

JUL 5 1912

AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

In This Issue:—

Prize Winning Letters

Successful Builders Tell How They Have Made Good

HOW I BUILT UP MY REPUTATION

By W. H. HUBBARD, "Bungalow Builder," Eugene, Oregon

MY RISE from CARPENTER to BUILDING CONTRACTOR

By EDW. SPRIGG, "Superintendent of Buildings Cornell University," Ithaca, New York

HOW I GO AFTER—AND LAND—NEW BUSINESS

By C. C. WRIGHT, "Carpenter and Contractor," Greenfield, Illinois

MY BUILDING JOURNAL AS A MONEY-MAKER FOR ME

By H. G. BLACKLIDGE, "Carpenter and Builder" Oakdale, California

— and Forty-Nine other Important Features:

A House for Three Dollars—The Builder on Thin Ice—Relative Cost of Frame Construction With Other Types—Mortorcycles for Builders—Cabinet Hardware—Details of Four-Fold Doors—Designs and Details of Five Novelties of Interior "Built-in" Finish—Estimating—Steel Square Work—Home Furniture Making—Correspondence Department With Questions and Answers.

**House Plans --- Garage Plans --- Ideas and
Designs for Home Builders**

ATKINS "SPRING BEAUTIES"

Here are just a few of the tools that you will find invaluable in your kit. They represent the most scientific construction and Highest Quality. Your regular dealer will supply you. Just tell him you want "ATKINS SILVER STEEL". He will order from his wholesale house, if he does not have them in stock. Why not "sort up" your outfit—this spring—now—and enjoy the benefits these really fine **mechanics** tools will bring.



Two Man Saws—For Heavy Cutting



Hand, Rip and Panel Saws



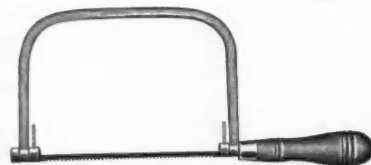
For Heavy Framing



Floor Scrapers. Blades of Saw Steel



Nests of Saws with Metal Cutting Blade



Coping Saw



This Mark on all Genuine Atkins Tools



Back or Mitre Saws



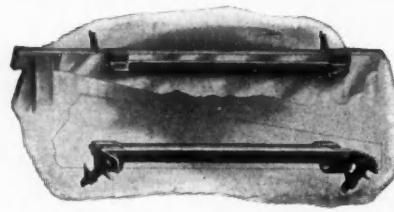
Trowels Made of Saw Steel



Improved Hack Saw Frames



Atkins No. 100 Flooring Saw



Atkins AAA Saw Clamp



Another Popular Floor Scraper

FREE Send your name and address with ten cents for postage, and we will register you on our list of High Class Mechanics and send you **Free** our Carpenters Book, called Saw Sense, a handy monthly Time Book, with wage scale and a fine carpenters nail apron.

E. C. ATKINS & CO., INC.

THE SILVER STEEL SAW PEOPLE

INDIANAPOLIS, INDIANA

When Writing Advertisers Please Mention the American Carpenter and Builder.

No. 3 C. H. & E. PORTABLE SAW RIG

**4 HORSE
POWER
4 CYCLE
ENGINE**

One 12" Rip Saw
One 12" Cross Cut
Saw
One 8" dia. $\frac{1}{2}$ " Dado
Head
4" Jointer Head
Jig Saw (3 Blades)
Boring Table (3 Bits)
Emery Wheel
10" Sander
Adjustable Gauges
Canvas Cover
Trucks
Huther Bros. Adjust-
able Dado Head



WE ARE THE PIONEERS IN THE
MANUFACTURE OF

PORTABLE SAW RIGS

We manufacture them in four sizes, besides a
complete line of contractors' equipment

WRITE for our attractive colored wall hanger, de-
scriptive of this No. 3 Portable Saw Rig

C. H. & E. Manufacturing Co. Inc.

322 Mineral Street - - MILWAUKEE, WIS.

When Writing Advertisers Please Mention the American Carpenter and Builder.

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 the finest parquet.

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 finest 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.

Write for Our Free Book, "Surfacing Floors as a Business."

Manufactured By **The American Floor Surfacing Machine Co., TOLEDO, O.**



We Make Panels of any Thickness and Any Kind of Wood — Curved or Flat.

FOR
Wainscoting
Ceiling
Mantels
Doors
Counter Tops
Partitions
Cabinets
Shelving
Drawer Bottoms

Our products excel in Quality and Durability, because we concentrate our best efforts in their manufacture.

We specialize in Panels and have the facilities for producing best results.

Try us with your next order. Send us your specifications and ask for our prices.

AMERICAN VENEER CO.

Specialists and Manufacturers of Built-up Veneer Panels

We appreciate small orders as well as large ones

12 Market St., - - - KENILWORTH, N. J.

ANTI-STICK PRODUCTS

CONCRETE AT ITS BEST

Anti-Stick.—Prevents poured concrete from sticking. No oil or grease.

Anti-Stick Enamel.—Used with the damp process, and where forms are removed immediately after casting.

Anti-Damp.—The damp proofing that does the work. Good as gold.

Elephant Tread.—Concrete floor finish. Easily Applied.

We are supplying what concrete men need. Write us. We are not experimenting.

Anti-Stick Company - Westerville, Ohio

"It Works Like a Plane"

The Boss Floor Scraper

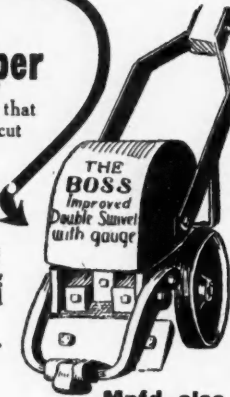
The "Boss" is the only Floor Scraper made that will plane a floor without leaving a square cut where knife first starts cutting. Why? Because the "Boss" is made with a gauge on front, to which is attached a pear-shaped wheel which raises when machine is pulled and lets the knife down gradually.

The "Boss" can be set for any thickness of shaving, it also can be set for any shearing cut right or left up or down to suit the kind of Lumber.

It is guaranteed to give absolute satisfaction.

G. J. KEPPLINGER

Main Office: - DWIGHT, ILL.



Mfd. also in Canada.

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.

DON'T BUY A FLOOR SCRAPER

of any kind until you have tested the

LITTLE GIANT

at our expense. Sold only on its merits. Shipped to you prepaid for a free trial. If not satisfactory in every particular, return it to us, at our expense.

Easy to operate. Will scrape your floors rapidly, perfectly and economically.

Ask for special price on the LITTLE GIANT



The Thor Electric Home Laundry Machine

permanently solves the laundry problem in the home. More than 34,000 now in use. Sizes, designs and prices to meet every requirement. Free trial. Easy payments.

Write for full particulars.

Hurley Machine Company

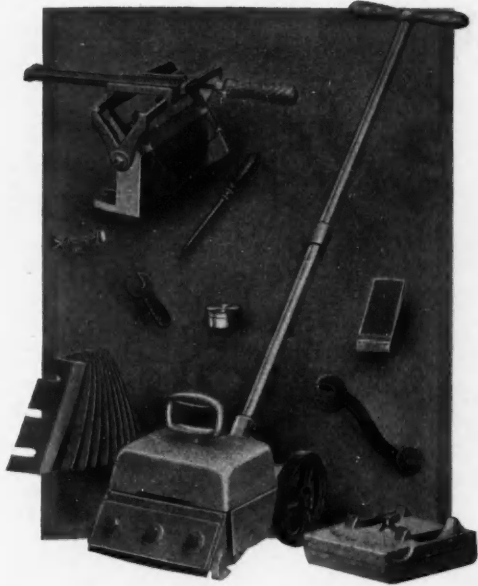
1008 Flatiron Building
NEW YORK

37 So. Clinton St.
CHICAGO

When Writing Advertisers Please Mention the American Carpenter and Builder.

OVER \$100,000.00

Has been **SAVED** by **USERS** of the



Acme Floor Scraping Outfit

during the past five years. Thousands of machines are now in daily operation, and every mail brings letters from users commenting upon the satisfactory work their outfits are doing and the vast amount of labor expense they are saving.

Now, Mr. Contractor, you do not have to rely upon what I say regarding the merits of my machines, but I want you to let me send an outfit to you on **one week's free trial**, and you can then let the machine demonstrate on your own work just what they can do. If, after working with the equipment for one week, you are not convinced that the same will save you many dollars, and do your floor scraping better than it was ever done before, just pack up the machines, return them to me, and you will owe me nothing.

Write to-day for booklet and full details of my proposition.



The Acme Handy Mitre Gauge

is another labor saving tool. It is absolutely accurate, can be set at any angle and fits in the pocket where it is always ready for instant use. If your dealer does not carry them in stock, then write to me for circular describing this wonderful little tool.

JOSEPH MIOTKE
247 Lake Street : : Milwaukee, Wis.



Post-paid
\$3.50
per pair,
including
Pocket
Pump

If your work renders this position necessary, you can't afford to be without a pair of "Kneematics." Fit the knee perfectly and weigh but six oz. Made of finest and toughest leather fitted with heavy inner tubes. Pump them as you would a tire. Will save four times their price in overalls and trousers in a year.

*Don't abuse your delicate knee cap tissues.
Rest on air.*

M. M. M. M. Co., Inc.
MARSHALLTOWN, IOWA

What Ellsworth Everson Thinks
of the

FOX FLOOR SCRAPER

Brilliant, Ohio, May 14, 1912
FOX SUPPLY CO.
Brooklyn, Wis.
Dear Sirs:—As I have two floors of yellow pine to scrape by the first of next week, I would like to give your scraper a trial, and if satisfactory I will pay you and keep it, as stated in your advertisement in the American Carpenter and Builder. If it doesn't cost too much send it by Adams Express.
Yours truly
Box 33. Ellsworth Everson

He
Tries
It

He
Is
Skeptical

Brilliant, Ohio, May 24, 1912
FOX SUPPLY CO.
Brooklyn, Wis.
Dear Sirs:—I received the scraper O. K. and used it on two rooms this week. It is very good and saves lots of hard labor. I thank you for sending it by express. You will find enclosed money order for the amount, \$25.00.
Yours truly
Box 33. Ellsworth Everson

He
Keeps
It

He
Is
Satisfied

We Have 847 Other Testimonials Just as Good

Why Don't YOU Order a Fox Floor Scraper on Ten Days Free Trial?

FOX SUPPLY CO., BROOKLYN, WIS.
MANUFACTURERS DEPT. A

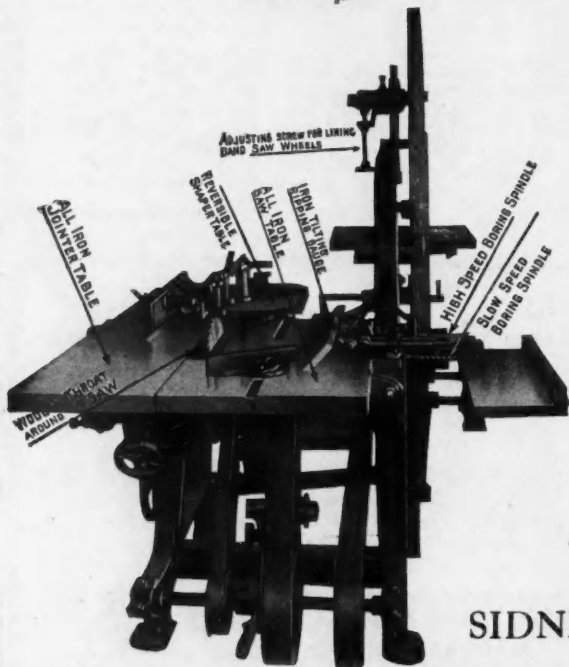
A FAMOUS MESSAGE

*Sixteen Woodworking
Machines in One*

27" Band Saw.
12" Jointer.
Saw Table (with raising and lowering arbor).
Single Spindle Shaper.
Borer.
Pony Planer.
Tongue and Pole Rounder.
Hollow Chisel Mortiser.
Single end Tenoner.
Drum Sander.
Disc Sander.
Emery Grinder.
Knife Grinder.
Band Re-Saw.
Spoke Tenoner, Rim
Borer and Wheel
Equalizer.
Adjustable Felloe
Rounder.



**Write for full particulars
today---don't delay**



- Original and Reliable.
- 1,250 in use today.
- Guaranteed for Life.
- Four Men can Work at the same Time.
- Easily Operated.
- All Steel and Iron Construction.
- Stationary or Portable Types.
- Styles and Sizes for every kind of Woodworking Business.

The Sidney Tool Co.

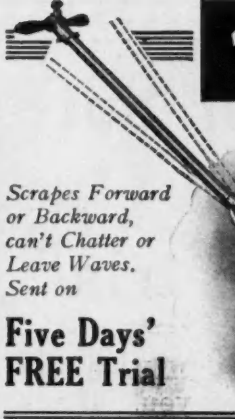
SIDNEY

::

::

OHIO

When Writing Advertisers Please Mention the American Carpenter and Builder.



Scrapes Forward or Backward, can't Chatter or Leave Waves. Sent on

Five Days' FREE Trial

The WEBER DOUBLE ACTING Floor Scraper

Enables you to bid lower on the same profit, or boosts your present profits—because of the great saving in time. It scrapes twelve "squares" a day against three by hand—and so actually

Does Four Times the Work

Try it five days. If you don't like it, send it back. The trial won't cost you a cent. You'll have to admit that we couldn't do this with anything but a perfect machine.

JOHN F. WEBER, President
WEBER MFG. CO 670 71st Ave. West Allis, Wis.

The Improved "RED DEVIL" MITRE BOX \$2.⁰⁰

IS the only mitre box that will cut any angle with any saw, any place. Can be used anywhere in the shop or on the job. You want this "RED DEVIL" Mitre Box and no other. All good hardware dealers sell it. Just insist on the "RED DEVIL" Mitre Box and take no other. It's to your advantage to use it and do perfect work and save time. If you can't get it locally, send us \$2.00 and your dealer's name, and one sample only will be sent you prepaid.



All Metal
Light in Weight
Practical in Every Detail
Folds Up to Carry in Tool Box

Smith & Hemenway Co., 153 Chambers St., New York City
240 Lemoine St., Montreal, Canada

Only Makers of Genuine "Red Devil" Tools
Over 3,000 Different Kinds and Sizes

No. 51 Crescent Universal Woodworker

While one compact machine, in reality it is five. It covers every need of the carpenter or contractor, lumber yard or other firm who may not have at hand all the facilities of a fully equipped planning-mill.

Four men may easily work on it at once. A combined band saw, jointer, shaper, saw-table and borer. Each unit has all the convenience of an individual machine.

The construction of our No. 51 Crescent Universal Woodworker does away with all separate countershafts. It is compact, strong, and an ever ready work producer.

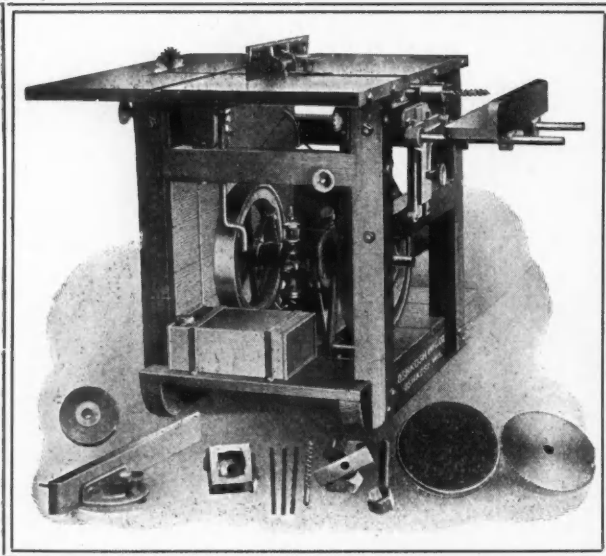
SEND FOR CATALOG No. 51 TODAY

The Crescent Machine Company
224 Main Street, - - LEETONIA, OHIO



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Since You Do Not Know for Sure
That It Will Pay You to Own One
why not make sure by a free trial?



YOU cannot possibly know what this outfit will actually save you. If you *did* know, you would have one making money for you NOW. But you can easily find out, by trying it out, entirely at OUR risk. Make that test with an

TRADE MARK
OSHKOSH

Guaranteed
for Life.

EVEREADY PORTABLE SAW RIG

Allow us to ship you one on the plain understanding that you can use it "on the job" for one week FREE. Let it "show you," and then we will talk terms. Unless it makes good as a money-saver, you don't want to buy it, and we don't want to sell it. That is a straight, square line of talk, and every word of it *goes*. Accept the Free Trial Offer and see.

Read What Others in Your Line Think of It.

The George B. Swift Company, Chicago's big general contractors, say:

"The portable saw rig purchased from your Company has given excellent service and has proven its efficiency under all conditions."

The Deathage Lumber Co., of Kansas City, declare that:

"The saving in time and the utilization of what would, without the use of the machine, be waste or low grade material, has been a source of constant satisfaction and profit to us.

In one day it saved us the net amount of \$22.00.

"It has been operated throughout by the regular yard force, among whom there is not one making any pretension of mechanical knowledge."

Geiger & Bosma, of Sheldon, Ia., write:

"The Eveready Saw Rig bought of you has given the best of satisfaction. We gave it a very thorough tryout in our Catholic Church contract in this city and know that it has saved in labor on this job almost the price we paid for it."

Lots of others praise it just as strongly. So would you!

Outdoes 25 Men on Any Sawing Job

This solid-built, compact, handily-moved outfit will easily handle as much sawing as 25 quick men could do. Rips or cross-cuts BETTER than hand work—and DOES A DOZEN OTHER KINDS OF SAWMILL and PLANING MILL WORK as well. Comes to you complete—you have no extras to buy—they are all included.

Costs Very Little Either to Buy or to Run

Though the EVEREADY is an A1 piece of machinery, its price is small. And a quarter a day pays its power-bill. Try it and judge its value.

Note How Many Money Making Jobs It Does

NINE FREE EXTRAS include Jig Saw that gives you a band saw rig. Does A1 cabinet work.

Jointer (2½ in.), built heavy and staunch, cuts at any angle, does many kinds of planing mill work well.

Borer makes mortising easy, and runs like a good watch—smooth, easy!

Special Dado Head cuts across the grain as well as with it. Great for framing jobs.

Other Eveready attachments include the best **Sander** made (won't blister); a **Mitering Device** you will admire; **Saw Gauge**; **Tool Grinder**; and **Cross-Cut** and **Ripping Saws**, all finest quality.

Simply Say: "I'll Try It Out At Your Risk"

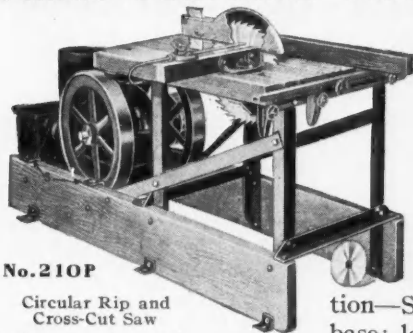
Put it to work on your own jobs, in your own way, for a whole week at our risk and cost. Tell us by letter today that you will make the trial—that's all.

OSHKOSH MANUFACTURING COMPANY

316 South Main Street
OSHKOSH, WISCONSIN

When Writing Advertisers Please Mention the American Carpenter and Builder.

