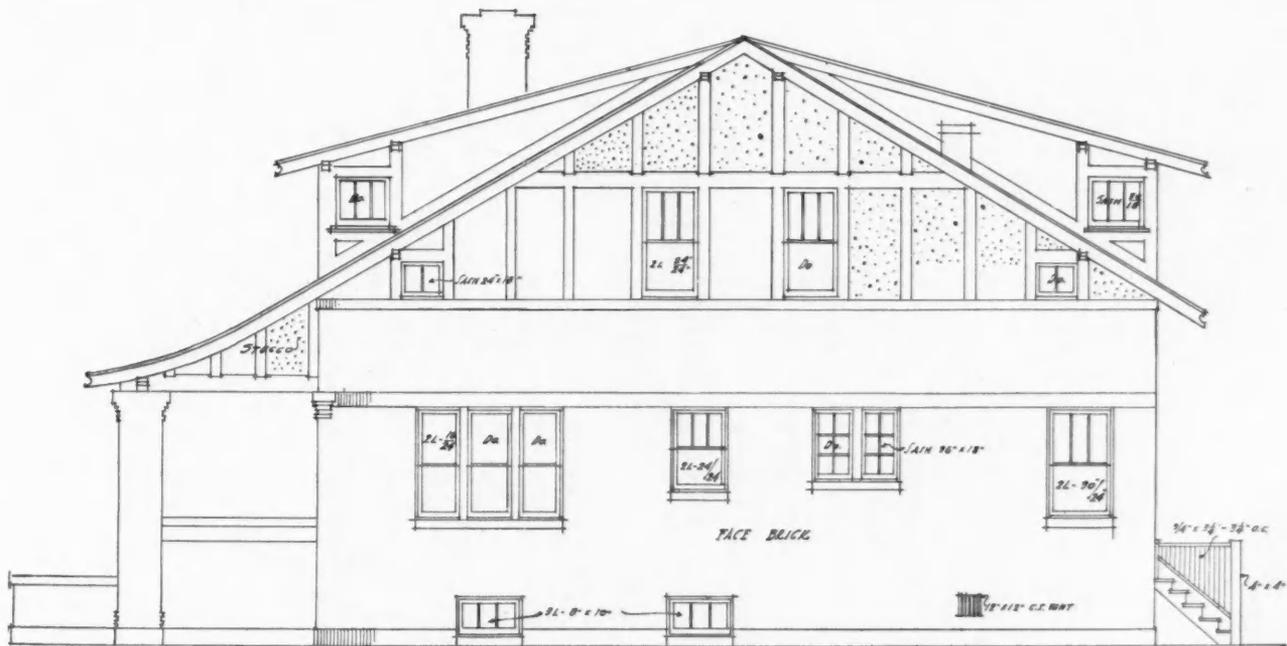
Another good suggestion is to hang your shaft in hangers with swivel or pivoted boxes. This simplifies aligning the boxes in the first place, but that is not the main thing. When your machines are at work there is often a little spring to the shaft from the strain. If the boxes are rigid this makes the journal bear tight at the ends, which leads to more or less heating and cutting. If the journal boxes

are pivot-mounted they will give with the shaft and adjust themselves so that they fit snugly the full length.—J. CROW TAYLOR.



Institute of Architects in Convention

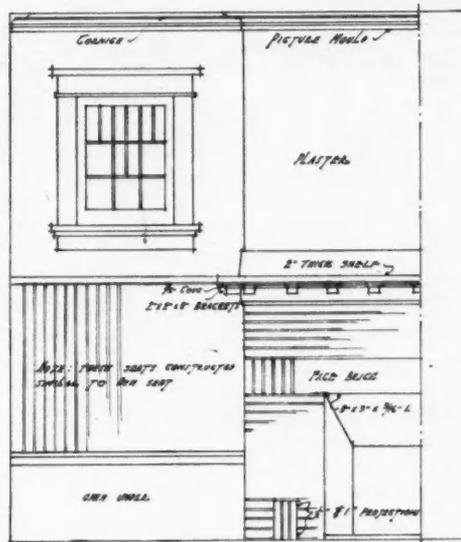
On December 2, 3 and 4, the American Institute of Architects are holding their Forty-seventh Annual Convention at New Orleans. Reports of all standing and special committees, Board of Directors, etc., addresses on architectural subjects, and election of officers comprise the program.



• NORTH ELEVATION •

(For Perspective View, See Page 73)

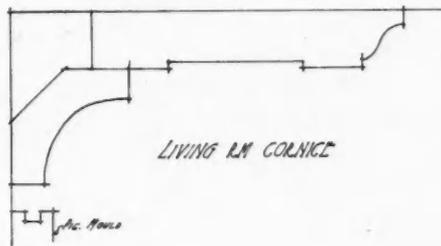
Plans for Nine-Room Bungalow



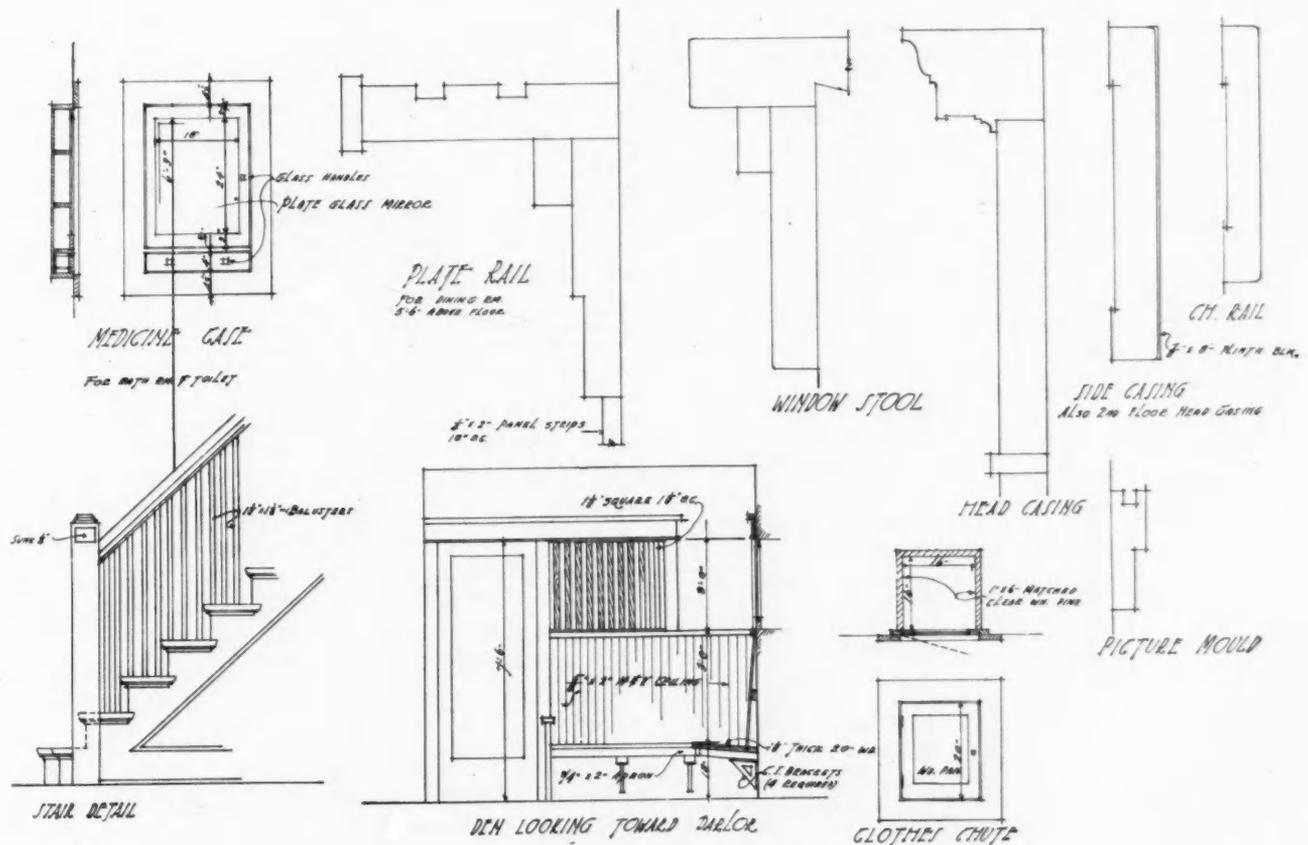
ONE HALF ELEVATION OF HALLOR LOOKING TOWARD FIRE PLACE



REAR ELEVATION



LIVING RM CORNICE



DETAILS OF INTERIOR FINISH
(For Perspective View, See Page 73)



Operating the Scroll Band Saw

SOME PRACTICAL POINTERS FOR ALL POWER WOODWORKING SHOP MEN

By Chas. Cloukey

ONE of the most popular uses of the shop band saw is that of resawing boards for one purpose and another. It is often a great saving for the carpenter or contractor as well as the mill man, to be able to resaw his lumber when occasion demands it, and this same job is one which every sawyer should be able to handle in a small way.

What I mean by this is that he should be able to do a good job of resawing without any unnecessary expense of stock, and that he should be able to do it in such time as would not eat up all the profit of the material gained by the work. Still it is not fair to suppose that a scroll band machine will be able to resaw in quantity and show a profit over what a stock of thin lumber will cost at a saw mill.

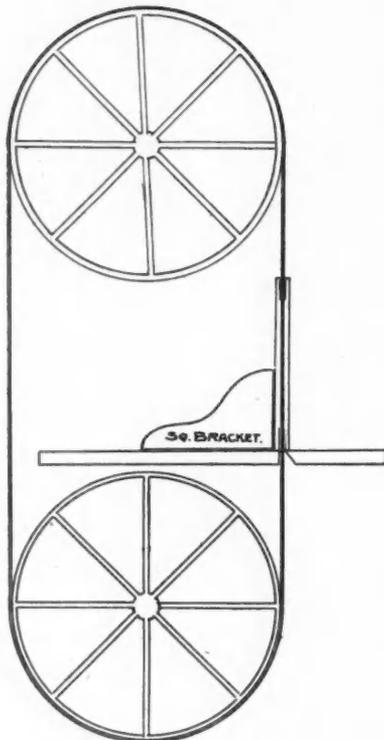


Fig. 1—Resawing with Scroll Band Saw

When resawing with a light machine and the saws fitted, it is best to give the stock a kerf on each side with a thin rip-saw, as shown in Fig. 1. This will serve as a guide for the saw and at the same time take part of the work off of the band saw.

Fig. 1 also shows the bracket used to keep the stock being resawed in a vertical position. The sawyer should have a number of these brackets of varying sizes so that he can select one at any time which will readily pass under the saw guide, and still be about as high as the work is wide.

One of the most annoying and wasteful tasks in

the resawing line is that of panels when the lumber is not in the proper condition. Take, for instance, the piece illustrated in Fig. 2, which has pinched in as soon as kerfed on the rip saw, and this shows that the piece is dryer inside than it is at the surface, and as soon as the edges are cut the tension caused by the excessive moisture near the surface will cause the outside surfaces to assume a rounded shape, or in other words, a larger surface. It is folly to go ahead and resaw the whole stock and then depend upon weighting them down to get them flat again. The only

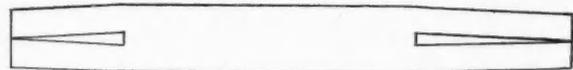


Fig. 2—Inside is Drier than Outside

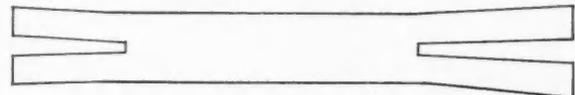


Fig. 3—Inside is Wetter than Outside

good method is to dry the surface before going ahead with the sawing. This can generally be accomplished in two hours or less if there is a good hot box in the mill, or somewhat longer if one has to depend upon the regular dry kiln. The stock should be set up on edge until the kerfs open out straight, and then the resawing should be done at once and the planing and sanding should follow immediately. Now they should be stacked in a dead pile until time for raising.

Fig. 3 shows the opposite extreme, where the inside of the boards are wetter than the outside, and these may be resawed at once and then spread out with the freshly cut side up, as it will shrink quite rapidly and should be planed as soon as straight or nearly so.

In this drying process to straighten the lumber, great care should be exercised in watching it to the proper point for working, as it is liable to go too far if left in the extreme heat until it is plumb straight.

Fig. 4 shows a badly warped piece of stock to be

resawed, and the reason why the concave face should stand against the guide bracket. It is evident that one piece will dress up much thicker than the other, if the saw is run in the kerf at both edges of the board, but if the kerfing is done after the board has warped, the kerfs may be spaced so as to give two panels of the same thickness, although there will be a large percentage of waste in thickness at the planer.

Jigs with the Band Saw

Among the odd work at the band saw, one of the most interesting and profitable items is that of work subject to the use of jigs. Whenever it is desired to cut quite a number of irregular pieces of an uniform size and shape, the first question that presents itself to the enterprising sawyer is, "will it pay to make a jig?" Fig. 5 shows a saw table with a jig for circular work. This consists of a board clamped to the table and having another circular board pivoted at such a point that the perimeter of the required circle will feed up to the cutting edge of the saw without running or drawing the blade out of its proper cut.

This latter may be accomplished if necessary, by loosening the clamp and shifting the bottom board to the required position.

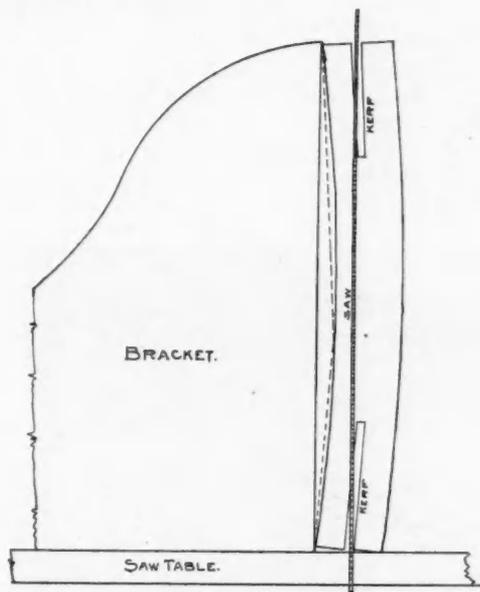


Fig. 4—Resawing Badly Warped Stock

There are many shapes besides circles subject to handling with the jig, such as the more simple patterns of brackets used behind metal cornices and used in great numbers. If the jigs are not too hard to make so that there will be more time used in making the jig than it would take to mark out the stock with a pattern and pencil or compasses, the sawyer will save time and at once have more agreeable and easier work.

When the sawyer wishes to cut through a roller or cylinder or a ball, he should be careful to support the edge of the piece so that when the saw begins to cut it will not jerk the wood around and down against the

table. Such an accident is liable to kink or break the saw, and it might be the means of jerking the sawyer's hand against the saw as well. If there are small rounds to be halved or quartered, or if it is desired to

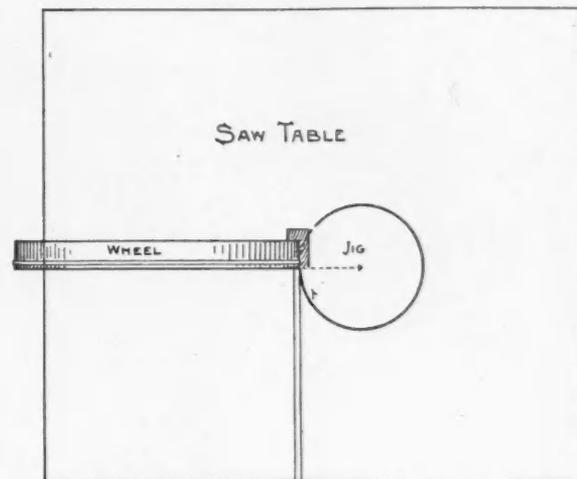


Fig. 5—Saw Table with Jig for Circular Work

saw a slab off the side of a round piece, the stock to be sawed should be tacked to a straight square piece which will act as a guide and at the same time keep the piece from turning while being sawed.

Of course it would be impossible in an article like this to give all the methods of doing the various work on the scroll band saw, or to even suggest the really wide possibilities of this useful machine, but the operator who can get an intelligent start and who has an ingenious turn of mind and hand, will not long be at a loss to study out the short cuts, the economies and in short the general scope of band saw work of the shop.



An Unusual House Moving Operation

One of the largest undertakings of the kind ever attempted in the District of Columbia is the moving of 92 buildings consisting of two solid blocks of houses, in order to make way for the plaza between the Union Station and the Capitol. The work is being done by Hugh J. Phillips, a local contractor, who has arranged with owners of more than 25 pieces of property to transfer bodily the structures to their vacant holdings. The other structures will be razed and the material utilized in the erection of buildings in other sections. One of the buildings is the historic Washington Inn, built by the first president of the United States. It is estimated by Elliott Woods, superintendent of the Capitol, that the original cost of the improvements on the two blocks exceeded \$1,000,000. We understand that Mr. Phillips pays \$7,300 for the privilege of clearing the property.

Manufacturers of artificial limbs are seeking substitutes for English willow, used because of its combined lightness and strength. It is claimed that the Port Orford cedar of the Pacific Coast will prove equally serviceable.

CORRESPONDENCE



Questions Answered and Ideas Exchanged.

Our Readers are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Carpenters and Builders

Suggests an Exchange Column

To the Editor: Morris, Ill.
 I have read in the "A. C. & B." about large barns for country use, but do not see any plans or photos of a barn that could be built for city use, where an automobile can be kept as well as horses. I wish some of the readers would get busy and show us something of the kind.
 I also think that if you had a column where a Bro. Carpenter could advertise and sell some piece of machinery that he does not use, to somebody that needs it, or trade it for something else, it would help us poor builders.

H. A. TAYLOR.



Wants Market for Hand-Made Furniture

To the Editor: Chanute, Kans.
 There have been many letters published in the past on how to keep the dollars coming in during the winter months, but none of the different methods seems to appeal to me except that of making Mission furniture. But I am afraid that if

one in this town should do anything of the kind, he would have to pay somebody to take it off his hands.

I have made two center tables with marquetry tops; but do you suppose I could dispose of them? Oh, no! A railroad conductor looked at one and said I ought to get \$25.00 for it, but he forgot to "come across." I still have the table.

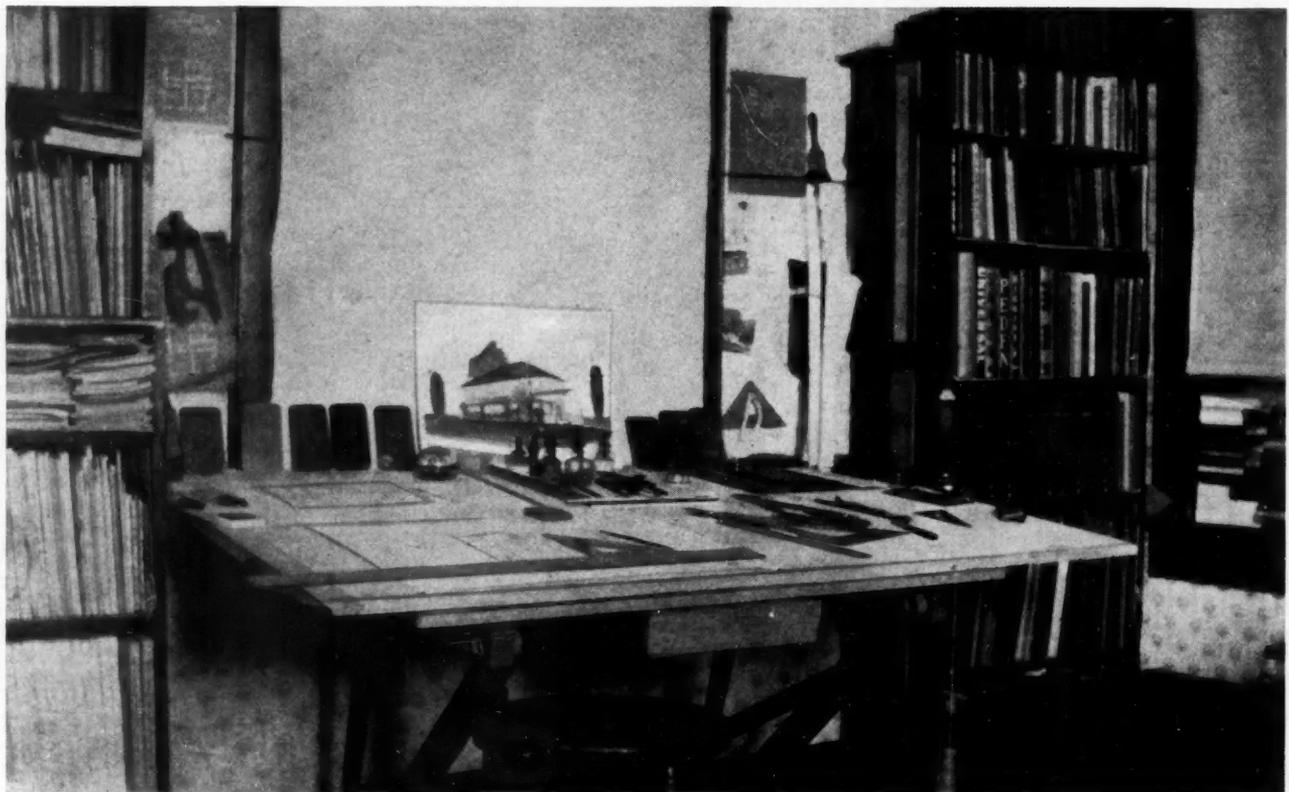
I would like to announce through the columns of the A. C. & B. that I can do such work, also Mission furniture, etc., and walnut bookcases. I have a bookcase of walnut with quarter-sawed white oak panels that the dealers cannot duplicate for \$100.00. If you know of any market for such work I would be very much pleased to learn of it, and it might be the means of my driving the wolf away from the door, too.

EDW. BARNES.

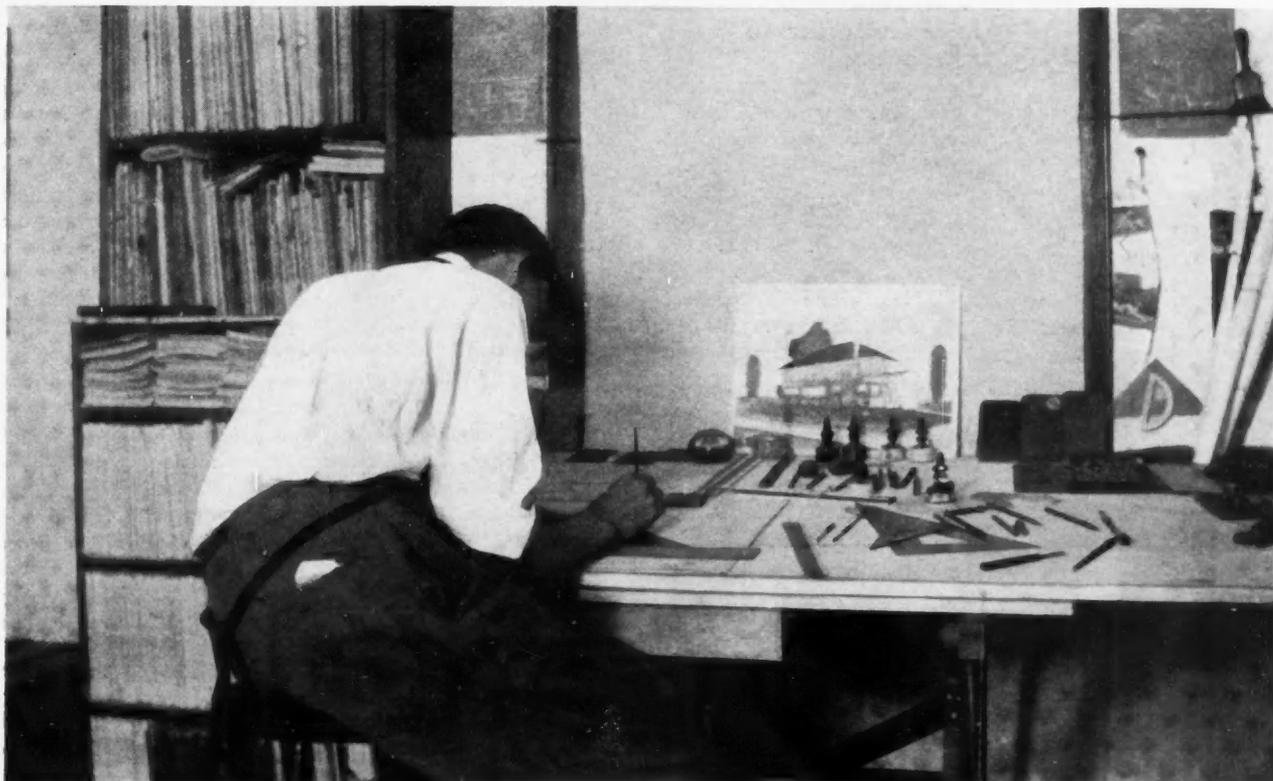


In an Architect's Office

To the Editor: Dallas, Tex.
 I am enclosing two views of my office before moving into larger quarters. On the book shelves at the right are one full shelf and half of another shelf, that shows at the bottom,



Drafting Table of R. E. Gilmore, Architect and Superintendent, Dallas, Texas. Bound Volumes of the American Carpenter and Builder Fill the Lower Shelf of the Bookcase and Radford's Cyclopedia of Construction is Close at Hand on the Third Shelf.]



Architect Gilmore at Work at His Drafting Board. The Current Issues of the American Carpenter and Builder can be Seen on the Lower Shelf of the Bookcase. Many Trade Catalogs are Filed in this Case for Reference

of AMERICAN CARPENTER AND BUILDER magazines; and the shelves on right carry several bound volumes, with advertisements cut out. They are of date such as 1905, etc. But I consider the advertisements one of the best references of any trade magazine, so I will not destroy them when I bind up these other numbers.

You will also notice I have a set of "Radford's Cyclopedia of Construction" in my reference library.

With best wishes for the AMERICAN CARPENTER AND BUILDER, I am

R. E. GILMORE,
Architect and Superintendent.

✦
Having a Shop Helps

To the Editor: Burlington, Me.

As I am a country carpenter, I don't have any inside finishing to do winters. We get our building all done by the first of November, and then we have about a month hanging storm doors and windows.

We buy the windows all made, but the storm doors we have to make; so this summer I built me a shop at odd times when I got a spare day, and nights after I got through my day's work. Had to scratch pretty hard to do it, with my other work, but I did it, and I am well pleased with it.

Now, when a neighbor wants a storm door or anything else I say, "Yes, bring her right along."

I have a forge in my shop, so I can do iron work—build sleds and iron them. I have built one set already this fall, during rainy weather when I could not do anything outdoors.

Sled business in a lumbering town is a good business; it pays. Any carpenter can do it after a little practice. It's better than freezing to death outdoors driving shingle nails.

I also have a soldering outfit, so can mend any old tinware. Some old lady may come with an old wash boiler she has had 50 or 75 years, and she hates to part with it. So I mend it for the old girl and she goes off happy.

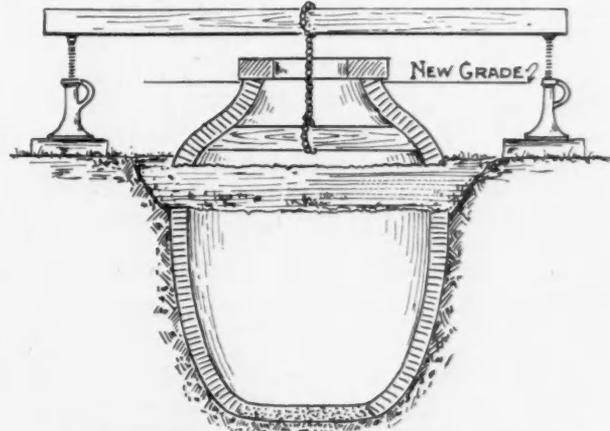
I think every carpenter ought to have a shop. You will get a great many more dollars through the winter months than you would without it.

WILLIS H. BARKER.

What Do the Cistern Men Think of This?

To the Editor: Jackson, Mich.

The old cistern is still in good condition, but the grade line has been raised so it will completely cover the cistern, unless something is done. Therefore, cut a stout timber and place inside of cistern and take off sod and dirt, get two jacks, a chain and another longer timber, as shown in the illustration. Fasten chain from long timber to short one inside



A Scheme for Raising Brick Cistern Top to New Grade

the cistern and screw up jacks, after cutting around wall with a chisel. The top can be carried up in this way to height desired and walls extended. "Just like pulling a tooth."

W. C. STEWART.

✦
What's Best Furniture Polish?

To the Editor: Niagara Falls, Ont.

What is the best way to make a good furniture polish, such as is used on piano work, for use on a varnished surface? I would feel much obliged if some reader could furnish the information.

D. M.

Adding a Hot Water Radiator to a Furnace System

To the Editor:

Calgary, Alta.

Having built an additional room to the rear of my house, I wish to heat it from the furnace; but distance to room being too great for hot air, would a coil of pipe placed in furnace and connected with a radiator in room making a miniature hot water system be practical? If so, would like particulars.

J. H. SUMMERS,

Building and General Contractor.

Answer: The arrangement proposed is one which is perfectly practicable to install and most heating contractors have had occasion to use this method for heating additional rooms,

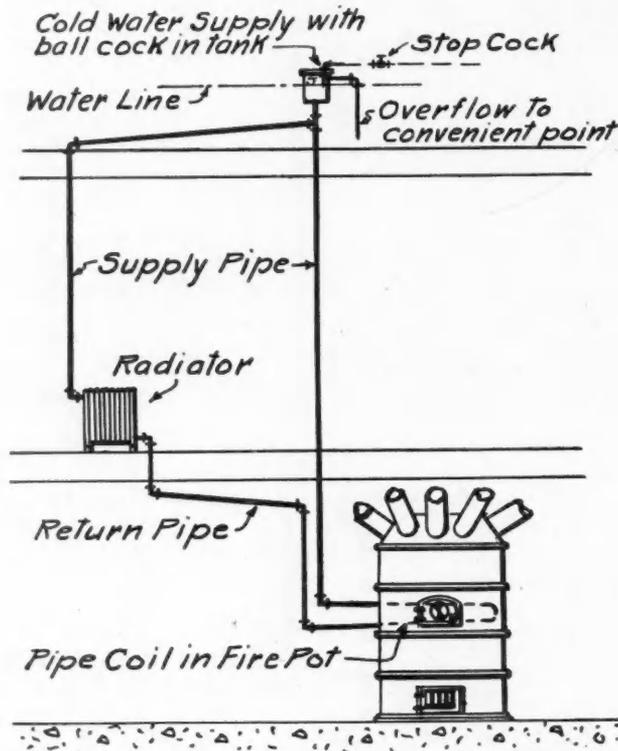


Fig. 1. Most Ideal Design if Conditions Permit

being up against exactly the same proposition. It is required, however, that the furnace should have sufficient capacity to supply the additional amount of heat over and above its present performance. Assuming that the additional room in the rear of the house is of ordinary size and that the furnace does not have to be excessively forced in extreme weather, under the present conditions the installation of a coil and radiator would be satisfactory.

Where this is done it is customary to drill through the furnace casting so as to get a pipe into the fire pot, but above the fire, and to take the pipe out at a point as much higher as possible, the coil being made of general shape shown in Fig. 1. Then, in order to get the best circulation, the outlet should be carried directly up above the ceiling of the room to be heated and run across above the ceiling until directly over the radiator. Here the supply is dropped down and should enter the top of the radiator as shown in Fig. 1, the return coming out of the bottom on the opposite side dropping through the floor and running back to the lower end of the furnace coil.

In order to take care of the expansion, a small expansion tank must, of course, be provided as is shown in Fig. 1, and it is necessary to vent the air from the high point of the line running above the ceiling into the expansion tank as otherwise the minute particles of air which are contained in hot water would gradually accumulate in the higher portion

of the system to the extent of excluding the water and stopping the circulation.

The water supply should be carried to the expansion tank with a ball cock in the tank to keep the water at a certain level quite a distance below the overflow (so that the expansion of the water will not cause it to be lost through the overflow) while the ball cock prevents the water ever sinking below the tank. The overflow may be carried out on to the roof, although it is better to run it down over a sink or to some other conspicuous position so that in case the ball cock ever gets out of order the waste of water will be at once apparent. This system, as shown in Fig. 1, is what is termed a self-venting system; that is, the air which collects rises of its own accord into the expansion tank and is dissipated.

In Fig. 2 another scheme of connections is shown which will give fairly good results although not quite as good circulation as that in Fig. 1. If the construction of the additional room does not permit the overhead line it will be necessary to run both pipes under the floor, as shown in Fig. 2, or to use the overhead line with the top pipe run exposed below the ceiling of the room, which may, or may not, be desirable. In Fig. 2 all piping is concealed under the floor, and the radiator is bound to have air slowly collect in the top of it; this is taken care of by putting a little air valve on the top of the radiator, all as shown, and by opening this air valve once in a couple of weeks or so, until water begins to come from it, you will make absolutely sure that there is no air in the radiator.

Fig. 2 also shows a method of filling the expansion tank, which is not quite as good as that given in Fig. 1, although a method in common use. This consists of making the cold water connection at the boiler with a little altitude gauge set so as to show when the water has entered into the proper height at the tank, or the altitude gauge can be omitted and the overflow from the tank used to indicate when the system is full of water. Care must be taken, however, not to allow the water to evaporate out of the system or to be lost through leakage so as to stop the cir-

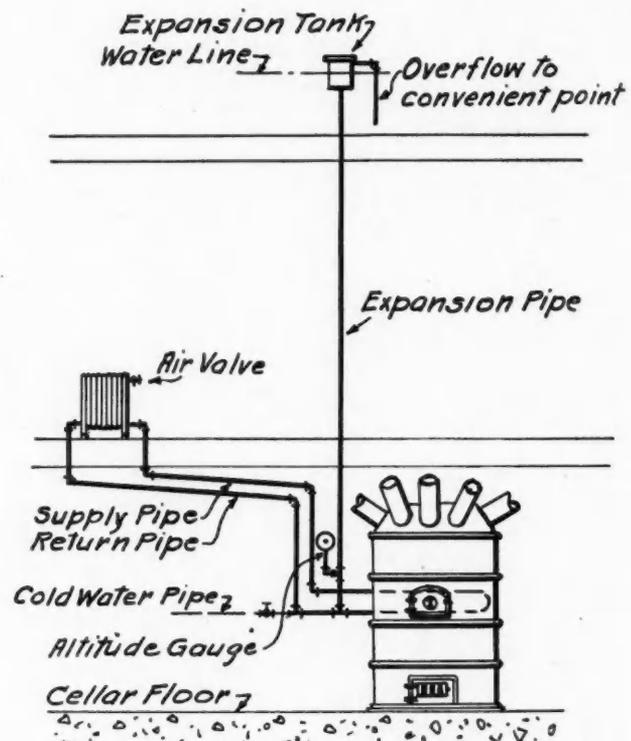


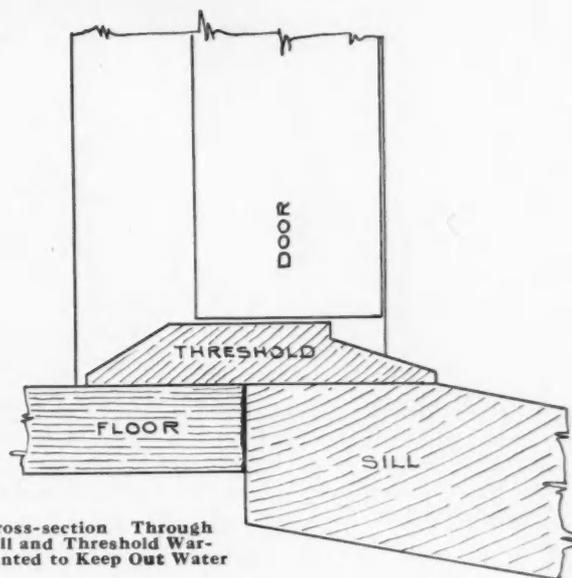
Fig. 2. Another Layout, but not so Good

ulation and (as this system is not automatic as far as self-filling goes), this is a danger which is not encountered with the scheme used in Fig. 1.

It is sometimes permissible to cut out the expansion tank and to connect the system on to the water supply of the building. This means, however, that if your water has a pressure of 40 pounds that the radiators and piping must also carry this pressure, and it may prove more or less difficult to keep valves tight than with simply the tank pressure. The attention of the correspondent is called to the fact that with a pipe coil in the furnace it is necessary to have the water circulating at all times in order to keep the coil from becoming overheated and burning out. It will be noticed that no valves are shown on these drawings owing to the fact that it is desired to make the system as near fool proof as possible and the shutting down of a valve in the circulation line would cause disastrous consequences by overheating the coil in the furnace. The only valve that should be installed is the one on the cold water supply, which cannot in any way interfere with the circulation, and care must be taken to keep the pipes pitched continuously up from the high pipe of the coil in the furnace to the highest point of the system where the air vent takes place, and then continuously down to the lower pipe on the coil, without pockets of any kind in which air can collect. The proper pitching is plainly indicated in exaggerated form on the figure shown.

To obtain the proper amount of radiator surface the correspondent is referred to the "Adventures in Heating," in the June and August issues of the *AMERICAN CARPENTER AND BUILDER*, and the pipe coil in the fire pot is usually made with a total area of about 1-30 of the radiator surface in square feet.

CECIL F. HERINGTON.