PARKS PORTABLE SINGLE AND COMBINATION WOODWORKING OUTFITS



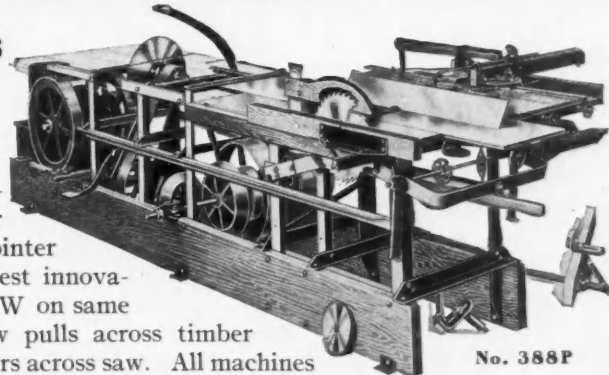
No. 210P
Circular Rip and Cross-Cut Saw
Price, Complete with Engine . . \$74.50

Our machines can be added to or changed to whatever combination special work may require. Ready for instant use, no bolting and unbolting of parts.

Portable Outfits Everybody Interested

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 to make immediate shipment.



No. 388P

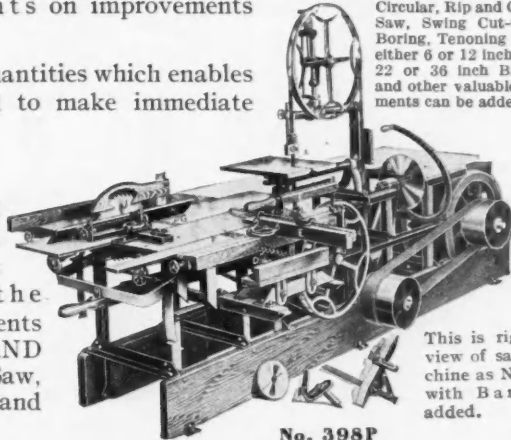
Circular, Rip and Cross-Cut Saw, Swing Cut-Off Saw, Boring, Tenoning Machine, either 6 or 12 inch Jointer; 22 or 36 inch Band Saw and other valuable attachments can be added.



No. 320P
Same machine as No. 210P with Jointer Band Saw and Boring attachments.

Ask for Catalog and you will find that we

have also lead in the greatest improvements in **FOOT AND HAND POWER Circular Saw, Band Saw, Mortising and Tenoning Machines.**



No. 398P

This is right side view of same machine as No. 388P with Band Saw added.

PARKS BALL BEARING MACHINE CO., Fergus St. and C.H. & D. RY., CINCINNATI, OHIO, U. S. A.

You Can Get This \$124.⁸⁰ Four-In-One Machine For

A BAND SAW—A SAW BENCH AN 8 INCH JOINTER and PLANER A MORTISER and BORER

Four DISTINCT MACHINES FOR THE PRICE OF One



Save money in your costs of doing work. Here is a woodworking machine that can save you money on every job you do. This type "C" Universal Woodworker is a substantial, portable, all cast iron machine that represents the best investment you can make. It is a time, labor and money saver—therefore a money maker.

In this type "C" woodworker you get FOUR distinct machines in ONE—A Band Saw—A Saw Bench—An 8 inch Jointer and Planer—A Mortiser and Borer. Not one machine with three makeshift attachments—but FOUR complete, individual, machines in ONE and for the price of ONE.

Our type "C" woodworker is equipped complete, including tools and belting. The heavy base is fitted with wheels—one of which swivels—making it very easy to move the machine.

We guarantee this woodworker to be A No. 1 in every respect. We will ship you a machine with the positive understanding that if it does not meet with your entire approval after 30 days trial we will refund your money and pay the freight charges both ways. That's a fair offer isn't it? We couldn't make it unless the machine was right all the way through.

Here is a big value for you. A real woodworking equipment for only \$124.⁸⁰. Be certain you have us send you our detailed specifications about this type "C" Woodworker before you buy any woodworking equipment. Drop us a line for complete particulars now.

THE TANNEWITZ WORKS
315 N. Front Street
GRAND RAPIDS MICH.

SMITH OF SMITHVILLE

Woodworking Machinery

For Bench Hand Planer and Woodworking Machinery, Address

H. B. Smith Machine Co.
SMITHVILLE, N. J., U. S. A.

New York Chicago Atlanta San Francisco

When Writing Advertisers Please Mention the American Carpenter and Builder.



\$1.00 BY MAIL ONLY
1 Positively the
Best Level Made

Guaranteed to Pay for Itself on
 First Job

KEEP 30 DAYS

RETURN IF NOT SATISFACTORY

J. D. WEAVER
 JACKSONVILLE, ILLINOIS



9 Machines in 1
GRIMM
Woodworker


You can have at your service either a Rip Saw, Cross Cut Saw, Jig Saw, Dado Head, Jointer, Emery Wheel, Boring Machine, Sander or Moulder.

A GRIMM WOODWORKER will increase your earnings, save time, etc.

Built with belt or electric motor drive, also gasoline engine for portable use.

Thousands in use giving complete satisfaction
 Send for catalogue and prices

GRIMM MANUFACTURING CO. 46 Erie St., Buffalo, N. Y.



No. 8 "UNION" COMBI-NATION SAW

A well-built, light power machine, at a low cost, has a wide range for work, will rip stuff up to 3½ inches thick, also cut off, 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 complete line of Foot, Hand and Light Power Wood-working Machinery.

THE SENECA FALLS MFG. CO., 218 Water St., Seneca Falls, N. Y., U. S. A.
 275

\$144⁰⁰ For Both To Contractors and Builders

Ask for Price on One if You Can't use Both
 Chicago No. 5 Combination Saw Table
 Used for Cutting Off, Ripping, Mitering, Grooving, Boring, Tenoning, Etc.




Chicago 12-Inch Jointer and Planer

Used for Planing, Jointing, Shaping, Matching, Rabbeting, Grooving, Chamfering, Beading and Making Mouldings.

The Worlds Largest and Most Complete Stock

of Woodworking Machinery, Tools and Supplies—everything for the Woodworker.

Send for our Free Special Catalogue to-day. We issue a catalogue of machines especially adapted to Contractor's and Builder's use.

CHICAGO MACHINERY EXCHANGE, 1213-1223 W. Washington Blvd., CHICAGO, ILL.

Buy Your Trucks Of Us

When Writing Advertisers Please Mention the American Carpenter and Builder.

NICHOLLS RAFTER FRAMING SQUARE

23	22	21	20	19	18	17	16	15	
LENGTH OF COMMON RAFTER PER FOOT RUN	LENGTH OF HIP OR VALLEY RAFTER PER FOOT RUN	DIFFERENCE IN LENGTH OF JACKS 16 INCHES	2 FEET	OF JACKS OF HIP OR VALLEY RAFTERS	CENTERS	21 63	20 80	20 00	19 20
FIGURES GIVING	SIDE CUT	CUT OF SHEATHING	IN VALLEY	OR HIP	18 10	17 10	16 10	15 10	14 10
22	21	20	19	18	17	16	15	14	13

3	4	5	6	7	8	9	10	11	12	13	14	
DIRECTIONS FOR USING NICHOLLS RAFTER FRAMING SQUARE												
MULTIPLY FIGURES IN FIRST ROW UNDER RAISE REQUIRED BY 1/2 THE WIDTH OF BUILDING GIVES EXACT LENGTH OF FIRST JACK THIS FIGURE IS ALSO THE DIFFERENCE IN LENGTH OF RAFTER AGAINST HIP OR VALLEY RAFTER												
GIVES EXACT LENGTH OF FIRST JACK AGAINST HIP OR VALLEY RAFTER												
SIDE CUT OF JACK AGAINST HIP OR VALLEY RAFTER												
HIP OR VALLEY RAFTER AGAINST RIDGEBOARD OR DECK												
CUT OF SHEATHING OR SHINGLES IN VALLEY OR HIP FOR CUTS ALWAYS USE												
1	2	3	4	5	6	7	8	9	10	11	12	13

☐ Nicholls Rafter Framing Square has full directions for using Rafter Framing Rule stamped on back of square—making a complete tool within itself. No direction sheet is needed.

☐ The Framing Square is the most important tool in your equipment. You want to make certain that it is positively accurate in every detail. You cannot afford to experiment with Framing Squares.

☐ Nicholls Framing Squares can always be depended upon. They are positively accurate, easily read and made so as to give constant, satisfactory, service.

☐ We make Framing Squares in both solid and take down styles. Our solid Framing Squares are made without a weld—being cut from a solid sheet of especially made steel. Our squares do not break at the corner. They do not get out of true easily.

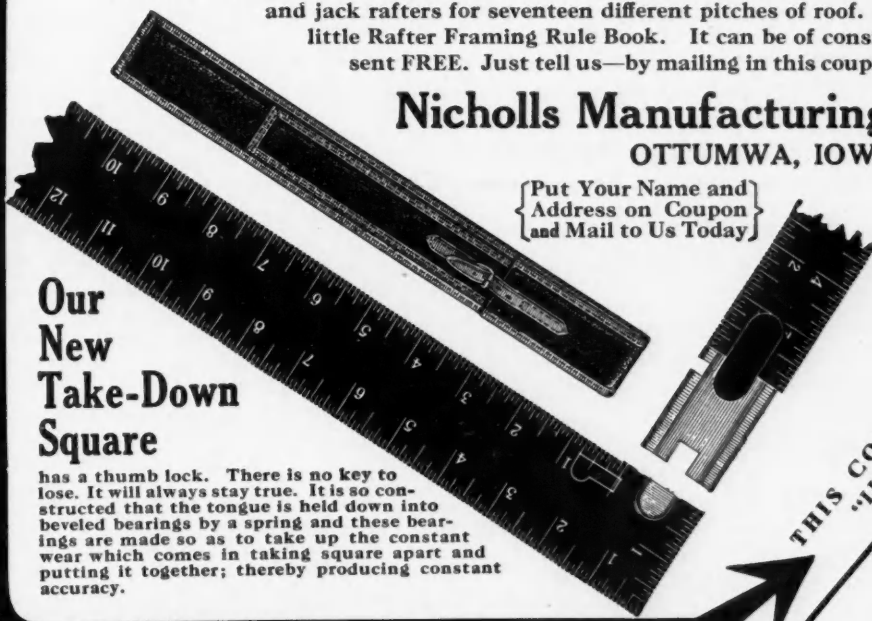
NICHOLLS FRAMING SQUARES

are made with 2x24 inch bodies and 1 1/2 or 1 3/4 x 16 or 18 inch tongue. Finished in Polished Steel; Oxidized Copper; Black, with white figures and letters; Royal Copper, with white figures and letters; Nickel Plated on Copper, bright finish; Nickel Plated on Copper, satin finish; Galvanized, buffed or satin finish. Our famous Nicholls Rafter Framing Rule is put on our regular framing squares.

We have a "Little Book" explaining how to get the lengths and cuts of common, hip, valley and jack rafters for seventeen different pitches of roof. You should have this little Rafter Framing Rule Book. It can be of constant help to you. It is sent FREE. Just tell us—by mailing in this coupon—that you want one.

Nicholls Manufacturing Company
OTTUMWA, IOWA

Put Your Name and Address on Coupon and Mail to Us Today



Our New Take-Down Square

has a thumb lock. There is no key to lose. It will always stay true. It is so constructed that the tongue is held down into beveled bearings by a spring and these bearings are made so as to take up the constant wear which comes in taking square apart and putting it together; thereby producing constant accuracy.

THIS COUPON WILL BRING YOU OUR "LITTLE BOOK." SEND IT IN NOW.

Nicholls Mfg. Co.,

Gentlemen: Send me---with-out any obligation on my part whatever---your Rafter Framing Rule Book.

Name _____
City (or Town) _____
State _____
R. F. D. _____

When Writing Advertisers Please Mention the American Carpenter and Builder.

HOW TO DRAW PLANS

Every young Carpenter and Builder who desires to advance must know how to draw and read a plan so that he will never hesitate about working from a drawing.

Information along this line has always been given in high priced books, but the **INDUSTRIAL BOOK CO. of NEW YORK** have just placed on the market a series of six handy sized volumes in which the subjects of making and reading an architectural working drawing are fully explained and illustrated. The six practical home study manuals form

THE YOUNG ARCHITECT'S LIBRARY

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Working drawings
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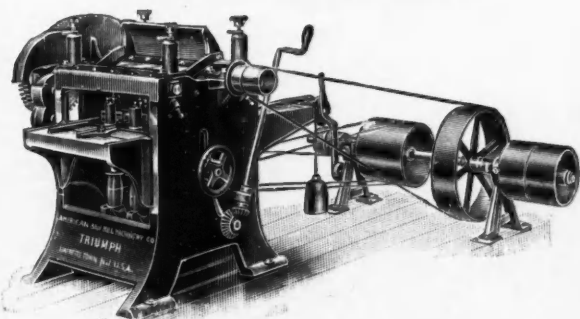
Because with this machine you can cut straight or curved sash bar to any length, on any angle and at the same time form the end to fit its mate in a great deal less time than it is possible to do by hand.

Then too, the fit is so nicely made that it shows finish and workmanship far in advance of the sash fitted by hand.

We will ship a machine on approval to any responsible concern—and should like to see you the next one to try it.

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American "Triumph" Planer, Matcher and Moulder

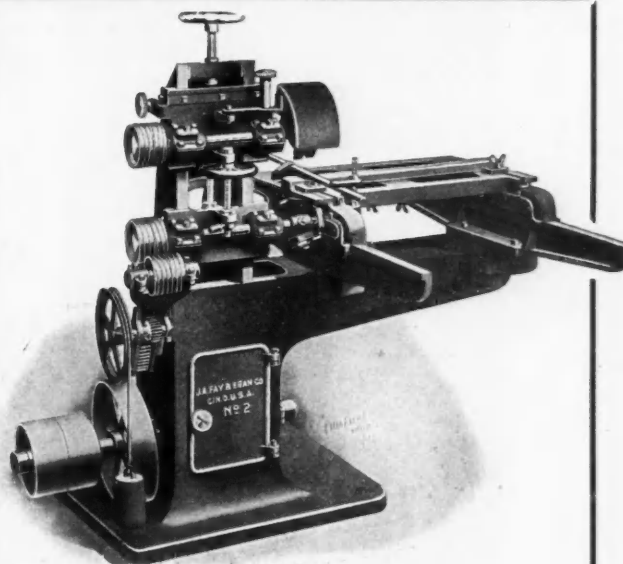


Here is a small planer, matcher and moulder which turns out work as accurate, uniform and high in quality as the largest, most expensive machines. It has better workmanship and materials, and more attention to fine details, than any other small planer and matcher.

We could not make the "Triumph" better if we asked twice the price. Our catalog explains why, and lists "everything for the saw mill plant". And let us send you a special hanger showing the many styles of work the "Triumph" will do.

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Sash, Doors and Blinds and all Light Tenoning can be done by the Contractor in his own shop on a No. 2 Tenoner.

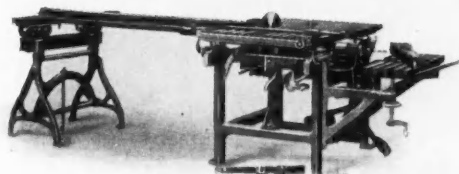
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Main Office **J. A. FAY & EGAN CO.** Sales Offices
545-565 W. Front St. CINCINNATI, O. World's Oldest and Largest Mfrs. of Woodworking Machinery The "Lightning" Line New York Chicago St. Louis Seattle

Our Portable Saw Tables Can Cut-Down Your Costs

● These Portable Double Arbor Rip and Cut-Off Saw Machines with either Iron or Wood Frames, can save you time, labor and material on any job. The machines are easily portable and require but small space to operate in. They are equipped with either electric motor or gasoline engine.

● Our Double Arbor feature gives you in one machine a Rip and Cross-Cut Saw ready for use at any time. It is but a second's work to change Rip Saw to Cut-Off Saw or Dado Head. Other big features of these machines are their rolling tops, carrying 1000 lbs. easily. Their boring attachments which require no pushing of lumber to bit. The bevel gauge which will make any cut that can be made on a tilting top table. The mitre gauge which can be set to any angle—right or left. The dado head which can be used in either saw arbor.

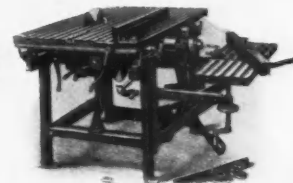


● Our table extension is framed together, trussed to prevent springing and provided with steel lumber roll, at outer end. When in place it is solidly secured to main table. It can be easily put up or removed.

● We guarantee these machines in every respect. Find out about them before you buy any machines of this type. Let us send you our catalogue "M." Free for the asking and it will interest you. Write us today for copy.

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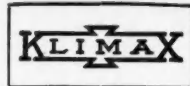
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TREE to FINISHED PRODUCT"
More than two-thirds of the
Reach the User through the

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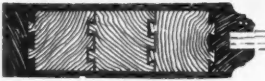
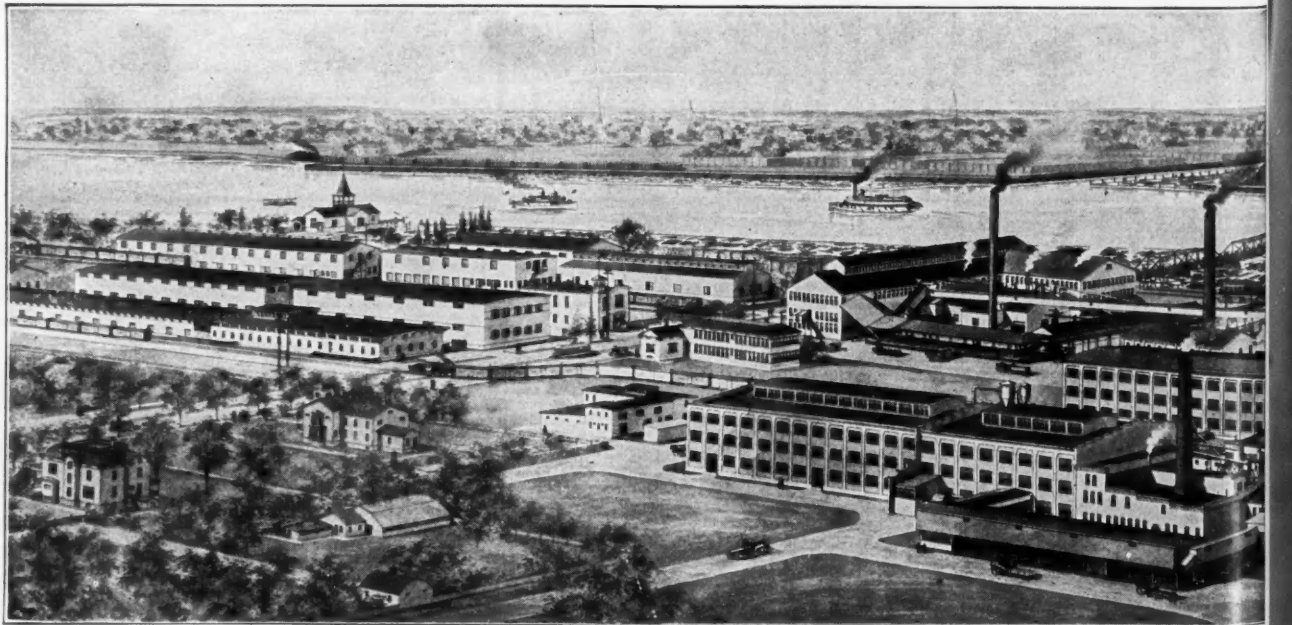
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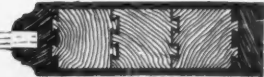


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Forests to the Doors."

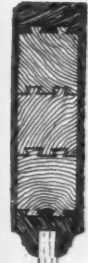
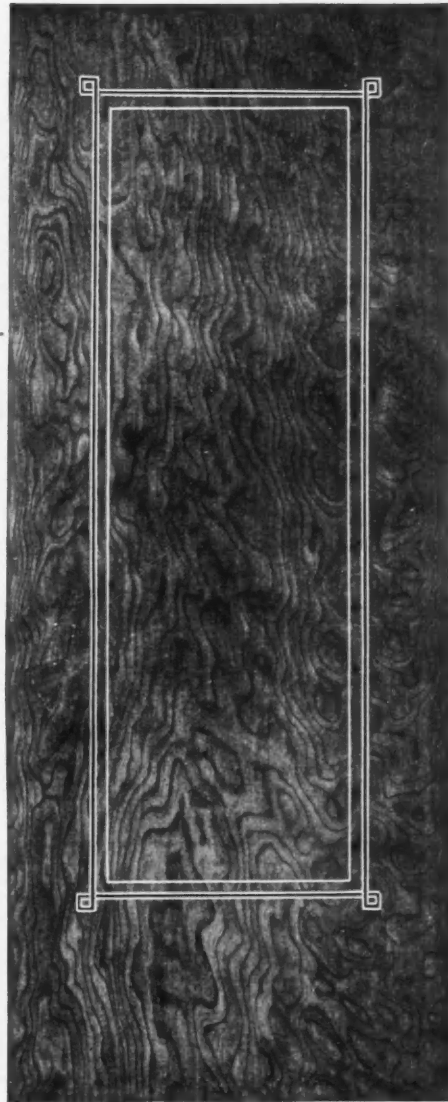


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World's Standard Veneered Doors PAINE PLANT Shown Below.

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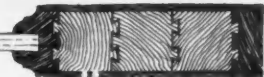
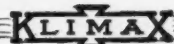
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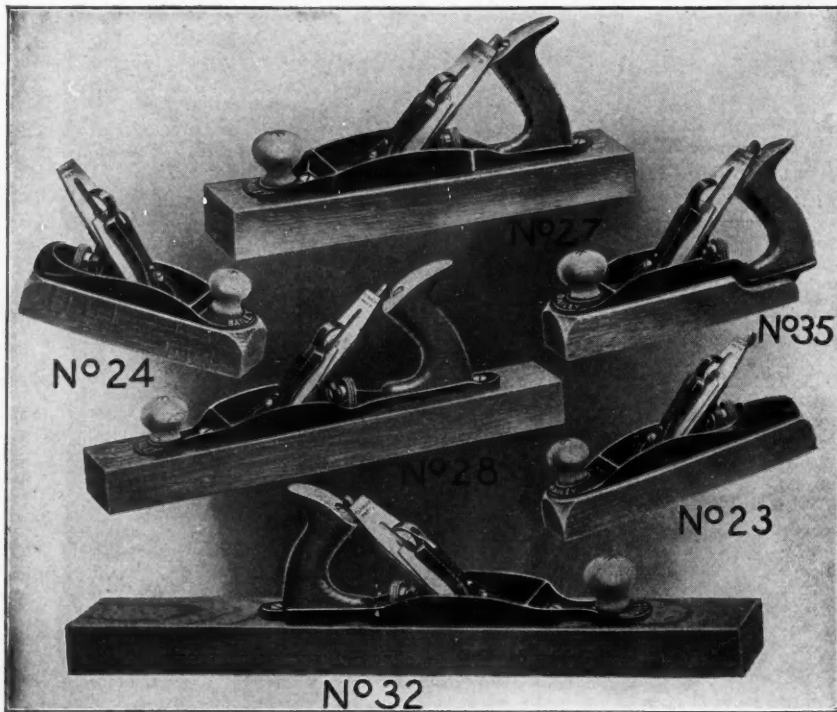


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HARDWOOD VENEERED DOOR"

WILSON U. S. A.





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“BAILEY” WOOD PLANES

THEY HAVE

The same adjustment as the celebrated “BAILEY” IRON PLATE—differing only in detail where the extra thickness of the Wood Bottom has been taken into consideration.

The Bottom is made from selected and well-seasoned Beech.

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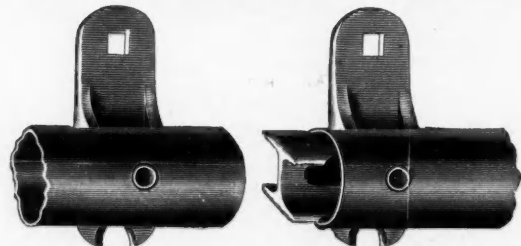
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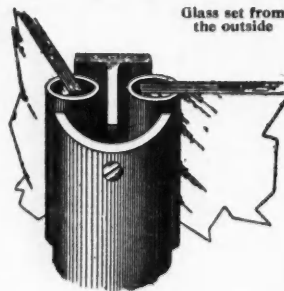
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Holds with a Grip of Iron, yet with a Touch of Velvet

Makes any angle. Allows for expansion and contraction of glass and for settling of building.

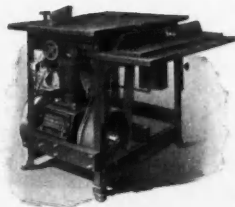
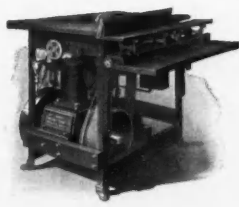
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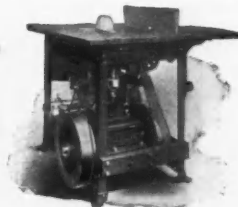


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9 Machines in 1
6 H. P. ENGINE

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Boston, Mass.



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27" Complete $\frac{3}{4}$ Band Saw
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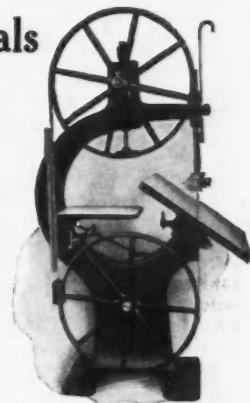
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Wright Roller Guide. Weight, 1100 lbs.

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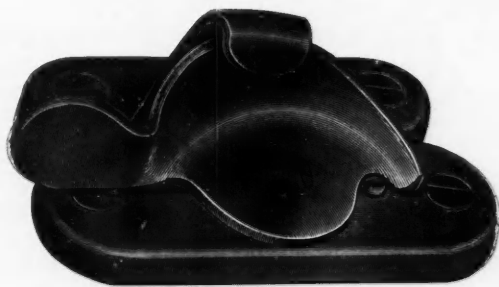
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SASH LOCKS**



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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.
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Big money is being made in the production of Cement Brick. Thousands of carpenter-contractors have already entered this field. Equip yourself NOW with THE PEERLESS—the original hand power brick machine with automatic Tampers.

Makes Brick Face-down and delivers them Face-up. One man operation.

Large variety of face plates with machine.

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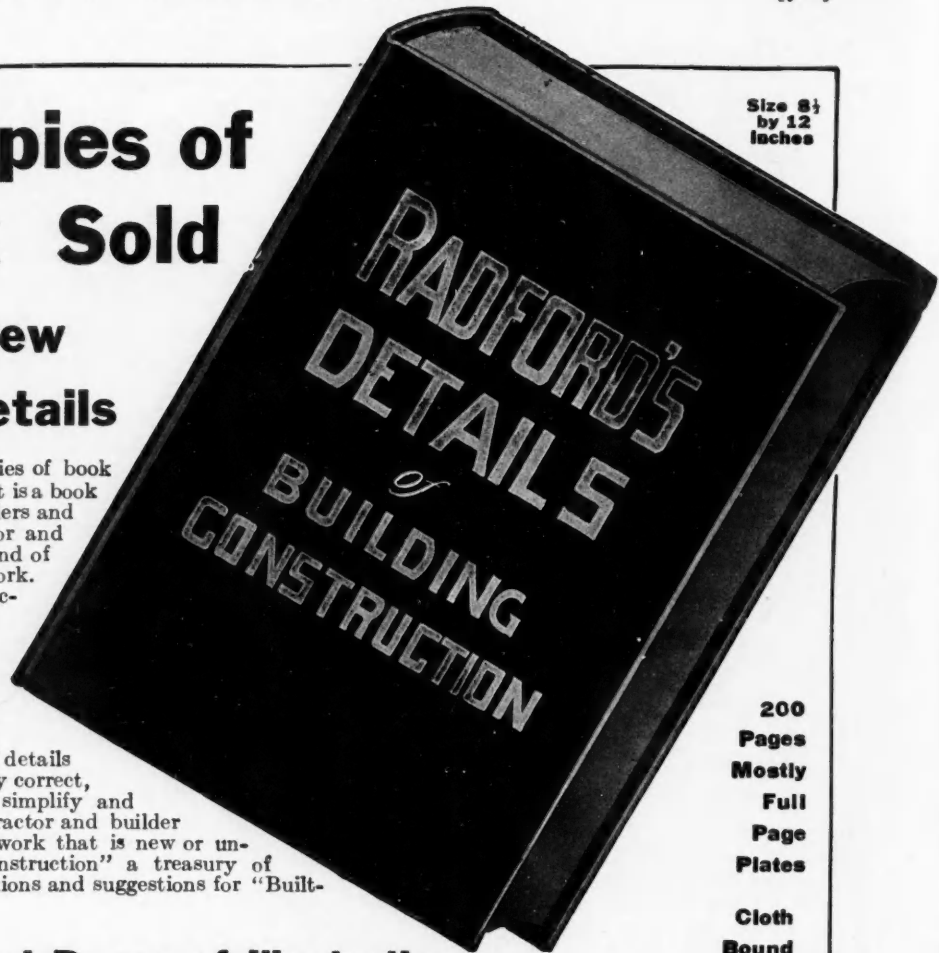
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On this principle Campbell's Winter-Chaser Furnaces were made and on this principle they have given utmost satisfaction for more than 25 years.

The extra sized air-chamber of the Winter-Chaser has a large entrance door. This gives free access for cleaning purposes. And in this large, clean chamber the air is never over-heated—a big point of fire insurance.

CAMPBELL'S WINTER-CHASER FURNACE

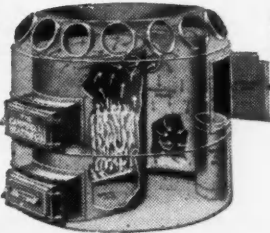
reduces cost of heating so materially that it almost pays for itself—the perfect combustion insures greatest heat with least fuel.

The dry air of the ordinary heating method is ruinous to health, and hard on the furniture and woodwork. The Campbell furnace has a large water reservoir which evaporates a sufficient quantity to supply the air with the moisture it needs. No cement is used in this furnace. It is gas, smoke and odor-proof.

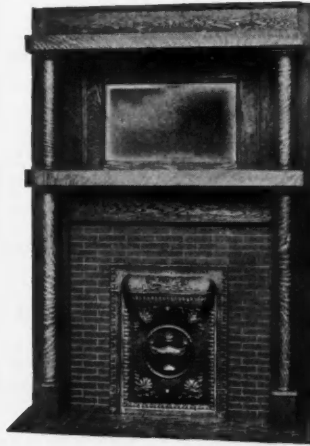
Hundreds of Campbell heaters in use today, were installed a quarter of a century ago. Made of thicker steel than is built into any other furnace in the United States.

Send for our booklet, "Twice-A-Day." It will post you on Campbell's Winter-Chaser Furnace—the most efficient, simple and cheap method of heating known today. Get our assistance on installation plans.

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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.

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G. F. T. Slate puts "The Finishing Touch" on any Building.



A HOT AIR FURNACE

For Less than \$50 Complete

For 5 and 8 Room Dwellings

An unheard of Price and a most Remarkable and Indestructible Furnace

No Pipes No Lost Heat

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PHOENIX SLIDING BLIND CO.
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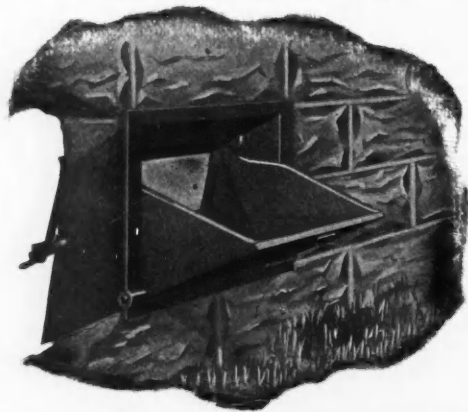


Only the machines that are in actual operation consume power. Over 25 other advantages.

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**A NECESSITY TO EVERY MODERN HOME
NO MORE DAMAGED CASINGS OR SASH**

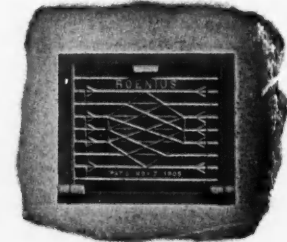
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2155-2187 Elston Avenue, CHICAGO

Eastern Office: 1123 Broadway, New York City
The best columns for porches, pergolas or interior use.

SALT GLAZED BRICK THE BEST IN AMERICA

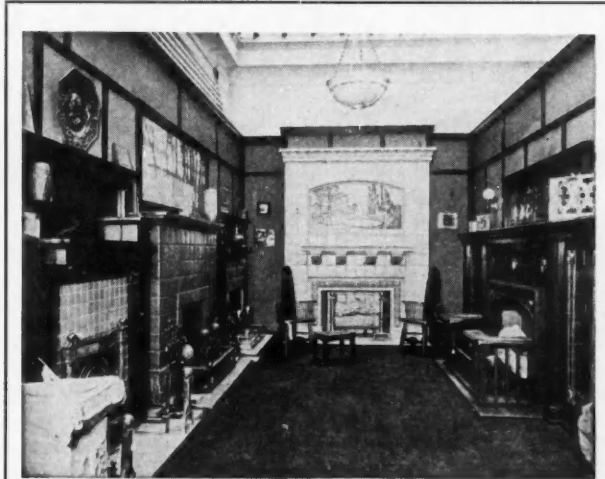
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With Heavy, Smooth Glaze

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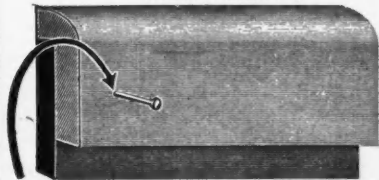
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THE DENNIS “CLINCHER” FELT WEATHER STRIP PATENT PENDING



**NOTE-NAIL PASSES THROUGH
BOTH MOULDING AND FELT.**

Specify The

**W. J. Dennis
Clincher Felt
Weather
Strip**

**If You Want
the Best
Made**

Manufactured only by

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

YOU CAN'T AFFORD TO BUILD

without a LEVEL, and
**YOU CAN'T AFFORD
TO BUY**



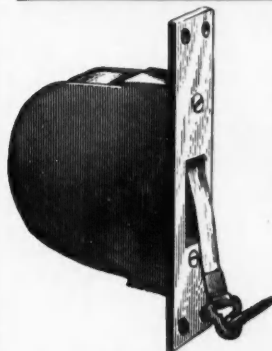
without investigating
the advantages of the

“Sterling” Convertible Level

Write TODAY for Catalogue and our Special Offer.

ISZARD - WARREN CO., INC.
136 N. TWELFTH ST., PHILADELPHIA, U. S. A.

CALDWELL SASH BALANCE



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

Makes sashes work per-
fectly.

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.

**“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 BACH
ROCHESTER, N. Y.**

When Writing Advertisers Please Mention the 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 without even springing, and they last a lifetime. Then think of the time you save! One man alone can put them up and take them down easily and quickly.

Write for Catalog of Builders' Specialties!



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.

WILLIS SELF-INSTALLING SKYLIGHTS



From Our Factory Direct To You,

and you don't need a soldering outfit to erect them. All Willis Skylights are constructed so they can be erected by any handy man with a hammer and screw driver. Guaranteed absolutely watertight without the use of putty. Designed to give the greatest amount of glass area. The ridge and gutter bars cannot sag, buckle or spread.

WILLIS MANUFACTURING CO.
GALESBURG, ILL.

Send us your plans for estimate on sheet metal work. Our catalog No. 6 showing full line of sheet metal building material sent on receipt of request.

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, saty, 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 you money.

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

GAGE TOOL CO., Vineland, N. J.



DUMB WAITERS AND HAND ELEVATORS
OF THE MOST IMPROVED AUTOMATIC CONSTRUCTION

INVALID LIFTS TRUNK, CARRIAGE, SIDEWALK AND FREIGHT ELEVATORS

SEDGWICK MACHINE WORKS

128 LIBERTY ST. NEW YORK

CATALOGS AND ESTIMATES FURNISHED
SEE SWEET'S INDEX

THE FOLDING DRAW KNIFE

It's the Draw Knife that's the seller
Right up to the Draw Knife law;
It's the workman's prize and treasure,
And the Draw Knife that will draw.



If your hardware dealer does not keep it, we will send it to your address postage paid. : :

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

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.

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BUY *Goodell-Pratt's*

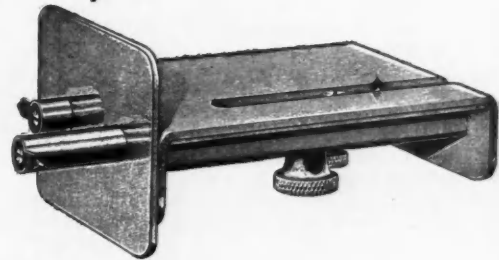
BUTT GAUGE

For door hanging and mortise work because it is a thoroughly well made, practical time-saving device for the above work.

It is made entirely of steel and has double edge spurs which are carefully hardened.

In finish it is up to our other well known tools, being full polished and nickel plated.

Learn about our others in Catalog No. 10.



Goodell-Pratt Company

Toolsmiths

GREENFIELD, MASS., U. S. A.

No. 227



Excelsior Dumb Waiters

The only Knock-Down Dumb-Waiter ever offered, shipped complete to a nail, with explicit directions for erecting, for **\$18.50**

Up-to-Date in Every Particular

Hardwood Car, Self Retaining Machine, Adjustable Weight, Guides, Ropes, Timbers and Hardware. Ropes joined by coupling. No Splicing. Will fit any ordinary opening up to 24" x 30"

Send for Printed Matter

R. M. RODGERS & CO.

74 Emerson Place - - Brooklyn, N. Y.



The Myers New-Way Adjustable Tandem Door Hanger

Is adjustable to and from buildings and permits the door to be raised or lowered as desired. This is a very important feature in cold weather when the ground is frozen and heaved up. It is absolutely dust proof and can be adjusted to keep out all snow and rain. Owing to its construction it will carry a heavier load than any other style tubular track. Another very important feature is its flexibility which permits the door to pass over uneven surfaces.