Cross-section Through Sill and Threshold Warranted to Keep Out Water

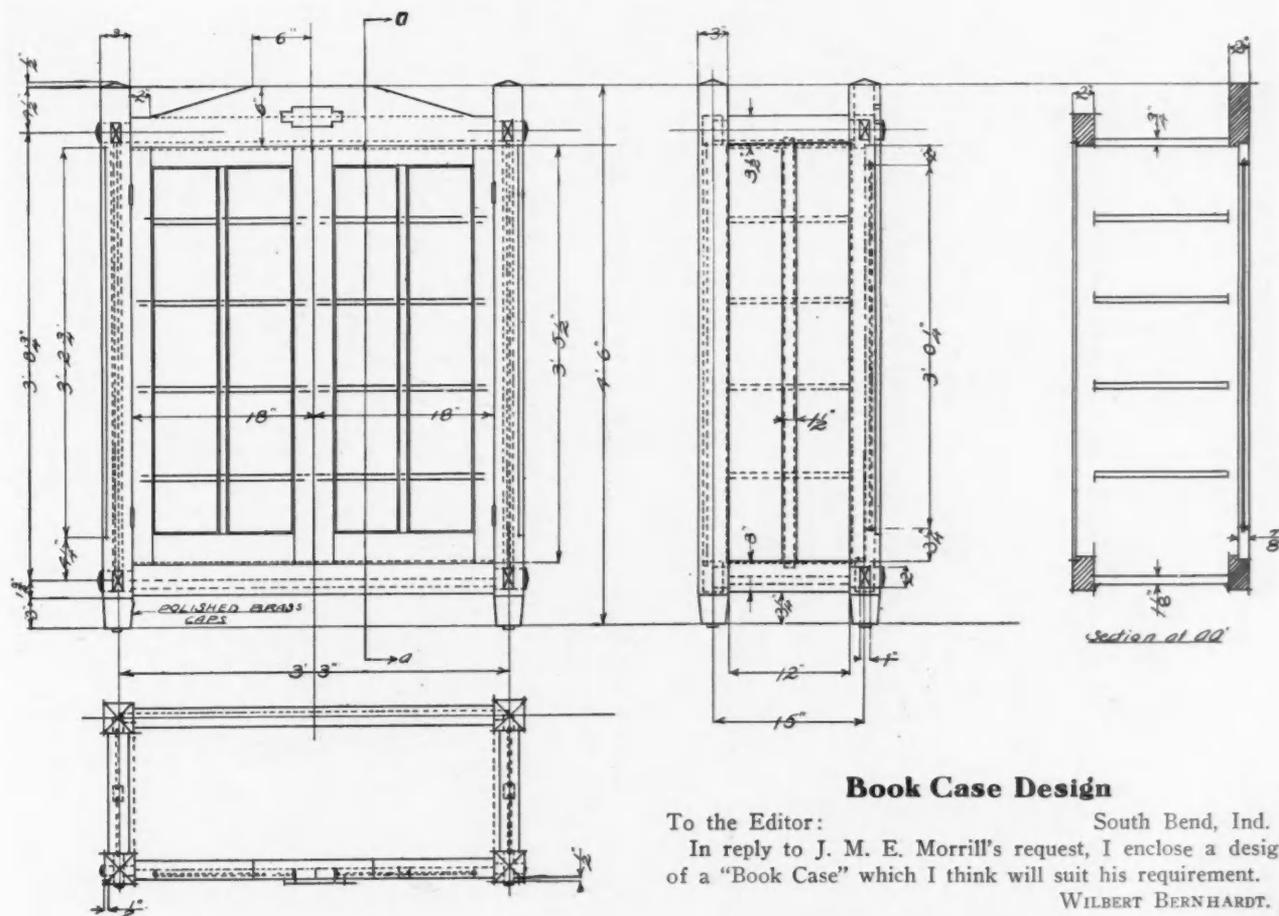
No-Leak Threshold

To the Editor:

Monroe Falls, O.

I see in the November issue that Jack Leg wants to know how to stop water from running under the door. As a reader of your most excellent magazine, will try and help him. If he fits his threshold so that the door projects about 1/4 inch over the outside, as shown, he will have no further trouble.

E. J. SPRIGGEL.



Book Case Design

To the Editor:

South Bend, Ind.

In reply to J. M. E. Morrill's request, I enclose a design of a "Book Case" which I think will suit his requirement.

WILBERT BERNHARDT.

Working Drawings of Very Artistic Book Case with Glazed Doors, Offered by Wilbert Bernhardt, South Bend, Indiana

Serviceable Machinery Helps

To the Editor:

Wilburton, Okla.

Supplemental to my letter of last month, will say that in addition to my carpenter shop, as described, I have a pony planer, matcher, and moulder.

I would advise those intending to install a machine of this kind that they can not be too careful in their selection. Get one with plenty of belt surface and long bearings. A planer, to do rapid work (and that is what counts these days), should be double belted. Two-ply leather is much more satisfactory than one-ply. The top and bottom feed rolls should be 5 inches in diameter, and all driven. The loss of time in tightening the belt, doctoring heated bearings, etc., will soon pay the difference between a good, substantial machine and one of the lighter variety.

The same rule will hold good with any kind of a wood working machine. The high speed requires rigid construction to stand up. It is very important to learn to keep your machines in first-class order. The saws must be kept round, the throat of the teeth gummed out to make clearance for the sawdust, and set and filed. This doesn't require much skill, only painstaking common sense.

I have a 12-inch rock crusher to crush stone for concrete work. I run the planer and rock crusher with a gasoline engine. I find that the gasoline engine is the most economical power I can use. I bought a good one of which there are a number on the market. If you will keep the cylinder oiled and water in the hopper and good batteries, your engine troubles are very few.

I use a hand-power concrete mixer on account of its being so easily moved, and there is not so much invested.



Outside View of Mr. McLarty's Carpenter Shop

A good hand-power batch mixer has a capacity on sidewalk and similar work of from 12 to 20 cubic yards per day with five men. Some men claim a batch of 4 cubic feet per minute, but I have never been able to keep that up very long at a time.

For general contracting it requires considerable outlay for equipment, but for the carpenter who does not want to contract, I would say: Secure a good, roomy, comfortable, well-lighted shop; install a few first-class machines and keep them in good order. Take in all the jobs you can get; do good work at a reasonable price; select some article you can sell; keep your eyes open to your opportunity, and you will likely begin to look at life from a different angle.

J. P. McLARTY,
General Contractor.



Mr. McLarty's Shop is all for Business. The Wood Working Machines are Big Enough to Turn Out a Large Amount of Work

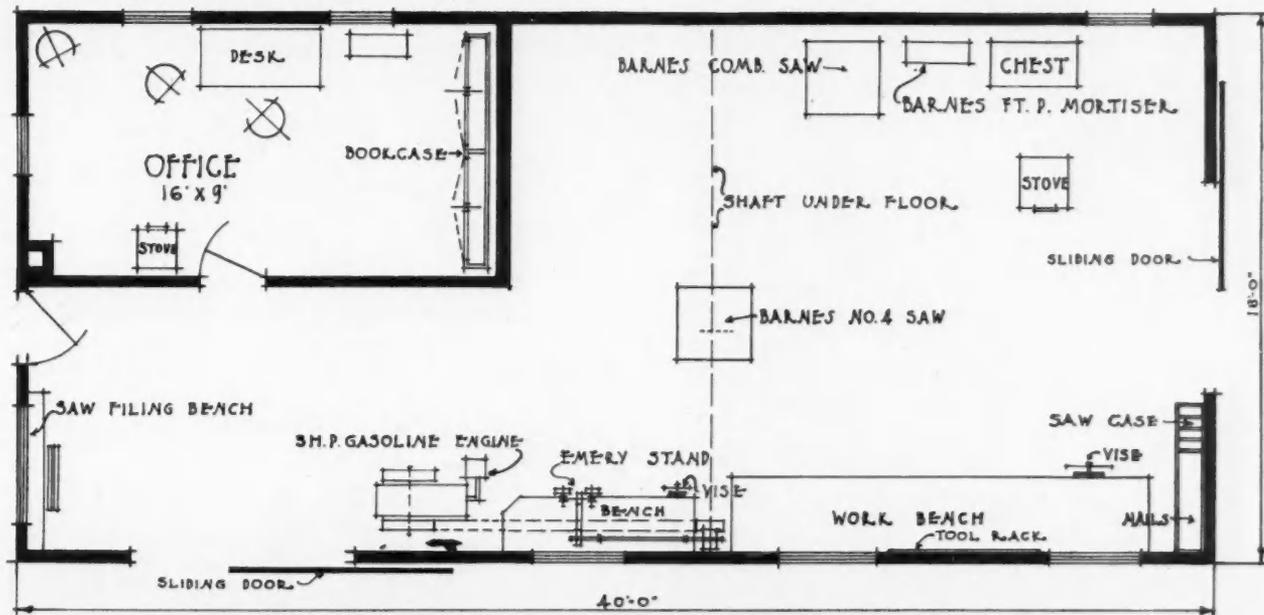
A Small Wood Working Shop

To the Editor: Pond Creek, Okla.
 I am spending this stormy, disagreeable weather re-reading back numbers of the AMERICAN CARPENTER AND BUILDER; and I find them good company and pleasant employment. As I am in the shop all the time, shop notes and things pertaining to shop work are very interesting to me, although I have spent a good many years at it.
 I see several plans of shops, some in use and some suggested. I agree with Bro. Danaho (in the May number) that it pays to keep things in their places. It looks better to have

pulleys for emery stand. This belt is twisted one-fourth turn. The shifting device is controlled by a lever behind the emery stand.

The No. 4 saw is belted up to tight and loose pulleys on shaft of saw between ratchet and outer boxing, so as not to interfere with treadle power, as I use this often when not running the engine.

I have several attachments which I have made for this saw. Can make it into a sash moulder, screen moulder and a drum sander. I have a wooden throat for each attachment. For screen moulder I put on a 7-inch rip saw, then a 2-inch



Floor Plan of Wood Working Shop and Office Showing Arrangement of Machines, Work Benches, etc. Shop is 18 x 40 Feet, with One Corner 16 x 9 Feet Partitioned Off for Office

things clean. I have been using hand and foot power machines for a good many years; but began to see that gasoline could help a lot, so attached an engine.

I have a small shop. Here is a plan showing the arrangement. It may interest some of the boys. It may look small to those doing big contract work, but it is capable of doing a lot of work easier than I used to do it.

My engine is a No. 2, type A, 3 H-P, tank cooled. The tank is fastened to the wall behind the drive belt and holds 6 gallons of water. Engine is set on a cement footing raised 8 inches above the floor. Drive belt to line shaft is under the floor. It runs over a floor jack with a belt-tightening arrangement. (See detail.) The upper idler is set in blocks to slide, with bolts running through holes in the top, with wing-nuts to adjust tension.

There are two pulleys bolted together on the line shaft. The outer one is belted to counter shaft with tight and loose

collar, then a small cut-off saw just a little larger than the moulding head, then the moulding head. I set the fence to the moulding head, but over the collar I put another fence to rip saw. I set this to the thickness of the moulding.

I usually run the edge on a moulding first, then put it on the rip saw. I find this is a good way to utilize waste.

When I want to attach the scroll saw I set it in front of the No. 4 saw and belt from outer end of shaft to shaft of scroll saw, twisting once. I do not molest the ratchet.

I use a Wilcox quick-acting vise on bench, with iron strip let in to the top of bench. It is provided with holes and a dog so that I can hold wide stuff, such as doors, etc. These helps soon pay for themselves in saving time.

This is my first effort along this line and hope it will be of some use to someone.

D. B. Ross,
 Contractor and Builder.



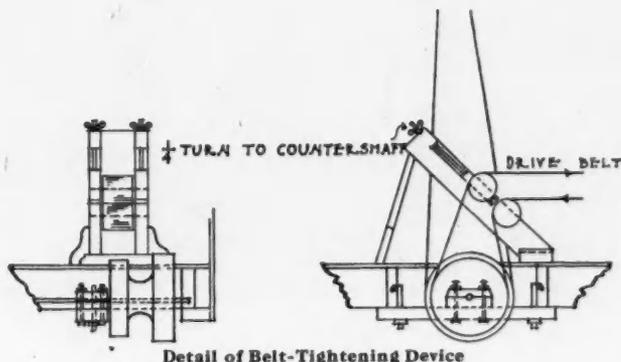
Troubled with Plaster Staining

To the Editor: Hartington, Nebr.
 Am completing a large house in which I used the western pine lath. The sap of the laths has come through the second coat of plaster. Is there anything I can do to stop it, or rather to avoid it from staining the third coat? Can I do anything before I put the third coat on?

HENRY STUCKENHOFF.

Answer: You might try using a waterproofing compound on the surface of the second coat before putting on the third coat of plaster. This might prevent the color from going through to the finishing coat. But if a dark colored compound is used with a thin covering coat of plaster, the color of the waterproofing compound may show through the plaster. You will have to watch this point.

EDITOR.



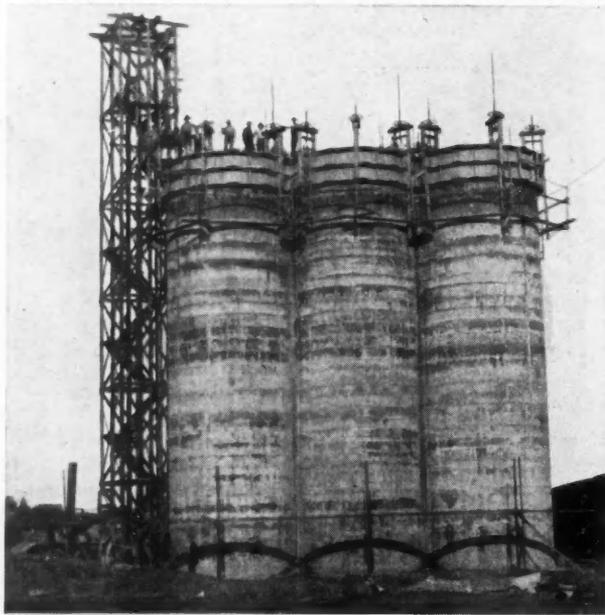
Detail of Belt-Tightening Device

New Form Raising Rig for Concrete Work

To the Editor: St. Paul, Minn.

During the summer of 1909 I was employed as inspector on construction of the large concrete elevator for the Great Northern Railway Company at Superior, Wis. In constructing the concrete bin walls, sliding forms were used, which were raised with the well known toggle jack, which is used extensively.

My observations were that the raising devices could be improved in a great many ways, so I invented a device which not only gave a great deal better satisfaction, but re-



Concrete Grain Bins Quickly Constructed Through the Help of New Style Form Raising Jacks

duced the cost in manipulating same by 50 per cent. My invention consists of a wheel, split collar, threaded sleeve, a guide plate, two sets of dogs, and an eccentric paul and U bolt. One and a quarter inch pipe is used to climb on, and same also serves as vertical reinforcing for concrete walls. These parts are mounted on a yoke as shown in photograph.

A graduated rule is nailed to one of the vertical yoke timbers with the zero end at the top. Before starting to raise, the guide is brought to zero, and as soon as the wheel is turned counter clockwise the upper dogs grip the pipe automatically and the yoke and form start traveling upwards, being forced up by the threaded sleeve, which is held stationary by the upper dogs. When the upper end of the threaded sleeve is reached and we have no more thread to climb on, all that is necessary is to reverse the wheel and the lower dogs will immediately grip the pipe automatically and hold the form stationary. The upper dogs also release simultaneously and the sleeve and upper dogs are again brought to zero. In other words, the device forms a continuous jack, which only requires turning of the wheel in either direction. When the concrete is set up sufficiently hard in the first course the U bolt is released with eccentric paul, which releases the outer form, the inner form being built with a 3/16-inch drift to prevent binding. But when raising forms while concrete is still plastic, releasing of outer forms is not necessary. This also gives the concrete a troweled surface.

This device has just been successfully demonstrated in the Big Bend country, Washington, at Ephrata and Wilbur, where two concrete elevators are being constructed by the Farmers' Union Warehouse Companies. The Wilbur job, which is of

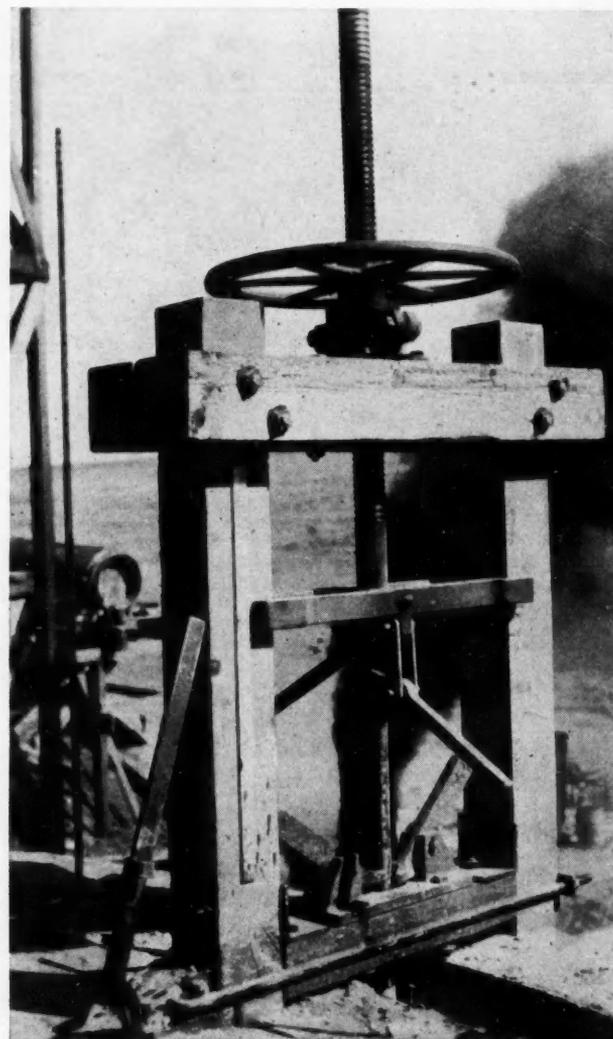
81,000-bushels capacity, and consists of eight circular bins and four interstice bins, required the following crew:

- 8 men for raising forms.
- 2 men for wheeling sand.
- 3 men for wheeling crushed stone or gravel.
- 1 man for hoisting concrete.
- 1 man at mixer.
- 1 man at chute.
- 3 men wheeling concrete.
- 2 men spading concrete.
- 4 men placing reinforcing steel.

These bins were 16 feet in diameter with 7-inch reinforced concrete walls. Working ten hours a day, this organization carried the twelve-bin walls up 13 feet in two days and three hours, which was the last 13 feet of a 55-foot structure.

The forms were 4½ feet in depth. By bringing up the bin walls 5 feet a day we were working 6 inches above the concrete, which was poured in the morning of the same day. The result was that a perfect wall and perfect surface was produced, as the forms came up with such smoothness that the green concrete was not disturbed in the least. On this job the devices eliminated eight raising men, two gauge men, an instrument man, one rodman, three wrenchmen, and three trowelmen, as compared with the old devices used at Superior.

Paying laborers 35c per hour, the concrete was placed, forms raised and oiled and the reinforcing steel was placed for a little less than \$2.00 a yard, while there was sufficient



Detail View of New Form Raising Jack. Operates Rapidly with Hand Wheel and Screw

material on the ground to keep the crew employed.

The same devices can be used to great advantage in constructing silos, smokestacks, stand pipes and water tanks.

They can also be used for building any kind of concrete walls, exclusive of trim.

The same devices can be used on any number of jobs, and the depreciation on the forms is also very small for a number of jobs.

C. P. BOHLAND.



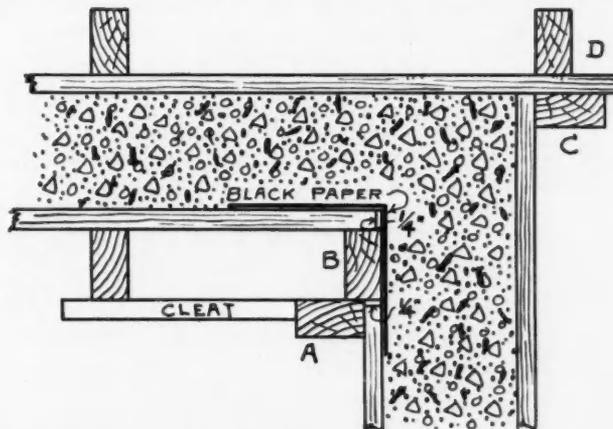
Easy Corners to Strip in Concrete Construction

To the Editor:

Ventura, Cal.

I enclose a sketch of my way of building the inside corners for concrete forms. My way may be in use, but have never noticed other carpenters using it. Ease in stripping, with sufficient solidity to hold the wet concrete, is very essential in concrete construction.

For the outside course, I set stud C to concrete line and cut sheathing flush with same, then I run up the other side by setting stud D and wire CD together, thus doing away largely of driving nails into stud C; of course enough nails are used to hold the boards in place. On the inside stud B



Suggested Method of Building Inside Corners for Concrete Forms

is set to concrete line with sheathing cut back $\frac{1}{4}$ to $\frac{1}{2}$ inch. Stud A is then placed into position and nailed only to stud B at top and bottom. The cleats back to the next stud hold it in place. The sheathing on stud A is cut $\frac{1}{4}$ to $\frac{1}{2}$ inch short, then I cover the whole corner with two layers of tarred paper.

This makes a smooth corner and also allows the sheathing to swell without cracking the concrete from B to D.

F. L. MARTIN.



Can't Get Full-Width Casing

To the Editor:

Oroville, Wash.

In the November number, Mr. L. H. D. of Pontiac, Mich., asks for your opinion on a certain subject. Mr. Woods, in his answer, seems to ignore the question altogether.

I have been working on buildings close to forty years, both as journeyman and contractor, and I must say I am of a different opinion to Mr. Woods. There are often times and places where it is impossible to get a full width casing, and at such times it is a rule of almost all architects whose plans I have handled, to leave the band moulding off the narrow casing. The band mould should be cut off square and fitted up against the wall. Hope this will settle the trouble for Mr. L. H. D.

I like to see such questions in the A. C. & B., as it is often of great use to young men who have not had practical experience.

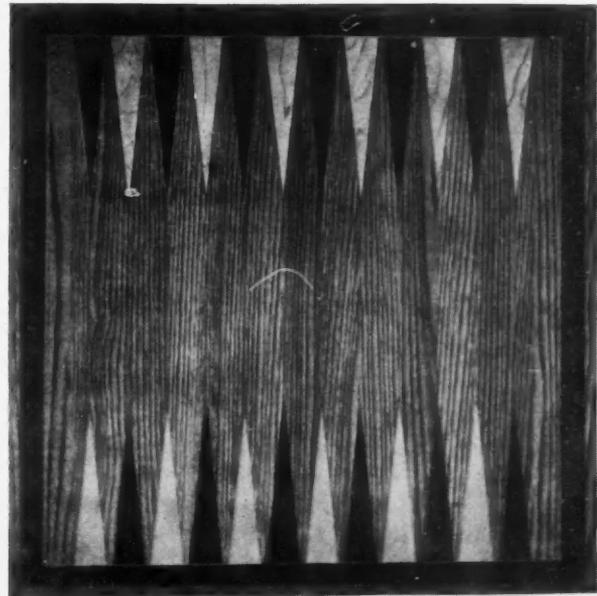
E. McCAMMON.

Inlaid Game Boards

To the Editor:

Pond Creek, Okla.

I enclose this photo of a checker board and backgammon board back that I have made at odd times. It is $15\frac{1}{4}$ inches

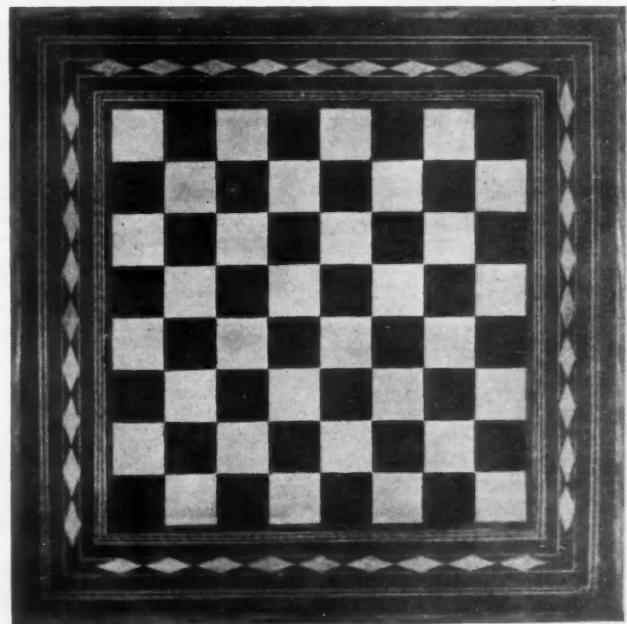


Beautiful Inlaid Backgammon Board with Inlaid Checker Board on Opposite Side (Shown Below)

square, seven kinds of wood—walnut, maple, birch, mahogany, badock, ash, and white oak. There are 2,241 pieces. A stripe on the edge of oak composed of small pieces, does not show in photo.

All of the work was done with the No. 4 Barnes saw.

D. B. ROSS, Contractor and Builder.



Skeptical

To the Editor:

Amhurst, N. S.

I always read your magazine with great interest, and always look ahead to getting the next month's paper, but that yarn about that house in Hamilton being built in 24 hours is about like those western shingle yarns. Can you tell me how 400 men could work on a house of that size without falling over each other?

C. M. STEWART.

The "Cycloneproofness" of Building Materials

To the Editor:

Omaha, Neb.

Although it may be rather late for me to write anything regarding the cyclone that hit Omaha in March last, yet there are many things that might be said of it that would be of more or less interest to the readers of the AMERICAN CARPENTER AND BUILDER.

We have noticed in several papers some accounts of the cyclone, in which the writers made a great effort to boost for certain kinds of building materials, claiming them to be cyclone proof, from the fact that the building where that particular material was used went through the storm practically unharmed, although the building stood directly in the storm's path. All those statements were misleading, so far as the material being cyclone proof goes. A cyclone does its work in such a peculiar manner that it is possible for a real frail frame building to go through the storm undamaged, or very nearly so, while a substantial, well-built brick building within two feet of the frame building was leveled to the ground. No one could contend that the old frame building was cyclone proof.

It was asserted by some that a certain large building in course of construction, having more or less reinforced concrete construction, passed through the storm with but very little damage, although it was right in the track of the cyclone, because it was the concrete. But what was it that saved the old frame buildings that stood more in the track of the cyclone than did this reinforced concrete building?

The cyclone took a strip through the city from two to three blocks wide, and wrecked 1,200 buildings, in some localities making almost a clean sweep, and in other places skipping here and there, destroying a few buildings, then skipping a few and destroying some more, and so on; and there were plenty of cases where the cyclone drew the line so close as to take only part of a building. Some buildings could be seen with the end gables blown entirely out, not a board left on, and yet the building was left standing with the roof on—others near by totally wrecked.

It is undoubtedly true that reinforced concrete will stand a much greater wind pressure than any other form of building, but not to any such extent as to be cyclone proof. The cyclone has no respect for any particular kind of material or building, but takes whatever it happens to hit as it goes bobbing up and down, and reaching out first on one side and then the other and, when it hits a concrete building fair and square, it will be more than likely to go down with the rest, just the same.

There was an overcoated house that escaped simply because

it was plastered with a certain kind of stucco. Now we are not going to condemn either concrete or stucco, because we know that both of these materials are of the very best when used in their proper places, but don't try to push them onto the people as cyclone proof, for the cyclone has the convincing power behind it to tear that argument all to pieces in less time than it takes to tell it.

I. P. HICKS.

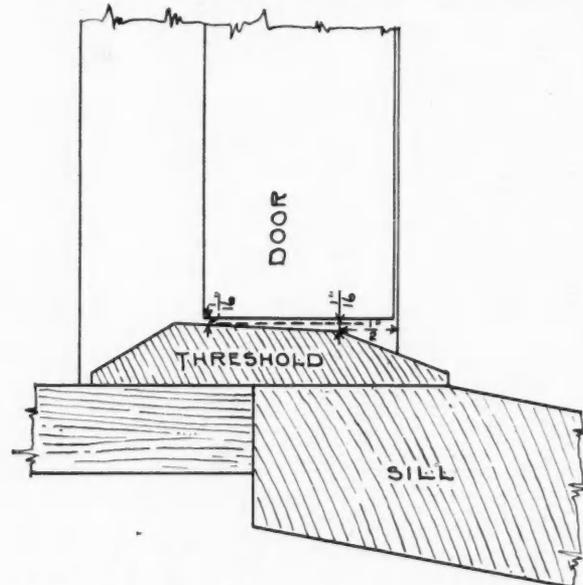
To Stop the Leak

To the Editor:

Crocker, Mo.

I am enclosing a detail for preventing outside door from leaking, as per request of Jack Leg.

This has always done the work for me, but it can be improved upon by nailing a guide strip about $\frac{3}{4}$ inch above



Detail of Outside Door Threshold to Keep Out the Rain

bottom of door and making a saw kerf about $\frac{1}{4}$ inch deep to receive a strip of tin, bending same out and down, then folding under and nailing to bottom of door, making a neat fit around stop and sides.

P. O. ANDREWS.

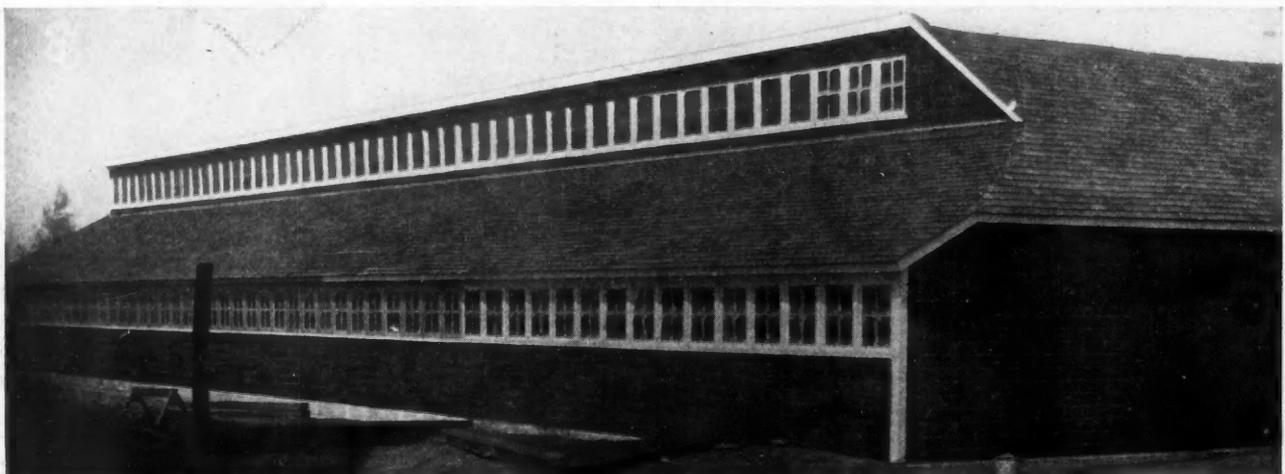
Biggest Hog House in Iowa

To the Editor:

Klemme, Iowa.

Here is a picture of a hog house I built this summer. It is 28 by 110 feet, with an addition 28 by 70 feet; I think the largest in the state.

A. F. HUBBARD.



This is Said to be the Biggest Hog House in Iowa. It is 28 by 110 Feet with an Addition 28 by 70 Feet

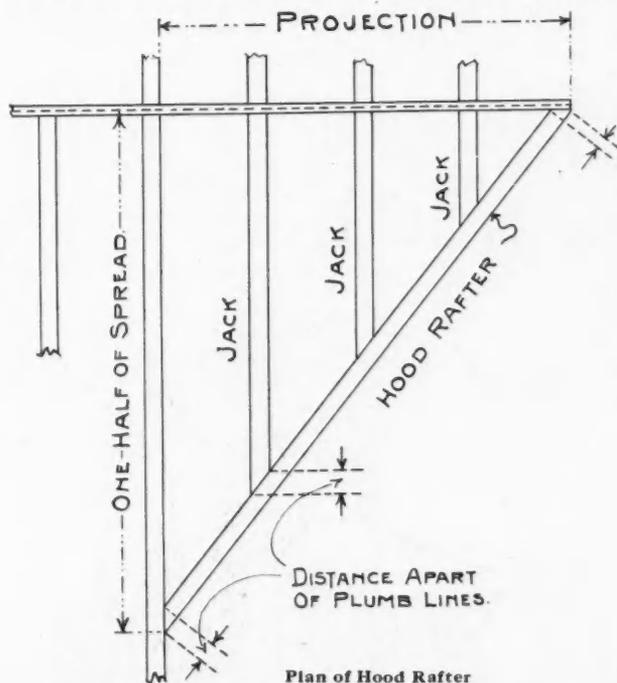
Hood Rafter Again

To the Editor: Griggsville, Ill.
 As I am a barn builder, I would like information in regard to the cutting and fitting of bonnet rafters or hood, over the door used by the hay carrier. I have made quite a number but would like you to explain in the magazine just how you would cut the rafters. I want the hood to extend about four feet out and spread to about ten feet wide at the bottom. Any information you can give will be gratefully received.

W. S. WALKER.

Answer: We have answered this question a number of times, but as it will be new to some and, rather than look it up in the back numbers of this Journal, we will answer it again.

This is a vexing question to some and an unnecessary one, if they would just stop and think a little. The roof may have a valley in it and the builder will go ahead and frame it and think nothing of it, but when it comes to a hood rafter away up at the comb of the roof sticking out over space, they think they have run up against something and throw up their hands for help, when, as a matter of fact, it is nothing more than the valley rafter they have already framed, only instead of a seat cut at the bottom, it is changed to a side cut. In other words, it is part of another roof (the gable) attached to the gable of the barn. If the projection and one-half of the spread are of equal length, the run of the hood rafter is at an angle of 45 degrees or just the same as a valley for a



square corner, but when they are of different lengths, the hood rafter should be treated the same as for the valley where the pitches are different.

Now, we have given the mode of procedure both on and off of the square. The illustration shows a simple method that applies to any pitch. The spread and projection may be anything desired.

The distance between the arrow points represents the distance (square out) between the plumb lines, which should be laid off on both sides of the rafter, then by cutting diagonally across the back from one line to the other, the side cut will be obtained. The plumb line is found, of course, by taking the run and rise of the common rafters to which the hood joins.

The back of the hood rafter should be backed one way to bring it in plane with the roof.

A. W. WOODS.

Silo Building in Kansas

To the Editor: Canton, Kans.
 This is the way we build silos in Kansas. We put them up without a scaffold until the time comes to hoop them. This one is 42 feet high. Every farmer has a silo out this



Large Stave Silo Being Built at Canton, Kansas

way, and the stave silos stand up well, even against our Kansas winds.

O. C. MIDDLESWART.



To Construct Storm-Proof Sash

To the Editor: Roswell, N. M.
 I have been a reader of your valuable paper ever since the first issue and have never asked for help, but I have struck up against a stump.

I have a sleeping porch to build and the parties want something on the order of a storm-proof window stool, similar to what you show on page 160 of your book, "Details of Building Construction," but I have but one sash instead of two. I do not want to hang it with butts. I want it to slide, something like a coach or cab window. I have one or two other details, but do not feel satisfied. If you can give me some suggestion, or a detail, I would appreciate it very much.

C. M. STAINS.

Answer: Why not make a jib head frame and slide the sash up? If you lack space to take in one sash, better divide same into two or three parts and slide them all up into a pocket. It is well nigh impossible to make a pocket below the sill strictly storm-proof. It might work all right for a time, but the natural swelling, shrinkage and more or less settlement will show up in time and the leak will follow as a natural consequence.

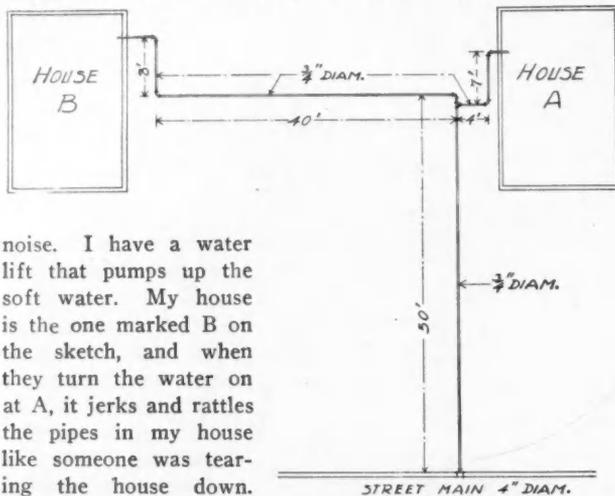
EDITOR.

Noisy Water Pipes

To the Editor:

Balaton, Minn.

I am sending a little sketch of my water system to see if you can tell me how to fix it so it won't make so much



noise. I have a water lift that pumps up the soft water. My house is the one marked B on the sketch, and when they turn the water on at A, it jerks and rattles the pipes in my house like someone was tearing the house down. The plumber put on a short piece of pipe about 4 feet long, with a cap on it, but it don't take the jar off. Perhaps you could suggest an air chamber of some kind that would help.

GEO. SNOW.

Answer: We judge that the trouble in this case is due to too small a pipe leading from the street main to the branch between the houses, and then again from the branch to the house farther away from the branch. The $\frac{3}{4}$ -inch pipe which leads from the main to the branch is only of sufficient size to furnish one house at a time with water, thus putting the pipe leading into either house into a condition of reduced pressure when the water is running to the other house. The house on the hill probably does not feel the effect of water hammer to so great a measure as the one

in the hollow, for the reason that the house in the hollow always has the effect of the dead column of water remaining in the pipe when water is being drawn at the other house. The effect of shutting off the water suddenly at the house on top of the hill is to throw the pressure of the main onto the column of water leading down to the house in the hollow, thus producing the jumping and pounding noise which you referred to. Another reason for the noise may be accounted for in the friction occurring in such a great length of pipe of small diameter.