Write us for information and catalog.

F. E. MYERS & BRO.

ASHLAND, - - - OHIO



Made in all sizes and styles, for use with brick or concrete block walls or with wooden or steel beams

TRUS-CON Joist Hangers

Avoid cutting away and weakening of timbers and walls—save labor, time and money.

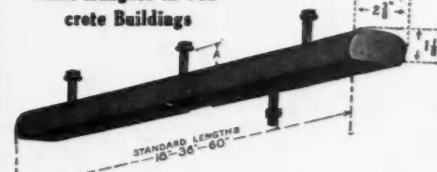
Trus-Con Joist Hangers are made from open hearth steel plates, and are proven by actual test to be the strongest on the market. Note the bulb-shaped reinforcement at upper angle.

We also furnish Post Caps Post Bases, Wall Plates and Base Plates made in rolled steel, malleable iron, or cast iron.

Write for catalog and prices

TRUSSED CONCRETE STEEL CO., 344 Trussed Concrete Bldg., Detroit, Mich.

Trus-Con Pressed Steel Inserts for Supporting Shaft Hangers in Concrete Buildings



Trus-Con Pressed Steel Inserts are imbedded in the concrete during construction, saving expensive drilling after completion of the work. The long slots allow a wide variation in position. Special washers prevent bolts from turning in the slots. Write for details and prices.

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GEO. H. BISHOP & CO., Lawrenceburg, Indiana, U.S. A.

Makers of

Fine Hand Made Hand Saws

The Purest of Quality Our "GREYHOUND" Hand Saw



IN introducing our "GREYHOUND" brand of Saws to the trade, we have departed from our usual custom in naming instead of numbering the saw. This saw will be known as our "GREYHOUND" and will be the only Bishop brand of saw known by name.



We have had a Chemist experimenting for years to originate a purity of steel with a fine grain and tough body that would stand up under such a fearless warranty as we place on our "GREYHOUND" brand of saws. We now have it. We know its worth as well as its value. As workers of steel we understand it. We had to name it and we have christened it Bishop's Refined "GREYHOUND" Steel, associating our trade mark with its name. We have in this "GREYHOUND" Saw blade a purity of steel that is tough, tempers accurately and even—together with the special way it is made—enables us to guarantee that this "GREYHOUND" brand of Saws will cut faster and run easier in all kinds of wood, hold its sharpness and set longer than any other makes of good Saws in the world. We Refund the Money if 30 days' trial does not prove our guarantee. Our pride is quality with an honest opportunity for the purchaser to judge. Each Saw is tagged with our warranty on it. No expense has been spared to make this Saw the most perfect in the world. We invite correspondence with anyone who has our "GREYHOUND" brand of saws in use.

Made in both straight and skew back. Packed One in a Box.

In workmanship this saw possesses all the skilled mechanical features known to the art of saw making. The hang of the blade has been carefully studied and adjusted, to suit the fancy of the most critical.

If this saw cannot be found in the Hardware Store and they will not order it for you, write to us. Price

Inches, Each,	18	20	22	24	26	28	30	Net.	Packed one in a Box
	\$2.35	\$2.50	\$2.65	\$2.80	\$3.00	\$3.30	\$3.65		

HESS MEDICINE SANITARY LOCKER



The Only Modern, Sanitary STEEL Medicine Cabinet

or locker, finished in snow-white, baked everlasting enamel, inside and out. Beautiful beveled mirror door. Nickel plate brass trimmings. Steel or glass shelves.

Costs Less Than Wood

Never warps, shrinks nor swells. Dust and vermin proof, easily cleaned.

Should be in Every Bath Room Four styles—four sizes. To recess in wall or to hang outside. Send for illustrated circular.



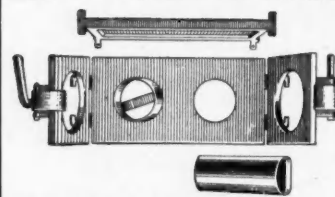
The Recessed Steel Medicine Cabinet

HESS, 920L Tacoma Bldg., CHICAGO

Makers of Steel Furnaces

Free Booklet

The Outside Street Cabinet



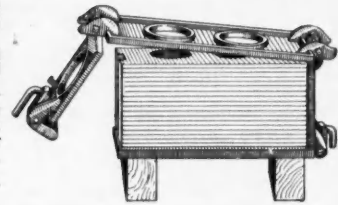
MAKE YOUR OWN TILE AND BLOCK

Tile your farm. It pays. Construct your buildings, water tanks and silos of cement blocks. This work can all be done accurately, economically, and quickly with our wonderful low priced

Combination Tile and Block Machine

Easy to operate. Guaranteed. Excellent work. Made at odd times. Prices from \$7.50 to \$24.00. Write for our complete booklet No. 1.

DUNKIRK CEMENT TOOL & MACHINE CO. DUNKIRK, INDIANA



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, 16, 20 and 40 parts. Also free catalog on request. Mention this paper.

Andrews Heating Co., 1288 Heating Bldg., Minneapolis, Minn.

ROOF SLATES BLACKBOARDS

E. J. JOHNSON

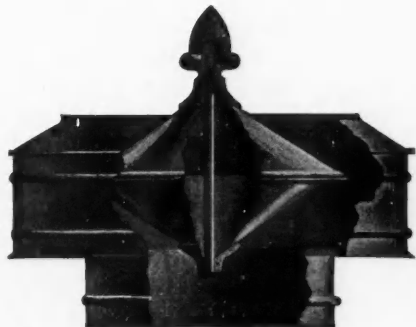
38 Park Row, New York

Quarry Operators

BLACK, GREEN, PURPLE, RED

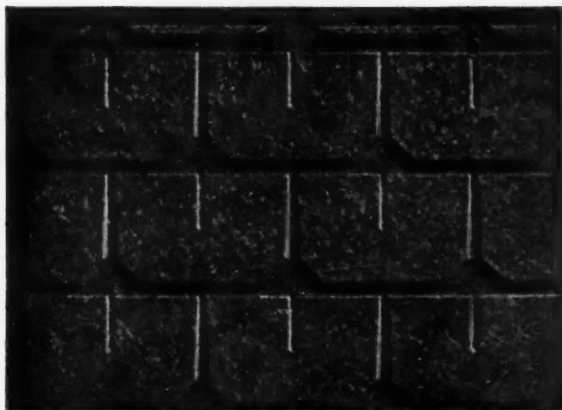
Booklet, Samples and Prices on Application

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**“XL” Skylights, Cornices,
Ventilators and Special
Sheet Metal Work**

**Stock designs or made to order
from Plans and Specifications.
We Solicit Your Inquiries.**



Metal Shingles in Two Styles

WRITE FOR CATALOG AND PRICES

The Canton Art Metal Co.
“Quality Products”
CANTON, OHIO

New York Branch
Cor. 11th Ave. & W. 25th St.

Minneapolis Branch
206 S. 3rd St.

THE MASTER SLIDE RULE



Showing lower slide
extended 2 1/4 inches
—making distance
between extreme
ends 10 1/2 inches.

Is the **Only Rule** in the **World** whereby inside measurements of doors and windows etc. can be taken rapidly and accurately. It is also far superior to any other rule for outside measurements of walls and ceilings, etc., as it can be extended and closed instantly.

Mechanics, Builders, Draftsmen and Architects

TRY ONE TODAY! DON'T WAIT!

On receipt of 15c per lineal foot, a 4, 5, or 6 foot rule will be sent you, prepaid.

Large profits to agents. Write for circulars and particulars.

DAHL MANUFACTURING CO.

Childs Bldg., 1 East 42nd St. - - - NEW YORK CITY

DECORATE

—A ROOM WITH—

“Cott-a-lap”

MADE in about 40 beautiful shades. Costs no more than good wall paper. Lasts for years. Protects walls. Softens sounds. Gives artistic effect not obtainable by wall paper.

*SEND for Samples and
Circular BB and Men-
tion Name of your Dec-
orator*

The Cott-a-lap Co.

Chicago, Ill. :: Somerville, N. J.

**PLUMBERS' SUPPLIES
AT WHOLESALE**



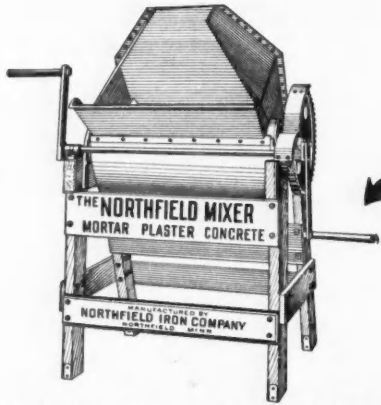
When in the market for Plumb-
ing Supplies and you wish to

**SAVE
20 to 40 Per Cent**

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

Small orders are as carefully
handled as large ones.

B. B. KAROL, 768-772 W. Harrison St., Chicago, Ill.



The Simple, Little, Light, Handy and Substantial NORTHFIELD MIXER

will save you big money on every job. Conservative Capacity: 90 Cu. Yds. per day. It can always be set to discharge direct into Forms, cutting out one-half the wheelers. It saves you three-fourths the Transportation charges and all repair bills, as compared with any other mixer.

No man's business is so big, nor no job so small but what it will pay to have this little Money, Time and Worry Saver on the Work.

New Principle: Plows, Hoes, Stirs, Mixes Mortar, Plaster, or Concrete. Insures a thorough mixture under all conditions. The only satisfactory color blending machine.

IS NOT A MAN-KILLER

Operates by either Engine, Motor or Hand Power. Most reasonable priced good mixer on the market.

Sold on trial. Satisfaction Guaranteed.

Write at once for FREE Catalogue, Price and Terms.

Manufactured by NORTHFIELD IRON COMPANY

402 Water Street : : : Northfield, Minn.



Fly Screens

Metal Frame

REWIRABLE CIN-MAN-CO.

See method of securing wire cloth, held by rounded corners, which prevents cutting by vibration.

Special inducements to Carpenters and Builders

Booklet Free

The Cincinnati Fly Screen Co. 1010-1026 Evans St., Cincinnati, O.

A FREE BOOK

On Concrete Machinery

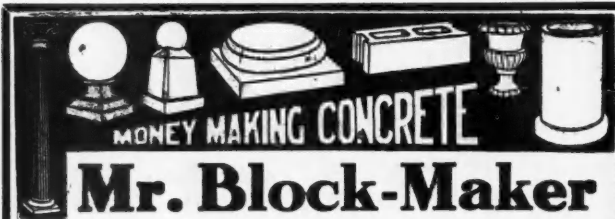
**BUILDING BLOCKS
BRICK
PORCHES
CHIMNEYS
DRAIN TILE
SEWER PIPE
SILO BLOCKS
AND OTHERS**

It isn't exactly a catalogue because it gives you the cost of making concrete Blocks, Bricks, Porches, and Chimneys. It tells all about the profits in making Drain Tile for farmers. The advantage of drainage, etc.

You ought to have this book if you are interested in concrete. Sixty-four pages of illustrations and interesting reading. Send at once, today, a postal will do.



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



**Wet Process is Right.
Face down is Right.
Three blocks at a time is Right.
Triple Tiering is Right.
Damp Curing is Right.**

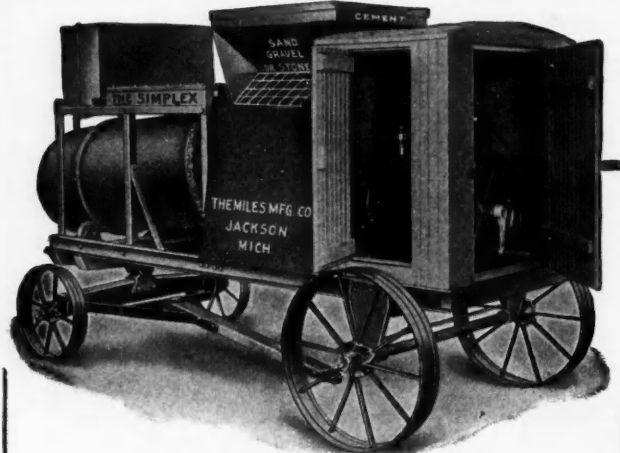
**The Mogul Invincible Block Machine
COMBINES ALL THESE
IT IS RIGHT**

It is 46 inches long and will make three 16" or two 24" blocks at one operation. It makes sills, caps, copings, rails and steps, faster and better than a special sill machine. It has every adjustment that any other machine has and many that no other machine has.

PRICE—Machine and Outfit, \$75.00

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**THE PETTYJOHN COMPANY
634 No. 6th St., TERRE HAUTE, IND.**



**THE SIMPLEX IMPROVED MIXER
1912 MODEL**



3-Hoppers, Continuous feed Rolling Mix, Low down Steel frame. Simple Strong and Accurate.

"The Miles" No. 5, Down Face, Wet Concrete Block Machine

Makes Stone in Lengths, 4", 6", 8", 10", 12", 16", 18", 20", 22", 24"; in Width: 4", 6", 8", 10", 12"; in Height, 4", 6", 8". Also Angle Stone, Circle Stone, Gable Stone, Hollow or Solid Stone. The Contractor's Friend, Simple, Strong and Rapid. Lowest in price.

WRITE FOR NEW 1911 CATALOGUE

THE MILES MFG. CO., Inc. 309 E. Franklin St. JACKSON, MICHIGAN

Here's Another New One

"YANKEE" Plain Screw Driver No. 90

A strong, durable, and well balanced tool, of the same high quality as other "Yankee" Tools which to-day are without equal. The blade and ferrule are highly polished, the handle of hardwood finished in dull black, making a handsome appearance. Each tool is thoroughly tested and the blades are positively guaranteed not to turn in the handle.

**Fourteen Sizes
2 to 30 inch Blade**

Have You Seen the "YANKEE" Line?

There are 35 Styles and 75 Sizes each a Labor Saver. Our New Yankee Tool Book tells about them. A postal brings it.

Your Hardware Dealer Sells the "Yankee"

North Bros. Mfg. Co.
(Department A)
PHILADELPHIA, PA.



"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.
SCREWS COSTMONEY

In This Improved Swing Saw Machine the Saw Arbor Travels in a Perfectly Straight Line

**PRYIBIL No. 5
Parallel Swing Saw**

Also for grooving, gaining, rabbeting, tenoning, etc. Send for prices and catalog.

P. PRYIBIL

520 W. 41st
Street
NEW YORK

This Machine Cuts..... (Parallel with Table)



When Writing Advertisers Please Mention the American Carpenter and Builder.

IT'S PRICE
 THAT INTERESTS YOU
 SEND FOR CATALOG DA, AND FIGURES ON
METAL CEILINGS and SIDE-WALLS
 WE CAN SAVE YOU MONEY.
THE KANNEBERG ROOFING AND CEILING CO.
 CANTON, OHIO

PEARSON'S AUTOMATIC SHINGLE NAILER



Works well on any pitch roof. Gloves or mittens can be worn and nails driven faster than by the old way. Throw nails in by the handful—holds about 600 nails—start nailing. Nails can be driven through tin or quite heavy sheet iron.

PAYS ITS COST ON ONE JOB

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.

Order through your dealer or sent prepaid for \$5.00.

Money refunded if not as represented
PEARSON MFG. CO.
 Robbinsdale, Minn.

SEE THAT NAIL

DECORATE
 Your Home and Church
 With F. & B. Co.'s
ART WINDOWS
 Designs and Estimates on Application Without Charge.
 Beveled Plate, Metal Sash, Memorial Figure Windows and Residence Work Our Specialty
 Grand Prize Awarded Louisiana Exposition. Established 1883.
The Flanagan & Biedenweg Co.
 Office, Studio and Salesroom,
 312 to 318 W. Illinois St., near Franklin
 CHICAGO, ILL. Tel. North 218

TRADE **FOX** MARK

6-E Universal Wood Trimmer

Height of Cut . . . 6"
 Width of Cut . . . 12 1/2"
 Size Bed . . . 18"x39"
 Weight . . . 420 lbs.
 Price . . . \$90.00
 F. O. B. Grand Rapids

4-A Universal Wood Trimmer

Height of Cut . . . 4"
 Width of Cut . . . 8"
 Size Bed . . . 7 1/2"x17 1/2"
 Weight . . . 32 lbs.
 Price . . . \$22.50
 F. O. B. Grand Rapids

Bench and Floor Type
Universal Wood Trimmers
 To Meet Every Demand

EVERY PATTERN SHOP, INTERIOR FINISH MILL, FURNITURE FACTORY, and others doing work requiring perfect glue joints and angles should have our Trimmers or Miter Machines to produce the best results.

WRITE TODAY FOR COMPLETE CATALOG OF OUR TOOLS

FOX

MACHINE CO.

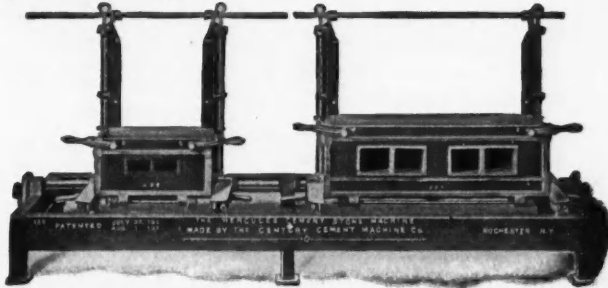
22 N. Front Street
GRAND RAPIDS, MICHIGAN
 30 Church Street, New York
J. B. STONE & CO.,
 135 Finsbury Pavement, E. C.

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WHY THE Hercules Concrete Block Machine

is the **BEST** for **YOU** to buy

The man who is about to take up the manufacture of concrete blocks, should exercise the greatest care in selecting a block machine. The biggest mistake to make is to buy a small machine that will always remain a small machine. Why not buy a machine large enough for your immediate needs and capable of being expanded to make more and larger blocks as your business expands.



You can buy a HERCULES equipped to make whatever size of block you need when you start. Parts for other sizes are added as you require them. Your machine is a plant in itself. When you expand you don't have to throw away old equipment—you merely add at small cost to what you have.

There are many other important points connected with Hercules Machines that you ought to know.

We have just issued a little book full of information. Send for it today.

CENTURY CEMENT MACHINE CO.
290-300 St. Paul St. ROCHESTER, N. Y.

Commonwealth Hotel

INC.

Opposite
State
House



BOSTON,
MASS.

Offers rooms with hot and cold water for **\$1.00** per day and up, which includes free use of public shower baths.

Nothing to Equal This in New England

Rooms with private baths for **\$1.50** per day and up; suites of two rooms and bath for **\$4.00** per day and up. Dining Room and Cafe First-Class. European Plan.

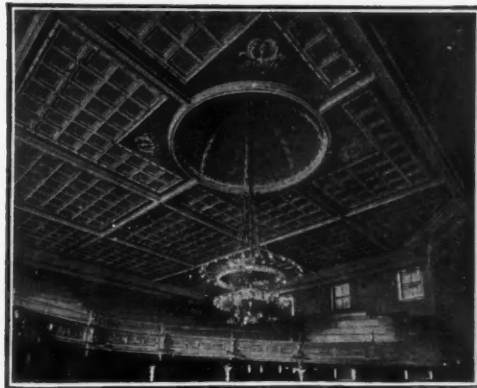
ABSOLUTELY FIREPROOF

Stone floors; nothing wood but the doors. Equipped with its own Sanitary Vacuum Cleaning Plant.

Strictly a Temperance Hotel

Send for Booklet

STORER F. CRAFTS, General Manager



A Beautiful Ceiling

The illustration above conclusively proves that a modern fire-retarding and durable ceiling need not necessarily be ugly or unsightly merely because it is constructed of metal.



of which the above is a typical example, combine beauty, utility and durability in a manner found in no other form of ceiling.

Berger ceilings are manufactured from high-grade sheet steel, deeply embossed with classic designs.

They are arranged in interchangeable panels, so that many different patterns of ceiling may be built from the eleven basic designs.

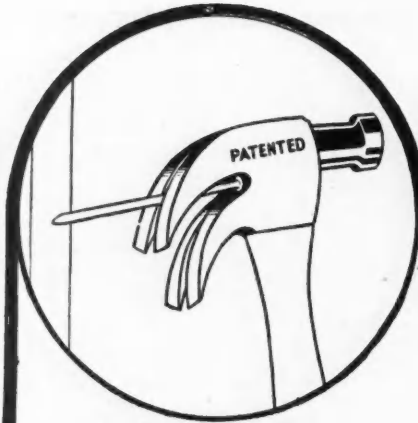
A prominent feature is the Lap Joint which makes erection a matter of great ease, simplicity and speed.

Have you seen our large, handsome catalogue? If not, send a card to the nearest branch.

THE BERGER MFG. CO.
Canton, Ohio

New York St. Louis Minneapolis
Boston Philadelphia San Francisco

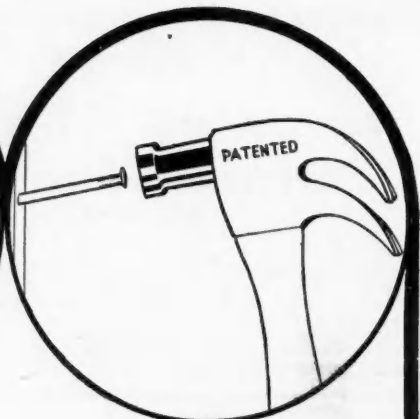
We also manufacture black, galvanized and painted roofing, eaves trough, hangers, conductor pipe, metal lath, metal lumber, sidewalk and vault lights, etc.



STRIKE



LIFT



DRIVE



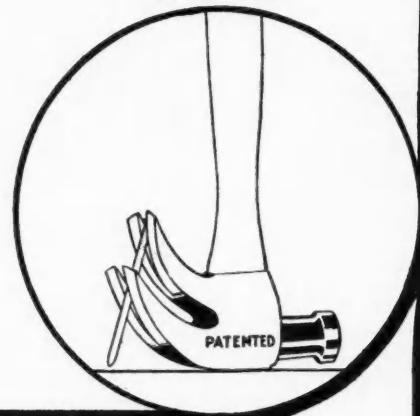
DOUBLE CLAW HAMMER

Nails higher without strain
Worth ten times more than the common hammer
Costs three times more to make
Spend a little more for the tool and save money

START



OUT



DOUBLE CLAW HAMMER CO., 453 BROADWAY, BROOKLYN, N. Y.

Send _____ 16 oz. Head _____ 21 oz. Head Double Claw Hammers.

Free delivery to—Name _____ Address _____
for which find enclosed \$1.50 each.

When Writing Advertisers Please Mention the American Carpenter and Builder.

SHORT TALKS WITH OUR SUBSCRIBERS



All Aboard for "Bigger Business"

WHAT a man has done others can do.

No one can read the personal experience letters submitted in our contest and published in another part of this issue without being impressed with the great opportunity that is before carpenters and builders to-day.

These letters relate actual facts and experiences, just like those happening to thousands of other builders every day. They show what a simple thing, after all, success really is. Honesty—conscientious work—alertness.

These men have found the carpentry trade worth while. They have made it the stairway to the good things of life. They have written frankly and without reserve. We are told that it is only the truly wise who can profit by the experience of others. How many of us are wise enough to do that?

"Thanks to my Power Woodworker"

THERE was one thing about practically all of these letters from successful builders which we noticed at once (and you will, too, when you read them); in nearly every case it seems to have been the acquisition of some power woodworking machinery that marked the beginning of real success and good profits.

This brings up the question of how to get the most good out of a power woodworker. How much of a woodworking shop or mill can the average carpenter and builder use to best advantage? How should it be arranged and managed? **Will all those who have had experience with power woodworkers, either in the shop or on the job, please step forward with their advice, and the narration of their experiences.** We will have some ideas and designs ourselves to offer for the planning and laying out of a model small woodworking shop. This is an interesting subject of growing importance. Let's get together in the August AMERICAN CARPENTER AND BUILDER and talk it over.

Yours Now for Safer Building

DON'T miss the "Noon Hour Talks by the Boss Carpenter." You will find the Boss a good fellow to know and full of useful wis-

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dom (especially at the noon hour). His class in safe building construction is called to order this month, and in the August number the first of his series of practical talks on what builders ought to know will be presented.

Tell your friends about this new department. Don't let any of them "lose out" on this.

Everyone Today is Interested in Advertising

DO you do any advertising?

No? Yes, but you do.

Your "card" may not appear in the local paper, but you do advertising just the same. A builder's work is his advertisement. Satisfied customers talk and dissatisfied ones do, too, only louder. Enormous businesses have been built up through advertising, backed by dependable goods. No other kind of advertising pays. You will find all of the concerns represented in the advertising pages of the AMERICAN CARPENTER AND BUILDER reliable and their goods honest; otherwise they wouldn't dare advertise them. When, by mistake, you have done a poor job, made a botch, you keep still about it, don't you? You don't recommend prospective customers to go and examine it. Just so with our advertisers. The fact that they invite full investigation guarantees the dependability of their goods.

So as advertisers yourselves and as buyers and users of advertised goods you will appreciate the following, which has been called

The Advertiser's Creed

I believe in publicity and in every legitimate method of catching the eye and reaching the ear of any possible customer.

I believe that repetition must result in emphasis, that emphasis must in time attract attention, that attention must create interest, that interest must yield orders.

I believe that the way to sell goods is to advertise them, to tell people about them continually, to talk straight and to talk honest.

I believe that the market is as big as the world, that a slice of it belongs to me, that my goods are worthy of it, and that I am going to get it.

Fraternally yours,

Editor AMERICAN CARPENTER AND BUILDER.

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CHICAGO
MARK

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

Chicago "Triplex" Spring Butts

offer this advantage to you. The appearance, durability and finish of this article are unsurpassed, and in consideration of prices that are conservative in respect to value, the up-to-date builder cannot afford to risk his reputation with goods that are unsatisfactory.



Send for Catalogue C 26. It illustrates and describes the most complete line of Spring Hinges manufactured.

Chicago Spring Butt Company,

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SUBSTITUTES

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the only Saw Set that will set a saw properly.

Our booklet No. 9 "Saw Points" tells how to take care of Saws. Sent free on request.

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30 Years
the Standard



Make Your Buildings Frost-Proof
BY LINING THEM WITH
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"Quilt" is not like common building papers. It is a matted lining full of dead air spaces and keeps out the cold in the same way that a bird's feathers do. It is forty times warmer (or cooler in summer) than the common cheap papers. It costs about 1 cent a foot and will pay for itself over and over again in saving fuel, and in protecting stock, poultry or stored fruit, and you and your family from discomfort and doctor's bills. Send for free samples and name of nearest agent.

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350 Dearborn Ave., Chicago 1133 Broadway, New York
Also Cabot's Creosote Shingle Stains, Waterproof Cement and Brick Stains. Conservo Wood Preservative.



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- The price is right.

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H. C. Marsh Company
606 Race Street :: :: ROCKFORD, ILLINOIS

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<p><i>The</i> World's Greatest Building Paper</p>	<p>Important Notice When your subscription expires, renew at once, using the blank enclosed in your final copy. If it expires with this issue your renewal must reach us before July 25 to avoid missing the August number. Use P. O. or Express Money Order if possible, but bills or 2-cent stamps may be sent at our risk.</p>	<p><i>The</i> World's Greatest Building Paper</p>
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Beware of Strange Agents

THE AMERICAN CARPENTER AND BUILDER employs no travelling subscription solicitors, nor does it enter into any clubbing arrangements with other periodicals.

Many of our subscribers, knowing the great benefit they themselves receive through the AMERICAN CARPENTER AND BUILDER, advise other contractors, builders and carpenters to subscribe. To make certain that their friends and fellow workers get the publication that has proven so valuable to them, these subscribers often send subscriptions direct. We are very grateful for this and appreciate the loyalty and friendliness shown in such a practical way. We thank our thousands of subscribers and readers who have been so

kind and thoughtful, and shall be pleased to continue to receive subscriptions sent in this manner in the future, and will show our appreciation in a substantial manner to all those who so favor us.

We occasionally receive complaints that men, pretending to be agents of the AMERICAN CARPENTER AND BUILDER, have obtained money for subscriptions and the person paying the money has failed to receive the paper. In every case in which a complaint of this character has been received it has been found that the man taking the subscription was a stranger to the intending subscriber.

We cannot be too emphatic in warning our readers not to pay money for papers and books of any kind unless they are personally acquainted with the party who solicits their orders. Even if he has letters or receipts or order blanks pretending to show that he is a regularly authorized agent of the publication, do not deal with him unless you know him to be honest and reliable. The man who will accept your money under false pretences will not hesitate to carry false evidence with him. There are a number of bogus subscription solicitors making a good income from victims.

Do not pay your money to a stranger.



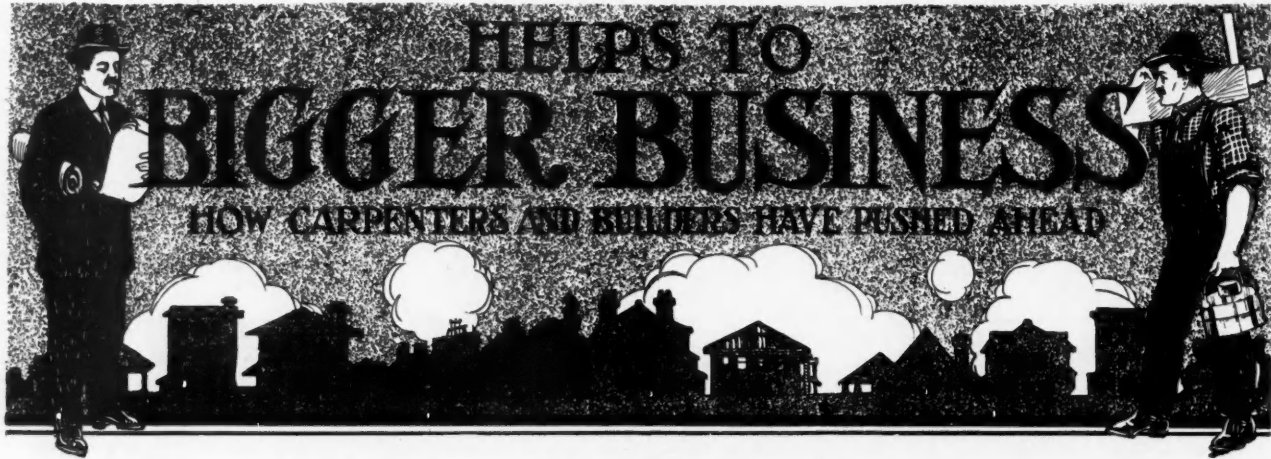
Make One Man Responsible for Your Mixer

A WELL-KNOWN manufacturer of concrete mixers believes that concrete machinery as a class is subjected to more abuse than falls to the lot of any other kind of machinery. In his opinion the hard uses incidental to the service the machines are called upon to perform are often aggravated by neglect. "Make one man responsible for the mixer," he said recently. "and allow him one-half hour extra time a day to clean up the mixer and go over carefully the various parts. Where a nut is started let him tighten it, where a key is loose, drive it home, and above all, keep an eye constantly on all journals."



Cruel and Unusual Punishment

"What is the extreme penalty for bigamy?"
"Two mothers-in-law."



Prize Letters—Builders' Experiences

We take great pleasure in announcing herewith the results in our *Bigger Business Prize Contest for July*. The names of the winners follow, together with a list of twenty keen and successful builders who deserve *HONORABLE MENTION* in this contest. All of the men—without exception—who contributed to this contest are to be complimented and thanked for the practical value, the spirit of friendly helpfulness, and the entertaining quality of their letters. There is not a dull one in the lot, nor one that does not contain some valuable lesson for builders.

AWARD

(Four Part Contest)

First Prizes	}	W. B. HUBBARD, Eugene, Ore.	}	G. E. S., Boise, Idaho.	
		EDW. SPRIGG, Ithaca, N. Y.		Second Prizes	J. P. McLARTY, Wilburton, Okla.
		C. C. WRIGHT, Greenfield, Ill.		PAUL N. HOLM, Maquoketa, Ia.	
		H. G. BLACKLIDGE, Oakdale, Cal.		F. L. M., Fenton, Mich.	

Honorable Mention: BENNY TUREAUD, Convent, La.; J. W. BROWN, Lawrence, Neb.; ROBT. A. HEINS, Lockport, N. Y.; JOHN M. SMITH, Bogata, Texas; H. A. TAYLOR, Morris, Ill.; DELL T. PARKER, Kansas City, Mo.; E. E. KIESS, Warrensville, Pa.; F. M. SCOTT, Chapman, Kans.; S. T. HUTCHINSON, Sabinal, Texas; KNUTE KNUTESON, Spanish Fork, Utah; S. JAS. KLING, Beason, Ill.; H. M. SMITH, Redmond, Ore.; EDW. A. F. CARSON, San Francisco, Cal.; GEO. P. LANNING, La Grange, Ill.; D. GITHENS, Spring City, Tenn.; JOHN KURTZ, Elwood, Ind.; R. A. RAY, Winfield, Kans.; G. E. GRATKE, Strawberry Point, Iowa; R. G. ROCKWOOD, Vesper, Wis.; C. C. WILLARD, Wichita Falls, Texas.

The four *First Prize Letters* follow; a part of the "*Honorable Mention*" letters are also presented this month. *READ* and *STUDY* over these letters. Do they give you any ideas that will help you along the road in the building world? Write and tell us *YOUR* views.

First Prize—How I Built up a Reputation That Is Now Worth Money to Me as a Builder

HONEST DEALING—PROMPTNESS—WORK OF THOROUGH QUALITY—SATISFIED CUSTOMERS—VALUE OF SPECIALIZING—KEEP UP-TO-DATE

By W. B. Hubbard

"Bungalow Builder"—Eugene, Oregon

Editor, AMERICAN CARPENTER AND BUILDER:

USUALLY a contractor's reputation is of his own construction, or "as he sows so shall he reap." A satisfied customer will do more to make a man's reputation good than any other thing I know of.

After signing contracts with a party to build a house, first having given himself and his family about what they wanted when I drew the plans (unless they were furnished by an architect), I try—and generally succeed—to get the building started as soon as possible, and then keep it moving along all the time.

Never allow the owner to think he is being slighted, or is being neglected to do some one else's work.

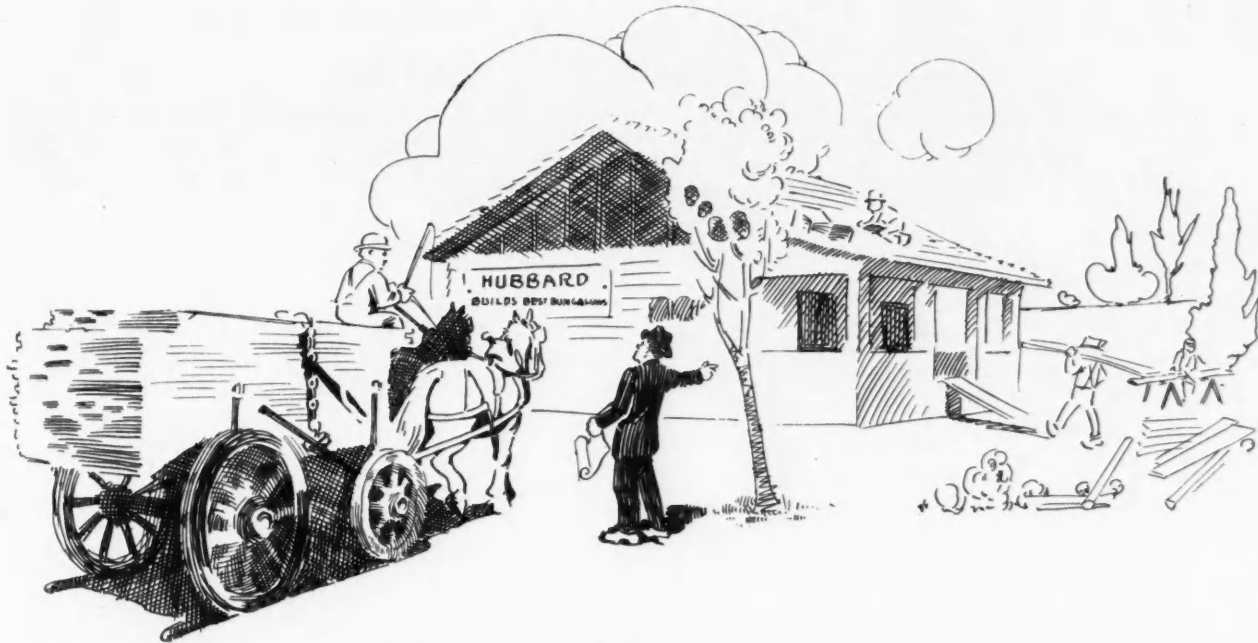
I also consult frequently with the owner or his wife about materials, arrangements, etc.,—which makes them feel more as if they would get just what they wanted. I also construct a building just as the plans and specifications call for; never under any circumstances do I deviate from them to the detriment of the owner or the building. In fact, I always try to do a little more than I agree to, and thereby gain a booster for myself.

Neither do I try to substitute poorer, cheap material where it should be No. 1; for it sooner or later loses its shape or brilliancy, "and then what?" Why, it is not "a thing of beauty," nor will it "be a joy forever."

If the owner has some little changes he wishes to

in contact. I am never too busy to answer any question the owner may ask, or to listen to a suggestion.

I also try to keep in touch with all new appliances, materials, etc., as they come out, that I may be able to give people just what they want. I find more reliable information in this line can be obtained from



I Try—and Generally Succeed—to Get the Building Started as Soon as Possible, and Then Keep it Moving Along All the Time

make, and it makes no material difference to me, I accede to his wishes. I always try to make the owner feel *at all times* that he is getting *just what he wants*.

I also find that, by finding out before starting any building, if the owner has the necessary money to meet his obligations, I avoid a great deal of trouble when the time comes for a payment or final settlement.

The prompt payment of material bills, labor, etc., is the biggest asset one can have, aside from a thorough knowledge of building.

To know how the building will look when complete is very essential, and this is where a great many contractors fail; they seem to be unable to combine, substantiality, appearance, comfort, and other points that go to make the owner happy and content after he is given possession. I study all these points carefully.

First I like to look at the ground on which building is to be erected. Oftentimes their choice of building is wholly unsuited to the surroundings. This may appear of no consequence, but I have found it different; because if, after completion, some neighbor tells the owner his house is out of place or does not fit, it sets him to thinking. Now, it is always the *satisfied customer* I am after.