Our suggestion would be to use about a $1\frac{1}{2}$ -inch diameter pipe leading from the street main to the branch, then a 1-inch diameter pipe leading to the house farther away, and a $\frac{3}{4}$ -inch diameter pipe into the house nearer the house main. We believe that this would relieve the trouble. EDITOR.



To Revive Sandpaper

To the Editor:

Port Arthur, Texas.

Enclosed you will find check for my subscription. I have been taking your magazine for some time, and I must say that I get my money's worth. As a Texan would say, I get a "whole heaps" of good from your "Shop Kinks," and "Making Power Woodworkers Pay."

Here is one that is 14k. for the man who uses a sander. When the paper becomes slick with pitch or gum, take your emery dresser to it. Just try it and you will do it again.

Yours truly,

H. MCDANIEL.



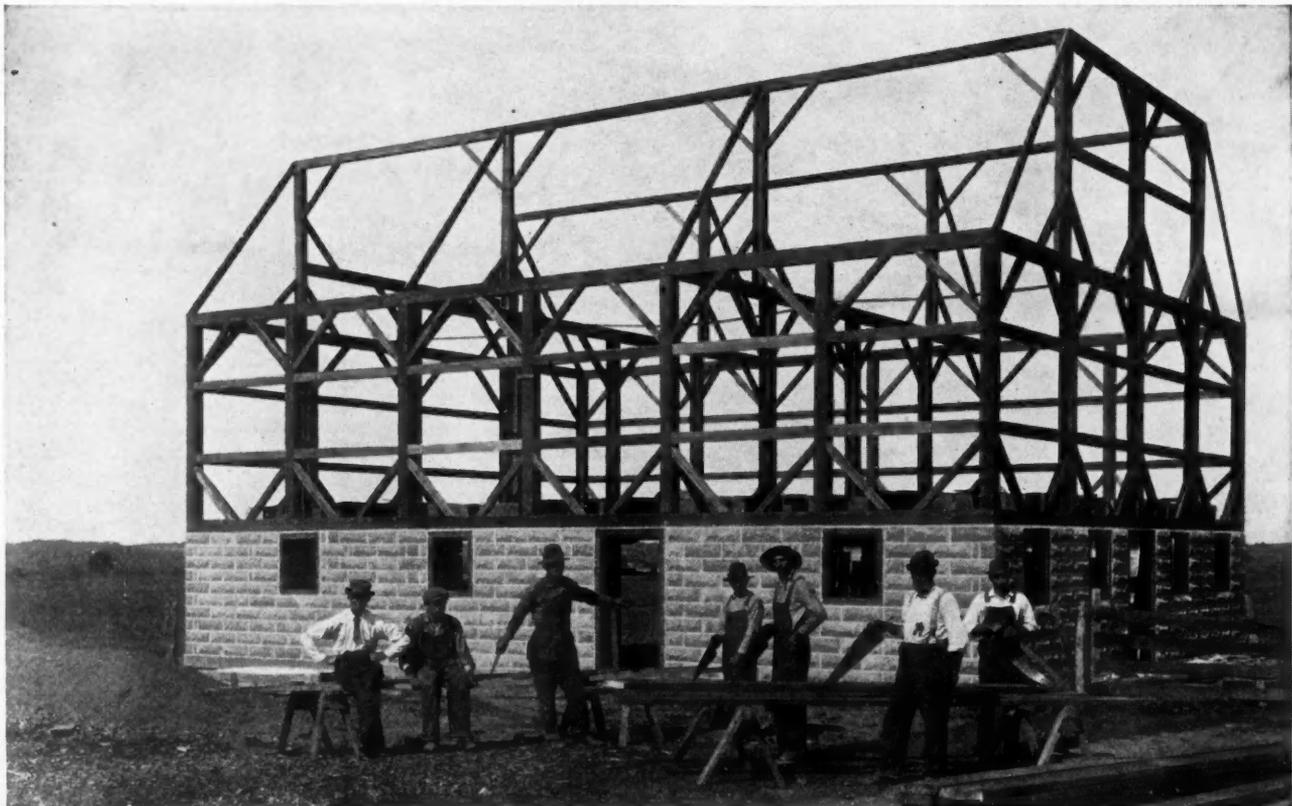
Heavy Timber Barn

To the Editor:

Le Grand, Ia.

Here I am with my gang of barn builders at work on a heavy timbered barn, put up this summer for Mr. A. F. Sawyer. This barn is 36 by 48 feet, with 12-foot posts. It has an 8-foot basement of concrete blocks.

A. H. WEITZELL.



A. H. Weitzell and Six of His Men at Work on Heavy Timber Barn

Arbitrary Rulings Condemned

To the Editor: Columbia, S. C.
 Enclosed herewith please find check for \$2.00 to pay for the AMERICAN CARPENTER AND BUILDER from the expiration of my present subscription.

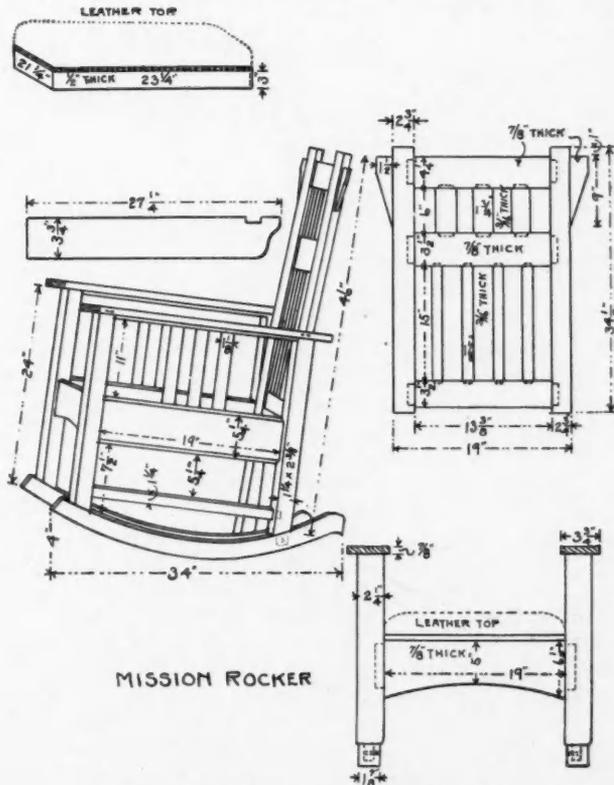
I am glad to see the article, "Why Contractors Go Broke"; this is a very timely article and one which should have as wide circulation as possible, and more of the same kind of information should meet with the approval of the contractors, as this is the way to correct the gross injustice of some architects; posting them, and finally refusing to bid on their plans, if no other way is available. The builders' associations have been trying to get this through down here, but have not met with much success except to about "put out of business" the worst one, but there are still others who imagine they are KINGS as soon as the contract is signed, but seem to be willing to do "any old way" until they get the "sucker" roped.

THOS. W. COTHRAN,
 With Jno. J. Cain Construction Co.,
 General Contractors and Engineers.



How to Build a Mission Rocker

To the Editor: Shaw, Ohio.
 I am enclosing a sketch of a Mission rocker, of my own design. It is made mostly from scrap pieces of oak. It is



Working Drawings of Attractive Mission Rocker

finished in dark and upholstered in leather. This makes a handsome piece of furniture, durable and comfortable.

C. W. COVER.



Designing an Ice House

Ft. Hayes Experiment Station, Hayes, Kan.

To the Editor:
 Here's the question: How many cubic feet of space must be allowed for a ton of ice? I am beginning to plan a new ice house for this station.

Have some figures (my own) on the subject in question, but would like to know whether I am right or wrong.

I based my calculations on the fact that an iceberg sinks 7/8 of its depth into the water. What is your method?

What do you think of a hollow reinforced concrete wall for such a building?
 WERNER A. RICHTER.

Answer: Since one cubic foot of ice weighs 57.4 pounds, about 35 cubic feet of space would be necessary for 2,000 pounds of ice, if this mass of ice was solid. You will have to allow for irregular shaped pieces and also for sawdust packing where ice is to be put into storage. This, of course, would increase the volume occupied as given above.

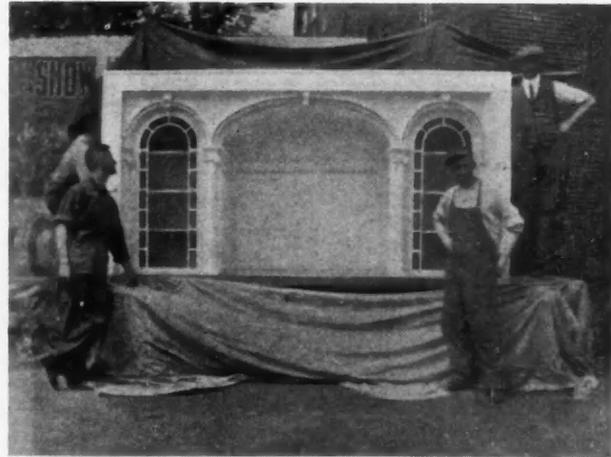
We consider that the hollow reinforced concrete wall would be suitable for a building of this type, and would suggest that the wall might be made more effective in regard to insulation, if concrete was thoroughly waterproofed in both walls and the space between the two parts of wall filled with sawdust.

EDITOR.



Some Fine Cabinet Work

To the Editor: Rutland, Vt.
 Here are two photographs of some of our work that is rather unusual. The dining room buffet is of white wood,



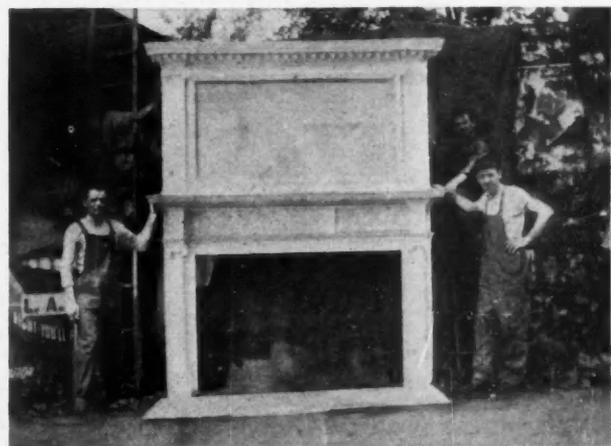
White Enamel Dining Room Buffet Produced by the Rutland Mfg. Co.

finished in white enamel. It is 10 feet long and has fluted columns with carved capitals.

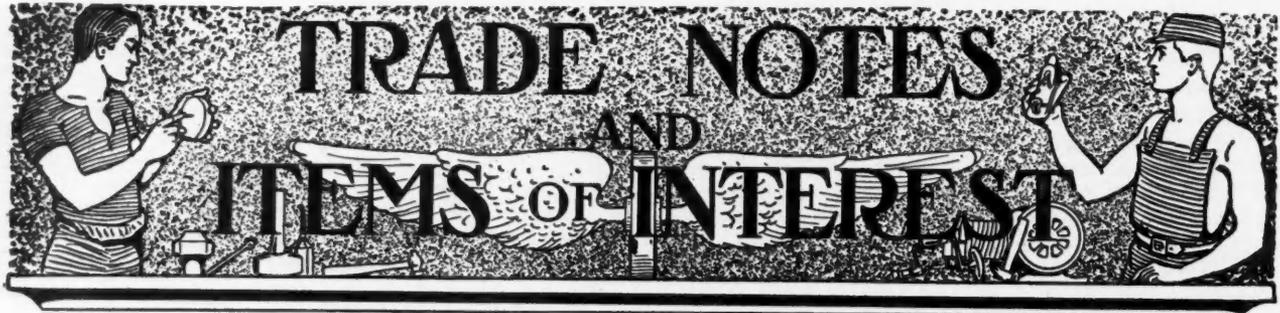
The other piece is a dining room mantel. It is designed to harmonize with the buffet. Both of these pieces are part of a special order for one of the hotels here.

The men standing beside these pieces in the picture are the ones who designed and executed this work.

THOMAS FOSSARD,
 Manufacturing Director, The Rutland Mfg. Co.



White Enamel Dining Room Mantel of Chaste Design



Through this department the editors aim to keep builders, contractors, carpenters and architects in touch with what their friends, the manufacturers, are doing for them in new or improved tools and machinery, methods and materials—pertaining to building. Items for these columns must have real news value; they are offered here as interesting information for our readers; they are not advertising. No matter will be printed here simply because some advertiser wishes it. Likewise, no matter will be excluded simply because the article described is not advertised in this magazine. Suggestions for the betterment of this department are requested of our readers.

Government Wood-Fibre Expert Joins Beaver Companies

J. H. Thickens, who for three years was chemical engineer in charge of the United States Government wood products laboratory at Wausau, Wis., and former general superintendent of the Brunet Falls Manufacturing Co., a \$3,000,000 organization at Cornell, Wis., has become associated with the Beaver Companies in the capacity of general director of laboratories, with headquarters at the Buffalo division.

The selection of Mr. Thickens is in line with the policy of the Beaver Companies to secure all scientific knowledge of wood-fibre that is available. Mr. Thickens brings with him the extensive knowledge gained in the close study of all pulp-wood produced in this country.

His work on wood-fibre as a result of his investigations, particularly "The Grinding of Spruce" and "Experiments on Jackpine and Hemlock" are now recognized as authoritative on wood-fibre, both by the Government and by manufacturers. Mr. Thickens is now at work on a third volume, which will be issued within a few months.

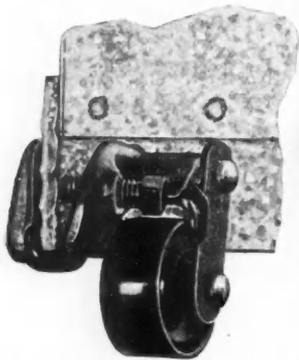
The importance of these researches is recognized when it is known that 4,300,000 cords of wood are used annually for the production of fibre, much of this pure wood fibre going into the manufacture of Beaver board.

The Beaver Companies have had for the past two years a well organized staff of wood fibre experts and the thoroughly equipped laboratories necessary to develop wood-fibre knowledge to a scientific basis. It is largely this close study of fibre and its possibilities that has made the success of Beaver board.

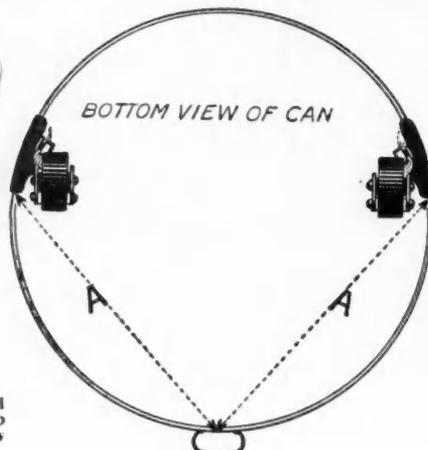


"Rockaway" Rollers for Ash Cans

The Edwards Manufacturing Co. are now offering a patent roller to be attached to the bottom of any ash can or other receptacle that has to be moved about a good deal. These rollers fasten in place with a thumb screw and the principle



The Wheel Carriage is Fastened to the can rim with a Thumb Screw. Diagram Shows How Rollers are Placed.



on which they operate is so ingenious that the rollers only come down into action when they are needed, that is, when the can is being moved. The rest of the time they fold back by gravity, out of the way, allowing the can to sit firm and solid.

We understand these rollers are very moderate in price. As they make the largest ash can as easy to handle as a small pail, they will be interesting to all householders. The Edwards Manufacturing Co., Cincinnati, Ohio, will send full information.



For Ambitious Men

From the earliest history of the race, the work of the carpenter and builder has held an honorable place in the eyes of man. But there are good reasons why ambitious men are not willing to continue for ever even in the most honorable of callings.

The desire to be his own boss, the wish to work out the ideas which his own brain has conceived, the purpose to enter the construction field for himself—these are laudable ambitions for any man.

But before he can launch out to attain any such ambition, common sense declares he must have sufficient knowledge of the proposed business to secure success. Not merely the practical knowledge, which he may have gained at the bench, but the technical training which will enable him to direct the work of others. He cannot afford to guess—he must know. He must be absolutely correct concerning all the details of his work or he will soon suffer heavy losses. To be ignorant is to invite disaster.

In the field of architecture there are many attractions for the practical carpenter and builder. Never were there greater opportunities to enter that pleasant and well-paid profession. All over the United States there are openings for men of ambition and first rate ability which will yield an income from \$5,000 to \$10,000 annually. To reach such a position, the first step which the carpenter or mason must take is to obtain a technical knowledge of his own trade.

Thousands of men all over the United States have done this by the study of the complete architectural course or one of the other courses offered by the International Correspondence Schools, Scranton, Pa. More than twenty-two years ago the I. C. S. introduced the system of study by mail, and the complete architectural course was one of the first of their courses. During all these years they have been taking hold of men who were bound down by their ignorance and low wages and qualifying them for better positions and larger salaries. Every month more than 400 students write to tell of their advancement in position or salary or both through the I. C. S. course.

Ambitious men who cannot make the advancement

Our Price Lowest On the "IDEAL" Home!

Gordon-Van Tine Co.'s Estimate on Materials to Build THE IDEAL HOME of Semi-Monthly Magazine Means a Saving of \$500 to \$1,000

\$2,146⁰⁰

**All
Materials
Complete**



The "Ideal" Home—Designed by Jack Manley Rose for Semi-Monthly Magazine

Another big victory for the Gordon-Van Tine Co.!

On September 28th the Semi-Monthly Magazine, in its House Building Annual, submitted to its readers a design for a nine-room house (see illustration above).

It is conceded to be one of the most perfect house plans ever designed, and created intense interest among home lovers throughout the entire country.

Our estimate on the material to build this house complete was by far the lowest submitted by any building material concern. For \$2,146 we agree to furnish all the material to build this splendid, "Ideal" house, including Lumber, Lath, Shingles, Finishing Lumber, Doors, Windows, Frames, Millwork, Nails, Tinware, Hardware and Paint. By buying from Gordon-Van Tine Co. you should be able to build this "Ideal" house for under \$5,000.

We offer you a saving of \$500 to \$1,000 on this beautiful home. Write today for *Free Plan* of the famous "Ideal" home and a price *delivered at your station*.

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Our leadership in the Building Material Industry is due to our vast facilities both in buying and distributing. Over 100,000 homes have been built from our materials.

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Our big catalog offers lowest prices ever known on high-grade building material of every description. We guarantee quality, safe delivery and satisfaction.

Our prices save the public over a million dollars a year.

Our famous Book of Plans contains over 70 designs of Modern Houses, Cottages, Bungalows, etc. Our plans keep cost within original estimate. In writing for Plan Book, enclose 10 cents for postage and mailing. Write today and save big money. Address

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Gilbert & Bennett "PEARL" Wire Cloth

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Gilbert & Bennett PEARL Wire Cloth is the modern screen material. It is as near rust-proof as metal can be made. It is the handsomest screen you've ever seen. Dust and dirt don't lodge on its smooth meshes—it's clean.

With a little exposure to the weather, it turns an "invisible gray" shade which is positively permanent and offers practically no obstruction to the vision.



For Screening Doors, Windows and Porches

This material costs least because it lasts longest. To be had in two weights—Regular Grade and Extra Heavy, Extra Strong Grade.

But to be sure of PEARL wear, you must get genuine Gilbert & Bennett PEARL Wire. Two Copper Wires in the Selvage and a Round Tag bearing our name on each roll are the identification marks.

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Est. 1818

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Kansas City, Mo.

they desire, are advised to write to the I. C. S. Courses are offered which will be profitable to carpenters, builders, masons, bricklayers, contractors, foremen, superintendents, architects, and all others engaged in the building trades.



A Serviceable Saw

The length of service to be obtained from a Disston Saw is proverbial among mechanics. Old carpenters frequently use the same saws throughout a busy life, and the older the saws become, the more the owner prizes and cares for them.

He grows used to each saw's ways, becomes accustomed to its weight, and with the passing years seems to obtain more and better work from it. A striking evidence of this durability and continued efficiency is reported by Charles Nadolney, an expert carpenter of Nanticoke, Pa.

Some eleven years ago he purchased a Disston Saw to use in his daily work. Day in and day out for all these years this saw has been doing faithful service. A few



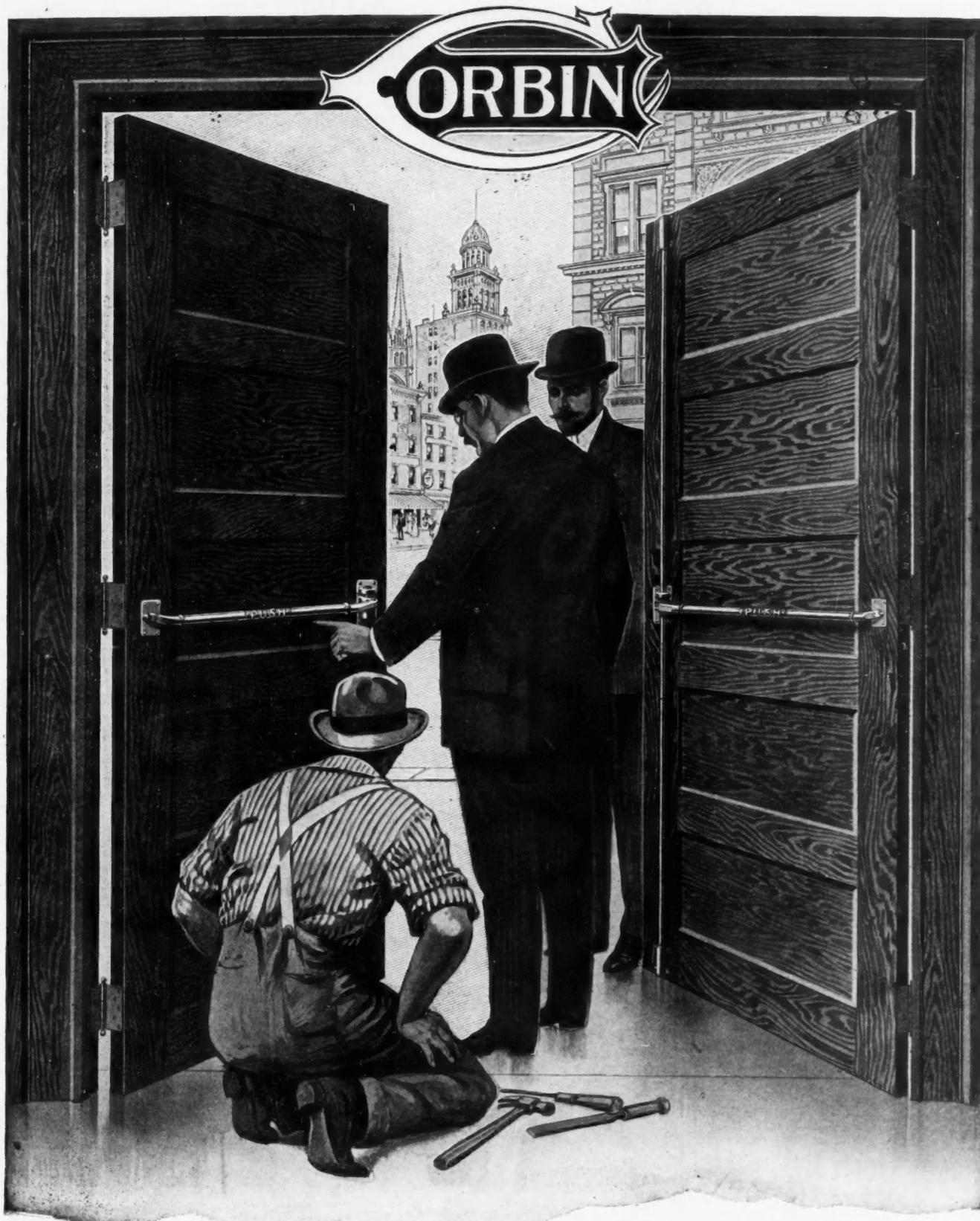
Chas. Nadolney of Nanticoke, Pa., and His Faithful Disston Saw

years ago it fell from the second story of a building he was working on, but the only damage it received was a broken handle. Not wishing to part with such a good friend, he purchased another handle and after attaching it found the old blade as good as ever.

Recently he had occasion to congratulate himself upon retaining his old Disston Saw. On June 6, 1913, Local Union No. 414, of Nanticoke Carpenters and Joiners of America gave a smoker. The principal event of the evening was a sawing contest, open to all comers. The only conditions were that the successful contestant must cut a piece off a 6 by 8-inch hemlock stick inside of 2½ minutes without a square or mark of any kind to guide him. The man making the squarest cut under these conditions was to receive a set of Disston Saws.

Mr. Nadolney entered the contest with his faithful Disston Saw that had seen eleven years of hard usage (including its fall). There were many other brands of saws, both new and old, used in this contest, but Mr. Nadolney felt that his skill, combined with the known efficiency of

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THE CORBIN ANTI-PANIC DOOR FIXTURES

Please the architect, the owner and the man who applies them. They are an absolute protection against loss of life through locked exits and are being specified in all parts of the country.

Send for Catalogue CK-112, which gives full particulars

P. & F. CORBIN, New Britain, Connecticut

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You will get **SPECIAL ATTENTION** if you tell Advertisers you read American Carpenter and Builder.

his saw, would carry him to success. His confidence was not misplaced, for depending upon his Disston Saw he started in and easily won out within the time limit. He made a square cut on the 6-inch way of the stick, and when the cut was completed it was found that he was only 1/32 of an inch out on the 8-inch way. This was the best cut of the evening, and the prize set of Disston Saws was unanimously awarded to him.

The accompanying illustration shows this now famous saw. It will be seen that repeated filing has reduced its width some inches. The picture shows Mr. Nadolney holding the saw in his hands after making the record cut. Mr. Nadolney was delighted to receive the prize of the new Disston Saws, but says he will always stick to his "old faithful," of which he is very proud. While there was some surprise at the fine showing made by this saw after so many years of service, the majority of the men present agreed that it was only what was expected of a Disston Saw.



Fox Wood Trimmers

The Fox Machine Company, Grand Rapids, Michigan, have recently issued a new series of catalogs describing their line of "Universal" wood trimmers, also some other machinery equipment, notably their adjustable dado heads, tube and pipe cutting machines and their hand and power feed milling machines. All who are in need of any of these machines will do well to write for these catalogs and find out just what the Fox Machine Company have to offer.

Our readers are pretty well acquainted with the Fox "Universal" wood trimmers. These are made in several types. The smaller size is to be used on the carpenter's work bench. Another type has its own cast iron frame

composed of three legs, and in another type this frame takes the form of a column. Several sizes are offered in each one of these types of trimmers.

One has to have one of these machines to appreciate the great variety of work that can be easily done with them. For the quick and accurate cutting of mouldings, especially mitered joints and for working half lap or tenon joints the trimmer beats a saw a dozen ways. A surprising amount of power is developed by the long arm operating handle. The cost of these machines is reasonable.



"The Lightning Estimator"

The seventh edition of "The Lightning Estimator," issued by the Bradt Publishing Company, Jackson, Michigan, has recently come from the press. This is a simple, reliable guide for estimating the cost of frame buildings. It is a practical, compact volume of considerable money value to carpenters and builders, and to all others who are concerned with estimating frame houses.

This seventh edition is nicely arranged. The illustrations, both photographs and line drawings, add considerably to the attractiveness of the book.

"The Lightning Estimator" in its several editions has been before the building world for a good many years and its helpfulness has been pretty thoroughly tested. Contractors know that estimating is the most important and at the same time the most troublesome of all their building business. Some are losing money on almost every contract, because of oversights and mistakes in making up the estimates. The study of a thoroughly reliable estimating book enables builders to avoid all the grief and worry of haphazard estimating. All interested in the new edition "Lightning Estimator" should write the Bradt Publishing Company for full particulars.

A Very Interesting Booklet
Just Issued

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**"Columned
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showing a series of new designs, can
be had free on request.

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*Exclusive Manufacturers of Kolls
Pat. Lock Joint Columns.*

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You will get **SPECIAL ATTENTION** if you tell Advertisers you read **American Carpenter and Builder**.

BIRCH

AMERICA'S FINEST WOOD

The Story of Birch

On this and the succeeding eleven pages are described and illustrated as concisely and authoritatively as possible, the properties and uses of **Birch**. While this is the largest advertisement for a building material that has ever appeared in a trade journal, no effort has been spared to verify every statement and thus render the "**Story of Birch**" as dependable a source of information as a Government Bulletin. Other Northern woods, of which there is a plentiful supply, are also mentioned together with their appropriate uses.

The Tree

THE **Birches** are common in the Northern woods from Maine to Minnesota and wherever found they are almost without exception among the most striking and beautiful of forest trees. The **Yellow Birch** (*Betula lutea*) is the chief source of **Birch** lumber, and reaches its perfection in the Lake States. The Census reports show an average annual cut of approximately 450 million feet of **Birch** lumber in the United States of which fully one-half is produced in Wisconsin and Upper Michigan.

It is a well known fact that the individuals of a species attain their best development in regions where that species is most abundant, and for this reason, the **Birch** lumber from Wisconsin and Michigan is of the highest quality. The trees are large, symmetrical, clear, and sound. A height of 80 feet and diameter of 30 inches is not uncommon. Timber of this sort yields a finishing wood which has no superiors and few competitors.

The Wood

The wood of **Yellow Birch** is hard, close-grained, tough, and strong. It has a specific gravity of .66, and the manufacturers figure that rough inch lumber in shipping condition weighs 4,000 pounds per M board feet. The finished product is, of course, much lighter.

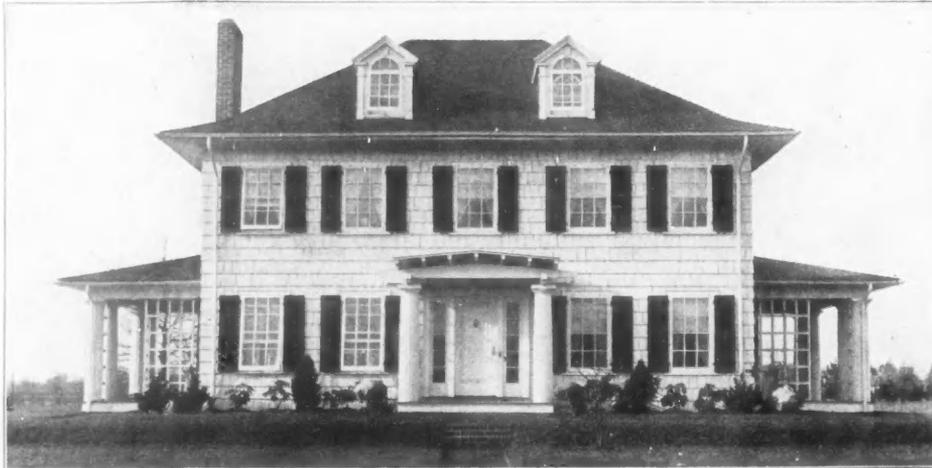
The commercial term "hardwoods" is a misnomer since it does not describe the properties of the woods to which it refers. Several so-called "hardwoods" are softer than the so-called "softwoods," while other "softwoods" are harder than some "hardwoods."

NORTHERN HEMLOCK
& HARDWOOD MANUFACTURERS ASSOCIATION
WAUSAU, WIS.

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BIRCH

Used Where Quality Is Demanded



Residence of Theo. N. Ripsom, Hemstead, L. I.
Arthur T. Remick, New York, Architect.

As ordinarily used, the term "hardwoods" is applied to all trees that are classified by botanists as belonging to the group of broad-leaved species, while the term "softwoods" is applied to the needle-leaved, or coniferous species, such as the pines, spruces, firs, cedars, larches, cypress, etc. For example—the wood of Yellow Poplar, Cottonwood, Gum, and Basswood, so-called "hardwoods," is softer than that of Longleaf Pine, a so-called "softwood."

Birch is a hardwood both in name and in fact, and its physical characteristics of weight, strength, and hardness, place it in the same class with Hard Maple, Oak, Walnut, Beech, and Rock Elm.

The sapwood of Yellow **Birch** is yellowish—the heartwood light to dark reddish brown. It is the heartwood of **Birch** that furnishes the beautiful Red **Birch**, which has no superior even in Mahogany. Both sapwood and heartwood take a brilliant, satiny polish. The figure of curly **Birch** is especially attractive, while the sparkling lustre of the finished wood gives a rich-



Residence of W. K. Grove, Orange, N. J.
Arthur T. Remick, New York, Architect.

ness of tone such as is usually looked for in only the costliest imported woods.

that over 60 million feet of **Birch** lumber is used yearly in the factories of that state for more than 150 distinct purposes. Simple enumeration of the more important groups in which **Birch** appears is most instructive. For example: Approximately 59 per cent

of the parlor furniture frames manufactured in Illinois are of **Birch**. These are the frames which are left in the white by the makers and sold to the upholsterer who stains and finishes the wood and adds the upholstery. It is stated that nearly 32 per cent of the

couches, 20 per cent of the chairs and stools, 14 per cent of the wood used in bath room equipment, 13 per cent of the store and office fixtures, and 11 per cent of the mantels fashioned in the Illinois factories are made of **Birch**—the bulk of the material coming from the Lake States. **Birch** is also used for picture frames, moulding, refrigerators, sash and doors, stairways, sporting goods, barber shop furniture, and other articles.



Residence on W. W. Fuller Estate, Briarcliff Manor, N. Y.
Arthur T. Remick, New York, Architect

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BIRCH

Its Quiet Elegance Appeals

The toughness and density of **Birch**, together with the natural beauty of the wood, make it one of the most beautiful and durable materials for floors in residences and high class buildings. The close, interwoven fibres of **Birch** resist wear and do not splinter up. Accurate tests have proved that under the same conditions of use, **Birch** is more durable than Oak.

Birch flooring is easy to lay. It harmonizes with **Birch** finish and furniture and the color becomes richer with age.



A Restful **Birch** Living Room



A Pleasant Cozy Corner of **Birch**, Finished in White Enamel

Stains Adapted to **Birch**

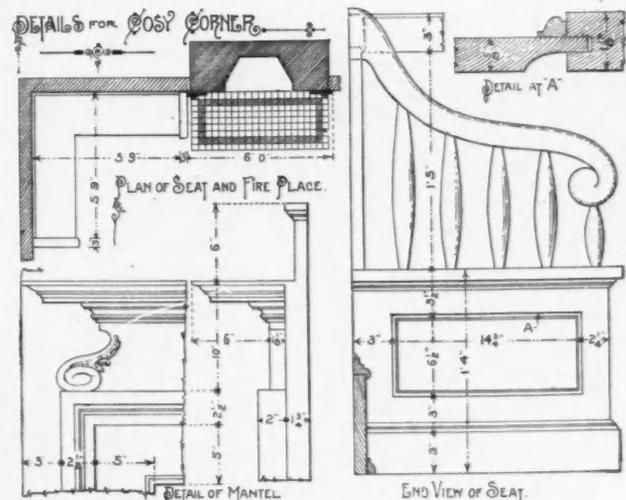
The ease and permanence with which **Birch** takes the finest stains and finishes, or white enamel, give it an increasing popularity with architects and builders of high-class apartments, hotels, residences, stores, hospitals, and office buildings. For many purposes, finish in the natural color of the wood



High **Birch** Panels Lend Stateliness to This Room

itself is most attractive, while strikingly rich effects can be secured by the use of red and curly **Birch**.

It is the close grain of **Birch**, together with the fine, variegated figure, that makes it possible to stain the wood almost any color with a result that is both pleasing and permanent. So many beautiful effects can be produced, that a house finished throughout in **Birch** is in the best of taste. The living room, dining room, den, and sleeping rooms can each be given an appropriate individual aspect and yet all be in perfect harmony.



Detail Working Drawing of Cozy Corner

In addition to finish in natural colors and with white enamel, for which **Birch** is especially adapted, the following stains can be depended upon to give permanent satisfaction if properly applied upon **Birch**:

Cherry	Dark Green
Circassian Walnut	Fumed Oak
Mahogany	Bog Oak
Walnut	Gray
Light Green	Mission Brown

Other stains equally pleasing are as easily applied to **Birch** if needed to complete any color scheme.

Get Free **Birch** Panels. See Last Page.

PAGE THREE

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

BIRCH

Most Practical For Interior Finish

How to Apply Stains



Esplanade Apartments
(Glidden & Fritz, Architects), Baltimore, Md.

Reliable stains of nearly any shade desired may be purchased in proper shape for applying. Care should be exercised, however, to make sure that the stains offered for sale are of tested quality. Care should also be exercised to have the wood properly seasoned, surfaced, and cleaned before applying the stain. Since **Birch** is a close-grained wood, a paste filler is not necessary.

Stains are designated as spirit, oil, or water stains, according as the medium in which the color is held in solution is alcohol, oil, or acid. Spirit stains are not recommended for **Birch** since the alcohol evaporates so rapidly that it is difficult to apply the color uniformly. Oil stains give splendid effects, but not as clear and transparent colors as are produced with water stains. Water stains are evenly and quickly applied and permit any method of finishing over them. The objection that water stains sometimes raise the grain of the wood is averted by sponging the wood with clear water and sanding it smooth before applying the stain.