I also try to keep myself fairly well posted on all the topics of the day, politics included, so that I may be able to converse with those with whom I come

the "Ads" in the *AMERICAN CARPENTER AND BUILDER* than from all the wholesale houses or agencies on the Pacific Coast.

Honesty is always the "watchword." I have built a great many bungalows, ranging in price from \$500.00 up (bungalows are my specialty and I adhere strictly to this line); the owner of every one is a booster for me. And I will say that I can trace my reputation in this city of 15,000 population to the fact that I



If the Owner Has Some Little Changes He Wants Made—I Agree

treat my customers honestly, giving them what they wanted and making them feel satisfied.

There are a few more points I would like to touch upon, such as how to handle help, advertising, etc., but I have not the space, so will close, hoping this

may be of sufficient interest to command the attention of the editor, as it tells, in my weak way, "How I built up a reputation that is now worth money to me as a builder." Yours respectfully,

"Builds Best Bungalows." W. B. HUBBARD.

First Prize—From Carpenter to General Builder— How I Made the Jump

IN 22 YEARS FROM A SUIT OF OVERALLS AND FIFTEEN DOLLARS WORTH OF TOOLS TO A BUILDING BUSINESS OF \$40,000 A YEAR

By **Edw. Sprigg**

"Supt. of Buildings, Cornell University"—Ithaca, New York

Editor, AMERICAN CARPENTER AND BUILDER:

IF the following is worth anything to my Brother Builders I shall be glad to have you publish it: I do not know if you will consider it as answering any of the four propositions for your prize contest or not.

Having served three years at my trade as a carpenter, five years as a floor mill millwright and machine wood-worker, I made up my mind that I could do business on my own hook. I first started by doing small repair jobs, reshingling roofs, building porches, and small house additions. On this kind of work (which I did at the regular price charged by the local contractor for my own wage, and furnished a man at a profit of 25c per day and a small per cent on some materials furnished) I worked along for a year, and then took a contract to build an ordinary eight-room house, furnishing all the materials and labor.



I First Started Doing Small Repair Jobs

I had always kept track of the cost of the labor and materials for making frames and placing materials, noting the time that it took me to do all these things. I based my estimate for the house contract on this knowledge; and on this contract I made wages for myself and a small profit. By keeping careful account of the cost of all labor and material, and comparing the cost of each item with my estimate of same, I was able to tell where some were high and some low.

Using this knowledge and past experience, I then

began to go out after business, and the next five years were very busy ones, working with my men days, while figuring plans and buying materials and keeping books nights kept me out of mischief often as late as till two o'clock in the morning.

Many of the jobs done during these years were from plans and specifications made by myself, from the knowledge gained at a Y. M. C. A. night school; and all the details worked out as the work progressed.

A trade journal coming regularly to my desk brought me much useful information, and helped me to establish a reputation as a builder who kept up to date. *And let me add right here that the young man who does not take a trade journal to keep himself in touch with his business will always be a back number.*

My satisfied customers were my best advertisement; and the local architects began to send me their plans for estimates. I built from some of them, but was always careful not to load up too heavy, believing that it was better to have a small business well managed than a large one-half done. Then, as my capital was limited and I had a horror of debt, I felt that it was better to work within my means. I have seen several firms fail because they tried to do more business than they had capital for.

After following the business as a contractor for several years, I began in a small way to handle building material, nails, hardware, building paper, and small quantities of lumber, the latter being purchased from small saw mills and farmers who have a few thousand feet at a time. I would have this lumber planed at the local shops and store it in a small shop, 16 by 26 feet, two stories high, at the rear of my house.

I purchased at this time a hand power, self-feed rip saw; and with a good miter box and this saw and good tools we made all our frames and light mill work at a fair profit.

With increasing business came a demand for more room, and at this period I purchased two lots, two blocks from my house, making a plot of ground 80 by 150, which I fenced and bought a small two-story shop and moved it on these lots; built a small lumber shed; bought a horse and small lumber wagon;

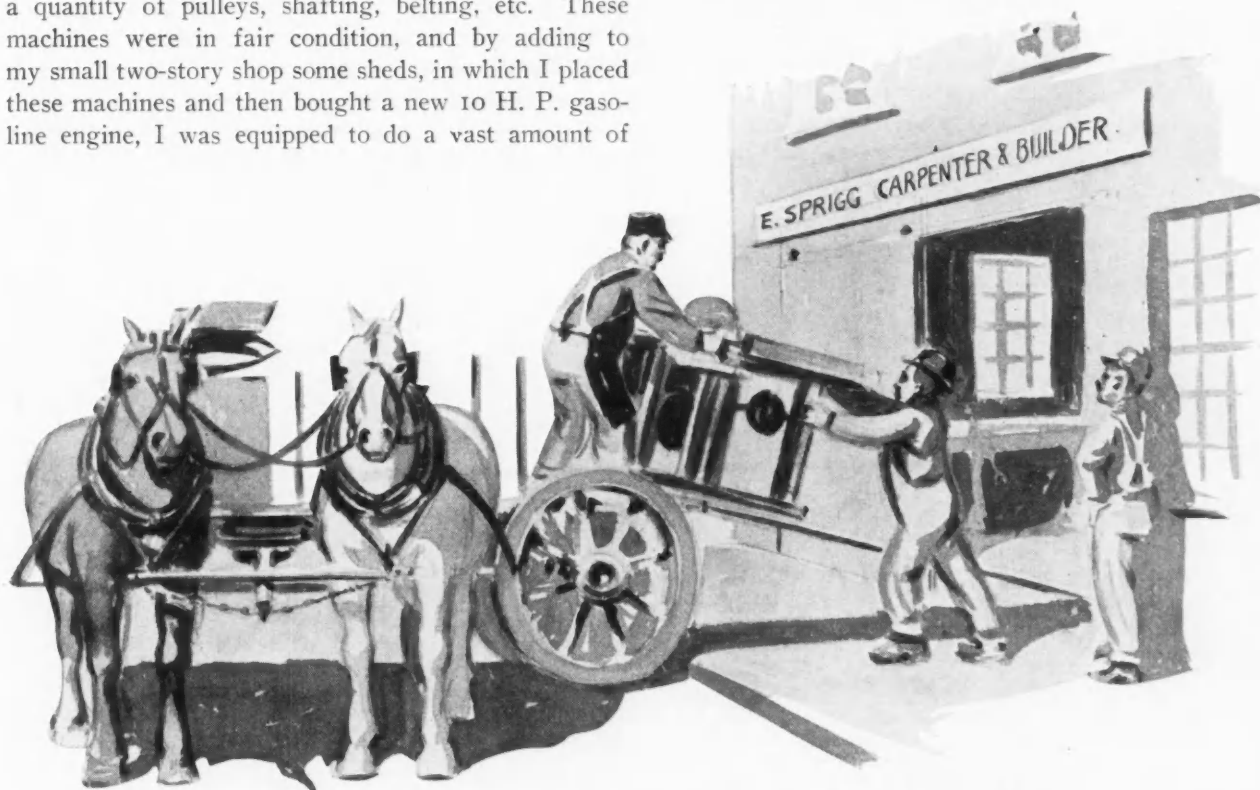
and then began to deal in building material, especially lumber, and did a larger contracting business.

One trouble that I always had was to get materials from the local planing mills worked and delivered to our jobs to keep my men working to the best advantage; and I felt that if I had a small mill I could solve this problem.

I studied the matter carefully for several years, and finally made a deal for a planer, saw, small jointer, scroll saw, lathe, emery wheel, sand paper drum, and a quantity of pulleys, shafting, belting, etc. These machines were in fair condition, and by adding to my small two-story shop some sheds, in which I placed these machines and then bought a new 10 H. P. gasoline engine, I was equipped to do a vast amount of

by 200 with mill and equipment all complete, with nearly \$6000.00 in stock and tools I could not think that my effort had been a failure.

I had now reached the age of 44 when a committee from Cornell University came after me to take the position of Supt. of Buildings. After considering the matter for some time, I finally decided to accept and so closed out my business, leased the mill property, and am now using the knowledge I have gained by careful reading and observation.



I Felt That a Small Mill or Machine Woodworking Shop Would Solve This Problem

our mill work in our own shop. By using local lumber, which I bought at low prices from farmers, I was able to sort and get good grades of lumber for my frames and trim at small cost.

Being near to three factories, I readily secured their odd work and was able to keep going through the winter months.

Four years after installing engines and machines, I had bought more ground, and built a larger mill with machines for making all kinds of wood work; had installed a steam plant, dry kilns, and erected sheds for storing 50,000 feet of lumber; and with bench shop, stock rooms, office, etc., and a good force of men was doing a business of building and building materials, of \$40,000.00 per year.

Considering the fact that I had started to learn my trade 22 years before, and that all my earthly possessions consisted of a suit of clothes and \$15.00 worth of tools, and now owned my home, an 8 room house with all modern improvements, my lumber yards 120

I am a charter member of the great body of AMERICAN CARPENTER AND BUILDER; for years "The Wood-Worker" has come to my desk; and now that I drive my own motor car a good motor journal comes to me every month.

I am using some of the things I receive from my trade journals every day. As my work now is caring for all the University's large buildings, which are of brick, stone, and concrete, I get a great variety of work; and then as I buy all the supplies for this work, including all lumber, and building material, my past experience comes in handy.

I am sure that any young man who has pluck and energy, could make good at the building business. But he will have to work, and deny himself many pleasures until he gets thoroughly established.

I believe that any man gets out of any business, in proportion as he puts into it.

Very truly yours,

EDW. SPRIGG.

First Prize—The Methods I Have Found Best for Working Up New Business

REFER NEW CUSTOMERS TO OLD—BUILD ECONOMICALLY AND GIVE SATISFACTION—EMPLOY STEADY MEN—DON'T BE BOASTFUL, LET THE OTHER FELLOW TALK

By C. C. Wright

"Carpenter and Contractor"—Greenfield, Ill.

Editor, AMERICAN CARPENTER AND BUILDER:

I AM not so old a man as it is probable a great many of you are. But I have 15 years to my credit as a carpenter, with the 5 last years as my own contractor.

I am located in a small city of about 1200 population. Of course in a place of this size each knows the other man and his method of livelihood.

When I began contracting in this little place every



Referred New Customers to some or all of my old ones

one talked of it. It was talked of by every one about that young man who was building Mr. So-and-So's home. I did not intend to make a fortune out of it but I made more profit than I expected. I did good work and did it quickly. That caused more comment. And as a consequence, I have always referred new customers to some or all of my old ones and nearly always succeeded in getting a customer. Also I have a friend who is in the barn building business. I do mostly house work and he turns to me all he can. But I have quite a list of satisfied customers and I think that a satisfied customer and good work are almost as essential to getting new business as is the fact of being a good workman.

Keep your old customers well satisfied and try to do all work to the best advantage and with as much saving as possible to your customers.

When your old or new customer, as case may be, is furnishing material, be careful. Don't make all the customer's material into the scrap pile. *Save material. Save time. Give satisfaction.*

Always employ *good steady men*. Men whom you

can trust to do as much if you are away from the job as if you are there. If you find a man is trying to injure your practice, don't keep him.

Keep good reliable men and employ only honest methods of securing new business and you will get plenty of it.

The more you get to do the more new business it will bring. Strive to be the biggest, and best and most reliable mechanic in the business. New business, I find, nearly always goes to the man who has the biggest trade.

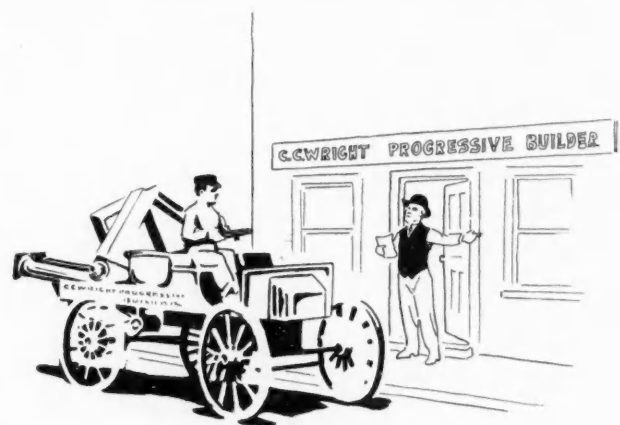
And with all this you must be equipped for doing all kinds of business. Keep up to date in methods and use up to date tools and machines.

Don't employ too many apprentices. Employ good, honest, methodical mechanics. Use good material and plenty of it.

Don't be boastful of your trade. Don't talk of your profits. Let the other man do the talking. He will make you more business than you can possibly work up for yourself in the same length of time.

Study methods and ideas as given by others and if not as good as yours don't talk too strong against the man. That drives business away. But rather let others talk and you keep quiet and do good honest clean, satisfactory work and your new business is sure to climb. Also your old customers are coming back oftener.

Never speak harmful of a brother carpenter. *Be honest. Be upright. Be practical. Be busy.*



Keep up-to-date in Methods, Tools and Machines

These are my methods and ways of getting my business and holding my old customers too.

Hoping these remarks will help some honest man, I remain, an interested reader of the AMERICAN CARPENTER AND BUILDER,

C. C. WRIGHT.

First Prize—How My Building Journal Helps Me to Be a Successful Builder

NEW AND PRACTICAL IDEAS TO WORK FROM—ADVERTISING ANNOUNCEMENTS VALUABLE—STIMULANT TO BETTER WORK AND TO MORE SELF RESPECT

By H. J. Blacklidge

"Carpenter and Builder"—Oakdale, Calif.

Editor, AMERICAN CARPENTER AND BUILDER:

FIRST and foremost a good building journal prevents me from getting into a rut. I see what other builders are doing in other places and in other ways. Not one number do I get but that I get some new kink out of it, anywhere from one to



I Have Something New to Offer My Customers When They Want It

a dozen new ideas or methods that I had not dreamed of before. Take the plans and details of the house each month in the AMERICAN CARPENTER AND BUILDER. There is something new that some one else is building in some other place. And they are PRACTICAL. A man can work from them. If I staid here in this one town and built every new house in it for ten years, I would not be much farther along than I am now, unless I got some ideas and put some of them into use. A man cannot grow unless he has something to grow on. By reading up all that I can get a hold of along these lines I have something new to offer my customers when they want it.

Next, my building journal keeps me posted about the new tools and hardware and materials that come out. Such, for instance, as new metal shingles, wall board, Circassian walnut panelling, new wood finishes, wood working machinery, and dozens of other things, these being just a few that I have taken from the last number of the AMERICAN CARPENTER AND BUILDER. No man can keep up with the procession unless he keeps posted on new tools, methods, materials and ideas.

Sometimes I get plum discouraged and disgusted with my work because there is nothing new there, just the same old drag. Then I get more solid comfort and satisfaction out of my "carpenter paper" than I can from any other source. I can lie down with two or three old copies of it besides me and first thing I know I am thoroughly cured of blues and ready for

new action and more business. You know it helps a fellow a whole lot to find out what some other fellow is doing.

Then, too, it stimulates me to want to do better and more work. There is no stimulant like knowing that some one else is doing the same thing, and you try and do it a little better than he does. I always want to do it a little better or a little quicker than he does. Don't you? Of course you do. We all do. And one of the best ways in the world to find out what the other fellow is doing is to take a good journal of your trade.

Again it better's one's opinion of one's work. I have no patience with the man who says he is in the trade "because he has to be." If a man cannot respect his own work, how can he expect anyone else to do so? The AMERICAN CARPENTER AND BUILDER is fine on boosting carpentry, and I like it for that. Respect and love our work and others will respect it also. Every number that I read gives me a higher and a better opinion of my work than I had before. Consequently I the more enjoy doing it. And always what a man enjoys he will do a blamed sight better than what he does from a sense of duty.



It Gives Me A Better Opinion of My Work

Therefore I say that I would not be without my trade journal for a good deal. And I had other trade journals when I was in other lines of work. It works for all lines.

Trusting you will find use for my effort, and wishing great success to the new department, I remain,

Yours very respectfully,

H. J. BLACKLIDGE.

Personal Experience Letters from Builders Who Have "Made Good"

A PART OF THE LETTERS SUBMITTED IN PRIZE CONTEST

THE "Bigger Business" Editor felt like beating a hasty retreat when the brothers began unlimbering their big guns in this prize contest. The letters came in volleys; and every one square at the bull's-eye. There should have been full twenty first prizes instead of only four. Almost every letter contained prize-worthy ideas. Probably some of you will "quarrel" with out judgment, as it is, and want to advance some of these Honorable Mentions to the front rank.

We don't mind. Our purpose is that every reader of the AMERICAN CARPENTER AND BUILDER may get *all the personal help possible* out of each and every one of these frank, friendly letters which tell the personal experiences of other builders.

If you have any comments of your own to make for the good of the cause (and we sincerely hope you have) don't hesitate to jot them down and send them to us.

The Second Prize Letters and several others will be presented in the August issue.

He Aims to Be the First to Introduce New Ideas In Buildings

Morris, Ill.

Editor AMERICAN CARPENTER AND BUILDER:

When I first started to learn the trade I made every effort to please my employer and his customers by being honest in everything that I did. I worked three years at the trade for one of the best contractors in our city, and I subscribed for one of the best building journals I could get, and made a study of any new thing in the building line, also learned a great many new ways to do work.

After starting to work for myself, I made every effort to satisfy a customer in doing a small job, so I could secure him as a customer for a larger job in the future—which is a good rule for any contractor and builder to tie to.

I have made mistakes by trying to do other work in connection with carpenter work; if any man wants to make a success take one trade and stick to it. Also make up your mind what city you want to locate in and do things the best you can. If you lose some money at some jobs, go ahead just the same. Do not slight any work to make money.

About five years ago I went to Oklahoma, leaving a fine business here, and got there just in time to get caught in the money panic and I made a failure.

I came back to this city, went to work at contracting and building again; subscribed for the AMERICAN CARPENTER AND BUILDER. I took an idea of a plan of a house from that journal and changed it to suit my ideas; and, while working at the contracting business for other people, I built a house for myself, putting in all the new modern ideas I could find in the building journal. Before I had it completed I sold it at a good profit.

When I see a new idea or a new advertisement, I send at once and get it, and if it is good I use it in my work, and it gets me customers, as I try to be the first to introduce it in this city.

In 1911 I started the pebble dash work on the outside of

houses and finished three large houses and other work.

I am now in 1912, building a new house for myself, and two other ones for sale—making them modern in every way, and making a reputation for myself; which I consider is my best bank account.

The plans of the houses I am now building were taken from the AMERICAN CARPENTER AND BUILDER and changed to suit my ideas.

I also buy all my material wholesale and make a double profit for myself.

My whole success is based on "Honesty is the best policy."

H. A. TAYLOR,

Contractor and Builder.

Glass and mill work of all kinds.

Successful Boss Carpenter through Study of Foremost Builders' Journal and Hard Work

Locksport, N. Y.

Editor AMERICAN CARPENTER AND BUILDER:

I have often desired, yes more, I have felt it a duty to express my earnest appreciation for the benefit I have derived from my study of the AMERICAN CARPENTER AND BUILDER, and I wish I could say that which would convince every carpenter of the necessity of providing himself with such an able help, as it will surely prove to any man who will give it careful study.