Varnish magnifies the natural appearance of the wood, hence defects as well as natural beauty are also magnified. This makes it especially important to have the surface smooth and free from defects, dirt, and dust before the varnish is put on. Varnish works best at a temperature of about 70 degrees and in a dry atmosphere.

Gloss, rubbed, and rubbed and polished finishes give the best results with **Birch**. There are also some flat finishes that are satisfactory for certain purposes.

The user of **Birch** should always remember, however, that he is handling a hard, high-class wood, whose peculiar richness of tone and figure is worthy of his most painstaking efforts. Moreover, the finish applied to **Birch** will last as long as the wood itself.

Full directions for finishing **Birch** can be obtained from reliable paint and stain manufacturers, or from the producers of **Birch** woodwork, whose names will be supplied by the Northern Hemlock and Hardwood Manufacturers Association.

Architects

No attempt has been made to compile a complete list of the architects who are daily specifying **Birch** in their work. However, it is only fair to say that those named below are responsible for the **Birch** finish used in many of the buildings mentioned on these pages:

Harrison Albright
Bliss & Faville
Brown & Wallace
Lawrence Buck
D. H. Burnham & Co.
Henry Otis Chapman
A. P. Clark, Jr.
Darling & Pearson
Frank R. Evans
Eames & Young
Essenwein & Johnson
Wm. P. Feth
Ford, Butler & Oliver
S. R. Feink
Glidden & Fritz
Hunt & Gray

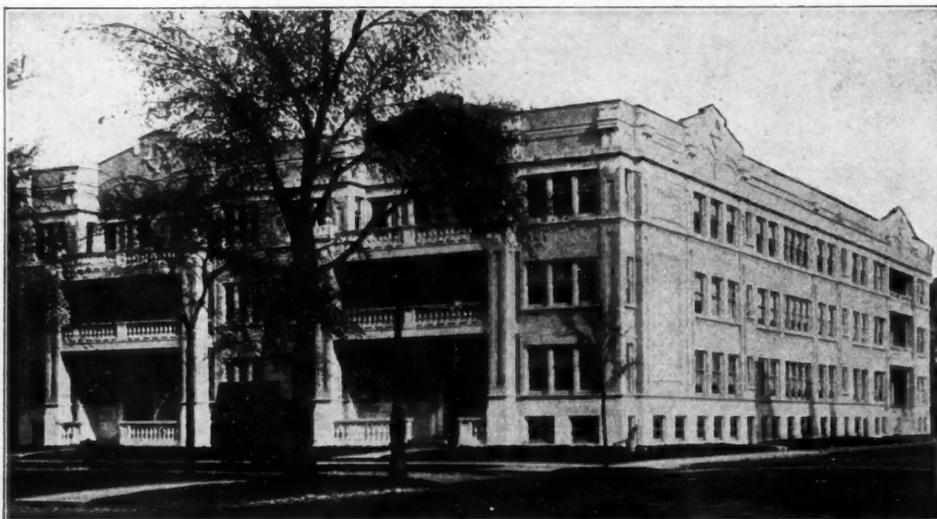
Geo. W. Kelham
J. Sarsfield Kennedy
Lester Kintzing
A. W. Leh
W. E. Lehman
Geo. R. Mann
J. W. McKecknie
Morgan, Walls & Morgan
F. J. Osterling
Owen & Payson
Frederick A. Phelps
Pratt & Ross
W. H. Pruyn
Chas. P. Rawson
Robert C. Reamer
Arthur T. Remick

Ross & McNeill
L. E. Russell
Sanguinet, Staats & Barnes
Chas. Schaefer
Meyer J. Sturm
H. B. Thompson
E. L. Tilton
Thompson & Frohling
O. M. Topp
Trowbridge & Livingston
H. H. Waterman
Chas. R. Weatherhogg
J. C. Westervelt
Wilson & Harold

Apartments

A few of the many apartment buildings finished in **Birch**

Alabama, Washington, D. C.
Armenio, Kansas City, Mo.
Bryson, Los Angeles, Cal.
Burke, Chicago, Ill.
Collinwood, Kansas City, Mo.
Covey, Salt Lake City, Utah.
Esplanade, Baltimore, Md.
Fulton, New York, N. Y.
Hayes, Chicago, Ill.
Homewood, Baltimore, Md.
Kutsche, Chicago, Ill.
Peery, Ogden, Utah.
Pittsburgh, Pa., has 35 to 40 large apartment buildings finished in **Birch**.
Pruyn, Chicago, Ill.
Riggs, Baltimore, Md.
Rossonian, Fort Worth, Texas.
Tudor Hall, Baltimore, Md.
White House, Kansas City, Mo.
Wisconsin, Milwaukee, Wis.



Pruyn Apartments
(W. H. Pruyn, Architect), Chicago, Ill.

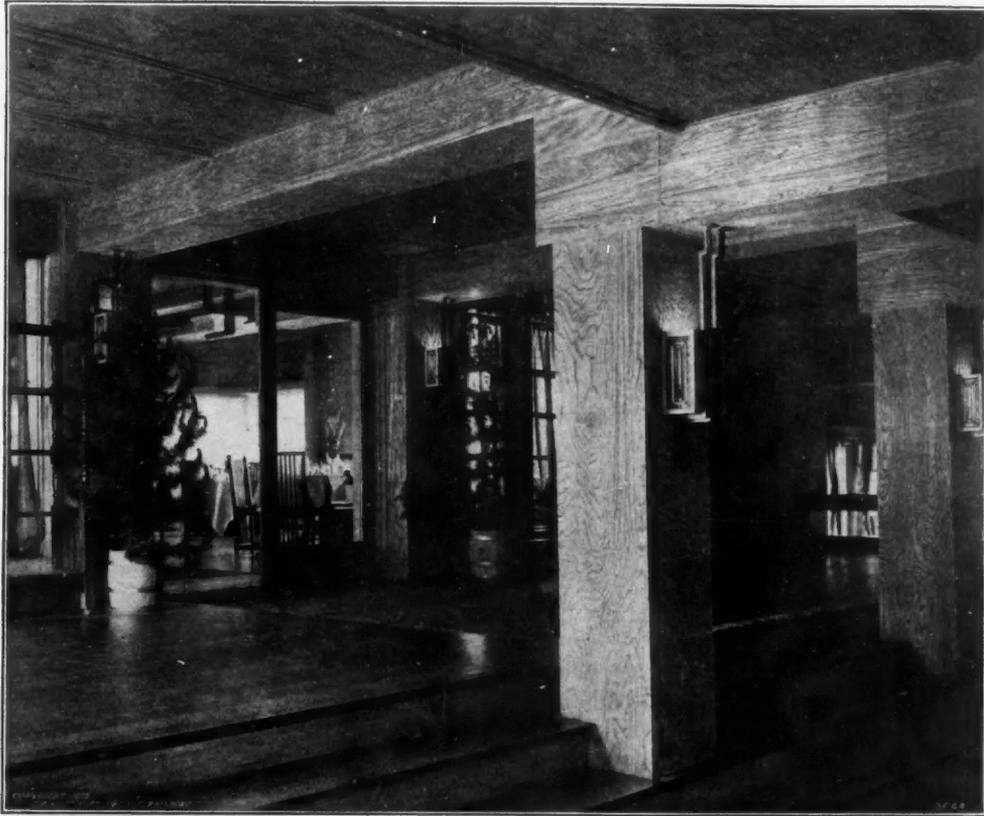
Fill Out Coupon on Last Page for Free Birch Panels

PAGE FOUR

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BIRCH

Lends Dignity and Charming Hospitality

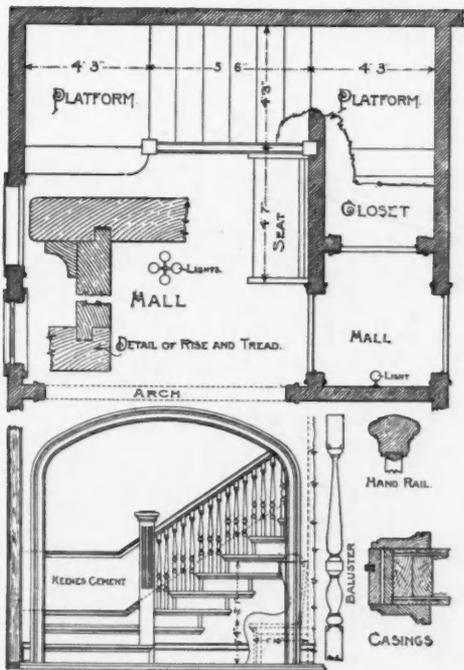


Entrance to dining room. Grand Canyon Hotel (Robert C. Reamer, Architect), Yellowstone National Park.

Birch, whether stained, enameled, or in the natural finish is very appropriate for a public building or the home. In the Grand Canyon Hotel, **Birch** has been used to give that cheerful, close-to-nature feeling.

The stairway at the bottom of the page displays a differ-

ent treatment to obtain the intimate, comfortable atmosphere of the home.



Detail Drawing of the Stairway shown at the right.



An Inviting Hall and Stairway showing *Birch* finished in Mahogany and White Enamel.

Read Free Coupon on Last Page

PAGE FIVE

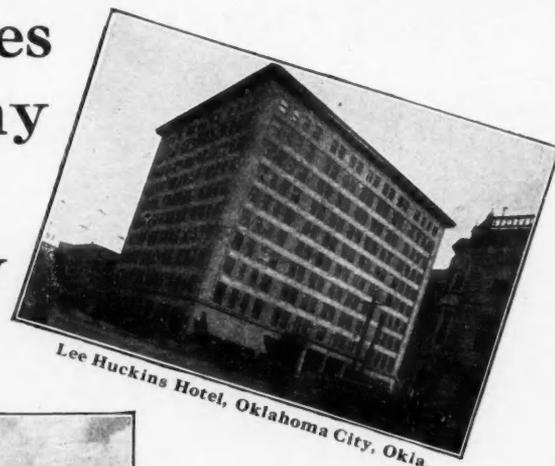
You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

BIRCH

Combines Economy and Beauty



Palace Hotel, San Francisco, Calif.



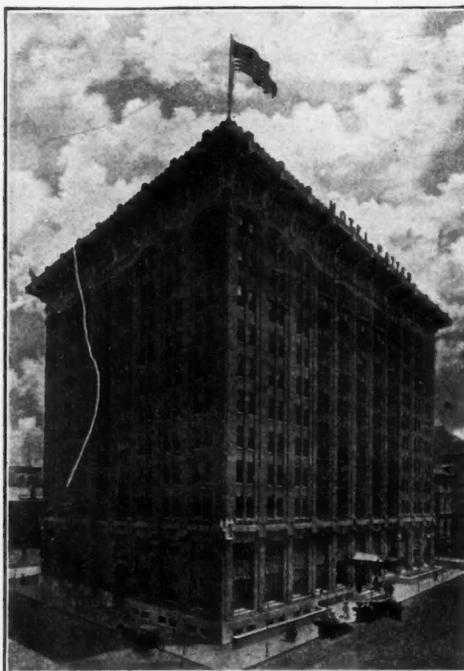
Lee Huckins Hotel, Oklahoma City, Okla.

Recognizing the serviceability of Birch, the hotels mentioned and illustrated on this page have used it for doors and interior trim.

Hotels

Using Birch Trim

Alexandria, Los Angeles, Cal.
Ansley, Atlanta, Ga.
Anthony, Ft. Wayne, Ind.
Beaumont, Green Bay, Wis.
Bentley, Alexandria, La.
Canadian Northern, Brandon, Man.
Casey, Scranton, Pa.
Chickasaw, Memphis, Tenn.
Claypool, Indianapolis, Ind.
Congress, Chicago, Ill.
Continental, Washington, D. C.
Fort Pitt, Pittsburgh, Pa.
Frye, Seattle, Wash.
Grand Canyon, Yellowstone National Park.
Grunewald, New Orleans, La.
Henry Watterson, Louisville, Ky.
Hermitage, Nashville, Tenn.
Imperial, Portland, Ore.
Lee Huckins, Oklahoma City, Okla.
Monteleone, New Orleans, La.



Hotel Patten, Chattanooga, Tenn.

Because of the wide variety of stains which it takes easily and permanently, together with its well known durability, Birch is especially suitable for hotels and apartment buildings.

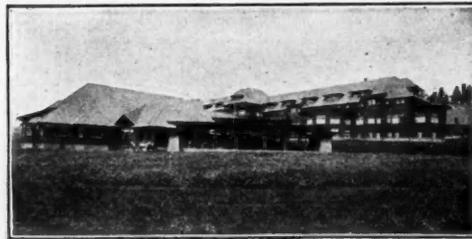
Hotels

Using Birch Trim

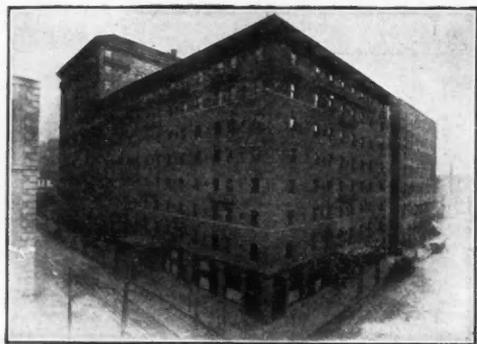
Multnomah, Portland, Ore.
New Brevoort, Chicago, Ill.
New Park, Madison, Wis.
New Seelbach, Louisville, Ky.
New Willard, Washington, D. C.
Palace, San Francisco, Cal.
Prince Edward, Brandon, Man.
Patten, Chattanooga, Tenn.
Rickman, Kalamazoo, Mich.
Rumely, La Porte, Ind.
Seminole, Jacksonville, Fla.
Skirvin, Oklahoma City, Okla.
St. Francis, San Francisco, Cal.
U. S. Grant, San Diego, Cal.
Utah, Salt Lake City, Utah.
Westbrook, Ft. Worth, Tex.
Wisconsin House, Milwaukee, Wis.



U. S. Grant Hotel, San Diego, Calif.



Grand Canyon Hotel, Yellowstone Nat. Park.



Ft. Pitt Hotel, Pittsburgh, Pa.

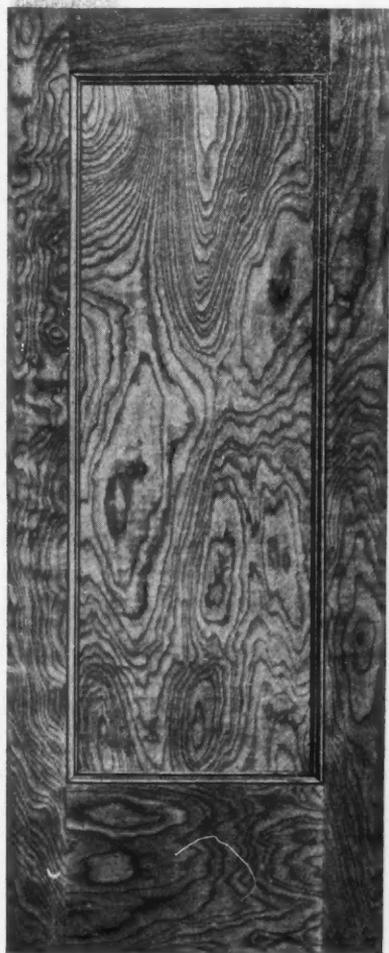


Westbrook Hotel, Ft. Worth, Texas.

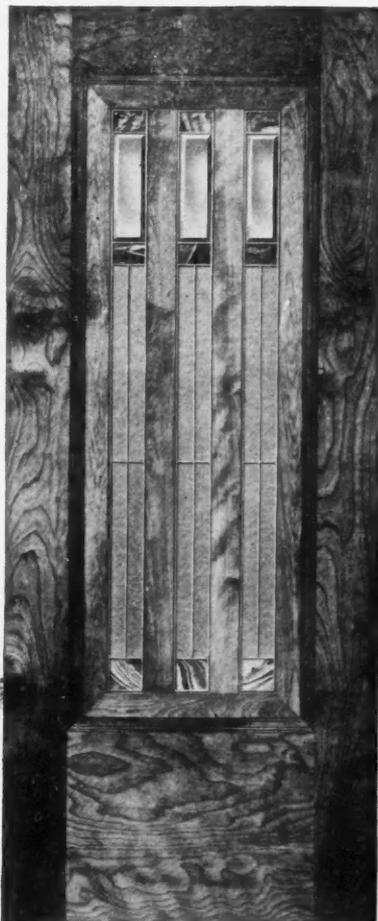
Free Birch Panels—Send Coupon on Last Page

BIRCH

Brings the Charm of the Forest Into Your Home



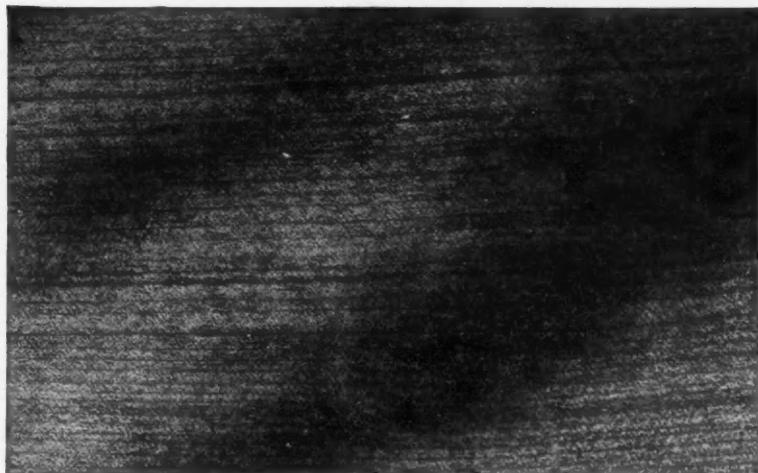
THE cuts on this page are faithful reproductions of a few of the many original and handsome designs of **Birch** veneered doors supplied by a manufacturer whose use of **Birch** has done much to make the merits of this wood more widely appreciated. An espe-



cially good effect is produced by using an inlay of White Holly and Ebony in a **Birch** door of the "Sanitary" type.

That doors can be made things of beauty is plainly shown by these few examples, and the wood that makes possible

beautiful doors is **Birch**. As if the natural richness of this wood were not enough to please the most fastidious house owner, **Birch** when stained gives such an intimate resemblance to mahogany that only the most searching scrutiny can detect the difference. **Birch**, being free from sap and taking an ideally lustrous finish, gives delightful results with any stain.



Quarter-Sawed Curly **Birch**—In the Peculiar Lustre and Beautiful Figure of this Wood Lies its Great Charm.

A combination of any of the **Birch** doors on this page with Birch trim and Red **Birch** floors will provide an interior, the wealth of tone and richness of which cannot be surpassed by any of the costly imported woods.

Handsome Birch Panels Free. Send Coupon on Last Page.

PAGE SEVEN

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

BIRCH

Its Finish and Lustre Last as Long as the Wood



Milwaukee Hospital
(Meyer J. Sturm, Architect), Milwaukee, Wis.



Lounge Room—Grand Canyon Hotel, Yellowstone National Park

HOSPITALS

Birch Finished

Bondurant Hospital, Cairo, Ill.
Brokaw Hospital, Normal, Ill.
Contagious Disease Hospital, Saskatoon, Sask.
Delgrade Memorial Hospital, New Orleans, La.
Fresh Air Hospital, Chicago, Ill.
General Hospital, Winnipeg, Man.
Grant Hospital, Columbus, O.
Hospital, Austin, Texas.
Irving Ave. Hospital, Syracuse, N. Y.
Lake View Hospital, Chicago, Ill.
Lucy Brinckley Hospital, Memphis, Tenn.
Madison Hospital, Madison, Wis.
McCustion Hospital, Paris, Texas.
Milwaukee Hospital, Milwaukee, Wis.
Monmouth Hospital, Monmouth, Ill.
New Asylum Hospital, Brandon, Man.
New Hospital, Toronto, Can.
North Chicago Hospital, North Chicago, Ill.
Nurses' Home, Saskatoon, Sask.
Saskatoon City Hospital, Saskatoon, Sask.
Southern Pacific Hospital, San Francisco, Cal.
State Hospital, Augusta, Ga.
State Hospital, Edmonton, Alta.
State Hospital, Saskatoon, Sask.
St. Luke's, South Bethlehem, Pa.
St. Mary's, Milwaukee, Wis.
Strathcona Hospital, Strathcona, Alta.
Suburban Hospital, Austin, Ill.
United Hospital, Port Chester, N. Y.
West Suburban Hospital, Oak Park, Ill.



Walker Bank Building
(Eames & Young, Architects) Salt Lake City, Utah

In hospitals and in bank and office buildings, **Birch** is especially serviceable because, being close-grained and hard, it is a sanitary wood and cannot be easily marred. **Birch** looks well and wears well. True economy is in building for permanence, so **Birch** is one of the most economical woods the contractor can use. Furthermore, it is consistent with the requirements of modern fire-proof construction.

Birch has been used throughout in the Milwaukee Hospital. The great Lounge Room—two hundred feet long by one hundred feet wide—in the Grand Canyon Hotel is entirely finished in **Birch**. The Walker Bank Building is a type of modern bank and office building in which **Birch** is extensively used.

See Our Free Offer on Last Page

PAGE EIGHT

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

BIRCH

An American Wood for American Homes



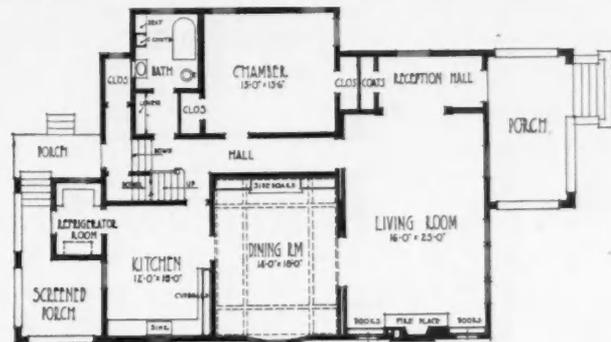
Residence of W. T. Christine, Glen Ellyn, Ill.
(J. E. Minott, Aurora, Ill., Architect.)

THE choice of interior trim determines the attractiveness of the home. It matters not how simple or how elaborate the interior may be, suitable woodwork enhances the beauty of the furnishings. Now, when excessive ornateness of trim is out of vogue, the wood itself in coloring and figure must be depended upon to yield the decorative features heretofore supplied by relief carvings, gilding, and other ornamentation.

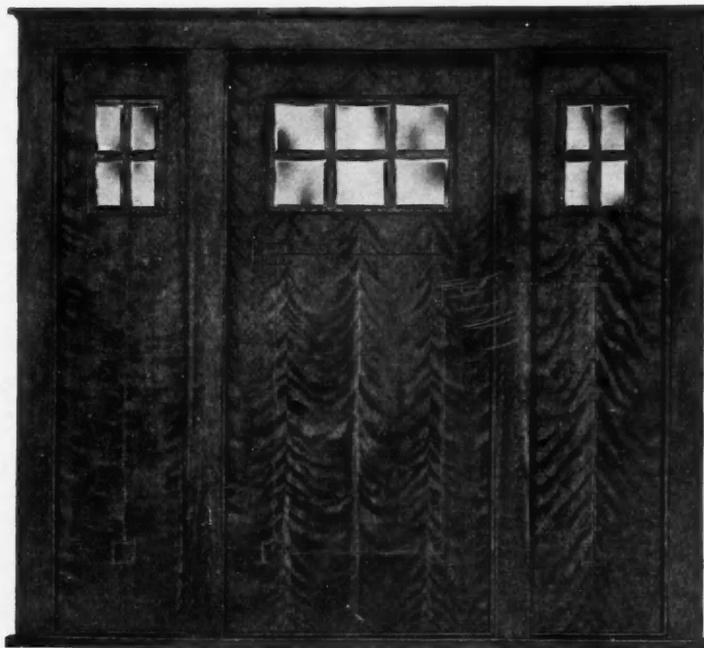
Birch is first, last, and always an American wood for American homes. Whatever color scheme is chosen, whatever style or period the rooms are furnished in, **Birch** becomes an intimate

part of the harmonious ensemble. Unlike other woods, **Birch** does not stand as something apart or foreign to the room. It merges into the general feeling, the personality of the room. If such a thing can be said of wood, **Birch** displays "good breeding." Its quiet unobtrusiveness, its restfulness, its comeliness all unite to give an atmosphere of distinction.

The coarse, gaudy markings of many other finishes make themselves felt even though the general tone of



Floor Plan of Mr. Christine's Home.



A Beautiful Art-Craft Entrance of **Birch**. The Versatility of this Wood Invites Its Use Everywhere.

the rooms is subdued by exquisite furniture and dainty hangings. Nothing short of paint can cover up their crudeness. On the other hand, **Birch** is strictly in keeping with the spirit and utility of the rooms. Its quiet, fine grain and adaptability to any stain as well as white enamel make the uses of **Birch** more general than any other finishing wood.

To obtain the utmost in beauty and durability at an appreciable saving, use **Birch**—the aristocrat of the American forests.

RESIDENCES AND OTHER BUILDINGS FINISHED IN BIRCH

Childs Restaurant, Newark, N. Y.
Christine Residence, Glen Ellyn, Ill.
Clock Factory, Newark, N. J.
Elks Building, Ft. Wayne, Ind.
Elks Club House, Vicksburg, Miss.
Elks Lodge, Ogden, Utah.
Faculty Residences (Five), German Evangelical Lutheran Society, Bronxville, N. Y.
Fitzgerald Residence, Los Angeles, Cal.
Forest Products Laboratory, Madison, Wis.
Frohling Residence, Great Neck, L. I.
Fuller Residence, Briarcliff Manor, N. Y.

Green Residence, Wausau, Wis.
Grove Residence, Orange, N. J.
Harvey Residence, Hastings-on-Hudson, N. Y.
Brunwig Residence, Los Angeles, Cal.
High School, Ames, Ia.
High School, Enid, Okla.
Jenkins Arcade Building (200 Stores) Pittsburgh, Pa.
Kress & Co., S. H. Stores in Durham, N. C., Jacksonville, Fla., Knoxville, Tenn., Fort Smith, Ark., Fort Worth, Tex., Dallas, Tex.

Lancer Tenement, New York (Bronx), N. Y.
Lefly's Dept. Store, Milwaukee, Wis.
McGoldrick Residence, Brooklyn, N. Y.
Methodist Episcopal Church, Wausau, Wis.
Post Office, Gadsden, Ala.
Pingree School, Ogden, Utah.
Provot Residence, Syosset, N. Y.
Ripsom Residence, Hempstead, L. I.
H. Weber Sons Store, Zanesville, O.
Wood Residence, Ardsley, N. Y.

Send Coupon on Last Page. Birch Panels Free.

When You Build

FOR the best combination of Durability, Service, and Economy, you will use Northern woods for these purposes—and for many more:—



Hard Maple, Beech, or Birch for floors.
 Birch for doors and interior finish.
 Basswood for ceilings and partitions.
 Hemlock for joists, studding, rafters,
 roofboards, sheathing, and underfloors.
 Elm or Maple plank for barn floors.
 Tamarack for timbers, sills, and silos.
 White Cedar for shingles.

Simply to mention these woods calls to mind their unique and varied merits.

Northern Maple has so firmly established itself as the wood for floors which will wear longest under severest conditions, that the demand for it extends around the earth.

Beech is a hard, tough, strong wood of a darker color than Maple, and especially desirable for flooring in connection with many styles of interior finish. Red Birch floors used with Birch trim give an exceedingly rich and beautiful effect.

Basswood is so light in weight and easily worked that it is one of the most desirable woods for ceilings and partitions.

Elm and Maple are among the strongest and toughest American

woods, and when used in the form of heavy plank prove inexpensive and give unsurpassed service in resisting the rough usage to which barn floors are subjected.

Hemlock is light in weight, durable, without pitch, and of great nail-holding power. Within its territory of distribution, determined by freight rates, it has long been a popular, low-priced building material.

Tamarack is a Northern wood which has always borne an enviable reputation for strength and durability. Shingles, posts, and poles of Northern White Cedar (*Arbor Vitae*) have been a standard product since the beginning of lumbering in the United States.

Many of these products of the Northern forests are shipped to every section of the United States, while all of them are available to more than half the population of the country. No architect, contractor, carpenter or homebuilder can afford to overlook their possibilities.

Mail Coupon on Last Page Today.

BIRCH

Its Popularity Proves Its Prominence



Bird's-Eye View of Pittsburgh, Pa.

The use of **Birch** trim and doors in Pittsburgh is as prominent as are the "skyscrapers" shown above.

Birch finish is used in the following modern buildings in Pittsburgh:

Fort Pitt Hotel Jenkins Arcade Building East End Saving & Trust Building Keenan Building Highland Building
Diamond Bank Building Mercantile Building May Building Vanadium Building Jenkins Building

Pittsburgh has also some forty apartment buildings finished in **Birch**.

OFFICE AND BANK BUILDINGS Where Birch Has Been Used Extensively.

Abilene National Bank, Abilene, Kan.
Auditorium Building, Milwaukee, Wis.
Auerbach Building, Salt Lake City, Utah.
Caswell Block, Milwaukee, Wis.
Citizens National Bank, Hays, Kan.
E. P. Clarke Building, Los Angeles, Cal.
Clement Block, Brandon, Man.
Colcord Building, Oklahoma City, Okla.
Diamond Bank Building, Pittsburgh, Pa.
East End Savings & Trust, Pittsburgh, Pa.
Enterprise Building, Milwaukee, Wis.
Garden City Co., Garden City, L. I.
German-American Trust Bldg., Ft. Wayne, Ind.
C. H. Henry Building, Portland, Ore.
Herskowitz Building, Oklahoma City, Okla.
Hibernian Bank Bldg., New Orleans, La.

Highland Building, Pittsburgh, Pa.
James Building Annex, Pittsburgh, Pa.
Jenkins Building, Pittsburgh, Pa.
Keenan Building, Pittsburgh, Pa.
Keith-O'Brien Building, Salt Lake City, Utah.
Majestic Building, Milwaukee, Wis.
Manufacturers' Nat. Bank, Leavenworth, Kan.
May Building, Pittsburgh, Pa.
Mellen Building, Oklahoma City, Okla.
Mentor Building, Chicago, Ill.
Mercantile Building, Pittsburgh, Pa.
Merchants & Mfrs. Bank Bldg., Milwaukee, Wis.
Newark Star, Newark, N. J.
Newhouse Building, Salt Lake City, Utah.
Peery Building, Ogden, Utah.
People's Trust Building, Ft. Wayne, Ind.

Praetorian Building, Dallas, Tex.
Public Service Building, Milwaukee, Wis.
Rand-McNally Building, Chicago.
Security Building, Los Angeles, Cal.
Spreckles Theatre Building, San Diego, Cal.
Stanrod Bank, Blackfoot, Idaho.
State National Bank, Little Rock, Ark.
Stephenson Building, Milwaukee, Wis.
Story Building, Los Angeles, Cal.
Title Insurance Building, Los Angeles, Cal.
Trust and Savings Building, Los Angeles, Cal.
Union Oil Building, Los Angeles, Cal.
Vanadium Building, Pittsburgh, Pa.
Walker Bank Building, Salt Lake City, Utah.
Watkins Building, Milwaukee, Wis.
Wells Building, Milwaukee, Wis.



A Large Office Entirely Finished in **Birch**.

Worth Having. Free Birch Panels. See Last Page.

You will get **SPECIAL ATTENTION** if you tell Advertisers you read **American Carpenter and Builder**.

From Birch Tree to Lumber Pile



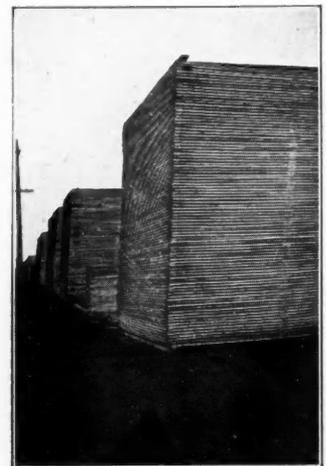
Some Good Birch Logs



A Red Birch Log Going Into the Sawmill



A Clear Birch Board 29 in. wide and 10 ft. long



Well Piled Birch Lumber in the Sawmill Yard

FREE—Handsome Set of Birch Panels

Fill out this Coupon with your name and address. Tear off and mail to us and we will send you absolutely FREE a handsome set of Birch Panels showing Birch finished in various stains as well as in white enamel.

Gentlemen:—Please send me without charge, one set of REAL BIRCH PANELS finished in various stains and in white enamel.

Name Street

Town and State

NORTHERN HEMLOCK & HARDWOOD MANUFACTURERS' ASSOCIATION
WAUSAU, WISCONSIN

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

Hewitt - Lea - Funck wish you a very Merry Christmas and a happy Prosperous New Year

We trust that the year 1913 has been as prosperous for you as it has been for the Hewitt-Lea-Funck Co., and that 1914 will be the best year in your history.

We truly appreciate the hearty co-operation extended us by the carpenters and contractors. The honesty and progressiveness of the building trade has been strikingly shown by your willingness, yes, your *eagerness*, to investigate our proposition of better lumber for less money, in the interests of your customers as well as your own. We thank you for the large number of orders sent us through your influence and know from the letters sent us that both the builders and the owners have been more than pleased.

During the coming year, we hope to be of even greater help to you. Our architectural department is at your service. Our expert estimators will check your bills without charge and provide detailed estimates.

May we double your business and profits during 1914?

May we not furnish, direct from our mills, the lumber for the buildings you put up, eliminating the middlemen's profits, saving 40% to 60%, and giving you better lumber than is elsewhere obtainable. Just sign your name to the coupon below and send us today.

Hewitt-Lea-Funck Co.
408 Crary Bldg.,
Seattle,
Wash.

**40% to 60% saving
on Lumber and Millwork**

Our plan of marketing lumber and millwork direct, saves all middlemen's profits. We control large forests in Pacific Coast States, fell the trees, operate the saw mills and ship the elegant material straight to the user at the wholesale mill price.

Mail the coupon for full particulars.

**Finest Lumber you
have ever seen**

Not for years have contractors and carpenters been able to secure such fine quality lumber and millwork. The lumber we ship is straight and clear—little sap, no big knots, no waste. Easy to work. Makes a beautiful job. We guarantee satisfaction.

Mail the coupon and get all the facts.

Mail this Xmas Coupon Get our Offer to You

Hewitt-Lea-Funck Co.

408 Crary Bldg., Seattle, Wash.

(BE SURE TO WRITE PLAINLY)

Please send me the following:

Catalog and general price list of Lumber and Millwork. Special Silo Folder.

Name _____

Town or Post Office _____

Street or R. F. D. No. _____ State _____

Business _____

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

LUMBER

Direct to You At Saw Mill Prices

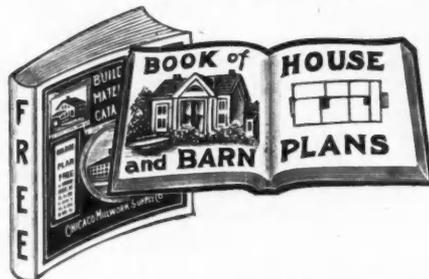
We sell direct from mills and save you all dealers' and middlemen's profits.

Dimension Stock—	Per M.
All sizes 2x4 to 2x12, strictly No. 1 . . .	\$17.50
Timbers—	
All sizes, 4x4 to 10x10, strictly No. 1 . .	17.50
Fencing—	
No. 1	20.00
No. 2	15.50
Flooring—	
No. 1, dressed and matched. 1x4	20.50
No. 2, " " " "	14.50
No. 1, " " " " 1x6	20.50
No. 2, " " " "	16.50
Boards—	
No. 1, up to 1x10, 10 to 20 ft. lengths . .	18.50
No. 2, " " " "	16.50
If boards are shiplapped, 50c per M extra.	
Drop Siding—	
No. 1, 1x6	20.00
Clear and free from all defects.	23.00
Shingles—	
Extra clear red cedar	3.50
Star A Star	3.15
Barn Boards—	
1x12, surfaced one side, selected	23.00

Send list of requirements and will name prices, freight paid to your own city. All our lumber is new, bright, clean—no wreckage. We positively guarantee satisfaction, safe delivery and grades to the highest standard.

We can also *save you money* on all kinds of millwork, doors, windows, storm sash, paint, hardware, roofing, plumbing, heating, etc.

Two Valuable Books Free



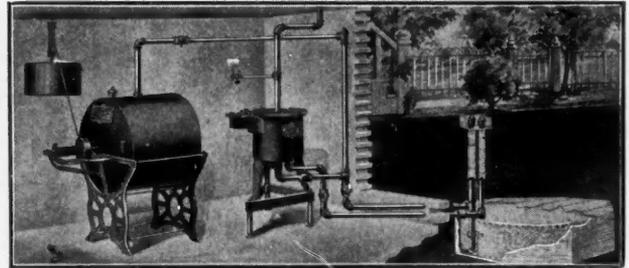
Write today for Building Material Catalog No. 43. Also Book of House and Barn Plans No. 53. Address

CHICAGO MILLWORK SUPPLY CO.
—AMERICA'S GREATEST SASH AND DOOR HOUSE—
1422 West 37th Street CHICAGO, ILLINOIS

Light for the Farm Home

It is the ambition of every live farmer to have a gasoline engine to pump his water and cut his feed. But gasoline has even greater use than that on the farm. It can be used to operate a lighting system that is as good as is found in big cities,—and cheaper. The result of gasoline lighting is a brilliant, powerful, steady white light, when a proper device is installed to make the gas,—for this is real gas lighting.

The picture that is shown here illustrates such a gasoline



gas-machine. It is simple to operate, is good for a lifetime. is installed cheaply, and produces light six times cheaper than kerosene. The Detroit Heating & Lighting Company manufacture this gas plant.

There is beautiful reliability to a gas machine like this. Smoothly and silently it works, giving a pressure of gas steadier even than that found in city mains. The vapor given off by the gasoline in the tank rises through the pipes with equal force at every point, issues through the jets in an even stream, and burns with a powerful yet soft light of intense power from cellar to attic, or in barns and outbuildings.

A good gas machine consists of three parts—a carburetor or storage tank, an air pump, and a mixer. The carburetor, which varies in capacity according to the number of lights used, is a metallic tank sunk at some distance from the house, and below the frost line. The air-pump forces into this carburetor a steady yet very gentle stream of air, which passes slowly over the surface of the gasoline, becomes saturated with the gasoline vapor or gas, rises again to the mixer, where it is automatically mixed with just the right proportion of air to give the strongest possible light, and finally passes into all the "risers" and smaller pipes, which convey it to the burners all over the house.

Not every sort of storage tank air pump or mixer, however, will produce good results. Gas under pressure is tremendously elastic. It responds to the slightest relaxation or increase of that pressure. The machine that maintains the pressure must be exact as a watch, and the carburetor must be made with scientific care to get the best results. But when these matters have been taken care of, as in a scientifically constructed gas machine such as the one illustrated here, there is no better or cheaper light obtainable than this gas light. It is a boon for the farmer.

A well made gas machine is a permanent investment. Machines installed as much as thirty years ago are still giving excellent service. They are safe; nothing but malice could ever make one dangerous. Neither are they wasteful; but when the lights are not burning they automatically cease work.

For further particulars address the Detroit Heating & Lighting Co., 546 Wight St., Detroit, Mich.

Dow Foundry Enlarged

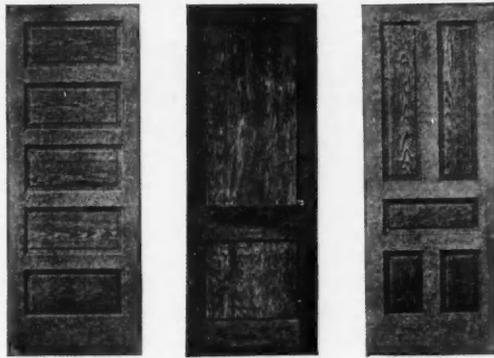
The Dow Wire & Iron Works, of Louisville, Kentucky, makers of ornamental and structural iron work, iron fencing, wire cloth, etc., have lately added 77 by 88 feet to their foundry.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

PRE - INVENTORY SALE WE ARE OVERSTOCKED

Prices quoted are F. O. B. CHICAGO and for CASH WITH ORDER
Order quick, this overstock will be sold out in a few days.

CLEAN NEW STOCK DOORS FOR OIL FINISH



5X Pan.
No. 202

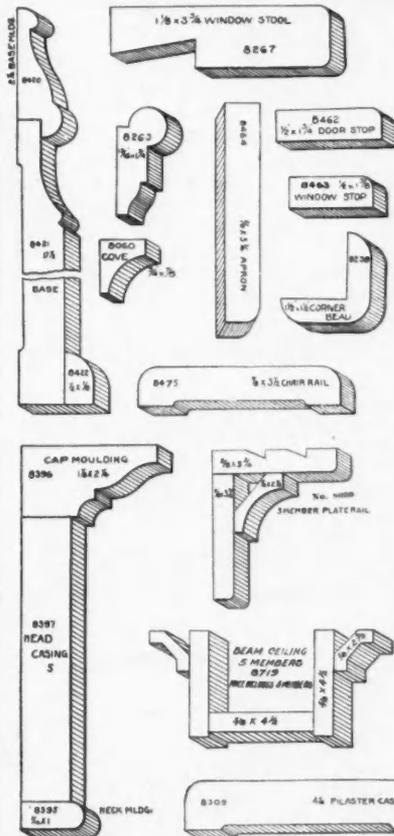
2 Pan.
Lincoln

5 Pan.
No. 201

Size of Opening	5X Pan. WP S&RYP Pan- els 202 3/4	5X Pan. Oak	2 YP Pan. Pine	2 Pan. Oak	5 Regular Pan. WPS&RYP Pan.
2- 0 x 6- 0	1 3/4 in. \$1.86	1 3/4 in. \$3.10	1 3/4 \$1.98	1 3/4 \$3.60	1 3/4 \$1.43
2- 0 x 6- 6	2.07	3.45	2.21	3.95	1.60
2- 2 x 6- 6	2.07	3.45	2.21	3.95	1.60
2- 4 x 6- 6	2.07	3.45	2.21	3.95	1.60
2- 6 x 6- 6	2.10	3.50	2.24	4.00	
2- 0 x 6- 8	2.12	3.53	2.26	4.03	1.65
2- 2 x 6- 8	2.12	3.53	2.26	4.03	1.65
2- 4 x 6- 8	2.12	3.53	2.26	4.03	1.65
2- 6 x 6- 8	2.15	3.58	2.30	4.08	1.70
2- 8 x 6- 8	2.16	\$3.12 3.60	2.31	4.10	
2-10 x 6- 8	2.55	3.70	2.72		2.00 \$3.00
2- 0 x 7- 0	2.45		4.08	2.62	4.58
2- 2 x 7- 0	2.45		4.08	2.62	4.58
2- 4 x 7- 0	2.45		4.08	2.62	4.58
2- 6 x 7- 0	2.46	3.57	4.10	2.63	4.60
2- 8 x 7- 0	2.52	3.66	4.20	2.69	4.70
2-10 x 7- 0	2.60	3.78	4.33	2.78	4.83
3- 0 x 7- 0	2.70	3.93	3.60	2.88	3.95
					2.15 3.15

STRICTLY HIGH-GRADE INTERIOR TRIM

CLEAR, CLEAN BRIGHT AND
SMOOTH FOR OIL FINISH



PRICE PER 100 LINEAL FEET

Stock No.	Yellow Pine	Plain Red Oak
8420	\$1.10	\$2.35
8421	3.25	6.95
8422	.33	.85
8396	1.65	3.50
8397	2.20	4.65
8395	.45	1.00
8267	2.65	5.60
8464	1.70	3.50
8263	.66	1.70
8060	.33	.85
8462	.60	1.55
8463	.45	1.15
8238	1.75	3.75
8475	1.70	3.00
8600	4.40	9.40
8719	8.15	17.25
8309	1.90	4.00

OAK FLOORING

	Price per 1000 feet
3/4 x 1 1/2 in. face, Select Oak	\$40.00
3/4 x 2 in. face, Select Oak	42.00
3/4 x 1 1/2 in. face, Clear Plain Sawed Oak	49.00
3/4 x 2 in. face, Clear Plain Sawed Oak	51.00
3/4 x 1 1/2 in. face, Clear 1/4 Sawed White Oak	64.00
3/4 x 2 in. face, Clear 1/4 Sawed White Oak	65.00
3/4 x 1 1/2 in. face, Clear 1/4 Sawed Red Oak	62.00
3/4 x 2 in. face, Clear 1/4 Sawed Red Oak	65.00
1 1/4 x 2 1/4 in. face, Select Oak	54.00
1 1/4 x 2 1/4 in. face, Clear Plain Sawed Oak	63.00

MAPLE FLOORING

Polished, Tongued and Grooved, Matched
Ends and Bored for Blind Nailing

	Price per 1000 feet
3/4 x 1 1/2 in. face, Select Maple	\$33.00
3/4 x 2 in. face, Select Maple	35.00
3/4 x 1 1/2 in. face, Clear Maple	40.00
3/4 x 2 in. face, Clear Maple	41.00
1 1/4 x 2 1/4 in. face, Select Maple	45.00
1 1/4 x 2 1/4 in. face, Clear Maple	50.00

CONTRACTORS: We will send you our Bargain List every month if your name is on our list. Write and ask us to put it there.

NEW 1914 CATALOG No. 34 MAILED ON REQUEST

Chicago & Riverdale Lumber Co.

**345 East 136th Place
CHICAGO, ILLINOIS**

WHOLESALE TO THE CONTRACTOR

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

A Christmas Hammer

The Van Doren Manufacturing Co., Chicago Heights, Ill., are making an interesting offer in their advertisement in this issue. It is a seasonable Christmas gift proposition. The Van Doren people line up with the "Spugs," that Society for the Prevention of Useless Gifts. They know that a good serviceable drop forged hammer would be a good deal more acceptable as a Christmas gift for any carpenter or handy-man-with-tools than any amount of pretty but useless truck that he often receives.

To introduce the Van Doren nail hammer they are making this special offer. The Van Doren hammer is now made in 13 ounce and 16 ounce sizes.



Agents Wanted

The Evergrip Gliding Caster Co., Dept. V, 20 Warren St., New York City, want agents and distributors everywhere to sell their chair tips. They are cheap and there's a neat little profit in it. Write these people for their proposition to carpenters. They also send a sample set free of charge.



Ventilation for Homes

The need for ventilation in living rooms and in sleeping rooms has been well taken care of by the Pullman Automatic Ventilator Co., York, Pa. In fact, their system of ventilation is so complete and yet so simple and thorough, it is small wonder that builders in every part of the country are using the Pullman Automatic Ventilator in every home they build.

There is nothing that builds a good reputation for a carpenter like attention to details. Any real, practical suggestion offered to the home builder is usually looked upon with favor, and the credit for the suggestion goes to the builder. The house owner naturally thinks more of a man who, in

constructing a house, tries to make it more habitable. A short statement of the value of good, fresh air in the home usually lands an order to install the necessary ventilators. Aside from the good will of the man for whom you are building, there's the profit you make on the ventilators and pay for the extra work of installing them.

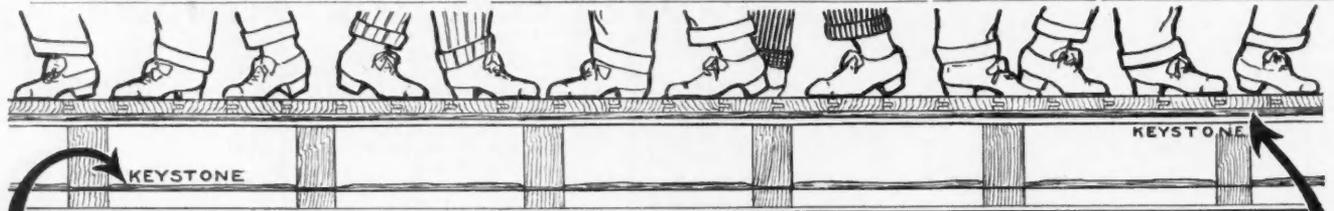


Three Views of Pullman Ventilator

But let us tell you something about the Pullman Ventilators. These ventilators are usually installed in the lower sash rail of the window or else in a portable panel with a sliding plug to make installation easy. The ventilator illustrated is made in three sizes, viz., 2 x 12 inches, 3 x 15 inches, and 4 x 18 inches, inside measurement. The box is brush brass, and the hood is black enameled steel, copper screened. Brass screws are used throughout. While this particular ventilator is not high priced, the workmanship on it has not been sacrificed nor the use of good materials stinted.

The Pullman Automatic Ventilators are right on the job every minute of the time. They allow a steady stream of fresh air to enter the room without chilling it or making a draught. The air intake can be closed when desired. The use of a Pullman Ventilator does not interfere with the closing or locking of the window. Besides, there is the additional advantage that when placed in a plain board or in a panel, they can be removed from the window when necessary.

The catalog and pamphlets supplied by the Pullman Automatic Ventilator Co., York, Pa., are nicely arranged and printed. The illustrations and descriptions are as plain as it is possible to make them. If you have never seen a Pullman Ventilator, you should get the catalog and we're sure that you'll advocate their use in every home you build.



2800 People on the Floors—Not Heard in Rooms Below

This is what the Elks write us of their Temple in Elkhart, Ind., where all the floors and walls are insulated with Keystone Hair Insulator. It is conclusive proof of the high efficiency of Keystone as an insulator against sound.

This is one reason why it is universally used in music conservatories, public schools, hospitals, apartment houses, etc.

KEYSTONE HAIR INSULATOR

is made of a thick layer of thoroughly cleansed and sterilized cattle hair, securely fastened between two sheets of strong, non-porous building paper. This cushion-like construction contains the greatest quantity of dead air, so that sound waves are absorbed instead of transmitted, as in the case of ordinary sheathing paper.

Keystone Hair Insulator has no equal as an insulator against cold and heat. It will not settle or pack down, dry out, rot, or attract moisture. It is an effective fire retardant, as it will not carry flame. Is inodorous and vermin-proof, and will last as long as the building.

Many other advantages of Keystone are fully described in our Catalog. Write our nearest branch for a copy and sample

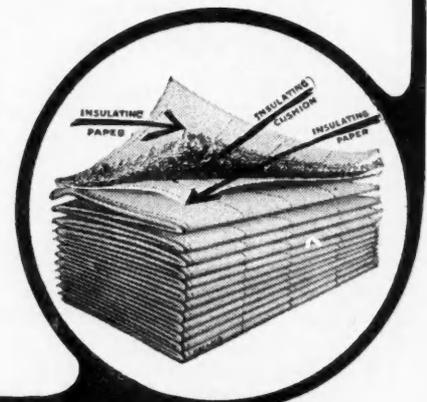
H. W. JOHNS-MANVILLE CO.

MANUFACTURERS OF ASBESTOS AND MAGNESIA PRODUCTS

ASBESTOS

ASBESTOS ROOFINGS, PACKINGS ELECTRICAL SUPPLIES, ETC.

- | | | | | | |
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| | Montreal | Winnipeg | Vancouver | 1600 | |



You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

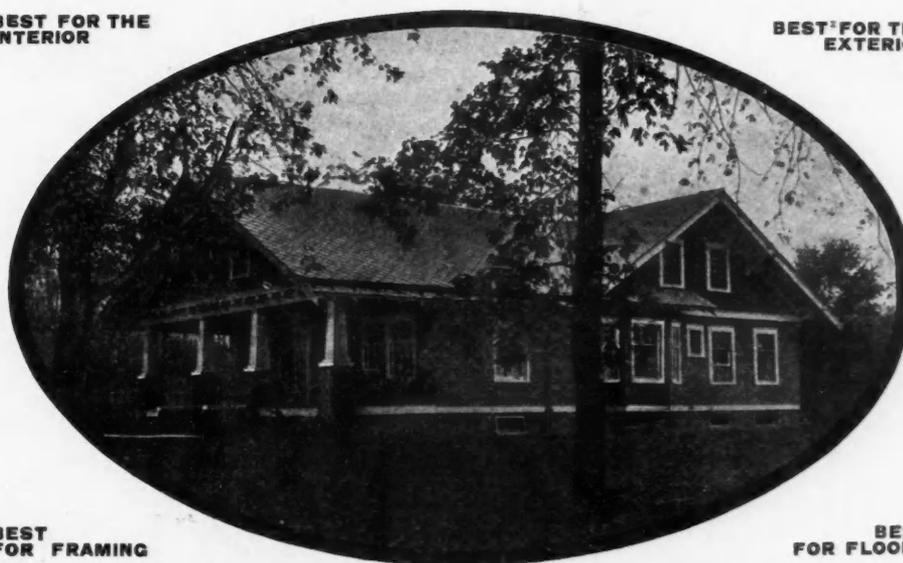
This Man Knew How to Build

This is a lumberman's home, the home of a man who knows all about lumber values and the worth of other kinds of material sometimes used by uninformed builders.

Fortified with facts he selected Arkansas Soft Pine for he realized it was the best value he could secure. Having handled building materials all his life he knows lumber is the best building material and Arkansas Soft Pine is the best lumber.

**BEST FOR THE
INTERIOR**

**BEST FOR THE
EXTERIOR**



**BEST
FOR FRAMING**

**BEST
FOR FLOORS**

The All Arkansas Soft Pine Home of R. T. Paddock, Pana, Illinois.

Here are some of the many reasons Mr. Paddock gives for selecting Arkansas Soft Pine for Interior Trim and Woodwork:

"It is my experience that no wood takes stain better than this character of yellow pine. We stained each room differently. . . . It is a fact that you can get better results with Arkansas Soft Pine, if you want to stain your home, than with any other wood, and I see no reason for using a more expensive wood if you are going to cover it up."

Whether you build for yourself or whether you build homes for others Arkansas Soft pine gives full value for every dollar invested in it.

Get a copy of "How to Build" and the WHY will become self-evident. You will find in that consideration of the building material value problem a free, frank and fair discussion of the subject. Some valuable basic facts are given. **Get the Book!**

Arkansas Soft Pine Bureau

308 South Canal Street

Chicago, Illinois

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

**TRY IT NOW
— FREE —
The MONARCH
CORNICE MOULD**



**Makes
Perfect
Corners**

The most expert hand-troweling cannot make as perfect plaster cornices and corners as the MONARCH CORNICE MOULD.

This tool will save you hours of time and hard labor. Makes the plasterer's work easy. A sure money-maker.

The MONARCH CORNICE MOULD consists of a blade holder, ten assorted blades, and a brass blade scraper. This Mould has a wall and ceiling guide. Impossible to do a poor job. Frame is made of red birch and black cherry. Metal parts of aluminum—strong, light and non-rusting. Blades of zinc encased in white pine specially treated with oil to resist action of water and plaster.

Special Price Reduction

Send me the FREE COUPON now and get the benefit of my SPECIAL LOW PRICE on the MONARCH CORNICE MOULD. Costs you nothing to try. It's the best friend a plasterer or decorator could have. Offers a good chance to make money this winter putting plaster cornices in houses or other buildings. No experience necessary.

Write for Free Circulars or Send the Coupon Now

TIMOTHY F. HORAN

10 Maple Street COOPERSTOWN, NEW YORK

— FREE TRIAL COUPON —

Timothy F. Horan, 10 Maple St., Cooperstown, N. Y.
Please send me without any charge whatever, your MONARCH CORNICE MOULD on Five Day's Free Trial. It is understood I do not have to keep it unless I want to buy it. You are to pay transportation charges both ways.

Name.....
Address.....
Town and State.....

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

New Model Flexible Arm Sander

A flexible arm sander is now being marketed by the J. A. Fay & Egan Co., 545-565 W. Front St., Cincinnati, O., which is especially adapted to the work of the carpenter and builder

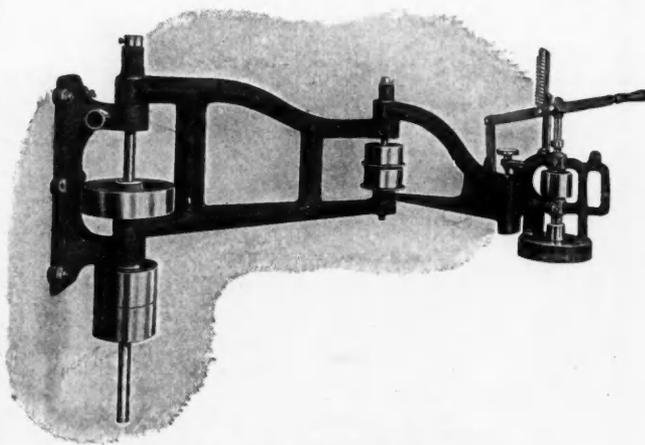


Fig. 1. New Model Fay & Egan Flexible Arm Sander

who does his own sash, door and blind work. It can be used in small shops as well as large shops and has proved very useful, also time and labor saving.

An idea of the construction of this machine can be seen in Fig. 1. It consists of a double arm swinging on ball bearings set in a heavy bracket, which can be attached to a wall or post. The arms have a 6-foot swing, and the hollow upper section serves as a conveyor pipe for sand dust, which is taken from as near the disc as possible. This feature is important in the protection of the health of the operator. The sand disc or head is 6½ inches in diameter and has a vertical

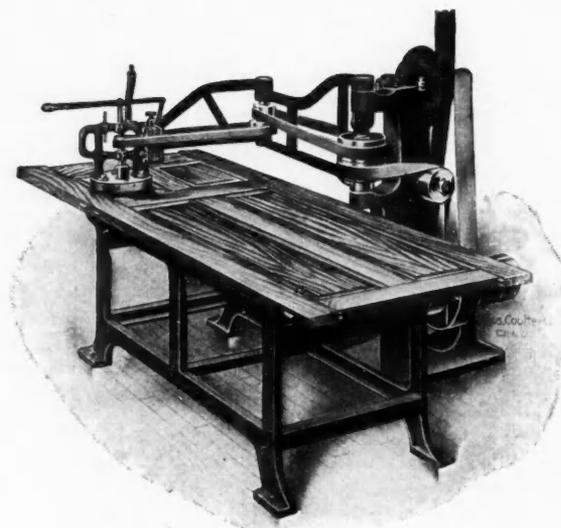


Fig. 2. Showing Sander at work Smoothing up a Door

adjustment of 5 inches, by hand lever, which serves to bring the disc down to the work.

The frame can be supported on a column which has a blower built in and carries the countershaft as shown in Fig. 2. An iron table is set before the column to support the door or sash. Boring and routing attachments can be had if wanted for making stair risers, etc.

Further information can be had from the above named company.



Boys *will* track in snow and mud from outdoors. You can't stop that, but you can protect your floors by finishing them with Liquid Granite, as this floor is finished.

Liquid-Granite is water-proof, mar-proof and sanitary. Floors finished with it are safe from snow and water. Even heavy blows won't crack this varnish, and washing with soap and water does not affect its appearance, except to clean and brighten it up.

Years of service have proven Berry Brothers Varnishes the best for every varnish need.

Luxeberry Spar Varnish is a water-

proof varnish that never turns white or peels—ideal for marine use and all kinds of exposed outdoor finishing.

BERRY BROTHERS VARNISHES Luxeberry Wood Finish is best for the finest rubbed or polished finish on interior woodwork.

Fifty-five years' experience in varnish making are back of every Berry Brothers' product. Use and specify these varnishes — they mean permanent satisfaction.

World's Largest Varnish Makers

Berry Brothers

Established 1858

Detroit

(Incorporated)

Michigan

FACTORIES: Detroit, Mich.; Walkerville, Ont.

BRANCHES: New York, Boston, Philadelphia, Baltimore, Chicago, St. Louis, Cincinnati, San Francisco, London, Eng.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

E. W. Edwards Honored

PROMINENT CINCINNATI MANUFACTURER CHOSEN AS
PRESIDENT OF BUSINESS MEN'S CLUB

Great Believer in Athletics

Every week day at noon a lithe, young man, with a business appearance, may be seen walking briskly into the Cincinnati gymnasium. He always has with him the ten heads of departments of the company of which he is president, and they take the gymnastic class exercises. In 30 to 40 minutes the eleven men come out, their step even a little brisker.

The leader of the ten heads of departments is E. W. Edwards, president of the Edwards Sheet Metal Manufacturing Company, who has just been elected president of the Business Men's Club. "Nothing like exercise to maintain the enthusiasm, the mental and physical vigor of business men," says Mr. Edwards.

He is only 39, perhaps the youngest president the Business Men's Club has had. But he has an abundance of energy. He believes in exercise. Twenty-five years ago he exercised with his fists. Edwards was not a physical giant, but he had ability and energy and a reputation as a "scrapper," who could whip any boy of his size in the East End. He was always ready for a battle, and he is pugnacious still, only his pugnacity has been turned to fighting for other things now, such as Cincinnati's commercial and civic development.

For five years he captained and managed a baseball team and was known as a speedy, heady player. Now he plays golf and last year won the Hamilton county golf championship. He is a good swimmer, too. He plays and works hard and intelligently.

Mr. Edwards was born in Cincinnati of Irish and English parentage, attended the old Fourth District school and Woodward High school. At 17 he began work with Scott & Co., in the corrugated iron works business on the Public

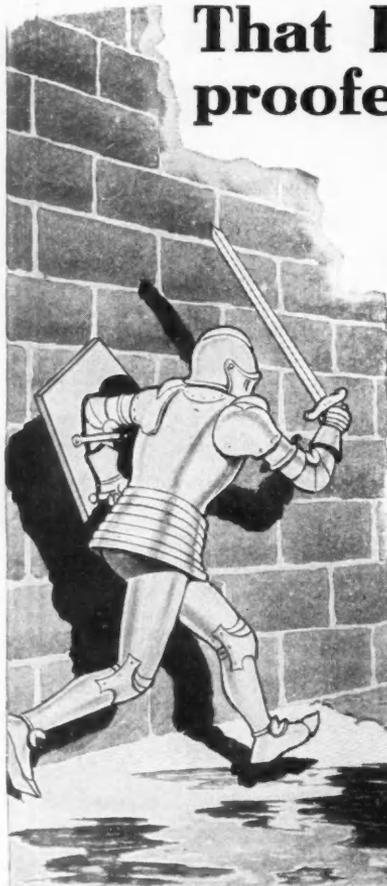


E. W. EDWARDS

New President of the Cincinnati Business Men's Club

landing. Not many years later he bought out the concern. He built a corrugating plant for the Reeves Iron Company at Canal Dover, O., and when this was bought out by the steel corporation he returned to Cincinnati and established the Edwards Manufacturing Co. At first he employed one clerk and three other men. Now he employs a factory force of about 300 and an office force of about 75 in the plant at Fifth street and Eggleston avenue.

That Building is Perfectly Water-proofed That is Waterproofed With



The Demon of Dampness cannot penetrate the concrete or stucco that is protected by Ceresit. He cannot worm his way between brick, stone, or tile that is bound by Ceresitized cement mortar. He cannot enter basements where floor and walls are protected by a plaster coating of Ceresitized cement mortar. Use Ceresit wherever you want to keep water in or out.

It is—**Moisture-Proof**—even under hydrostatic pressure.
Disintegration-Proof—when attacked by frost or sea water.

A Thorough Protection—permeating every particle of the concrete, mortar, or stucco.

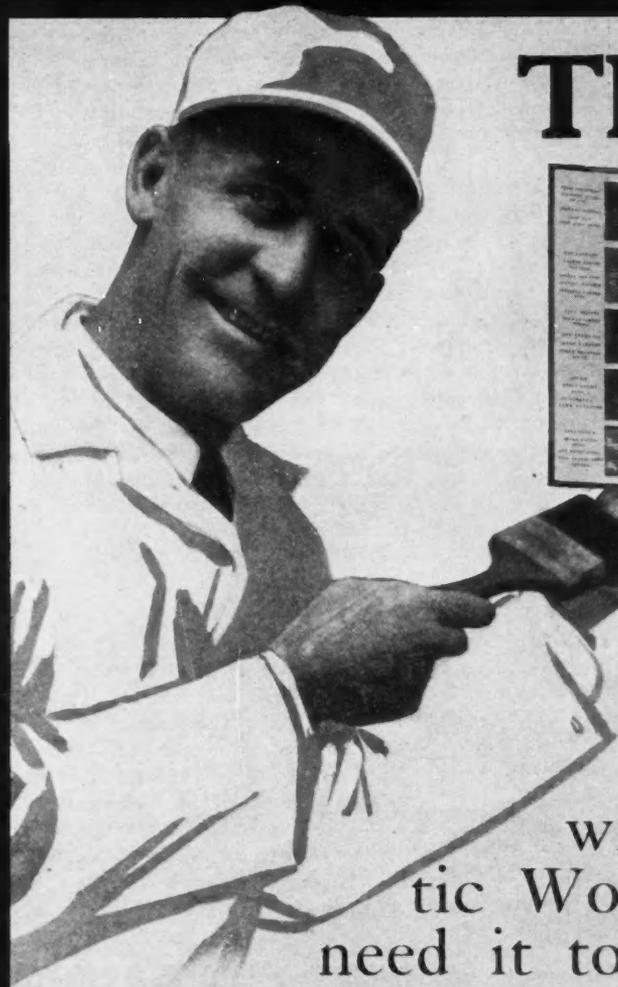
Harmless—in that it does not affect the strength of the concrete, has no odor and cannot discolor.

Permanent—Ceresit, like the cement with which it is mixed, grows stronger with age.

Ceresit is a paste to be dissolved in the gauging water used in mixing concrete, cement mortar, or stucco. It water-proofs reliably, and is harmless. What contractor can ask more? Write for our interesting "Book of Evidence."

Ceresit Waterproofing Company
911 Westminister Bldg., Chicago, Illinois

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



This \$1.00 Portfolio Free

It displays on actual woods the numerous beautiful effects obtainable with Johnson's artistic Wood Finishes. You need it to show your clients how their floors and woodwork will look when finished the Johnson way

Johnson's Wood Dye
In 17 shades—for the artistic coloring of all wood, soft and hard.

Johnson's Prepared Wax
A complete finish and polish for all woods.

S. C. Johnson & Son, Racine, Wis. "The Wood Finishing Authorities"

Value \$1.25—Free **Value \$1.25—Free**
S. C. JOHNSON & SON, Racine, Wis.

Please send me, Free, your \$1.00 Portfolio of Wood Panels with specifications and instructions, also your 25c 1913 Book—BOTH FREE.

Name

Address

My Dealer's Name is

His Address

AC&B12

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



Building a Reputation with Flex-A-Tiles

Hundreds of carpenters all over the country are doing just that. They know they can point with honest pride to every roof they lay with Flex-A-Tiles.

No other shingles are made with such care and expert precision. This is why more and more building owners are insisting that only Flex-A-Tile Asphalt Shingles be used. The Asphalt we employ is the finest mined in the Rocky Mountains. We pay the top market price for the wool felt—felt composed of long, strong, naturally oily wool fibres. The chipped slate or granite we crush into the surface comes from certain selected Vermont quarries. This slate, or granite, we sift 3 times. And we lose 30 per cent. But all these extra precautions enable us to give you a better looking, longer wearing shingle. It is to your direct profit to roof only with Flex-A-Tiles.

Take the time now to
write us for a sample.

THE HEPPE'S CO.

Also manufacturers of Utility Wall Board, Asphalt Paint and Asphalt Roofing in any Finish

1010 45th Avenue Chicago, Ill.

Flex-A-Tile Asphalt Shingles come in a natural red, garnet, greenish-gray, emerald or brown color

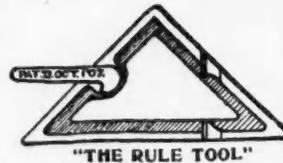
Death of A. G. Rodgers

Ashmead Gray Rodgers for twelve years Superintendent of The Carborundum Company's plant at Niagara Falls, died October 23, 1913, as the result of injuries sustained through an accident October 5. Mr. Rodgers had a host of friends and acquaintances throughout the mechanical and chemical world and they will sincerely feel the loss of a man who was so pleasing in personality, democratic in his attitude to others, and so capable in his chosen line of work. Mr. Rodgers was a native of Albany, N. Y., having been born there in 1872. Previous to his coming to The Carborundum Company as superintendent he was superintendent of the Eddy Electrical Company at Hartford, Conn. His funeral services were held Saturday, October 25, from St. Peter's Church at Niagara Falls and was attended by several hundred of the employees of The Carborundum Company, members of the Niagara Club, and other friends. Mr. Rodgers was a member of the American Chemical Society, Engineer's Society of New York, Chemists' Club, Niagara Club, University Club and Country Club of Niagara Falls, and several other scientific and social organizations.



The Rule Tool

Every carpenter has felt the need at times of a simple device which he could carry in his pocket and by which he could mark a square cut for sawing, scribe to a line, or mark an accurate miter. The Rule Tool, made by the Rule Tool Co., 15 Hermon St., Newark, N. J., allows him to do this. As will be seen by the illustration, the



Rule Tool consists of a triangle on which are two lugs and a cam for holding an ordinary two-foot rule closely against the lugs. This simple device will be found useful in a great many places and will take the place of a detached tri-square or bevel, while its pocketability insures its always being on the job.

The Rule Tool Co. also offer their well-known double point scriber and their flexible bit gauge. Write them today for particulars.



Wood Show Progressing

At the headquarters of the Forest Products Exposition in Chicago, reports are being received from all sections of the country, including important Canadian points, indicating the liveliest interest in, and general support of the big undertaking. The prospectus, containing floor plans of the Coliseum, at Chicago, and Grand Central Palace, New York, and rules and regulations governing the exhibition, are being distributed, also posters for display in the offices and plants of every branch of the wood industry, and sticker-seals for application to mail correspondence. In the "foreword" of the prospectus is the significant statement, "the assurance is conveyed that the rules and regulations have been prepared with the welfare of the greatest number of exhibitors and the ultimate purpose of the Exposition in mind," evidently with the purpose of anticipating any individual objections.

Manager George S. Wood is authority for the statement that the subsidiary organizations forming the National Lumber Manufacturers' Association are proceeding enthusiastically and in careful deliberation with plans for their respective and joint displays, and many organizations and individual concerns are making preparations for more or less elaborate individual displays. This applies also to the affiliated products and by-products of the industry. Secretary J. E. Rhodes, of the National Lumber Manufacturers' Association and the Forest Products Exposition Company, recently returned from

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

1872

1913

41 YEARS OF FAIR DEALING

WITH THE
Carpenters, Builders and Contractors

IS YOUR assurance that we can serve you to your advantage. We ask nothing more than a trial. When in need of builders' hardware send us your plans and specifications. Let us bid on your requirements. We can give you better value at a lower price than any other hardware dealer.

**Tool for Every Trade
Electrical Supplies
Contractors' Supplies
Builders' Hardware**

(80,000 Different Items)

Our years of experience, our immense buying power, our reputation have enabled us to place before you the largest assortment of well-known builders' hardware, tools of all kinds, etc., in the country. All the leading manufacturers are represented. Our stock is the pick of the choicest and most reliable.

Your orders will be filled promptly. No delays; no waiting for goods out of stock. You will be entirely satisfied with our selection, for our knowledge of hardware and supplies insures your getting the best. Each piece in every shipment is sorted and labeled from the specifications and packed so the workmen will lose no time in handling.

Let us bid on your next contract. Whether your order is large or small, we appreciate it and give it the individual attention that makes buying from us both pleasant and profitable.

When you are in Chicago, call on us. Let us show you over our big store. Look over our display of "quality" hardware. You will go away with the feeling that we can make good on our promise to give you the best service, the greatest satisfaction, the utmost quality at a moderate price.

Let us Figure on Your Next Bill

ORR & LOCKETT

Established 1872 **L HARDWARE CO.**

14-16 West Randolph St., CHICAGO, ILL.

**LOW
PRICES**

**HONEST
VALUES**

You will get **SPECIAL ATTENTION** if you tell Advertisers you read American Carpenter and Builder.

a trip through the Southeast and reported activity among the lumber and manufacturing interests in that section in preparing for the Exposition.



Winter Work Sawing Wood

A profitable field for winter profits for builders is revealed in the following letter from a contractor who has invested in a Top Swing Oscillator Wood Saw Machine. It is manufactured and sold by Mr. W. H. Pence, Fairfield, Iowa.

GILLOGLY & HOERTZ,
CONTRACTING CARPENTERS
Van Buren and Third Sts.
Savanna, Ill., October 18, 1913.

W. H. Pence,
Fairfield, Ia.

Dear Sir:

I am sending you photo of my saw rig that I bought from you last fall. I find the saw frame just as you represented it in your catalog. The 7-H. P. engine pulls a 28-inch saw fine, and will cut through 12-inch sticks. As to speed in operating—it is fast enough for me. I cut a half cord of wood in four minutes, twice in two. I have run different makes of wood saws and the best time for one cord of wood was from ten to eleven minutes. Now, I think I can saw a half cord of wood, twice in two, in three minutes by sorting wood best suited for fast cutting. For safety to the workmen when operating saw—it is almost impossible to injure oneself. I had the experience to have a saw burst, from being full of frost in the morning, just as starting to saw. Most all the pieces were on the ground under the saw



Contractor Gillogly and His Power Wood Saw Machine

mandrel. If it were not for the steel cage over the saw, evidently some one would have been hurt

Please send me your catalogs when they are complete.

Yours very truly,

FRED A. GILLOGLY.

It is surprising the volume of wood sawing work there is to be done and that comes to the man equipped with one of these wood-saw machines. It is genuine winter work and there is good money in it.

A large number of our readers will be interested in this proposition. They can obtain full particulars about these machines by writing Mr. W. H. Pence, Fairfield, Iowa. Investigate this proposition now.

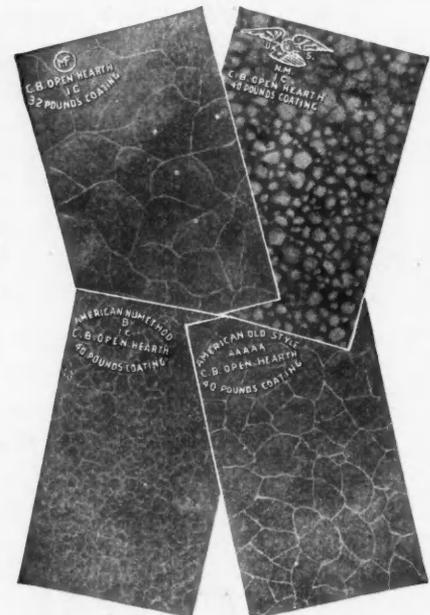
Copper Bearing Open Hearth Steel

gives more lasting service and satisfaction for roofing purposes. A series of actual service tests with uncoated sheets, have proved conclusively the superiority of this material for

ROOFING TIN

Copper Bearing terne plates are carefully manufactured, uniformly coated, and high quality in every respect. Each plate is stamped "C. B. OPEN HEARTH" in addition to brand and weight of coating, as indicated by accompanying well known brands. You should use no other.

We also manufacture Apollo Best Bloom Galvanized Sheets, Black Sheets of every description, Copper Bearing Sheets, Formed Metal Roofing and Siding Products, Tin Plates, Etc. Write for information and booklet "Copper in Steel." Every roofer and builder should read it.