I can scarcely qualify in either class designated in this prize concert, as I am only a foreman; but I get the top wages for this work in this section, and this I attribute to the fact that I have made careful study and diligent application of the many useful articles which appear monthly in my building journal.

Every man who is a builder, in order to prove successful, must be a student and in one or another sense a pioneer, inasmuch as new phases appear on nearly every job, and new methods have to be devised to increase the earning capacity of those in his employ or charge. So must the builder study to provide himself with ablest help he can bring to his command. First, to provide himself with the necessary practical knowledge to be able to direct his work and to inspire the best efforts in those whose work he directs.

The man who really becomes a successful builder will be one who loves to build; one who loves his work and believes in it; further his love and belief must be included in his determination that it shall succeed and prosper. He commits himself to it because he thinks well of it, but more than all these reasons is his creative impulse urging him to make good. If one way appears blocked, then another must be found to ultimate success.

I have, with the exception of one copy, all back issues for four years, together with a graphic index which I worked out, covering such articles to which I might wish to often refer; and from them I find anything I may need—and I believe anything any carpenter will need—and every item in such plain words that he can understand them.

The last copy (June, 1912), brings the very thing I have been wishing for, viz., how to determine the length of the sides of any regular polygon by the square. In this lesson Mr. Woods (more power to him) has given the rule in such a simple and easy way that I find myself saying I should have seen that myself.

In conclusion I wish to again say that I owe my success to the useful knowledge I have gleaned from the lessons

appearing from time to time in my building journals, foremost among them I place the AMERICAN CARPENTER AND BUILDER.

I should like to add that above every other qualification to a man's success in this or any other work, must be that of industry. A man will get out of his work just what he puts into it—no more. Show me a successful builder and I'll show you a worker, and in the ranks of the successful builders I'll venture there isn't a loafer to be found.

Wishing the AMERICAN CARPENTER AND BUILDER ever and increasing success, I am yours very truly,

ROB'T. A. HEINS,
"Boss Carpenter."

From Brick Mason to Architect and Builder Via the Carpentry Trade and Home Study

Editor AMERICAN CARPENTER AND BUILDER: Convent, La.

I served 10 years at bricklaying, and am a good mason; but finally decided the chances of getting ahead were poor. Work in that line here was scarce, and I would not lower prices. I looked over the industries, and figured out that it did not require much talent any way to be a boss bricklayer (as it was said about me, that I was as good as the rest). Of course I knew the size of my educational ability, which was poor, poor.

In the face of a storm I unchained my boat from the wharf, green as a cucumber in May, and entered the carpentry field, just to satisfy ambition. As a bricklayer wages were \$2.50 and board, while in my new field they were \$1.25 no board. But work was plentiful and I also noted there was a chance of promotion (unlike my old job). If you had the ability you would be given a chance, and I also discovered that the carpenter was more or less the mason's boss, and that the carpenter had lots of figuring, innumerable amounts of problems to solve, so many little and big things to see into, and all ahead of time.

I am not from Missouri, but have their nature; I wanted to know; and in the shortest possible time, how they, i.e., some of them, did it.

Well I, being naturally a lover of books, I purchased a set; but they did not bring me where I wanted to go. I then purchased another set of books, a complete cyclopedia of Carpentry, Building and Architecture, and these were the books; they contained the goods.

Ah, if more carpenters would read, and put into execution what they read, the only thing needed is ambition; ambition to imitate the man higher up. But I guess it's nature's law; plant three hills of cabbage; treat all alike; but they are sure to mature differently. However, I claim that they will do better with cultivation than without. Try it.

I used a saw and hammer for the first time in my life in the year 1903; wages \$1.25 per 11 hour day. Today my wage is \$3.15 for a 9 hour day when doing day work. The usual price here is \$1.50 to \$2.25 for the best, but most of my work is contracted for. I use a 9 hour day for my men; the only one here that does it, and it's through education of the trade, that enables me to come out O. K.

All my work is done from carefully drawn plans. (Boys this is the trade.) Make most of my own plans and blue print them. It makes me shiver; I don't know whether I should cry or laugh when I look back over the past; cry for not getting in sooner, or laugh that I was late, but got in just the same.

Last year I built my first two-story residence, from my own plans; a modern house, 7 rooms and bath, open press brick fire places down stairs; club grate with tiles up stairs, and electric lighted.

A few more words and I'm through. To know how to saw and nail, is only the *first reader* in carpentry. Get in-

terested in the correspondence department of this paper, ask questions, and watch Mr. Woods on that steel square, buy good books, and those that wish to stand on grounds with the carpenter, the builder and architect, take a correspondence course in line with your calling. Without this training you will be what a drug clerk is to a doctor, only fill the prescriptions.

Respectfully,

BENNY TUREAUD,
Contractor and Builder.

The Five Rules to Builders' Success

Chapman, Kans.

Editor AMERICAN CARPENTER AND BUILDER:

I started in some ten years ago contracting for myself, having previous to that worked for several years for as fine a mechanic as there was in the country. To start with, I adopted some of his ways, but more of my own.

My method is, first, to be courteous and polite to each and every customer, whether big or little; second, to do as near as possible as I agree to, at all times and in all places; third, to give each and every one value for his money, whether working by the day or contract; fourth, to do a quality of work that will bear inspection at all times, regardless of parties working for and in what place; fifth, by using the amount, and if anything a little better grade, of material than called for in contract.

Now, this is my first attempt to write to this publication, although I have been a subscriber since the second year of its existence, and I like very much to read its pages, especially the correspondence pages and letters from brother workmen.

Wishing the paper, its publishers, and its patrons, all success, I am respectfully yours,

F. M. SCOTT,
Contractor and Builder.

Plans, Specifications and Estimates Furnished for Prospective Builders.

Finds Fact of Being Subscriber to Leading Building Journal Impresses Customers

Lawrence, Nebr.

Editor AMERICAN CARPENTER AND BUILDER:

Dear Sir and Friend: Referring to the way I got my start in the building line, I first worked by the day here and there for different contractors and builders; and by hard work and hard study, I finally got to the front as foreman; and now am still studying hard.

I study everything in the line of building I can get hold of; and that AMERICAN CARPENTER AND BUILDER—I can hardly wait from one month to another to get it. There is so much good in it that I think I will always take it.

When I get a new customer I first talk things over and find out, as nearly as I can, what the family want. Then I mark them off a floor plan as near as I can what they want. The next step is generally to spend about two or three days referring them to some of my old customers who will show them the sort of work I do.

Then I take them to my book case and get the latest number of my AMERICAN CARPENTER AND BUILDER and show it to them and tell them how much good there is in every issue for a carpenter and that a carpenter who doesn't take the best building journal is not up to date and can't do up-to-date work.

By building up with these methods, I now have a nice business. I am running a gang of 5 men now, and expect I will take on more soon. We have built three good houses this year and have another to build soon.

Hoping this will benefit, I remain as ever, one of your readers.

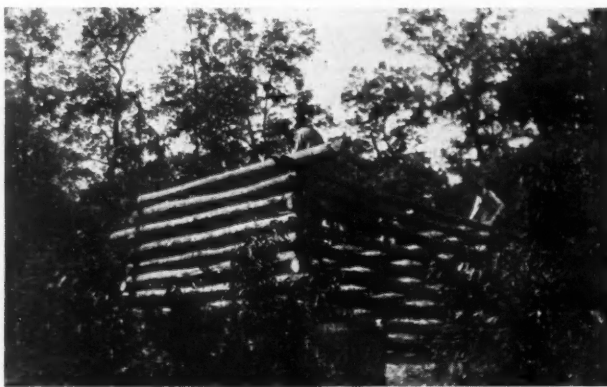
J. W. BROWN,
Contractor and Builder.



THERE are places in the United States where a house complete, 18 by 18 feet, can be built for the trifling sum of three dollars. This is what it would cost you if you were a mountaineer of Kentucky, Tennessee, North Carolina or the adjacent states.

In the first place, the fact that you might own no land on which to place your house would be no real obstacle. Land is plenty and such is the neighborliness of the section that no mountaineer with a stretch of property would deny you the privilege of building in some odd gulley or corner of his lands. The man that refused such a favor would be counted lacking "in accommodation."

Having been "accommodated" to a building site for your three dollar house, the next step is to secure the timber for it. This also can be had for the asking. There are always clearings being made in the mountains; and in the field of new ground that is being broken, it is not unusual to see as many as twenty great bonfires each 15 feet high burning up solid trees of black and white oak, chestnut, beech and occasionally walnut, together with less valuable timber. To one familiar with the values set upon wood by the outside world, these fires seem a sacrilege. But with the nearest railroad thirty-five miles away, there is nothing to do with the wood but burn it. Any man, then, who is breaking new land will be glad to let you fell and haul away as much timber as you wish,



Laying the Side Logs

including a specially selected tree of chestnut or oak for a "board-tree" from which to hew your shingles. If you own no mule to do this hauling, you can barter with some mountaineer a half day of your time in his corn field in exchange for his mule to draw your logs. When these have been snaked down to the place where your three dollar house is to stand, you lay the logs in a hollow square until they rise chest high. After this it is difficult for one man to work alone. By hiring a hand for half a day, at a cost of



The Wooden Door Hinge

twenty-five cents, you can carry the walls to the desired height and can lay the ribs for the roof.

According to mountaineer methods, the next step is to lay the roof. This is done with a double layer of hand-made shingles or "boards." To the southern mountaineer the word "boards" always signifies hand riven shingles; while what we term a board he designates as a "plank." To make the boards for your roof it will be necessary for you to expend another twenty-five cents in a half day's carpenter hire. This is considered skilled work and you should look about carefully to select a man with a knack and reputation for board making. First he will help you with a cross-cut saw to set off the board-tree into three foot blocks. These are quartered with an axe and maul; the heart is taken out of each; and the quarters are struck off into two-inch slabs. With a tool called a fro these slabs are riven into boards from one-half inch to three-fourths of an inch in thickness. Following this comes and expenditure at the settlement store of one dollar



Chinking



Daubing

walls, these same openings are chinked from the outside full of chips and saplings and the whole daubed with mud. Last of all, a door is nailed together from the pieces left from the flooring and is fitted to the house with hand-made wooden hinges. The window, provided you have one, is a batten affair without glass and swings upon wooden hinges similar to those used for the door. In the language of the mountains it is known as the "light-hole."

for nails. The ordinary mountaineer would barter this out in eggs and chickens; but we are building our house on a strictly cash basis.

The building of the chimney follows the roofing. The chimney is made of slabs of rough rocks picked up among the ledges of the mountain-side, stuck together with a mixture of mud and warm water. This requires the help of a second man at a cost of fifty cents.

After the roof and chimney are placed you look about you for your flooring. By a visit to a neighboring saw-mill you learn that if you are not over-exacting as to the quality of your "plank," but are content with good pine or beech, you can buy sufficient for your needs for one dollar.

The long open spaces between the logs of the side walls now come in for their share of attention. Hand-made boards, such as were used for shingling, are nailed in strips on the inside of the house to cover these yawning cracks. This is called weather-boarding. To further insure that no wind or rain shall penetrate the

Your bill would then stand:

Hire for side-walls and roof.....	\$0.25
Hire for boards.....	25
Nails	1.00
Hire for chimney.....	.50
Flooring, door, etc.....	1.00
	<hr/>
	\$3.00

(Continued to page 53)



Hauling Rocks for Chimney



Chimney Completed

IDEAS FOR HOME BUILDERS

Successful Dwellings Planned and Built by Our Readers

PHOTOGRAPHS AND FLOOR PLANS OF FOUR MEDIUM SIZE RESIDENCES THAT ARE FULL OF WORTH-WHILE IDEAS FOR BUILDERS

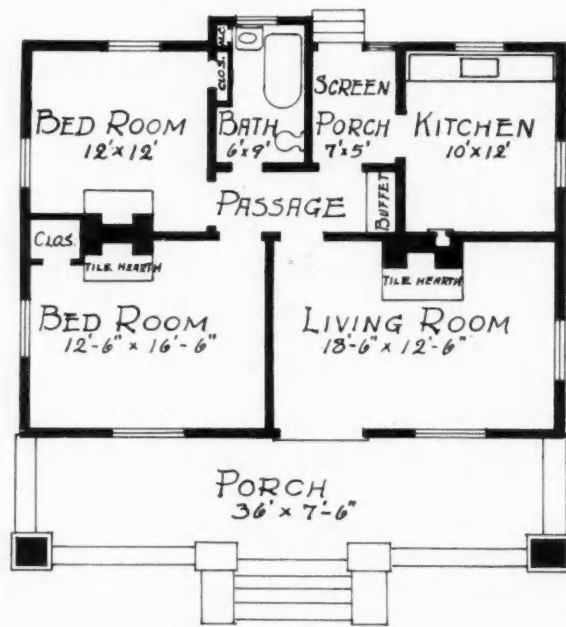
WHERE is that fellow who says no one is fit to design a house unless he wears nose glasses and a Van Dyke beard?—and has studied Architecture (note capital "A") for at least a year in the Ecole de Beaux Arts, Paris?

Hunt him up and show him these four modern, convenient and artistic dwellings, planned by the men who built them, graduates of the "Ecole" of practical experience on the job.

Joking aside, it is gratifying to see such high grade, well designed work being turned out by the practical designers of buildings, who are qualified both to lay down good work on their shop or office drafting boards and then to go out onto the job, and produce—himself and his men—a well built, completely equipped and finished structure. No one can fail to observe that builders are designing better these days. Their houses will stand close comparison with the best work of the professional architects, who formerly were considered to have a corner on all things artistic and in good taste.

The little 4-room bungalow cottage on this page was designed by Edwin L. Markel, builder of modern homes, New Orleans, La., for a wide shallow lot and shallow pocket-book. It is a very convenient and low cost house and can be practically

built in any location. It is a good investment, whether in the city or in the suburbs. You will note that the sizes of the rooms are a little larger than the ordinary house and you will also note that all rooms are strictly private.



Floor Plan Markel Cottage



Four-Room Cottage Designed and Built by Edwin L. Markel, New Orleans, La.

The arrangement of the kitchen gives a cross draft which should make the kitchen cool in the summer time and by placing the ice chest on the screened porch will save lots of room and many foot-steps. The buffet is arranged between kitchen and living room, making it very easy to serve the purpose of both rooms.

In the summer time the screened porch can have the windows down and the screens locked from the inside. This will permit the use of an open air passage throughout the house, and will positively keep the flies from the kitchen, although the kitchen door may be left open. The bathroom is arranged to be within easy access from any room. The bedrooms are practically connecting, as you can readily see

from the floor plan shown on opposite page.

All rooms have a fire-place; which removes the necessity for a basement. All rooms have two exposures and the windows are placed in such a position that there is lots of space left for the furniture. The front elevation will show how, with a simple design (and with no breaks in the roof), a small house can be made artistic at a low cost.

Under the sink in the kitchen are placed lockers for the pots and pans. Further comment will be unnecessary, as any one who studies this plan and photograph will find how convenient and low cost this house can be built.

House that Won a Prize

The little four-room cement plastered cottage illustrated on this page was awarded second prize by a Battle Creek, Michigan, merchant through the Community Club of that city for the most beautiful home erected in Battle Creek or suburbs between May 1st, 1910, and September 1st, 1911. The first prize went to a larger, more expensive place.

This little home was built and sold, complete in every detail, for \$1,500; this including also the land (60 by 132 feet), well, cement walks, trees, grading, etc. The house was built by the Brownlee Construction Company as part of their development of Brownlee Park, a suburb of Battle Creek.

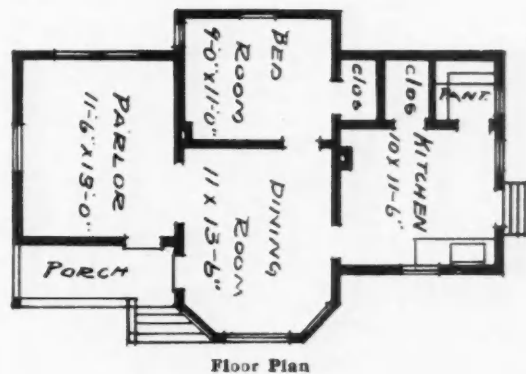
For a small cottage it would be hard to improve on this. The rooms are well arranged for convenience, are bright and cheerful, and are of good size. The house was erected on a good cement

block foundation, construction throughout being the best approved practice, a good grade of building and finishing material being used.

Designed to Take Advantage of Fine View from Rear

A charter member of the AMERICAN CARPENTER AND BUILDER family, Fred H. Thomas, architect and contractor, is doing work in and around Charlevoix, Michigan, which doesn't need to be ashamed of itself in any company. The ten-room house illustrated on page 46 is a good example of his architectural work.

In explanation of the somewhat unusual arrangement of the floor plans of this summer cottage we are informed that it stands on a bluff at the edge of Lake Michigan, and the rear of the cottage overlooks the lake. The owner wanted the living rooms next to the lake, where they have a magnificent view of the lake and all in-coming and out-going



House Built by Brownlee Construction Co., Battle Creek, Mich., Awarded Second Prize in Community Beautiful Homes Competition

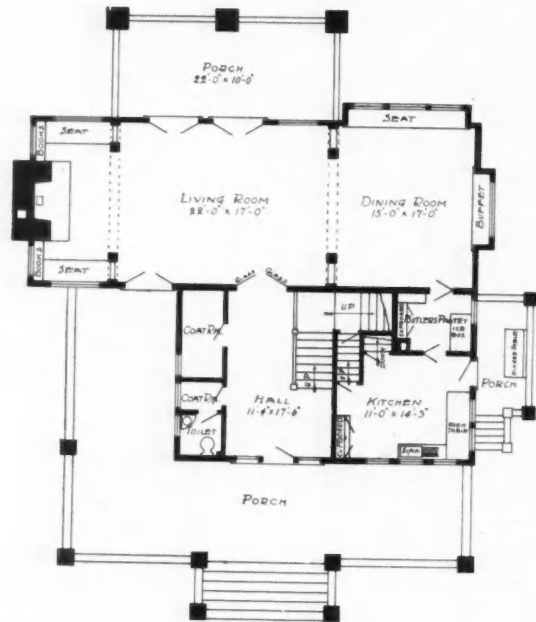
boats, which are numerous there in the summer time.

A glance at the floor plans will show how successfully this problem was worked out. Although the kitchen is in the front right-hand corner of the house it is so protected that its presence there is

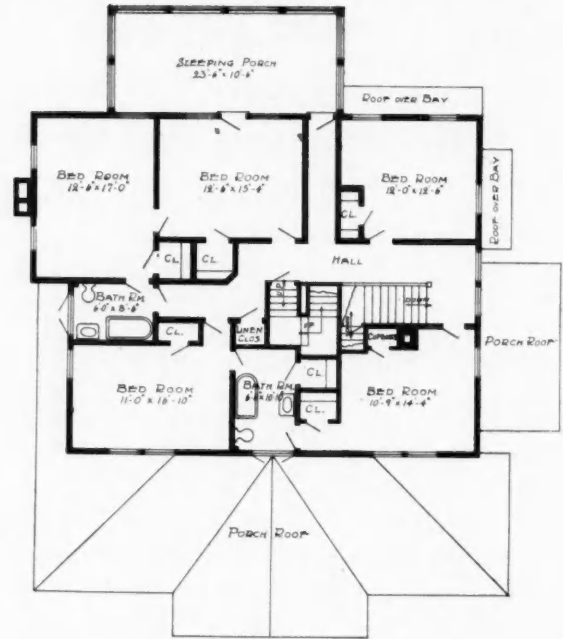
floor provides five large bedrooms besides the sleeping porch.