American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

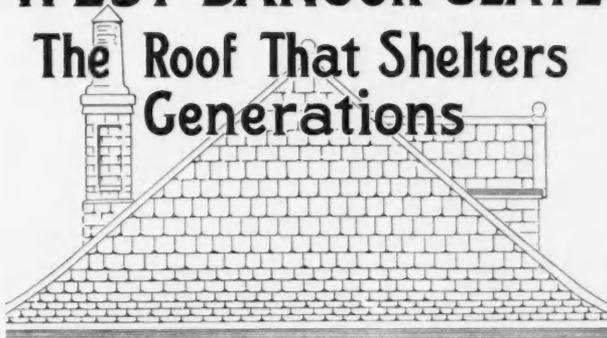
DISTRICT SALES OFFICES:

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis
Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City
Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

WEST BANGOR SLATE

The Roof That Shelters Generations



If you are building for PERMANENCY and SATISFACTION, consider West Bangor Slate. Durable as the rock from which this slate is cut. West Bangor will last the lifetime of the building. These slates are practically free from breakages even under the most trying conditions.

All claims for "man-made" roofings to the contrary, West Bangor Slate stands pre-eminent as a "real" roof for all private or public buildings.

A moment's consideration, will convince you that for durability, low repair cost, cleanliness, and decorative beauty, there is nothing can take the place of West Bangor Slate.

Our product is West Bangor Slate. See that you get it. Write for prices.

BANGOR SLATE MINING CO.

Trust Building

Bangor, Penna.



—It Stays and Satisfies

VULCANITE ORNAMENTAL ROOFING

will without paint or repairs **outlast** any other roof covering. It costs less to buy and less to lay. Thoroughly fireproof and resists all weather conditions.

This roofing is laid in strips, one edge of which is cut in a single or slate pattern. It is durable and very decorative. Seven handsome, mellow shades to select from—colors which cannot fade because they are the natural tint of the crushed rock surfacing.

Vulcanite Ornamental Roofings are made in several artistic designs such as diamond-shaped tile effect, mitered slate effect, and V-edge effect.

Vulcanite Asphalt Shingles known under the trade name Vulcanite, are better than wood shingles. They last longer, are fire-resistant and do not crack or break. You forget roof troubles when you use any of the Vulcanite Roofings.

Write for Catalog and FREE Samples.

Patent Vulcanite Roofing Co.

2500 Ogden Avenue

CHICAGO :: ILLINOIS



A Durable Roofing Means a Durable Reputation

and Permanent Profit on a Growing Business for the Builder

To begin with, what is a durable roofing?

Durability is an elastic term. A buggy that runs fifteen years, a locomotive ten years, a shoe is worn six months—each is durable in its class.

Can a roofing be called durable when it doesn't last more than ten years or so? The owner will not think so. And it is dangerous for the builder to have the owner dissatisfied.

There is no reason why a roof should not last as long as the rest of the building. Such is the case with

Genuine Bangor Slate

This does not deprive you of any profits or revenue. Only instead of doing patchwork, which brings little pay, you will get the more profitable new work because your reputation will spread all over the section.

These statements are really only reminders. You are well aware of the facts, being a practical builder. No matter what your views on roofs are, you owe it to yourself to let us give you further information about our proposition to co-operate with you to mutual profit.

This will put you to no obligation and as a good business man you want to know all the facts and offers in the roofing market.

Why not write today, before you forget about it? Mail the attached coupon.

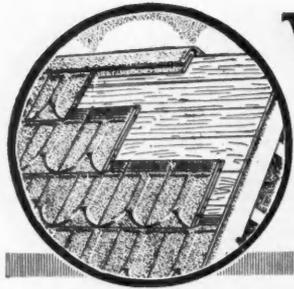
Do it today.

Genuine Bangor Slate Co., Drake Bldg., EASTON, PA.

It will pay you to fill this out, detach and mail TODAY
 Genuine Bangor Slate Co.
 Easton, Pa.
 Please send the particulars about your ability to help me make No. C 130-03.
 Name
 Address

December, 1913.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



Withstand Winter Weather

SNOWS and blows and everything else that goes with "a hard winter" cannot drive nor drift past the side-lock and overlap of Cortright Metal Shingles.

"No Admittance" is written all over them. This storm-proof feature is only one reason for the country-wide success of

CORTRIGHT Metal Shingles

"The Permanent Roofing"

Contractors appreciate the fact that any of their men can lay them successfully. There is very little waste as compared to wood shingles or stone slate, and absolutely no fire risk. Cortright Metal Shingles last as long as the building and never need repairs.

Have you ever seen a copy of our book, "Concerning That Roof"? Write for it today—or send attached coupon.

CORTRIGHT METAL ROOFING CO.
PHILADELPHIA and CHICAGO



----- Sign and Return -----

Cortright Metal Roofing Company
50 No. 23rd St. Philadelphia, Pa.
Gentlemen:—Send me copy of your book "Concerning That Roof."
Name
Firm Name
Street Address
City.....State

A.C.B. 12-13

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

New J-M Catalog

One of the most complete and satisfactory building catalogs, received this year has just come in from the H. W. Johns-Manville Co., of New York City. It is devoted to J-M asbestos roofing and waterproofing. It gives complete specifications for the use of these materials on all kinds of buildings. Special chapters are devoted to J-M asbestos built-up roofing, asbestos-prepared roofing. Transite asbestos shingles, J-M waterproofing and J-M Mastic flooring.

The illustrations are all very clearly rendered to show exactly how these various materials are applied. Builders, architects and engineers will find this book both instructive and interesting. It is printed on fine paper, much of it in two colors.

Copies will be gladly sent to any of our readers on request. Address the H. W. Johns-Manville Co., New York City, or any of their branch offices. Their branch offices are maintained in practically every important city in the United States and Canada.



The Winter of Our Discontent

A big league ball player, with his \$4,000.00 salary and expenses, can afford to lie idle all winter. So can a grass-hopper.

But the real live contractor, with ambition in his blood, does not. It is one of the vexing questions to the small town builder to find a dignified occupation, not entirely outside of his life-work.

For a contractor to take up the sale of Dr. Bill's Pink Pills, as an agent from door to door while it might be profitable, would not add to his business standing in the community. So suppose we survey the field with the question: "What can I do this winter to earn money and not sacrifice my business?" And the business with which this article deals would seem by nature to be intended for just that purpose.

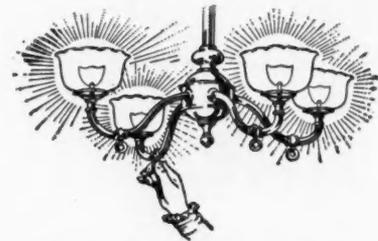
Selling is the big business of the day—the contractor sells his expert services, his knowledge, when he lands a job.

And selling is just the thing for you, Mr. Contractor.

Selling what?

Find a line which is best in small towns and the country—a line which sells better in fall and winter—a line that is consistent with a contractor's ability, and which offers large chances for profit.

The winter nights are dark—then supply a guard against the dark—sell lighting plants. There is a *large profit* in this work.



Acetylene Makes an Elegant Light

Dwellers in the country need just such a thing. A plant that will furnish real light at not too high a price, and as good, or better, than city lights.

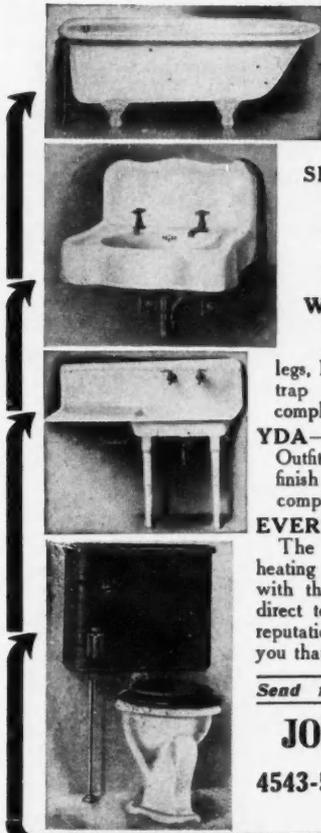
Such a plant is the Davis Acetylene Generator, manufactured at Elkhart, Indiana.

One of these plants furnished to a country home is a real improvement, and the contractor can point with pride to his work.

Davis Generators have been furnishing excellent light at about the same cost as kerosene for fifteen years. W. J. Bryan uses one in his home near Lincoln, Nebr. Probably there are several in use in your immediate neighborhood.

The only things needed for an installation are a Davis

Everything in Guaranteed Plumbing and Heating Supplies



ALCO—5 foot, 3 inch roll rim white enameled bath tub; N. P. Fuller faucet; Ball pattern N. P. waste and overflow, complete . . . **\$16.50**

SERPENTINE—18 x 24 Drop Apron Lavatory with concealed wall hanger, heavy N. P. compression faucets, N. P. adjustable trap to the floor or wall, complete . . . **\$13.50**

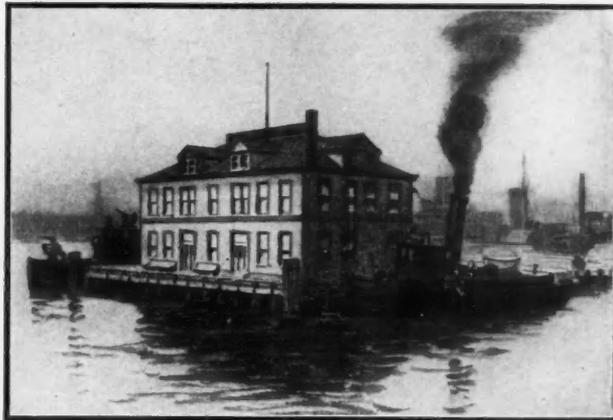
WHITE ENAMELED SINK—One piece 20x52, long back, concealed wall hanger and extension legs, N. P. Fuller faucets, N. P. brass trap to floor or wall, complete . . . **\$19.85**

YDA—Wash Down, Low Down Closet Outfit, light or dark oak or mahogany finish tank and seat, complete . . . **\$12.00**

EVERYTHING GUARANTEED
The quality of our plumbing and heating supplies is not to be confused with the supplies ordinarily advertised direct to the consumer. Our years of reputation for reliable dealing assures you that everything is as represented.

Send for New Complete Catalog #1

JOHN HARDIN CO.
30 Years at
4543-53 Cottage Grove Avenue
Chicago, Illinois



Fire Boat Station of the Baltimore City Fire Department, roofed and sided with Asbestos "Century" Shingles by P. J. Cushen, Contractor Baltimore.—Reproduced from an Artist's Drawing.

**Asbestos
"Century"
Shingles**

"The Roof that Outlives the Building"

THIS Fire Boat Station was designed by the Inspector of Buildings of the City of Baltimore. Erected in 1909, and roofed and sided with Asbestos "Century" Shingles.

Every day Asbestos "Century" Shingles are being specified for Municipal, State and Federal buildings, manufacturing plants, private dwellings, churches, schools and institutions.

Made of Portland cement, reinforced with interlacing asbestos fibres, by the **patented "Century" Process**, which is controlled and operated solely by this Company.

They are light in weight, easily applied, fireproof, and remarkably durable.

Write for the names of roofer who can supply Asbestos "Century" Shingles—men who know how to lay a good roof as it ought to be laid. We will also send you our booklet—"Roofing: a Practical Talk."

Keasbey & Mattison Co.

Factors

Dept. B, Ambler, Penna.

Branch Offices in Principal Cities of the United States

SHEET METAL BUILDING MATERIAL

Roofing, Siding, Gutter Spouting!	Shingles Skylights Cornices Ventilators	Metal Ceilings Metal Lath Store Fronts Everything
--------------------------------------------	--------------------------------------------------	------------------------------------------------------------

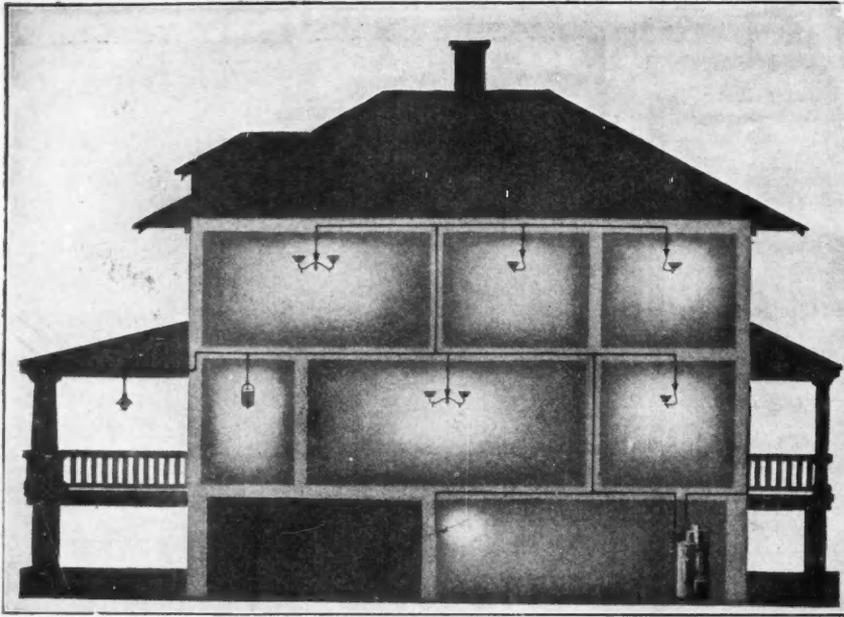
"JUSTRIGHT" ROOFING
That Simple Roof That Don't Leak

A catalogue containing the largest variety of Sheet Metal Products in the world will be mailed free by addressing

The Moeschl-Edwards Corrugating Co.,
Covington, Ky.

This advertisement appears in December Magazines read by the owners and tenants of the better class of buildings. Write to above address for terms and trade prices.

You will get **SPECIAL ATTENTION** if you tell Advertisers you read American Carpenter and Builder.



Residence Piped and Lighted throughout with Acetylene

Generator, some pipe, and ordinary gas fixtures, except burner tips.

Would it pay you to take this up?

Why, man, selling Davis Generators has made one man in Michigan independently wealthy. He was a farmer who installed a plant in his own home. His neighbor asked how he liked it, and before he knew it, our farmer friend had sold a plant.

referred to nearest dealer, or salesman.

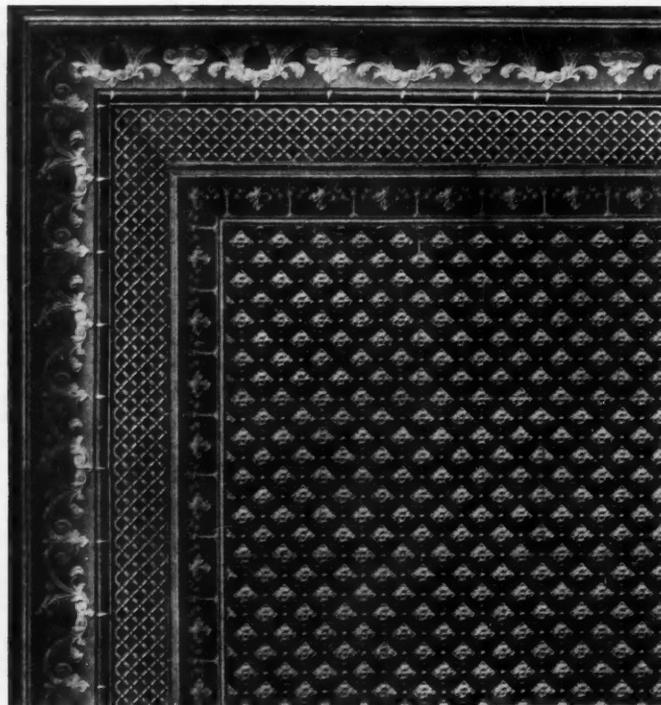
Here is an opportunity for the contractor and builder in the small town to turn the "winter of his discontent into a glorious summer" of profit and progress. Here is a chance to enter a live, growing business entirely without capital or experience.

Write the Davis Acetylene Company, 91 Crawford St., Elkhart, Ind., for their selling plan.

This is a line that will work in with your summer work, too. When you land a contract for a small town or country home where no light is provided, you can point to the installations of Davis Lighting and offer the same light. Your man who is building now-a-days wants the modern improvements.

The manufacturers of the Davis Generator, the Davis Acetylene Company, Elkhart, Ind., have records of several contractors and builders who have entered this field with success. The business, as remarked, does not absolutely require any capital—you can take orders for plants and the Company will carry the account until payment is made.

They offer to assist salesmen in closing sales. Every help is given to the man in the field, even the assistance of the Sales Manager, in closing difficult sales. A competent force of correspondents and stenographers are kept busy writing letters to prospects furnished by salesmen. Advertising is carried in several large publications and inquiries are



Carpenters Contractors and Builders

Here is a chance for you to build up an independent, profitable business for yourself right at home. Many agents are now devoting their entire time to selling our Metal Ceilings.

EDWARDS' METAL Ceilings and Walls

Others have made big profits simply devoting part of their time to selling and applying our Metal Ceilings and Walls. *Write us today about your territory.* Our business is growing so rapidly that it is necessary to have an agent in every community. The territory is going fast. One day's delay may mean that someone else may be given your territory. *Don't Delay. Write today for our special agents proposition and large handsome catalog of attractive designs.*

The Edwards Manufacturing Company,

401-417 Eggleston Avenue, Cincinnati, Ohio

Largest Manufacturers of Metal Ceilings, Metal Shingles, Steel Roofing and Siding in the World

Eastern Representatives: The W. H. Daycox, Jr. Co., 81-83 Fulton Street, New York

Branch Office and Warehouse: 1625-1627 Pacific Avenue, Dallas, Texas. J. F. Agnew, Manager

"The Sheet Metal Folks"

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



This Photograph tells its Own Story

It came to us on a post card and while you've all seen similar cases, we'd like to have you look at it carefully.

Kno-Fur Expanded
Metal
Lath
*Used Without
Furring or Sheathing*

is made to make outside plaster work *permanent*. It has the famous **Kno-Burn** mesh that makes the plaster stick through wind, weather and temperature changes and in addition is braced by a diagonal "U" shaped rib that does away with furring strips and sheathing.

Lay Right—Stay Right

That's the answer to the durability of stucco. Be sure of the *base* and you will soon have the profitable reputation of being "the fellow who knows how to build stucco houses."

We have a booklet that tells why stucco often goes wrong and how you can make it always "go right." Also, it gives you full details about **Kno-Fur**. Write for Booklet 37. We'll send it at once.

North-Western Expanded Metal Co. 903 Old Colony Building
CHICAGO, ILL., U. S. A.

MONTROSS METAL SHINGLES



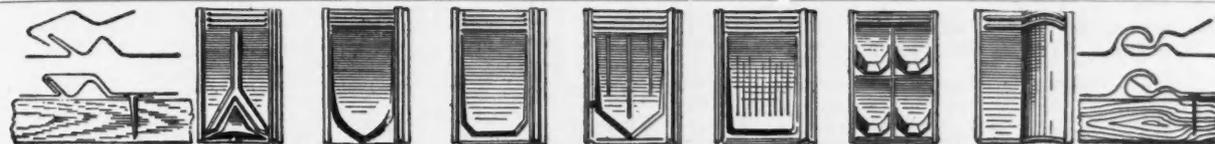
Consider This Point:

When any man asks you to put up a roof that you know is "no good", he is asking you to give yourself a "black-eye" as a roofer with your community. When the roof fails—as you know it will, he will simply say: "So-and-so put it up." He'll never add "at my direction." It pays to stand pat for a good roof, even if somebody else gets the contract for putting up the poor one. Montross Metal Shingles and Tiles are the best and most economical roof you can furnish. We guarantee them to you, so you can guarantee them to your customers.

Our new booklet is a fair and square analysis of roofing materials; we prove our claims by scientific data and facts.

Write for your copy—NOW. Agents Wanted

Montross Metal Roofing Co., 2nd and Erie Sts., Camden, N. J.



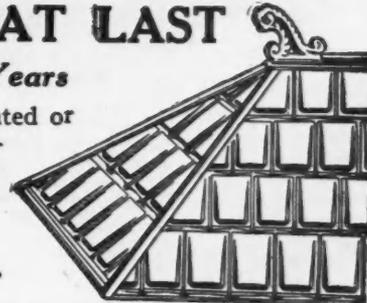
WALTER'S SHINGLES THAT LAST

The Leaders for Twenty-nine Years

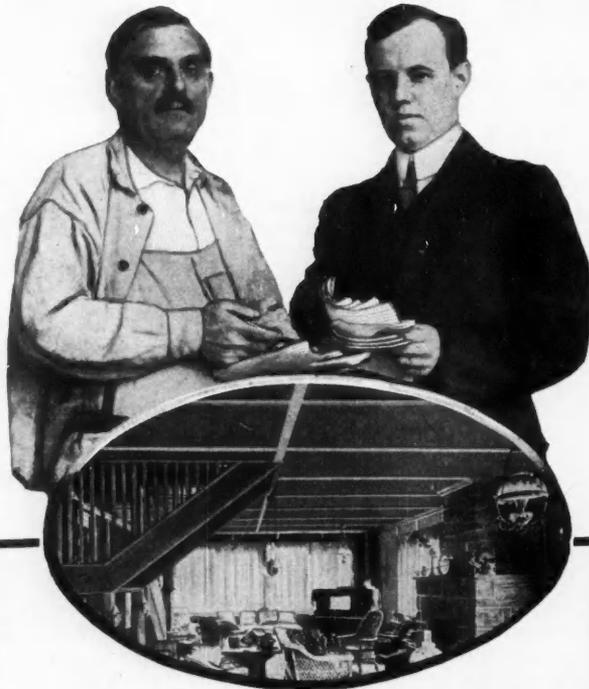
Made from I. C. full weight roofing tin, painted or galvanized after stamping. Rust-, storm- and fire-proof. The most complete line of metal shingles and tiles manufactured.

Agents wanted in every community

National Sheet Metal Roofing Co.
JERSEY CITY, N. J.



You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



Jones' Profits

during the off season on Utility Wall Board

Always before, Jones had dreaded the coming of the off season. Building operations fell off then and Jones had a big family to take care of. This season, however, he got the jump on every other carpenter in town. This is how he did it.

He wrote for samples of all the various brands of wall board. Then, he tested them in every possible way and he found that Utility Wall Board alone satisfied every test

Jones now went after the remodeling work hard. The amount he found to do surprised him. He transformed unused store rooms and dingy attics into cozy dens, bright sewing rooms, spare bed rooms or billiard rooms. He made over cold, damp basements into warm, dry laundry rooms, work shops or convenient store rooms.

Utility Wall Board pleases owners immensely for it is inexpensive and easily, speedily and conveniently put on. Then, too, there is no dust and muss as with a lath-and-plaster job. And Utility is a non-conductor, thus keeping the rooms warmer in winter and cooler in summer.

You can make your money-making season last the year around—if you do as Jones did. Jones didn't wait for his Opportunity to knock—he went out and grasped it by the hand before it was half way to his door. What Jones did you can do.

Make it a point to sit down
now and write us for a sample.

THE HEPPEES CO.

Also manufacturers of Flex-A-Tile Asphalt Shingles,
Asphalt Paint and Asphalt Roofing in any Finish.

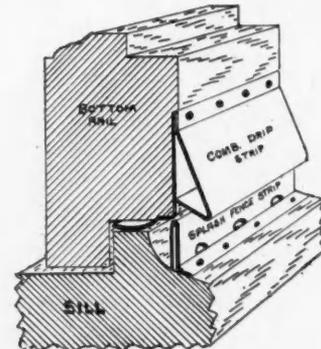
4503 Fillmore Street

Chicago, Ill.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

Diamond Weather Strips

It is a recognized fact that no building is complete or up-to-date without weather strips. They are a necessity. A flexible metal weather strip is now offered, the product of the Diamond Metal Stamping Co., Columbus, O. Being flexible and removable, they are easy to install. Sash can



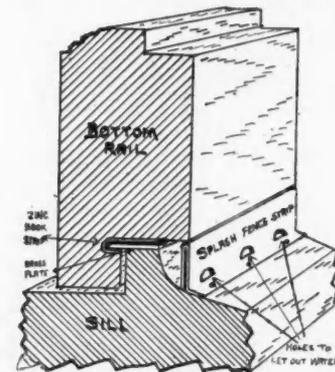
Double Weather Guard for Inward Opening Casement

be removed when necessary without displacing the weather strips.

Fuel saving has been found in buildings where the Diamond flexible metal weather strips are used, to be anywhere from 20 to 40 per cent. Besides this saving, they keep out dust and moisture.

In addition to the regular weather strips, these people have perfected weather strips for casement windows. The illustrations show two styles. As will be seen, a splash fence strip along the sill keeps out the rain. This prevents water from rebounding over the sill plate. In an extremely exposed location the drip strip is added to the sash just above the fence strip attached to the sill.

This equipment for inward opening casement windows has proved to be about the only satisfactory way of absolutely keeping out driving storms on this type of window. The



Effective Weather Strip for Inward Opening Casement

Diamond way is the practical method of weather stripping. Door strips, as well as window strips, are offered.

The Diamond Metal Stamping Co., 626 Kerr St., Columbus, O., are making a special agency proposition to reliable architects, contractors and builders. Write for illustrated catalog.

Up-To-Date House Moving

There are times when every builder has to be something of a house mover. Also a good many carpenters and builders have taken up house moving as a special line and have made good at it, developing a paying business. All such will be interested in the house moving machinery manufactured by the La Plant Tool Co., Marshalltown, Iowa.

Those who have tried it say that buildings can be moved by the La Plant tools with half the time and with half

From Walls of Skin to Carey Ceil-Board

Skins hung from the ceiling were the first partition walls, and served merely as screens, separating one corner of the hut from another. When something better was evolved, skins were done away with and the rough timber partition made its advent. Although letting in the heat and the cold, the noise and the wind, this was a decided improvement over any previous material. Timber partitions were improved as time went on, and were only superseded when lath and plaster wall were devised. But even plaster has its defects. It cracks and falls at the least vibration, is an ideal material for vermin to nest in, a poor non-conductor of heat, cold and dampness; plastered rooms are hot in summer, cold in winter, damp and unhealthy in wet weather.

With the advent of Carey Ceil-Board, a better material became available, and as the public is becoming fully aware of the advantages to be derived from the use of it, Ceil-Board is fast becoming the standard wall and ceiling covering. Damp-proof, vermin-proof, sound-proof, and a thoroughly efficient non-conductor of heat and cold, a better wall building material can not be readily imagined. Handsome in appearance, and extraordinarily simple in application, it is the ideal "Home Beautifier."

Ask us questions about it. Send a postal for catalogues and samples. They're free.

THE PHILIP CAREY COMPANY

58 Wayne Ave. Lockland, Cincinnati, O.

Allentown, Pa.
Atlanta
Baltimore
Birmingham
Boston
Buffalo

Charlotte
Chattanooga
Chicago
Cincinnati
Cleveland
Dallas

Denver
Detroit
Harrisburg
Hartford, Conn.
Houston
Havana

Jacksonville
Kansas City
Knoxville
Little Rock
Los Angeles
Memphis

Minneapolis
Montreal
Nashville
New Orleans
New York
Oklahoma City

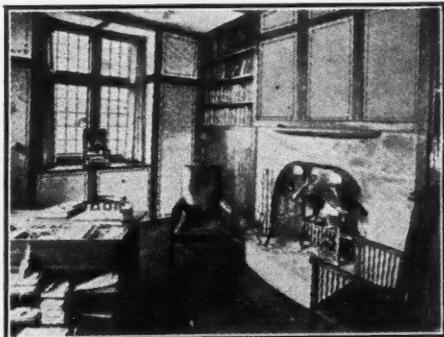
Philadelphia
Pittsburgh
Portland
Richmond
Rochester
Saginaw, Mich.

San Francisco
Scranton
Seattle
Spokane
St. Louis
Syracuse

Toledo
Toronto
Wheeling
Winnipeg
Washington
Youngstown



Plastergon Means A Busy Winter For You



It's installed quickly in Winter or Summer—not so with plaster. And besides the plasterer's profit there's a profit for you on the material, if you're the first to handle Plastergon in your city. You can take all kinds of remodeling and repair jobs, too. Really, an unlimited field.

Mr. O. S. Lang,

A prominent builder says of PLASTERGON WALL BOARD

"I recently, used some of your Plastergon and recommend it as being better and cheaper than other kinds of Wall Board I have used."

Want a busy winter—a bigger business? Then write us—we'll reply promptly and send you a Plastergon sample.

PLASTERGON WALL-BOARD

PLASTERGON WALL BOARD CO.
Dept. A. Tonawanda, N. Y.



WINTER PROFITS

This winter you can do a nice business building partitions, finishing off or remodeling rooms with

NEPONSET WALL BOARD

You have probably seen our advertising to House Owners in which we have told them to "fix up their house this winter" with NEPONSET Wall Board. Remember this—NEPONSET Wall Board is waterproof and finished. It does not require decoration. The whole job is yours.

BIRD & SON

(F. W. Bird & Son)

EAST WALPOLE, MASS., 212 RIVER ST.
New York Chicago Washington
Portland, Ore. San Francisco
Canadian Plant, Hamilton, Ont.



You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

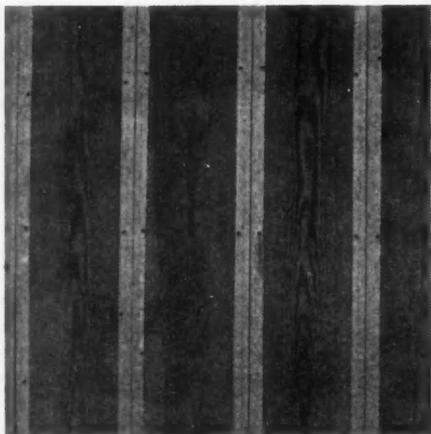


Ten-Room House Moved Across the River by R. C. Cole, Moline, Ill., Without Cracking Plastering or Paper

the labor required with the old style rollers. Remembering that labor means cash, it is evident that the La Plant Tool Co. outfit will pay for itself in a short time.

These people have recently issued an illustrated catalog

which every one of our readers should have for reference. It illustrates and describes their two-wheel, four-wheel, and eight-wheel trucks, capstans, jacks, etc. It also illustrates in a very interesting way some of the difficult



METALLIC BATTEN STRIPS

PRACTICAL—EVERLASTING—ECONOMICAL

These Batten Strips of Galvanized Metal will never warp, split, or draw away from the boards. Offer no obstruction to sliding doors. Allow for expansion and contraction of the siding. Made in 8-foot and 10-foot length with interlocking joint. Easily cut; no waste. Nailed directly to siding with small nails.



End view showing joint closed. A perfect fitting Batten at all times, in all weathers. Beautifies any building.



End view showing joint open. Provides for expansion or contraction of the siding so nails will not work loose.

Metallic Batten Strips make strong, neat joints. They make the building wind-proof, weather-proof and rat-proof. Also valuable for lining grain bins or wagon boxes.

Write for Free Sample and see for Yourself

METALLIC BATTEN COMPANY

Owensville, Indiana

Get the Eye of Your Customers on
our New and Original Designs of

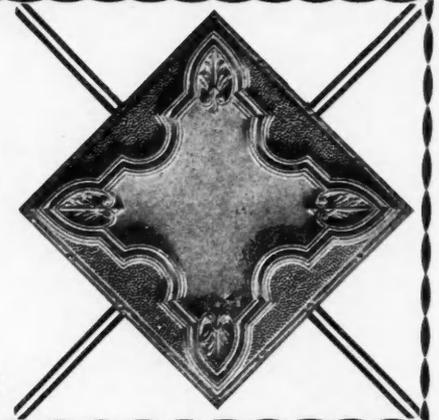
Metal **ART KRAFT** Ceilings

And the Order will come easy. Superior in quality, more attractive in design, cheaper to erect than any other, price so low you can underbid your rivals and make a good profit.

New "Art-Kraft" Catalog ready. A post card with your address will bring it. You can't afford to let this get by. Write the card **NOW!**

The Canton Metal Ceiling Co.

1947 Harrison Ave.
CANTON, OHIO.



You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



STAMPED STEEL TILING

Just the thing for
**Bathrooms, Kitchens, Restaurants,
 Butcher Shops, etc.**
AND ITS RIGHT IN YOUR LINE

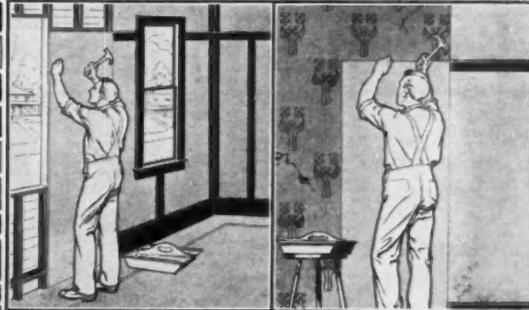
Real tile frequently becomes loose and falls off. This cannot. The studding or plaster is first sheathed with narrow, dry boards and the metal put on with small nails

SIX PATTERNS

Furnished with Baked White Enamel finish—or simply prime painted Metal trim Cap Base, Corners, etc., supplied or you can use wood trim.

NORTHROP, COBURN & DODGE CO.
 29 Cherry Street, New York

BEAVER BOARD



Beaver Board is put up in panels; these are then painted; usually the seams are covered with decorative strips.

**A Big Advantage Over
 Lath and Plaster**

THE quickness and cleanliness of Beaver Board construction are among its forty-one great advantages.

Just compare it with the muss and litter, the delay and the many different operations necessary in lathing, plastering and papering. This alone convinces thousands of users.

You have a big opportunity here to get the job, and its superior beauty and durability will help land many others

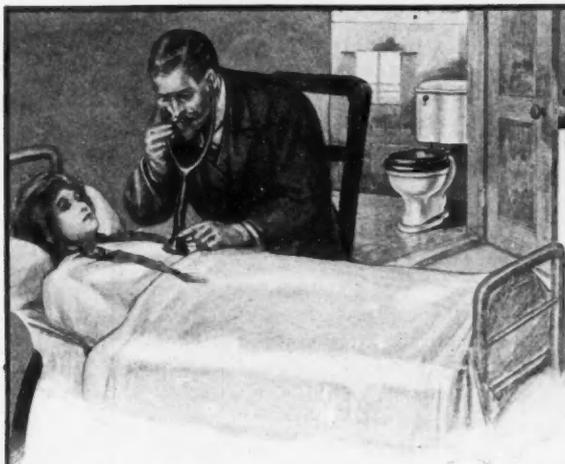
Write today for "The A. B. C. of Beaver Board Construction", sent free with printed sample.



The Beaver Companies

United States: 189 Beaver Road, Buffalo, N. Y.
 Canada: 389 Wall St., Beaverdale, Ottawa
 Great Britain: 4 Southampton Row, London, W

Trade Mark



Copyrighted by the L. Wolff Mfg. Co.

Silentflow
 A Noiseless
 Water
 Closet

IN THE TOILET adjoining the sick room one of the distressing noises can be eliminated by installing the "Silentflow."

This closet was not put on the market until it was proven perfect in construction, design and workmanship.

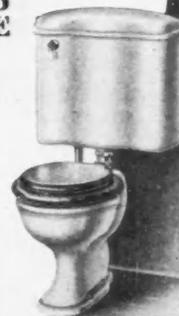
**SPECIFY WOLFF H-7005
 FOR RESIDENTIAL USE**

L. WOLFF MANUFACTURING COMPANY

Manufacturers of
Everything in the Plumbing Line
 The only complete line made by any one firm.

General Offices, 601-627 W. Lake St. Showrooms: 111 No. Dearborn St., CHICAGO
 Pottery: Trenton, N. J.

BRANCHES: Denver, Colo.; Omaha, Neb.; Minneapolis, Minn.; Dallas, Tex.; Rochester, N. Y.;
 St. Louis, Mo.; Washington, D. C.; Cleveland, O.; Cincinnati, O.; Kansas City, Mo.;
 San Francisco, Cal.

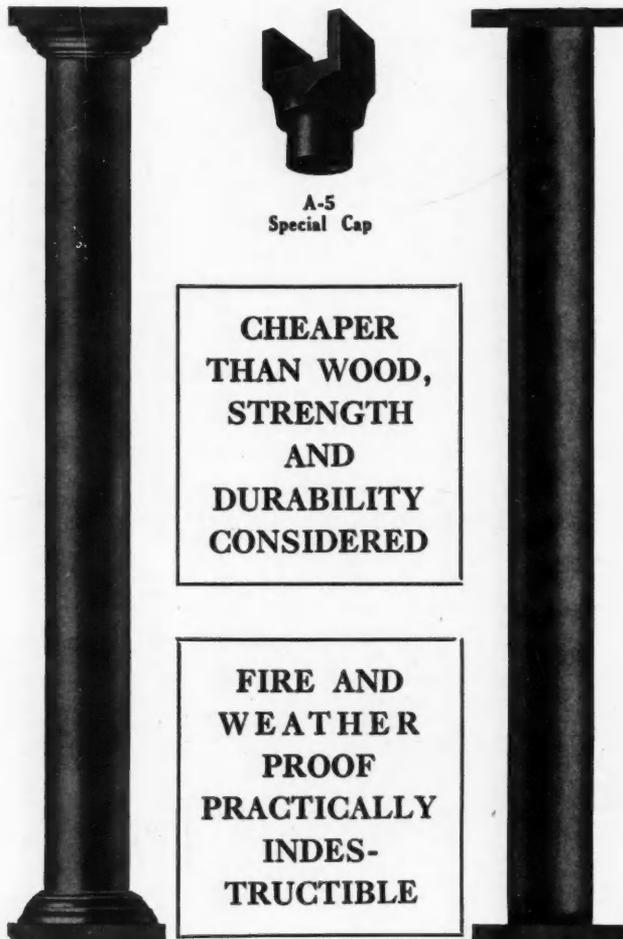


You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

Cast Iron Columns

In all Lengths up to 12 Feet

Carried in Stock



A-5
Special Cap

**CHEAPER
THAN WOOD,
STRENGTH
AND
DURABILITY
CONSIDERED**

**FIRE AND
WEATHER
PROOF
PRACTICALLY
INDES-
TRUCTIBLE**

A-2070.
Moulded
Cap and Base.

A-2073.
Plain Cap
and Base.

We are in a position to furnish promptly Cast-Iron Columns in lengths from 6 to 12 feet. For concealed supports and in cases where ornamentation is not necessary, our Columns answer every requirement. The ends are carefully machined, insuring an even bearing.

Prices on Application.

James B. Clow & Sons
CHICAGO

FOUNDRIES:

Coshocton and Newcomerstown, Ohio

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

kinds of moving work successfully done with La Plant moving gear.

The illustration reproduced here, for instance, shows a ten-room house being moved across the river at Moline, Ill. This unusual undertaking was carried through by Contractor R. C. Cole, using La Plant Tool Company moving machinery, without even cracking the plastering or wall paper.

All those interested can obtain this catalog by writing the La Plant Tool Co., Marshalltown, Iowa.



"New-Way" Air-Cooled Engines

One of the most interesting exhibitions at the Good Roads Congress Show at Detroit, Mich., was the exhibit put on by the "New-Way" Motor Company of Lansing, Mich. They exhibited a line of air-cooled engines.

These people have specialized for many years on an engine that is cooled by air, and have never attempted to build anything but an air-cooled engine.

They have built a successful engine of this type for something like ten years, and the engines that first went out are still giving perfect satisfaction.

They claim that the time is rapidly approaching when the man who owns the water-cooled engine will have his troubles. There is nothing that bothers a water-cooled engine more than cold weather. It brings a multitude of troubles that take considerable time and often a large amount of money for repairs.

The "New-Way" engine operates successfully at any temperature that a human being can stand. It is guaranteed to deliver its full rated power in any climate, under any working conditions, when given ordinary care and attention. Hot weather will not bother it. Cold weather is just the same to it as hot weather.

The contractors who are using the "New-Way" air-cooled engines cannot say too much for them. They claim that all they have to do when it is quitting time, is to stop the engine, and when they want to start it again, turn it over.

This one air-cooling feature alone has saved a great many dollars, both in time and repairs, for a great many contracting firms. There are scores of "New-Way" engines giving perfect satisfaction in summer and winter, and for further information we suggest that you write the "New-Way" Motor Company of Lansing, Mich.



Roofed with Vulcantile

A man is known by the company he keeps, and a roofing is known by the kind of a house it is used on.

When we see Vulcantile (Vulcanite asphalt shingles) used on this beautiful \$10,000 residence, we know that this roofing must be worth while. It must have advantages commending it to the owner of this fine structure, and to his architect and builder, otherwise, it would not have been used.

The roof is the most exposed part of a building. It has to bear the full brunt of the weather, the attacks of wind and wet, sun and frost. It must consistently stand up against the onslaught of the elements and unfailingly protect all of the rest of the building. In other words, the roofing is, or should be, the best and most enduring of the materials entering into the construction of any dwelling.

When we see Vulcanite asphalt shingles the roof covering of an expensive concrete residence we feel that *there* is an endorsement that means something.

The manufacturers of these asphalt shingles, The Patent Vulcanite Roofing Co., 2500 Ogden Avenue, Chicago, Ill., are producing a line of roofing materials that are both enduring and highly ornamental. They come in several forms; as individual tiles, cut 8 by 12¾ inches, and as continuous strip shingles. There are at least seven handsome colors

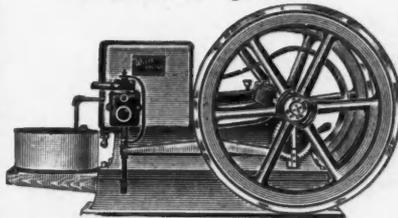


Get My Latest Engine Offer

Let a WITTE earn its own cost while you pay for it. Take full 60 days' Free Trial to prove its big value.

Five - Year Guaranty

I unqualifiedly guarantee every WITTE engine for five years against defects, and consequent faulty operation. I carry the risk, as I have done for my thousands of customers during 27 years. Ed. H. Witte.



WITTE Engines

Kerosene, Gasoline, Distillate, Gas

All styles 1 1/2 to 40 H. P. Used and recommended by shop, mill, and factory men all over the earth. All my life I have been a shop man, making my own engines. I sell only what I make. That is why, for 27 years, WITTE engines have always made good and stay good.

Look at These Prices! 4 H. P., \$ 75.50
6 H. P., 99.35
8 H. P., 149.95
11 H. P., 218.90

Other sizes proportionately low. WRITE FOR MY FREE BOOK, and all about my New Liberal Offer BEFORE you arrange to try any engine. I save you money, besides giving you the easiest chance to get the best engine service. Write me to show you.

ED. H. WITTE, Witte Iron Works Co.
1779 Oakland Ave., Kansas City, Mo.

Satisfy Your Customers

Build with **SEIPPEL'S** Quality Lumber

GET MORE CONTRACTS
Your interest as a contractor and builder lies in satisfied customers. But your good work is wasted if you build with poor stock.

It takes quality lumber to build a quality house.

Our lumber is all carefully graded up to the manufacturers' grading specifications; and with our enormous stock we fill your order exactly, item for item—no trouble-making substitutions in dimensions or quality.

We carry everything you need, including roofing and mill work—all guaranteed high quality. You get quick service and low freight rates from Dubuque.

If you're in the market for a carload, come to Dubuque and let's talk it over. We'll refund your railroad fare both ways and you select what you want.

OUR DUX BAK ROOFING has no equal in the market for the money. Sells for less and is backed by a longer guarantee than any other standard goods.

Besides, we have a special proposition in which you'll be interested.

We'll save you money on small orders, and guarantee satisfaction.

Write us at once. Place yourself in position to make more money during this building season.

Orders solicited only from Iowa, Illinois, Southern Wisconsin, Indiana, Northern Missouri, Southern Minnesota, Southeastern South Dakota.

PETER J. SEIPPEL LUMBER COMPANY
212 S. Locust Street DUBUQUE, IOWA

Be Ready for YOUR Chance



A GREAT OFFER to men in the building trades. If you have never had the advantage of a technical training, this is YOUR opportunity.

The "Chicago Tech." method appeals to practical men who have never had the advantage of a technical training. It is our own new, easy, quick plan to qualify you in a short time by HOME STUDY. The Day and Evening Schools of the College in Chicago are filled with hundreds of builders, contractors and men from the building trades. If you cannot attend these Day and Evening Classes, you can get the same work. You can get the same practical blue print working plans and STUDY AT HOME. The same experts are YOUR instructors. Your spare hours are enough for our short, complete, home-study

Builders' Course Plan Reading Estimating Architectural Drawing Specifications Contracting

We have no books to sell. You don't study from old-time plates in books. You use the live, up-to-date blue print plans of buildings now being built. No other Correspondence School offers this advantage. Let us tell you more about the "Chicago Tech." method. Never mind the cost—it's small. Earnest and ambitious men are the ones we want. "Spare hours are ambition's tools." Use yours. Write.

Better things are in sight. Mark and Mail this Coupon NOW!

Mark "X" opposite work in which you are interested. Without obligation on you we will send full information free.

<input type="checkbox"/> Architectural Drafting	<input type="checkbox"/> Building Superintendence
<input type="checkbox"/> Builders' Course	<input type="checkbox"/> Structural Steel Drafting
<input type="checkbox"/> Estimating	<input type="checkbox"/> Structural Steel Design
<input type="checkbox"/> Plan Reading	<input type="checkbox"/> Reinforced Concrete
<input type="checkbox"/> House Planning	<input type="checkbox"/> Machine Drafting
<input type="checkbox"/> General Contracting	<input type="checkbox"/> Machine Design 1017

Name.....
Address.....
Town.....State.....
College or Home-Study Course.....

We Furnish FREE A Complete \$15 Drawing Outfit

All Blue Print Plans FREE with this Course

Chicago Technical College

1017 LAKE VIEW BUILDING, CHICAGO, ILLINOIS

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



Beautiful and Expensive Residence Appropriately Roofed with Vulcanite Asphalt Shingles

to select from, permanent colors which cannot fade, as they are the natural tint of the crushed rock surfacing. Some of the popular colors are light gray, red, slate, garnet, brown, gray, green and emerald.

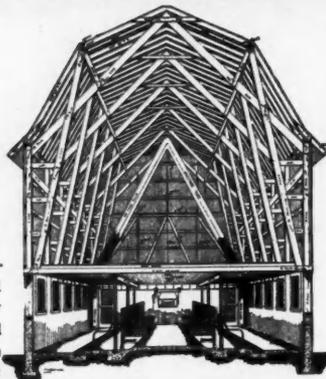
Vulcanite asphalt shingles can be laid on any sloping roof

that would take wood shingles. They do not crack, split or warp, and are fire resisting.

Investigate this roofing, The Patent Vulcanite Roofing Company will send you samples and very interesting illustrated catalog if you will write them.

Helpful Ideas on Dairy Barn Building FREE!

If you learn more about the newest, best, most economical and most sanitary methods of Dairy Barn Construction — you will make more money. Our free book "Helpful Hints to Dairy



Barn Builders" tells about proved principles that it will pay you to know about. It tells facts about plank frames, King system of ventilation; proper width and arrangement; lighting; stable floors; site; size; appearance; design; drainage; and sanitary barn equipment with floor plans.

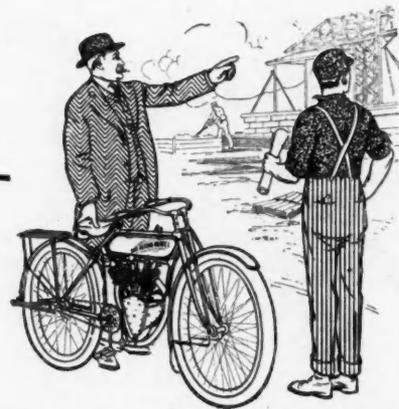


Special Blue Print Offer

We have complete blue prints, specifications, floor plans and lumber bills for several different types and sizes of modern dairy barns. Ask about them. Also ask how to get the free help of our Architectural Department.

James Mfg. Co.
8575 Cane Street
FT. ATKINSON - WIS.

FT. ATKINSON - WIS.



Get Around Quicker by using

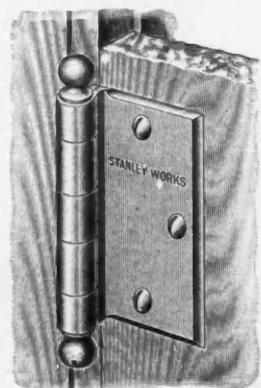


Save time and make more money. You can handle more contracts and keep better watch on each of them. The wonderful Self-Starting Flying Merkel starts in a jiffy without pedaling or other effort by simply pressing a small lever. The Merkel Ball-Bearing Motor means speed, power and low cost of upkeep, and the patented Spring Frame and Fork makes it the easiest riding motorcycle in the world.

Write today for 1914 Art Catalog, and if you have time to spare we can show you how to make money selling Flying Merkel Motorcycles.

The Miami Cycle & Mfg. Co.
601 Hanover Street - Middletown, Ohio, U. S. A.

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



Stanley Ornamental Surface Butts No. 165

Save Time and Labor and Please the Owner

The Ornamental leaf screws on the surface of the door, saving half the time of mortising. The slotted ball tip can be unscrewed and the pin reversed so that the butt can be used on either right or left hand doors.

The handsome, dignified, **Beveled Edge** design harmonizes with the popular designs of hardware. Made in all finishes.

Write for Booklet "A" describing this and many other lines of "Stanley" Quality Hardware.



The Stanley Works
New Britain, Conn.



HERE IT IS Mr. Beattie's Letter About VANADIUM SAWS

Pennsylvania Saw Company, Arcadia, Mich., Sept. 15, 1913.
Gentlemen:—This will acknowledge receipt of the 26-inch rip saw which you mailed to me for trial.
In compliance with your instructions of Aug. 26th, a 20d nail was driven into the edge of a hard wood plank, the plank was ripped and the nail cut in two with no apparent injury to the saw teeth and as far as we could see the saw was as good after the test as before the nail was cut.
I am enclosing herewith \$2.00 to pay for the saw and please enter our order for two hand saws, as follows:
1, 20-inch, cross-cut, 9 or 10 points to the inch.
1, 26-inch, cross-cut, 7 points to the inch.
(Both skew-back, if possible.)

These saws are to be used in our Railway shop here, and I have no doubt they will prove satisfactory.

The test of the above saw has created quite a little interest among the local carpenters around the village, and more than one has expressed a desire to own one.

If you desire to supply the trade through the regular channels, please write to Henry Mauntler & Company, Arcadia, Mich., referring to me. This firm deals in everything, including hardware, saws, etc., and are the largest dealers here, and have asked me for your address or where I obtained the saw.

I cannot say that I admire the finish or the appearance of the saw that you sent me, as it looked like a 75c or a \$1. saw when I removed the wrappings, being a straight-backed saw and no particular attempt made to finish or highly polish the blade. However, it proved to be like the "singed cat," better than it looked.

A little later on I would want a couple of your saws for my own private use being short two from my chest, one 26-in. rip, 5 1/4 points or 6 to the inch and one 20-in. cross-cut ten or twelve points to the inch. I want skew back saws, well made and polished with good apple-wood handles, and I am willing to pay for them.

Trusting that the above arrangement will prove satisfactory to you, and that you will be able to sell more of your product in this village, I am,
Yours very truly,
Chas. W. Beattie,
Auditor, Arcadia & Betsey River Railway Co.

P. S.—Mail me a bill with the saws and I will send our check immediately. Be sure and send skew-backs and have them as nice in appearance as possible, because they will be examined by critical eyes and I am interested in having them stand the test.—C. B.

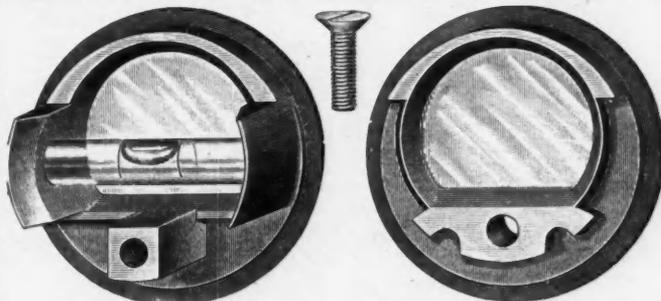
Watch for our ad next month. If you can't get a Vanadium Saw in your town, write us. We'll see that you are supplied and that you're satisfied.

SEND TODAY FOR PARTICULARS
PENNSYLVANIA SAW CO.

1000 Betz Bldg. PHILADELPHIA, PA.



VANADIUM SAWS "Smile at Nails"



The Two Parts of EZSET Lever are Fastened with This Screw.

Postpaid only 75c. Write for Our Complete Catalog of Builders' Supplies

MAKE YOUR OWN LEVELS and STRAIGHT EDGES WITH EZSET LEVEL DEVICES Save from \$2.00 to \$3.00

In your spare time with two or three EZSETS you can make a better level than you can buy; because you will make it right, make in to suit yourself, and it will be absolutely accurate. Simply obtain a piece of stock from 1/2 in. to 1 1/4 in. thickness, bore holes and insert EZSETS.

No Carpenter can afford to be without it. Made of Aluminum; light and strong; will never rust. Can be used as a square level or for bench work. Spirit glass is protected from dust, dirt and weather by heavy plate glass. Only one screw required to hold it in position. Can be used on a straight edge for leveling floors, sidewalks, pavements, etc. A true level that is guaranteed to give the greatest satisfaction.

CADILLAC TOOL & SALES CO., Detroit, Mich.

Want to Earn More This Winter?

LET THIS MACHINE WORK FOR YOU

This Wood Saw is not expensive and gives you the chance to keep busy and make money when the season is slack. It's a better machine than others, because it works faster and uses less power.

Mount Engine Here

The Top Swing Oscillator Wood Saw Machine

can be furnished with or without gasoline engine and trucks when desired. Requires a 3 H.P. to 6 H.P. engine. Cuts a cord of wood, twice in two, in 8 minutes. Foot treadle feeds saw into the wood. Spring on frame returns saw automatically. Saw cannot become cramped. Steel cage protects saw and prevents injury to workmen. A great machine for cutting cord wood, poles, posts and timbers.

The experience of others shows how you can make money. Write today for circulars and copies of testimonial letters.

W. H. PENCE, Fairfield, Iowa



You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



Winnipeg winters offer real test of motor wagon

Up in Winnipeg the heavy snow drifts and icy pavements frequently make the use of horses impossible.

W. F. Lee, a carpenter, builder and dealer in supplies is a Winnipeg owner of a Kissel-Kar Motor Wagon. This motor wagon is "always on the job," no matter what the physical or atmospheric conditions may be.

A motor wagon that will give satisfaction in Winnipeg will give satisfaction anywhere—and the KisselKar is giving satisfaction everywhere.

KISSELKAR TRUCKS

There are four all important elements to be considered in the selection of a motor wagon. 1st.—Its construction and record. 2nd.—Its adaptability to the duty required of it. 3rd.—The permanency and responsibility of the makers. 4th.—The facilities to give thorough service.

Each of these considerations are satisfactorily met in KisselKar Motor Wagons.

KisselKar Motor Wagons and Trucks are built in six sizes, 1500 lbs., 1, 1½, 2½, 3½ and 6 tons capacity.

Investigate KisselKar Motor Wagons and the written KisselKar Service Guarantee to owners. Write for new illustrated portfolio.

Kissel Motor Car Co.

546 Kissel Ave., Hartford, Wis.

New York, Minneapolis, Chicago, Philadelphia, Milwaukee, Los Angeles, San Francisco, Oakland, Dallas, Boston, St. Paul, Kansas City, and over 300 other leading points.

No Wheeling—No Waiting—No Guessing

The Eureka Machine Company are using the above slogan in featuring their line of concrete mixers, and to better illustrate its meaning to the unacquainted, the following explanation is offered.

No Wheeling—You will note, for example, the Eureka Mixer shown in the accompanying picture being used on street work at Wheeling, W. Va. No wheelers are needed, as the organization is entirely complete without them. The materials are merely placed in windrows and shoveled directly into the mixer. The concrete is discharged into a chute and flows into place by gravity. The chute is suspended in a position free to swing in a half-circle, depositing the concrete into any desired spot. Four or five men easily move the mixer ahead as the work progresses. By this method of laying concrete base, the number of men is greatly reduced over the ordinary way, and results in an actual saving of \$10.00 to \$20.00 a day in labor alone. Notwithstanding the comparatively small crew, a steady yardage of 700 to 900 square yards of 6-inch concrete is maintained daily.

No Waiting—The men shown in the picture are doing their best to keep up with the mixer. The mixer is setting the pace and one man doing the work of two. There is no lost motion—no one in the way—and no one waiting, but



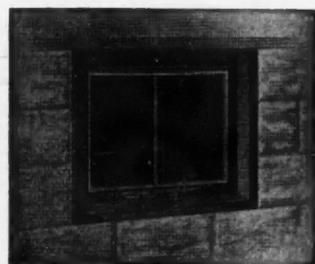
Eureka Concrete Mixer at Work in Wheeling, W. Va.

each man making every move count to the greatest advantage. Surely this is a picture to gladden the heart of any contractor, especially considering the high price of labor, and its scarcity.

No Guessing—You do not see any one in the picture filling a loading hopper with a few uneven wheelbarrow loads of material and a sack of cement, and guessing at the ultimate result. All the uncertainty of hand measuring is removed, for the Eureka actually measures the materials automatically in the proper proportions, regardless of the crew. In other words, the responsibility of measuring the material is taken care of by the machine, and not placed upon any individual. Proper proportioning is just as essential as good mixing. Many concrete failures have been directly traced to insufficient cement or its entire omission. No man is infallible, and there is always a possibility, when measuring material in batches, to omit sufficient cement, resulting in serious damage. The Eureka safeguards the work by making certain that every shovelful of concrete in any concrete work has the same relative proportion of cement as every other shovelful.

Further information and particulars can be obtained by writing the Eureka Machine Company, Lansing, Michigan.

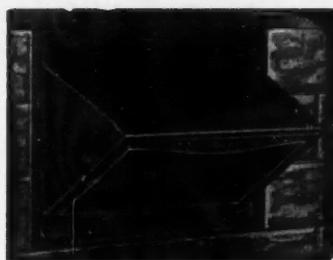
You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



The Window Chute

A Real Window—A Perfect Coal Chute

Useful 364 days in the year for light and one day for the coal man



A Burglar-Proof, Air-Tight Window which conforms with architectural lines. Looks best and is best. Write for booklet giving full description.

Holland Furnace Co.

Dept. "A. C." :: Holland, Mich.

—"Holland Furnaces Make Warm Friends"—

The Bovee Furnaces

AT

Manufacturer's Prices



Will give every one of your patrons most perfect results. They last longer and actually require about one-half the fuel used by other furnaces.

They are made heavy, of the very best material and workmanship. Take your rule and measure the fire pots, the large combustion chamber and the long travel of heat and compare it with all other furnaces and see WHY the Bovee

uses less fuel and lasts longer than others. Get our special prices. We can save you 40% on a heating plant. Any handy man can install them.

Bovee Furnace Works

50 Eighth Street

Waterloo, Iowa

Burn the Garbage

It is the *safe, practical* and *economical* way.

Safe, because it eliminates the garbage problem entirely. The disposal of garbage is never any problem to the building owner who has installed a

KEWANEE

Water Heating Garbage Burner

Practical, because it does away with the odors and dangers of the garbage can and the garbage wagon. It makes apartment buildings healthier, more desirable and more rentable.

Economical, because all the garbage and rubbish, which usually costs money to have hauled away, can be used for fuel in heating water.

A Kewanee Water Heating Garbage Burner can be installed in any building—old or new—in a very few hours—at a very low cost.

And an average of 2.8 cents per day, per apartment, is all it will cost to run it—producing hot water in abundance and absolutely destroying all the garbage and rubbish. These figures have been furnished by owners who know.

KEWANEE BOILER COMPANY

Kewanee, Illinois

Steel Power and Heating Boilers, Radiators, Tanks and Garbage Burners

Chicago, New York, St. Louis, Kansas City, Salt Lake City

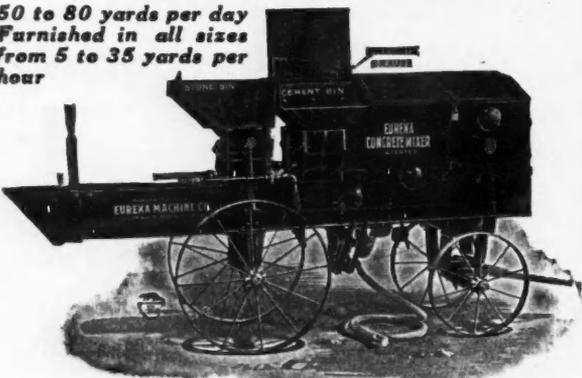
You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



Eureka

Mixer for Building Contractors

*50 to 80 yards per day
Furnished in all sizes
from 5 to 35 yards per
hour*



Over 300 Eureka's used in New York City

These Striking Eureka Advantages Compel Attention

- It will save one-half in labor over hand mixing.**
- A thorough uniform mix is guaranteed and full rated capacity.**
- The average life is six to eight years.**
- It can be operated by three men or will accommodate a dozen.**
- Costs about 50 cents a day for gasoline. Built extra strong and can be depended upon for hard, continuous service.**
- Easy to move and operate.**
- Material shoveled direct into bins—no wheeling.**
- Only necessary to keep bins supplied with material—measured automatically.**
- One lever stops and starts mixer—another the feeders.**
- Equipped with a strictly high-grade engine Bosch magneto if desired.**
- Eureka mixers are in use everywhere and always satisfactory.**
- On this satisfaction to the user Eureka prestige has been built.**

Ask for catalog No. 30 and names of Eureka users in your territory.

EUREKA MACHINE CO.

85 Handy Street LANSING, MICHIGAN

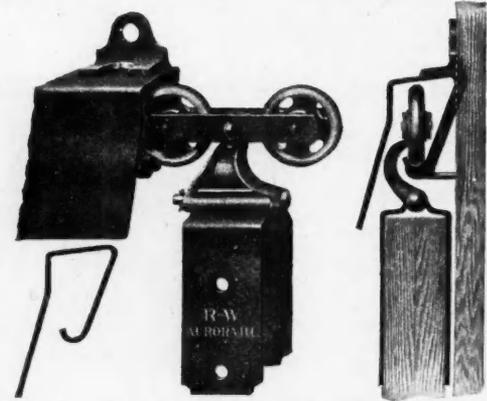
W. V. JOHNSON & CO., General Eastern Agents
1 Madison Avenue, New York City

Atlanta	Detroit	Peoria
Cedar Rapids	Ft. Wayne	Pittsburgh
Chicago	Houston	Rochester
Cincinnati	Indianapolis	St. Louis
Dallas	Kansas City	Salt Lake City
Dayton	Minneapolis	Winnipeg

Door Track and Housing Combined

Here is a newly patented track and housing combined that is just being offered by the Richards-Wilcox Mfg. Co., Aurora, Ill. It is easy running and storm proof. It is said to be the only trolley track made in one piece, forming a complete housing for the door.

Another feature is the patented bracket, which gives unlimited strength and holds the track in perfect alignment.



The New Richards-Wilcox Door Track and Housing

You will observe from the detail cut that this track is positively storm and bird proof, eliminating the usual expense of constructing special housing for the doors.



Big Pipe Covering Contract

Among the many large contracts placed for building material in connection with the new General Hospital, Cincinnati, O., was one for 50,000 feet of J-M Pipe Covering for the heating system of that huge structure. This contract was awarded to the Cincinnati branch of the H. W. Johns-Manville Co. The many types of pipe covering manufactured by this firm are fully described in their new booklet, a copy of which may be obtained by writing their Cleveland branch.



THE WORLDS GREATEST HAMMERS ALL OTHERS OUT OF DATE.

Smash not thy fingers or Fish Hook the Nails. Do the same work with half the effort. The nail holding feature makes you safe in your Scaffold work.



Get them from your dealer or from us.

Double Claw Hammer Co.
453 Broadway
BROOKLYN, N. Y.



$\frac{3}{4}$ inch of pencil may be used before necessary to readjust same. Note different shapes of pencils that can be fastened equally well in this scriber.

Peerless Flexible Bit Gauge, 25c

Excels all others. Only successful mortise lock gauge made. Saves all unnecessary turns. Nickel plated, 25 Cents; by mail 30 Cents.

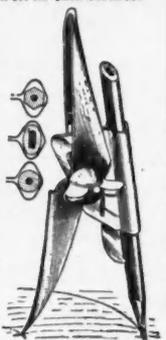
The Peerless $3\frac{1}{2}$ inch Scriber, 25c

Broad point for plaster walls, fine woodwork, etc. Sharp point for quirks and mouldings. Adapted for extra close scribing. To use broad point, simply swing it down over sharp point. See Cut. Must be used to be appreciated. Close scriber to secure pencil. Polished Steel, 25 Cents; by mail 5 Cents extra.

Ask your Hardware Dealer to show you these tools. If he does not carry them, order from us. U. S. Stamps accepted.

POTTER BROS. CO.

612 W. 110th Street NEW YORK



You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

The Simonds Saw

is built on honor. Every saw which leaves the Simonds factories is inspected and its quality is guaranteed.

Ask your dealer

Simonds Mfg. Co.,
Fitchburg, Mass.
Chicago, Ill.

Tool Cabinet, No. K1 17 Tools, Price \$8.50

Real Gifts

There's no Christmas present like a fine kit of tools. Buy a Keen Kutter Tool Cabinet this year and have the satisfaction of using the finest tools in the world.

KEEN KUTTER
Tool Cabinets

contain only the standard Keen Kutter quality. The prices vary from \$8.50 to \$125.00, according to the number of tools. Remember that your money will be refunded if any tool fails to make good.

"The Recollection of Quality Remains Long After the Price is Forgotten."
—E. C. SIMMONS.

Trade Mark Registered.

If not at your dealer's, write us.

SIMMONS HARDWARE CO., Inc.
St. Louis New York Philadelphia Toledo
Minneapolis Sioux City Wichita

Indestructible
CARPENTERS' TOOL CASE
Neat, Light, Strong

Suitcase style. Saves carrying a heavy tool box. Made of 3 ply veneer covered with heavy canvas and painted. Edges and corners bound and reinforced with steel. Two brass catches and lock. Made in two lengths—31 ins. and 33 ins., for 26" and 28" saws. Has a place for every tool. Handsome and indestructible. Special sizes to order.

Write for Price List.

WEDELL & BOERS, 157 Jefferson Ave. Detroit, Mich.

Weather Proofing For Sliding Doors

Get and use the Schouler Patent Weather Stripping and Guide. It is made of heavy metal. Will not wear out. It is easily applied and a positive protection against wind, rain, sun and dust. Doors slide easily and firmly.

Get catalog and other particulars. Write NOW.

Schouler Cement Construction Co.
144 Frelinghuysen Ave. NEWARK, N. J.

This is the Standard Take Down Square.

It makes good with the user.

Send and know more about it.

Southington Hardware Co.
Southington, Conn

THE GALE
BARN AND GRANARY VENTILATOR

For all your buildings

INEXPENSIVE, BEAUTIFUL, STRONG

Made of heavy galvanized iron. Screened inside. Storm-proof and bird-proof. Perfect ventilation guaranteed. All you have to do is to place ventilator on roof and nail fast.

Write for Illustrated Circular with Complete Prices.

Galesburg Sheet Metal Works,
Galesburg, Illinois

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

There's Another Thing

about the *Hess Welded Steel Furnace* that is different from other furnaces, and that is the matter of regulation. Regulation means the controlling of air drafts through the fuel or through the furnace, so that the combustion is controlled. When a furnace is made of steel and cast iron, or of cast iron alone, or of steel alone (unless the seams are welded), it is impossible to make joints that are everlastingly tight. The expansion and contraction of heat will distort the parts and there is no cement made which will expand and contract with the metal and hold the joint against leakage. Steel and cast iron do not expand uniformly with heat, and will buckle apart from each other, and steel alone, without welding, will not stay together tight enough to prevent escape of gas and leakage of air.

There is always some leakage of air *into* the furnace, or of gas and dust *out* of the furnace, that is sure to interfere with the regulation or control. The crevices may be small but they will let in enough air so that your control of the fire is not perfect. Then you lose fuel through combustion which is too rapid, or the leakage about the fire cools your furnace slightly and prevents the good steady flow of air through the fire, which is necessary to success.

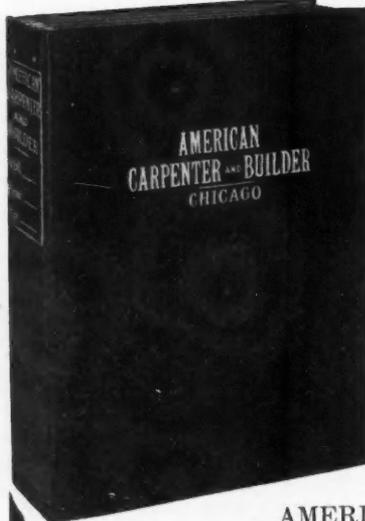
The leakage of dust and gas out of the furnace and through the hot air pipes is so common that some people hold it against all kinds of furnaces.

In the *welded steel furnace* which we make, every seam is *permanently and absolutely tight*; the steel parts are *melted together like one piece of steel*. Regulation is easy and the furnace is always under exact control. No dirt can come from the furnace and your house and furniture are always free from furnace dust.

This space won't allow for a longer account, but if you will drop a card and ask for our booklet, which tells all about it and how we sell on trial direct from factory to consumer and save you a lot of money, you will then get full information that will be valuable to you. Send a sketch of your house and we'll mail you a blue print with the heating system laid out and an estimate of cost. No charge; no obligation.

Hess Warming & Ventilating Company

1220 Tacoma Building, Chicago



Have Your Own Reference Library At a Trifling Cost:

Here's a good way to keep your magazines. What's the use of cutting them up? It's just as easy to save the complete magazine and have the use of ALL the good information it contains.

We have had 10,000 Binders made up for our readers. We don't want to make any money on these, so we're selling them at actual cost. We do want you to save every number of the AMERICAN CARPENTER AND BUILDER, because we know that you'll always find it a handy and valuable reference.

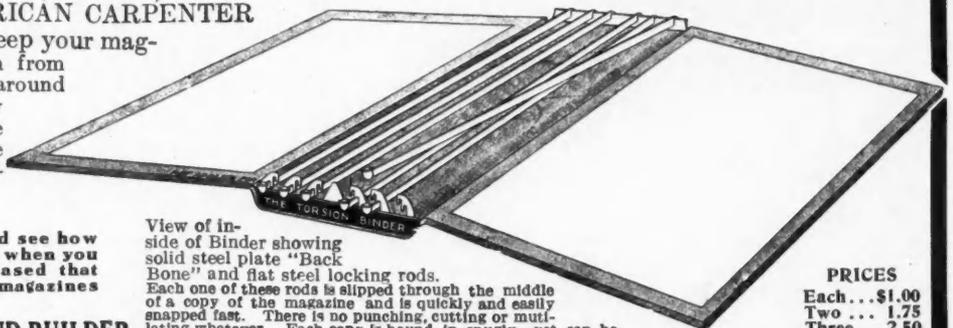
These "TORSION" STEEL WIRE BINDERS are made of maroon art canvas and lettered in gold. On the back of each one is a three-color label with spaces for dates and volume number. Each binder holds six numbers (1 volume) of the

AMERICAN CARPENTER

AND BUILDER. They keep your magazines neatly and save them from being torn, soiled or kicked around the house. When bound neatly in one of these Binders, the magazines are never in the way and look fine in any bookcase or on any bookshelf.

Send for Binders today and see how nice they are. We are sure when you have one you'll be so pleased that you'll want to bind all your magazines

AMERICAN CARPENTER AND BUILDER
1827 Prairie Ave., Chicago, Ill.



View of inside of Binder showing solid steel plate "Back Bone" and flat steel locking rods. Each one of these rods is slipped through the middle of a copy of the magazine and is quickly and easily snapped fast. There is no punching, cutting or mutilating whatever. Each copy is bound in snugly—yet can be opened absolutely flat. Keeps your magazines clean and fresh—and right where you want them for ready reference.

PRICES
Each...\$1.00
Two... 1.75
Three... 2.50
Four... 3.25
Five... 4.00

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.

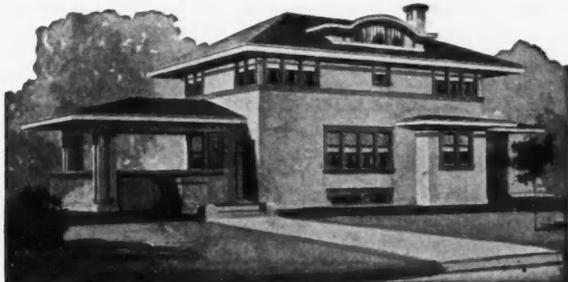
Leading the Legions
in the Crusade for more durable
Sheet Metal Products

**TONCAN
METAL**

You'll know it by what it does.
Write today for our "Text Book
on Corrosion."
ASK YOUR JOBBER.

The Stark Rolling Mill Co.
Canton, Ohio

General Distributors for the Dominion of Canada.
THE PEDLAR PEOPLE, Ltd.
Oshawa, Montreal, Toronto, Winnipeg.
Also manufacturers of Black and Galvanized
Sheets and formed products.



Cement Houses and How to Build Them

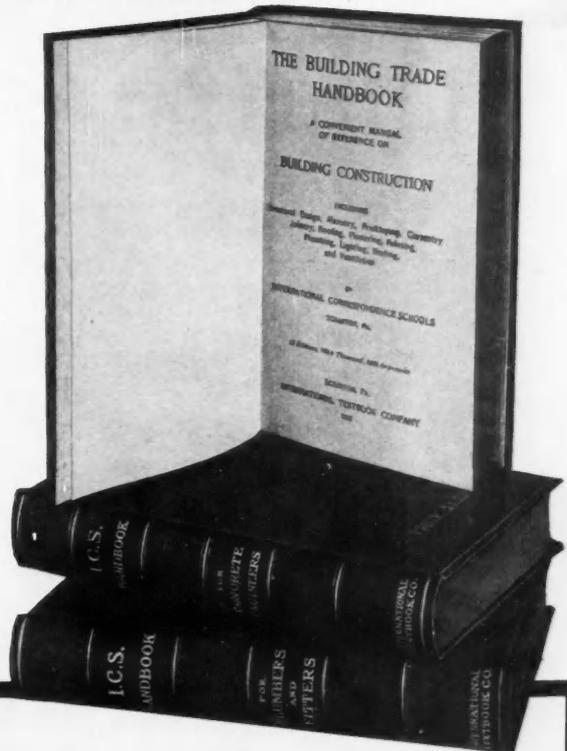
This large book of 176 (8x11 inch) pages contains illustrated details of cement construction—standard specifications for cement—concrete blocks—general information concerning waterproofing, coloring, aggregates, mixtures, paving, reinforcing, foundations, walls, steps, chimneys, floors, etc., together with perspective views and floor plans of 87 stucco and concrete block houses.

The illustrations show the houses exactly as they will look when built. All the floor plans are shown, giving the location and dimensions of all rooms, closets, porches, etc.

This Book Sent Free

Send in your subscription today and receive one of these books by return mail, Free, postage paid. Regular subscription \$2.00 per year.

American Carpenter and Builder
1827 Prairie Ave. CHICAGO, ILLINOIS



These Handbooks Will Help YOU

When a puzzling formula, an elusive table, or some other equally necessary piece of information slips out of your memory—then it is that one of these little encyclopedias demonstrates its worth. They are written by the well-known textbook writers of the International Correspondence Schools and are so thoroughly indexed that you can turn instantly to any rule, formula, or other information you need. Here is a brief table of the contents of one of them:

BUILDING TRADES: Arithmetic; Weights and Measures; Formulas; Mensuration; Geometrical Drawing; Structural Design; Loads on Structures; Strength of Materials; Masonry; Carpentry and Joinery; Roofing; Plastering; Plumbing; Plumbers' Tables; Heating and Ventilation; Gas and Gas Fitting; Estimating; Elements of Architectural Design; Proportions of the Greek and Roman Orders; Moldings, etc. The others are equally complete.

Special Offer: For a limited time we are selling the Handbooks shown here in the titles listed below, durably bound in silk cloth, containing an average of 375 pages and 175 illustrations, and regularly sold at \$1.25, **50c** at a special price for each handbook of only

International Textbook Company Box 910, SCRANTON, PA.

I enclose \$_____ for which please send me the books BEFORE which I have marked X.

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| <input type="checkbox"/> Concrete Engineer's | <input type="checkbox"/> Tel. & Tel. Engineer's | <input type="checkbox"/> Salesman's |
| <input type="checkbox"/> Plumbers & Fitters' | <input type="checkbox"/> Mariner's | <input type="checkbox"/> Farmer's |
| <input type="checkbox"/> Mechanics' | <input type="checkbox"/> Business Man's | <input type="checkbox"/> Window Trimmer's |
| <input type="checkbox"/> Electrical Engineer's | <input type="checkbox"/> Steam Engineer's | <input type="checkbox"/> Civil Engineer's |
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| <input type="checkbox"/> Steno. and Corr. | <input type="checkbox"/> Coal Miner's | <input type="checkbox"/> West. Air-Brake |

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Street and No. _____

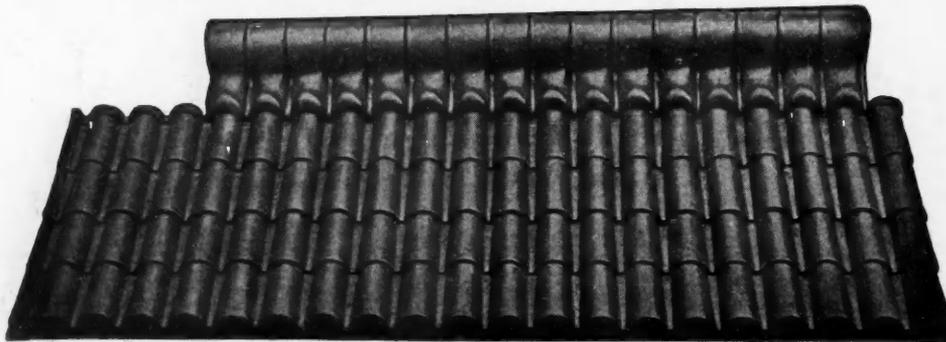
City _____ State _____

You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder

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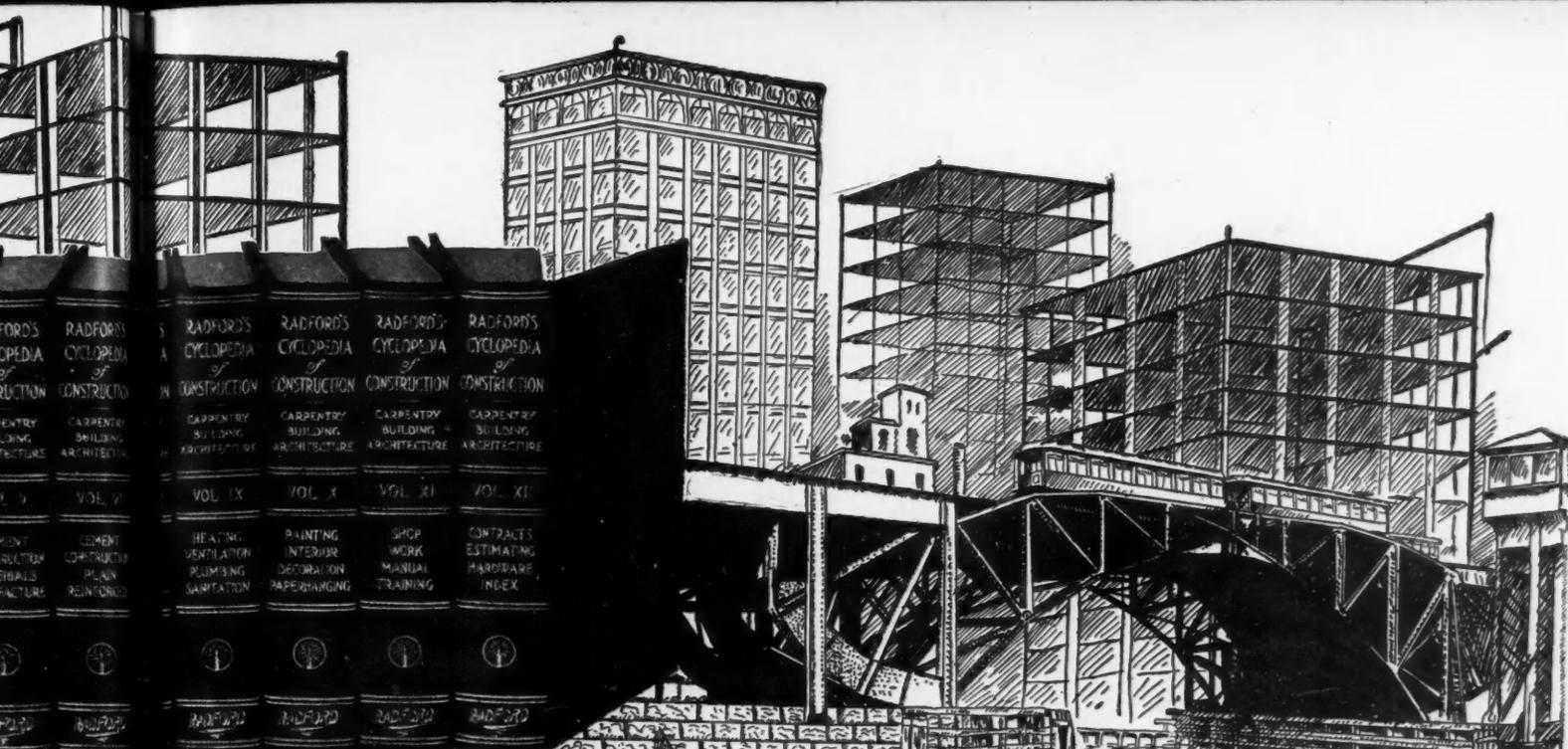
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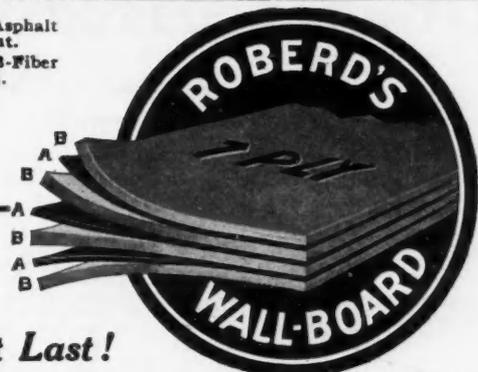
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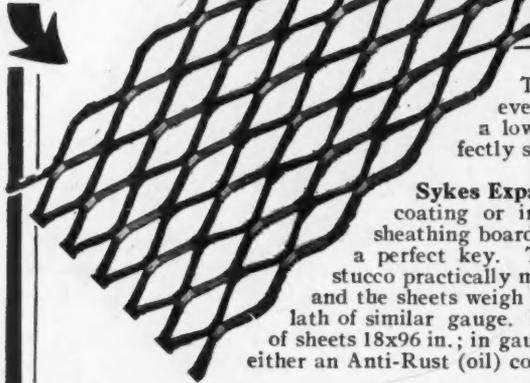


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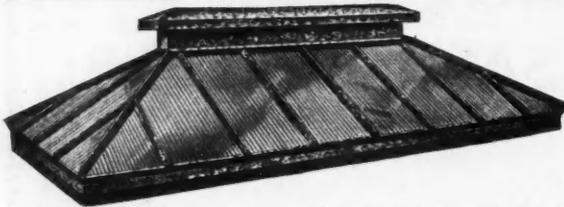
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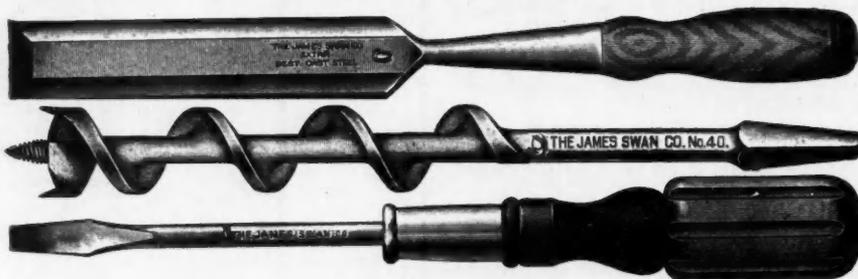
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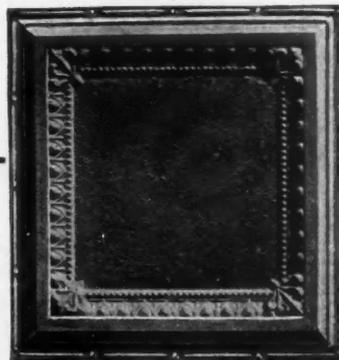
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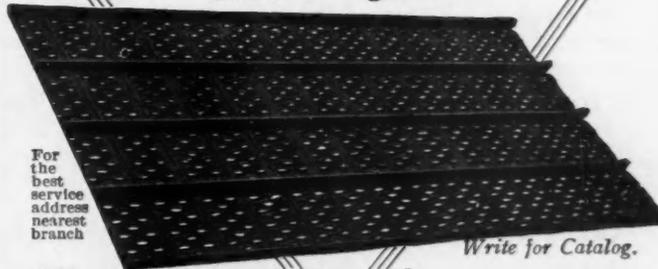
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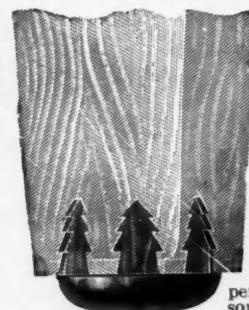
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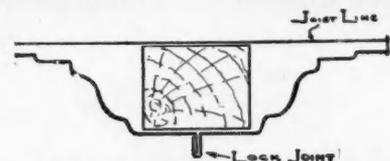
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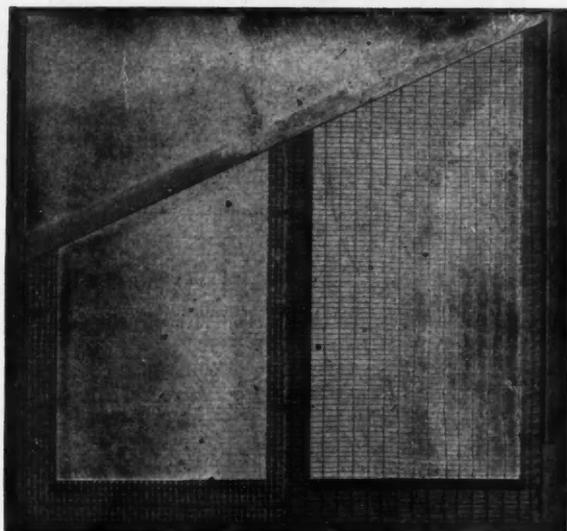
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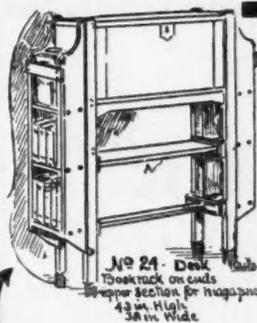


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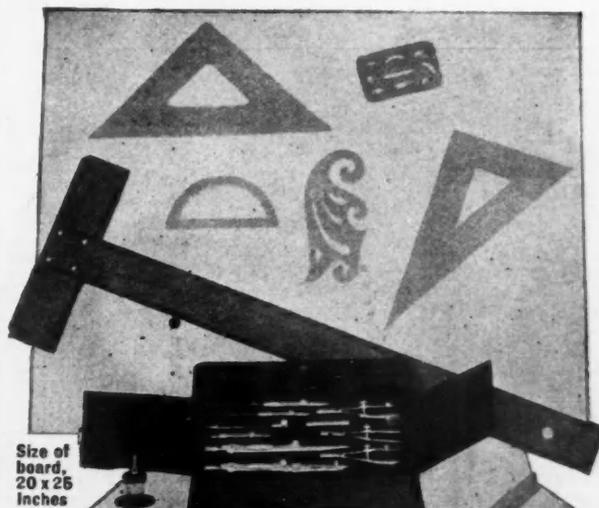
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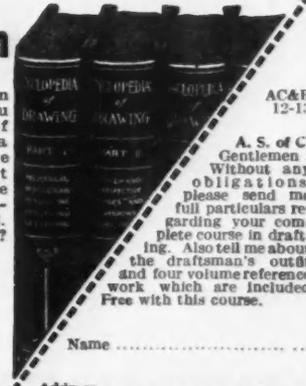
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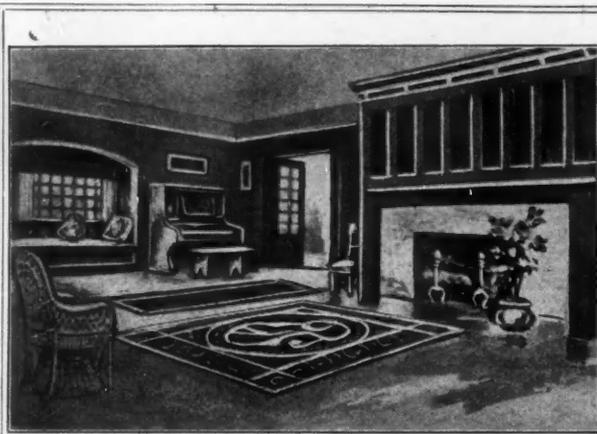
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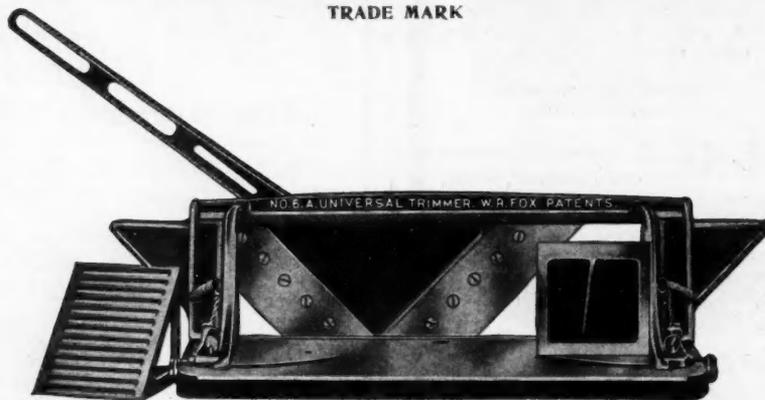
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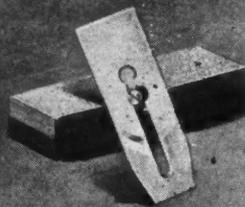
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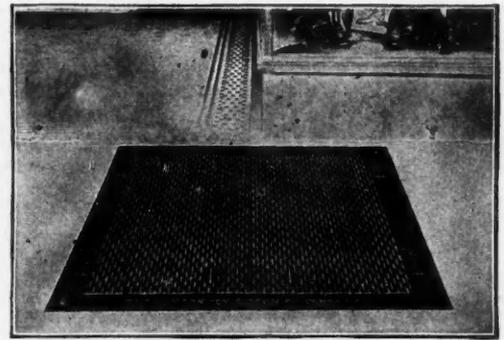


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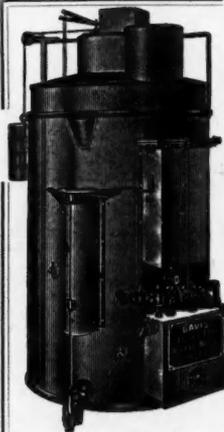
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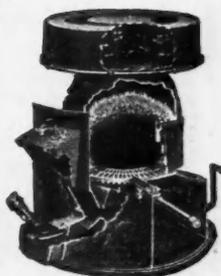
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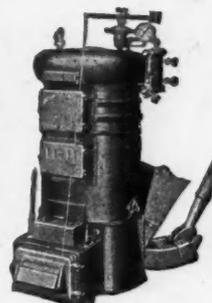


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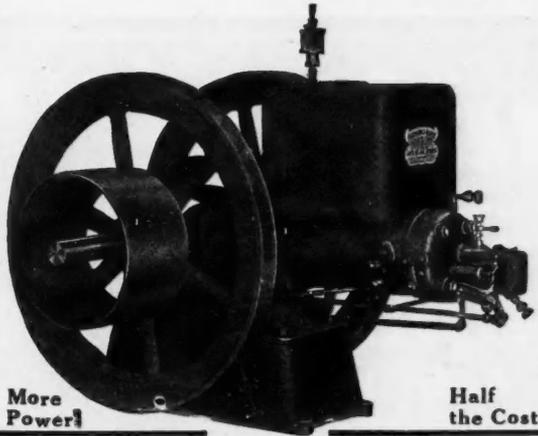
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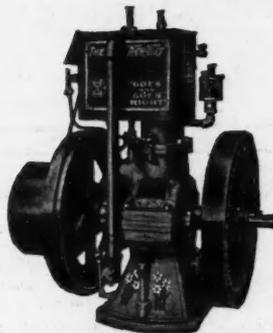
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PULLMAN AUTOMATIC VENTILATOR

Three sizes—2x12 inches, 3x15 inches, and 4x18 inches. Box of brush brass;

hood of black enameled steel; copper screened; brass screws throughout. Handsome and substantial. Can be installed in lower sash rail of window. Best, cleanest, neatest, ventilator for homes, offices and all buildings. Our line is complete. Prices reasonable.

Write for Free Catalog and Prices.

Pullman Automatic Ventilator Mfg. Co. York, Penna.

Three Tools in One SQUARE LINE GAUGE MITRE



Compact, strong, no loose parts. Guaranteed accurate. Should be in every carpenter's and mechanic's tool kit. If your dealer can't furnish you with "The Rule Tool" send 25c for one postpaid. Pays for itself a thousand times over.

THE RULE TOOL CO., 15 Hermon St., NEWARK, N. J.

Triumph Light

EVERYBODY WANTS BETTER LIGHT. HERE IT IS

This new 100 to 700 candle power light turns up and down like gas. One-third cost of electricity, gas or kerosene. For home, church or store. Anyone can operate. Perfection guaranteed or money back. Write for catalog. (A. C. B.) Dept. 20. Agents Wanted. **BRILLIANT GAS LAMP COMPANY, 1009 S. Wabash Av., Chicago, Illinois**



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Buy a Standard Typewriter. Your choice of late style Visible etc. Prices lower than other cash prices. Perfect machines only. Guaranteed. Ask for catalog 35.

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USE THE SUPERIOR FOR POWER

Prices are 2 h. p., \$42; 4 h. p., \$70; 6 h. p., \$98; 10 h. p., \$154; 16 h. p., \$238, for the next 10 days.

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East End Binghamton, N. Y.
6-16 Abbott St.

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In London, England, wishes to get in touch with small *Hand and Machine Tool Makers* in America who make a really good article at a reasonable price. A good business can be done with reliable articles. Cash if necessary on delivery.

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

SATISFACTION GUARANTEED IN QUALITY AND PRICE

ASK FOR DELIVERED PRICES

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R. J. KICHLINE, Sales Agent

NO FALLING WINDOWS
SMASHING GLASS
POCKET FRAMES
SASH WEIGHTS
RATTLING
BINDING
CORDS with

AUTOMATIC SASH HOLDERS

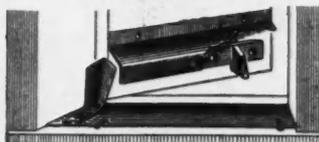
SPECIFY USE DEMAND

Automatic Sash Holders

and save labor, lumber and money. Send for trial set (\$1 prepaid) stating approximate weight of sash, or our circular. Automatic Sash Holder Mfg. Co. Church St., New York.

Over 1,000,000

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A perfectly tight All-Metal Weather Strip for bottom of doors and swinging windows. Saves sill from wearing and can be put on any door in 5 minutes at 200% profit. Sells at sight wherever shown. Our prices will interest you. Write us.

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West Hanover, Massachusetts

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The Introstile & Novelty Co., Marietta, Ohio

PAY NO TRIBUTE TO THE TRUSTS! Reduce YOUR Cost of Living!

"A penny saved is a penny earned"

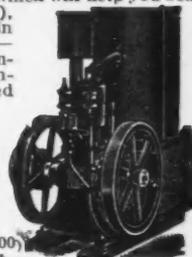
Why pay tribute to machinery and oil trusts? Have your farm work done by engines at factory prices; save money on your engine and on its operation. Kerosene is getting lower in price; gasoline is constantly advancing.

The Amazing Detroit Kerosene Engine

—sold to you at factory prices, is the engine which will help you beat the Trusts. It runs on cheap kerosene (coal oil), uses alcohol, distillate or gasoline also—runs in either direction—has only 3 moving parts—throttle governed—water cooled—speed controlled while running—sold on 5-year guarantee and 15 days' trial. Every engine tested and shipped ready to run.

NO Cams **NO** Sprockets
Gears **NO** Cranking
Valves **NO** Trouble

Engine pumps, saws, threshes, churns, separates cream, grinds feed, shells corn, does other farm work. Simplest engine in the world. Why pay trust prices when you can get the Amazing Detroit at factory prices? Write today for catalog and special introductory prices.



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HAS BEEN TRIED AND CONVICTED ON TWO COUNTS

- 1st—Of producing results as promised.
- 2nd—Of being the best canvas roofing on the market.

Its neat appearance; satisfactory service; low initial cost and extreme durability—warrant the Home Builders' close investigation.

Allow us to put our organization at your disposal by co-operating with you.

CON-SER-TEX has no equal as a covering for Porch Roofs, Piazza Floors, Sleeping Balconies and all places where a lasting fabric is desired.

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California Distributor
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You will get SPECIAL ATTENTION if you tell Advertisers you read American Carpenter and Builder.



Thousands of Roofs Declare the Superiority of

Carey Flexible Cement Roofing

Over twenty years' actual service, and time tests in all climates and under the most trying conditions, has proven Carey Roofing the most durable and economical roofing material made.

Permanent Flexibility of the material itself, and the *Carey Patent Lap* are the features that will enable you to get absolute protection and economical service from *your roof*—and Carey Flexible Cement Roofing is the only material that can offer you these features. A Carey Roof adapts itself perfectly to all weather changes; expansion and contraction never affect its efficiency, while the Patent Lap affords perfect protection for the nails, permanently insuring them against rust, and the roof against leakage.

The buildings shown above are: Schmulbach Bldg., Wheeling, W. Va.—Butler Bros., St. Louis, Mo.—Andrus Black, Minneapolis, Minn.—North Western Terra Cotta, Chicago, Ill.—Convention Hall, Kansas, Mo.—Pierce Bldg., St. Louis, Mo.—Wright Bldg., St. Louis, Mo.—Wyeth Hardware Mfg. Co., St. Joseph, Mo.—Finance Bldg., Kansas City, Mo.—Canton Auditorium, Canton, O.

Our book, "Facing the Facts About Roofing," contains valuable ideas and building aids. May we send you a copy, and a sample of Carey Roofing?

THE PHILIP CAREY COMPANY

58 Wayne Avenue, Lockland, Cincinnati, Ohio



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NOTICE TO ADVERTISERS

Forms for the January number of the American Carpenter and Builder will close promptly on December 20. New Copy changes and orders for omissions of advertisements must reach our business office, 1827 Prairie Ave., Chicago, not later than the above date. If new copy is not received by the 20th of the month preceding date of publication the publishers reserve the right to repeat last advertisement on all unexpired contracts.

AMERICAN CARPENTER & BUILDER CO.

Better Walls Inside and Out

The
Only Wall Board
Reinforced with Lath

In Less Time
and for
Less Money

Keyed
Lath Keeps
Plaster In and Up



INSIDE



OUTSIDE

OF INTEREST
TO EVERY AMERICAN
CARPENTER AND
BUILDER

Your work will pay you better, both in money and results, when you use Bishopric Wall Board for interiors.

Makes you independent of lath-and-plaster troubles and after expense. Comes in handy sheets ready for instant nailing to studding. The moment it is up the walls are ready for paint, paper, kalsomine, burlap, or any other kind of decoration.

Prepare the outer walls instantly for cement, stucco, plaster or concrete. By simply attaching the handy sheets of Bishopric Stucco or Plaster Board just as they come, one man can keep far ahead of the plasterers.

Another advantage is *stability*. Where old style backgrounds sag, spring and crack—

BISHOPRIC WALL BOARD

"CAN'T CRACK, BUCKLE OR PULL LOOSE"

Needs no paneling. One man with a hammer and saw can apply it and do an expert job. It can't crack, shrink, buckle or pull loose in any climate—winter or summer. All this is guaranteed by our

\$5,000 Anti-Warp Bond

First you have kiln-dried laths, next a heavy layer of toughened Asphalt-Mastic in which the laths are imbedded, and through which vermin can't penetrate. Next a layer of heavy-size fibre board. Air-tight, damp-proof, and sanitary. Once up stays up.

BISHOPRIC STUCCO or PLASTER BOARD

"DAMPNESS CAN'T PENETRATE"

holds the outer material everlastingly tight in its keyed laths.

Saves 50% of the outer material, 50% of the workman's time and 100% of all after trouble.

Plaster simply can't fall down. Winds can't enter. Damp can't penetrate. Rats can't gnaw through. Sun can't affect it. Makes a cool house in summer—warm in winter.

Note the solid construction—a layer of fibre board, a layer of asphalt mastic and then keyed laths, to hold your outer stucco, plaster or whatever else it may be. No metal to rust and "bust."

Fully Patented

Both Bishopric Wall Board, and Stucco or Plaster Board are fully protected under U. S. patents. They are in a class by themselves.

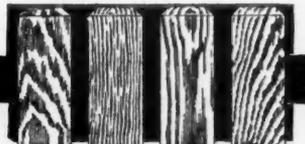
WRITE FOR FREE BOOK

Send for new Bishopric Book, Samples of both Bishopric Boards, and complete architectural Blue Print Plans for building a Model House. All free.

THE MASTIC WALL BOARD AND ROOFING CO.

452 ESTE AVENUE, CINCINNATI, OHIO

CENTRAL DOOR & LUMBER CO., PORTLAND, OREGON
Licensed Manufacturers and Distributors for Pacific Slope



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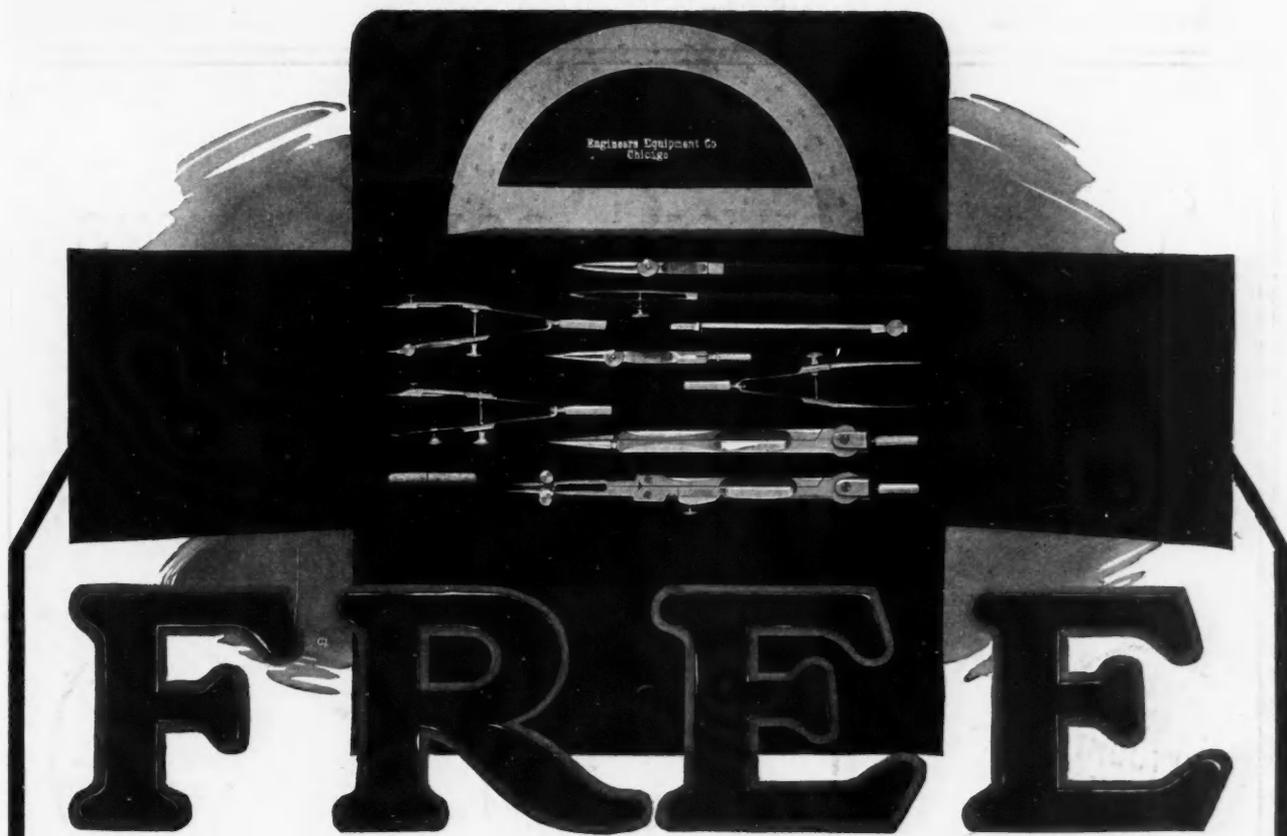
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and Builder.



\$15.00 Draftsman's Complete Working Outfit

Yes, sir. I will give you a complete draftsman's outfit absolutely free. It does not cost you a penny. Besides these German Silver Draftsman's Instruments shown here I also give you absolutely free a 20x25-inch drawing board, a 24-inch T square, 12-inch rule, supply of drawing paper, 2 triangles and French curve, pencil and eraser, drawing ink and thumb tacks, etc., etc. All free. Send the coupon now.

This is just the kind of an outfit I use myself. Genuine working instruments. You couldn't get this outfit anywhere for less than \$15.00. But you must hurry. I cannot give these outfits away to every one that writes but will consider the names in the order in which they are received. Send the free coupon. Now—tomorrow may be too late.

Be a Draftsman | Make More Money ^{Working At Home} Earn \$125 to \$165 a Month at Once | You Can Earn While Learning

Thousands of positions paying big money are open right along. **All over**, concerns are constantly wanting trained men. They pay big money. Hundreds of positions open paying from \$75 to \$100 weekly. A prominent chief draftsman will give you just the kind of training that you need, practical training, the kind demanded by firms that pay the biggest salaries. You can learn to become a draftsman in your own home—during your spare time—by mail. I will give you personal instruction until you are in a position drawing \$125 to \$175 a month. Write for full particulars.

I will give you paying work to do as soon as you enroll. Practical drafting work will give you experience and put you in the big money-making class. Start earning money as soon as you are my personal student **You may earn \$5 a day as soon as you enroll.** Big opportunity for men who act at once. Send the free coupon for full particulars—now. Do not delay. Write immediately.

I Guarantee
To instruct you until competent and placed in a position at a regular salary paying from \$125.00 to \$175.00 per month and furnish you free \$15.00 Working Outfit at once.

Chief Draftsman Will Instruct You Personally

For 20 years I have been doing the highest paid expert drafting work as Chief Draftsman of a large and well known company. I will train you personally and give you just the kind of practical training that you need to hold one of the biggest paying positions. I know what the big firms demand, and I will give you this kind of training as long as required during your spare time, in your own home. Send the free coupon at once. Do not delay. Write today—now.

Pay as You Wish Don't bother about the money. If you are ambitious and wish to become an expert draftsman, don't worry about money. Write now—we'll fix it up.

Send the Coupon for Big New Free Book

Just put your name and address in the free coupon and send it to me at once I will send you absolutely free and prepaid the big new book, "Successful Draftsmanship." The book will tell you about the exceptional opportunities you will have after you join the profession. Explains exactly how you can learn to become an expert draftsman in your own home—during your spare time. Do not delay a single instant. Here is your chance. Every minute that you delay means one day longer at the old job—at the small pay. Get out of the rut now. The first step toward success and a big job is to fill out the coupon. No obligations of any kind. Write today.

CHIEF DRAFTSMAN
Div. 2669, Engineer's Equipment Co., Inc., Chicago, Ill.

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Address.....

Free Outfit Coupon

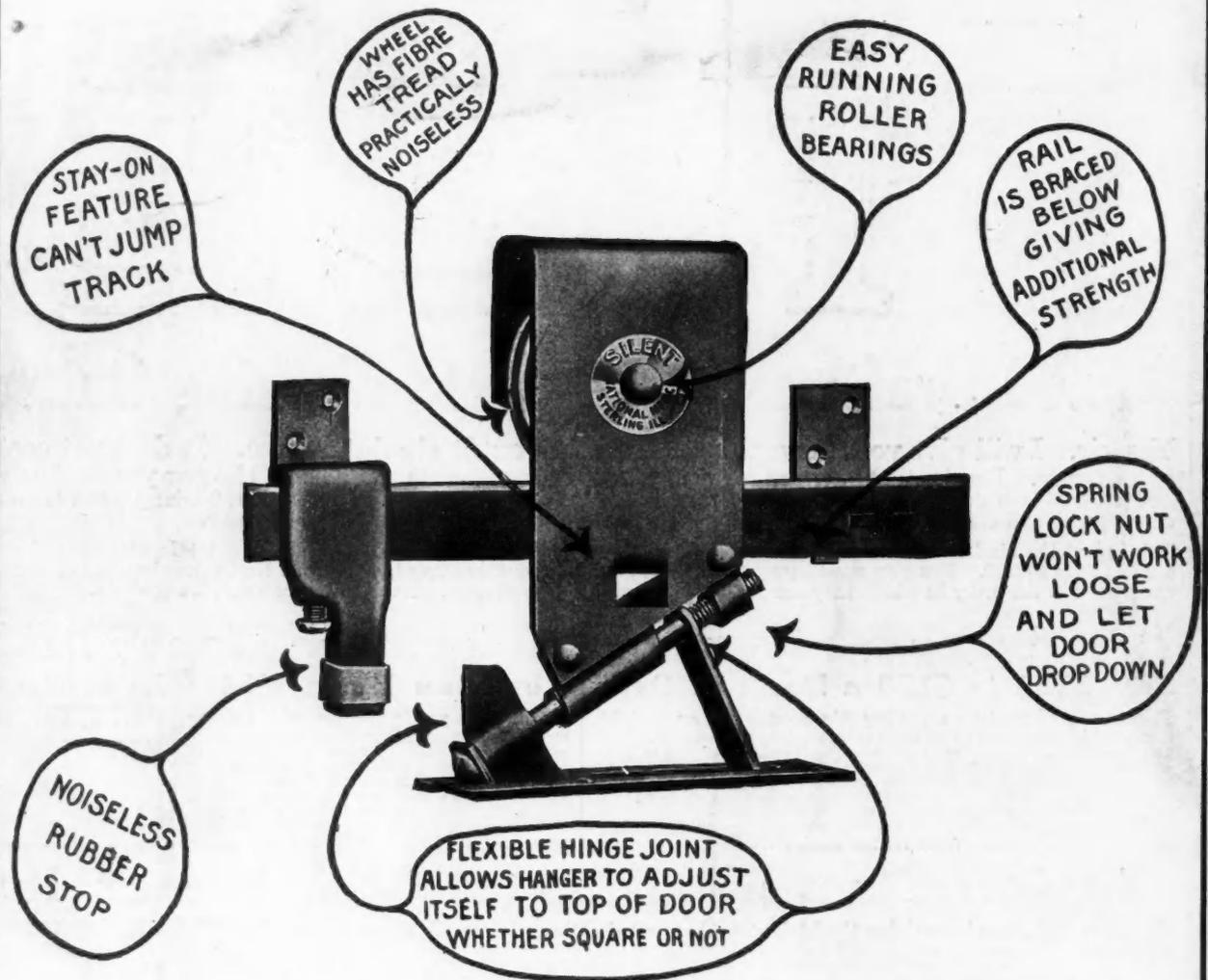
Chief Draftsman
Div. 2669 Engineer's Equipment Co., Inc.
Chicago, Ill.

Please send me your book, "Successful Draftsmanship" and also full particulars of your liberal "Personal Instruction" offer to a few students. It is understood that I am obligated in no way whatever.

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"Silent" Parlor Door Hangers

THEY'RE EASY TO HANG



National Manufacturing Company

Sterling, Illinois