Palatial Farm Residence

The large modern farm home (see page 47) designed and built by C. E. LaFrance, Adrian, Mo., for A. J. Erhart, proprietor of the Green Lawn Stock



First Floor Plan



Second Floor Plan

unsuspected. Both living room and dining room face the lake, numerous broad windows and glazed doors affording an unobstructed view. The second

Floor, is an example of extra fine rural building. The character of the interior will be indicated by the fact that six of the rooms are finished in oak, five



Ten-Room Summer Residence Designed and Built by Fred H. Thomas, at Charlevoix, Mich.

of them golden oak and one of them mission; two are finished with hard maple, one of them bird's-eye maple, and the rest of the trim yellow pine. The hardware finish is brush brass for the first and second floors with nickel trim in the bathrooms and toilet, the woodwork there being white enamel.

This house is an example of modern conveniences on the farm. There is an air pressure water sys-

tem operated by a gasoline engine in the basement, which also runs electric lighting plant, cream separator, and other small machinery. The building is heated with a large hot air furnace which is said to have given perfect satisfaction even in the coldest weather last winter when the thermometer was down at twenty-seven degrees below zero. House is piped for gas lighting system.

"Narrow-Lot" House for Growing Locality

By C. Bryant Schaefer

IN building a cottage near a thriving city it is well to have the future demands of the locality in view. A good fifty foot lot is bound to increase in value until a larger building or more buildings are required in order to keep up with the progress of the neighborhood. As ground space becomes limited it is necessary to have two cottages on fifty feet.

Our design shown on the next page is practical on one narrow lot with another lot on either side for a yard. Two cottages on fifty feet would leave a space of 5 feet 8 inches between. The important windows are front and rear while the dining room windows on the side slant front and back.

The stairs in this plan are so arranged that they can be entered directly from the front door or from the rear of the house through the dining room. This is of greater convenience than two flights of stairs. This one flight does service for both with less care and cleaning.

Underneath the stairs is a side entrance that admits to the basement as well as to the main floor. It is also convenient to the second story stairway. This arrangement protects the front room from general use so it can be kept in nice shape.

The kitchen, pantry and first floor bed room are well arranged. The former has a back door which it is nice to leave open in warm weather. Ice may be slipped into the pantry under the pantry window. The front porch may be inclosed with storm glass and screens.

This is an ideal plan for the American family that does its work together. People of taste would enjoy doing their own housekeeping and make a fine art of it. That is what constitutes an artistic design. It is thoroughly practical and beautiful to live in.

It is not artistic to impose some eccentric plan upon the owners nor to introduce some unusual sight feature in the construction. Such cottages seldom fit the habits of the occupants, make more work and exhaust time and labor in building.

One important fact is usually overlooked in home building. A man is expected to put all his spare savings into a home of his own yet there is never any provision for an income on his investment. It was a great advance when it was shown how the rent might

be applied on the purchase of a home; but the home owner is also entitled to some pecuniary returns just as much as the investor in any other business. If any thing the home owner should be given the preference because the country is actually being conducted on the stability of the home building class.

The people who build homes on the installment plan are also securing customers for trade, clients for their professions; people who have to pay their bills, safe



16-Room Modern Residence Designed and Built by Chas. E. La France, Adrain, Mo.

to trust, safe to lend to and persons who will do the real work of municipal improvement. These home owners make up for the unpaid bills of the floating population. The home owner can not pack up and leave when prices are raised on him. He can not force the party, who has a little money, to keep it in legitimate business circulation, although that is what it is intended for. Instead he has to fight against being cornered and becoming that man's borrower. He finds his cheap cottage expensive to keep repaired and finally after a few years the lot would be more valuable if vacant. It becomes a hindrance to the progress of the locality.

To avoid all these difficulties makes home owning the most successful business there is, as it naturally should be. What is required is good workmanship, a convenient plan and one that will meet the changes in family life. The next thing of importance is to have

a cottage that may be adapted to the progress and improvement of its environment. The cottage will then increase in value from year to year, thereby earning the income on the first cost to which the home owner is fully entitled. This income is paid him through the better class of improvements with which he is surrounded, better educational advantages, convenience and time saving in respect to business and the greater administrative influence which he may legitimately exert in his family's interest. These are affairs well worth learning. Customers of this sort are a benefit to the building trades.

It will be noticed that our design will take in rough lumber at standard sizes. There is hardly any

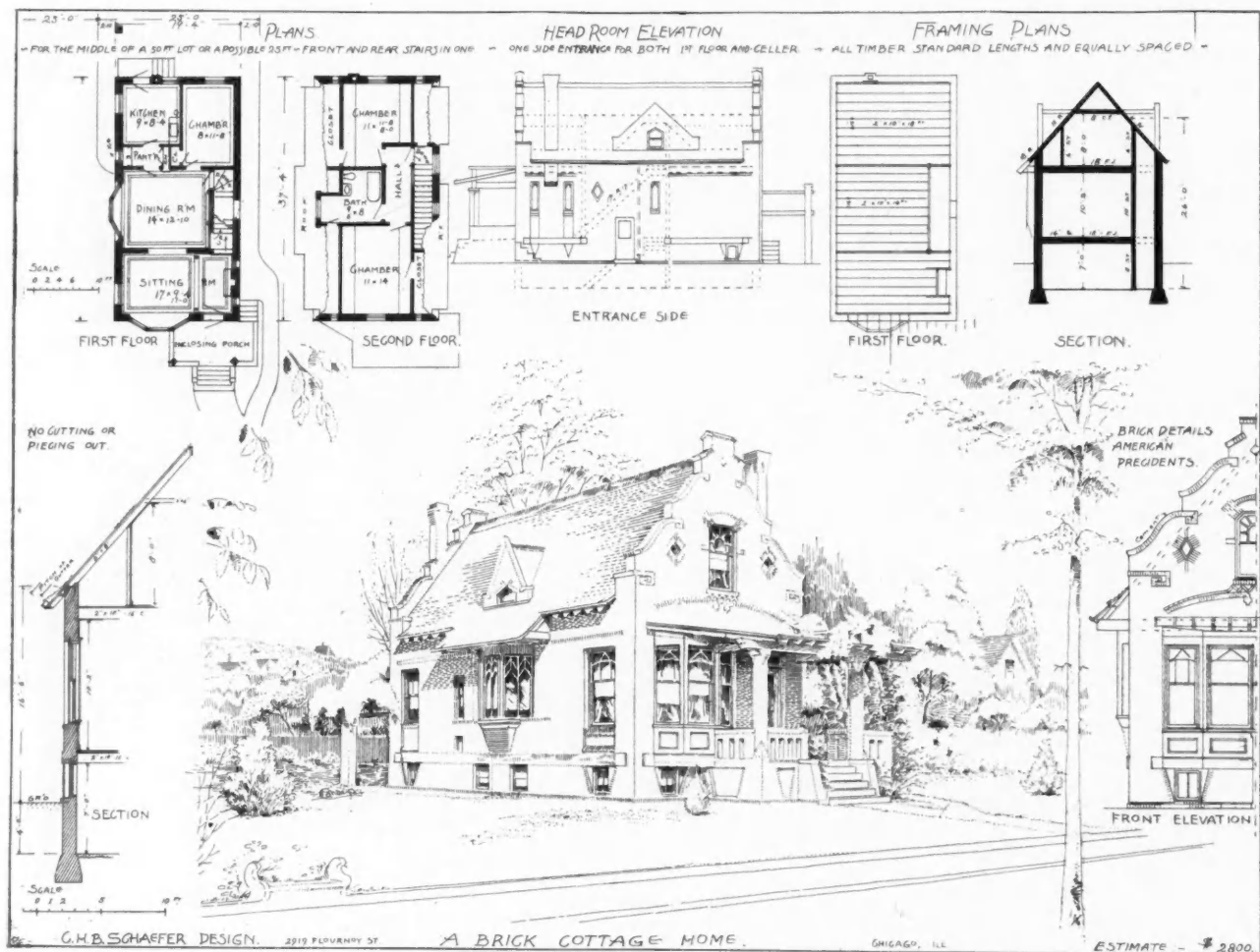
copying. These and the chimney tops are to be laid in cement.

The decorative features are distinctively American. It is an art that is constantly growing in favor.

Surrounded by shrubbery this design would not only prove of the greatest attractiveness in the country, but its elegant rustic beauty would be pleasing in a cityfied environment.

To Remove Marble Stains

A correspondent sends us the following formula to remove stains from marble and similar surfaces: Take $\frac{1}{4}$ pound of soap—preferably some linseed oil soap such as *Flaxoap*— $\frac{1}{4}$ pound of whit-



Perspective and Plans of Attractive House for a Narrow Lot

cutting and fitting called for. There are no pieced out projections and angles. Such are sure to sag or settle unevenly. There is no waste head room. There is nowhere any need for spiking corner wise through the timber ends. Such unworkmanlike nailing always gives in a few years, settles and cracks the plastering and makes uneven floors.

The use of impervious brick will secure a permanently clean appearance, always like new. Particular attention should be given to securing a hard water proof brick for the window sills, sill corners and

ing and 1 ounce of common washing soda (Sal. Soda). Add water and boil together for fifteen or twenty minutes. Apply this while hot to the surface and wash off next day. The stains will have been absorbed by the mixture and the marble may be polished with a coarse flannel. Ink stains are a little more difficult to remove, and the surface should be washed with muriatic acid, then cleaned with water.



"What's worse than finding a worm in your apple?"
"Finding half a worm."



Watch this Department—Read it—Study it—Save every instalment of this series for future reference and study. This month the problem is stated (and every carpenter and builder knows it is a real problem—not an imaginary one). It is: **The Danger of Guessing, and How Can a Builder KNOW when Every Member of the Structure he is Designing is just Strong Enough.** THE ANSWER will be started in our August issue. It will be written in terms that every practical builder can understand. Let's study up, and stop guessing. Every builder, young and old, who wants to know, is invited to sit in at this series of "Noon Hour Talks by the Boss Carpenter."—Editor.

The Builder on Thin Ice

GUESSING AT SIZES, AND THE USE OF RULES NOT CLEARLY UNDERSTOOD WHERE ACCURACY AND SAFETY ARE DEMANDED

By Chas. E. Paul, S. B.

THE campaign for "Better Building" which is pushed so vigorously by the AMERICAN CARPENTER AND BUILDER should have the effect of opening the eyes of some of the building fraternity. The builder of reputation is careful of that reputation and realizes that he must live up to it to continue to be successful. Not only are good materials and careful workmanship demanded by the discriminating public, but also stability, strength and pleasing design.

Right at this point is where the builder is likely to be tempted onto the thin ice, and the object of this article is to place a danger signboard in his path. No matter how good a carpenter, mason, or concrete worker a man may be, let him keep out of the field of the architect or engineer *until he has prepared himself* to face the problems which are properly handled by the architect or engineer. The question of pleasing design may often be taken from illustrations and plans shown in some building paper, or from an idea advanced by the owner of the structure. If the owner is satisfied with the appearance of a building thus constructed, the architect is not needed for this part of the question. But what shall we do about the sizes of some of the members in this design which is new to the builder? Here is where the special training of the architect or engineer is needed.

Pleasing lines and wide unobstructed spaces are a delight to the owner, but often a source of much quandary laden with doubt and even danger to the non-technical builder who has attempted to imitate a design without reliable detailed plans, or to put strength and rigidity into a part of the structure without even knowing the fundamental laws upon which

such calculations for sizes of members should be made.

Possibly this builder has read articles on the design of beams, columns, and other principal members of a structure and has jotted down a number of "Rules-of-Thumb" to be followed in the future. In writing down these rules, did our friend have the fundamental training sufficient to know that he must also take a note of the working conditions under which these rules were evolved in order to know when they might be intelligently applied? Otherwise, he wasted his lead pencil and time.

Then again, can the non-technically trained man trust himself in the intelligent use of formulas in which he has no knowledge of the meaning of the components parts? Can he depend on himself not to use a quantity whose units are the inch and pound on one side of an equation and a foot and pound quantity on the other? This is a point which has to be watched carefully for some time in the training of technical students.

We believe that it shows a true spirit of faith in mankind in general, of supreme optimism, or, of gross carelessness when a builder will take a design of a trussed beam or a built-up member of any kind, or even choose an I beam or plain member such as a heavy beam or column, from a book or magazine illustration without knowing the exact conditions under which this member was used, and seeing that they correspond or compare favorably in detail with the conditions which are to be met in his particular construction. If he has sufficient training to figure the strength and stiffness of such an illustrated member,

he will find that it is, possibly, within the limits of a suitable factor of safety in regard to strength; larger than needed for the load to be carried with a reasonable factor; too weak for use in the location called for; or may have too great a deflection. Thus it will be seen that to be *right* the member must have a certain size within close limits; otherwise either failure or great distortion will occur, or a waste of material and an increased expense will result.

If you wish to be able to determine intelligently the sizes of beams, columns, and other parts of a structure, study in your spare moments the principles of mechanics and strength of materials. That is what the trained architect or engineer had to do. If the science of intelligent and better building had not proved conclusively that such training was necessary for both safety and economical results, why license architects, pass building ordinances, and provide building inspectors?

Every man to his own trade. If you are a successful builder and wish to remain so, don't guess at an important point in a structure. If you have not the necessary training to be sure what you are doing is correct, take the matter to an architect or engineer whose business it is to know. It is cheaper in the end to pay him for a small service than to replace a poor job. A good reputation and peace of mind are worth many a five or ten dollar fee.

Poor material may be covered up and hidden from sight in many places and possibly no damage result, but poor calculations or no calculations at all and a bad guess, when strength and rigidity are demanded not only cause trouble, but often result in serious consequences.

In the campaign in the interest of "Better Building," let us not forget to inscribe one banner "Intelligent Building."



Eliminating Dust from Concrete

A Massachusetts engineer and builder gives two methods which have proved satisfactory for stopping the dusting of floors already built.

The first is to apply a coating of boiled linseed oil and, second, a coating of water glass or sodium silicate. As a rule there is entirely too much working on the surface material in laying concrete floors. As natural stone is much harder than concrete it will resist abrasion much better and therefore the larger percentage of natural stone which can be brought to the surface in laying concrete floors the less will be the dusting. The more the troweling the more will the smaller particles be worked toward the surface. Furthermore, the last of successive trowelings which are common is apt to take place after the concrete has taken its initial set and therefore tends to reduce the strength.

He also states that if the finished floor is laid integral with the underflooring, all being placed in one operation the top layer can be considerably thinner than if applied after underflooring has set.

Relative Cost of Building Materials

COMMITTEE AT BOSTON CHAMBER OF COMMERCE COMPARES FRAME WITH NON-COMBUSTIBLE CONSTRUCTION

The report of the committee on fire protection of the Boston Chamber of Commerce included some very interesting figures on the comparative cost of frame and brick construction for dwelling houses. The conclusion was that the slightly greater cost of brick, which averaged under 10 per cent more than frame, was more than offset in a few years by the lesser cost of maintenance and insurance and by the greater comfort and durability of the structure. The report says that when lumber was cheap and brick was more expensive than now, the idea became general that the cost of brick as compared with frame was almost prohibitive, and this continues, although the conditions have changed so radically that the cost is now little more and the ultimate cost is less.

The purpose of the investigation was to encourage the use of brick and non-combustible interior construction for the purposes of fire prevention, and this form of building was very strongly urged by the report. Bona fide bids were secured from five different contractors of good reputation on the cost of the construction of dwellings of brick, wood, cement and hollow blocks, the houses to be the same in every particular except the outer walls. Bids were secured on a modern, eight-room house, of good design and excellent arrangement, such as is frequently built in and about large cities, and on these the bids of the five contractors varied comparatively little, and so the average was taken as a fair test of the practical cost, the contractors including their profits in all cases. The average bid for the various types was as follows, the second column showing the percentage of excess cost of each type over the clapboard type:

Clapboard	\$6,759.95	.0
Shingle	6,868.80	1.6
10-inch brick wall, hollow	7,372.48	9.1
12-inch brick wall, solid	7,641.00	13.0
Stucco on hollow block	7,187.65	6.3
Brick veneer on hollow block	7,483.16	10.7
Stucco on frame	6,952.90	2.9
Brick veneer on boarding	7,226.44	6.9
Brick veneer on studding	7,153.98	5.8

The committee corresponded with contractors in various parts of the country in making up its report, and found from them that brick buildings were commonly estimated to cost 10 per cent more than frame, while brick veneered buildings could be put up in many sections for 5 per cent more than the cost of frame buildings, the difference in cost being usually more than offset by the lessened insurance premium. In the same way estimates were secured on annual cost of maintenance, including depreciation, for frame and brick dwellings, and it was found that the frame dwellings cost 26 per cent more for maintenance and depreciation than the brick dwellings.



Cabinet Hardware; also Four Fold Doors

THE HARDWARE MAN'S FORM, A SHORTHAND SYMBOL FOR LISTING CABINET HARDWARE—ARRANGEMENT AND PROPER HARDWARE FOR DOORS FOLDING BACK INTO POCKETS; ALSO FOR ACCORDION FOLD DOORS

By Our Hardware Expert

MR. ARCHITECT, you can make the hardware trimmer's life a joy forever, if you will add details A, B, and C to your drawings when you make the pretty picture of the sideboard, or other cases in the front part of the house.

The conscientious trimmer wants to please the lady of the house; but he cannot do it unless he knows the exact width of stiles of the doors.

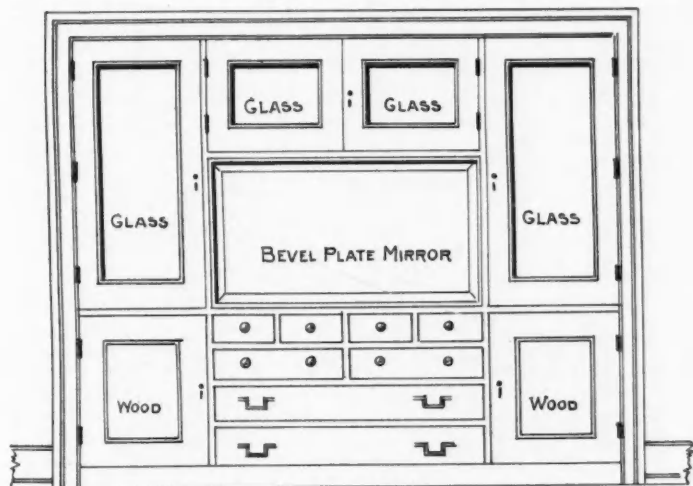
Mr. Trimmer, do you see the "short hand form" for hardware men? This was invented for your benefit. When taking off your quantities you can quickly transpose the architect's pretty picture into this form and it will enable you to schedule your items and save you from error. If you make too many errors, you sure will lose your job.

Detail No. 16 is a typical detail of the built-in side-

board. The following schedule of items will furnish the key to the hardware man's form. These are nifty trimmings:

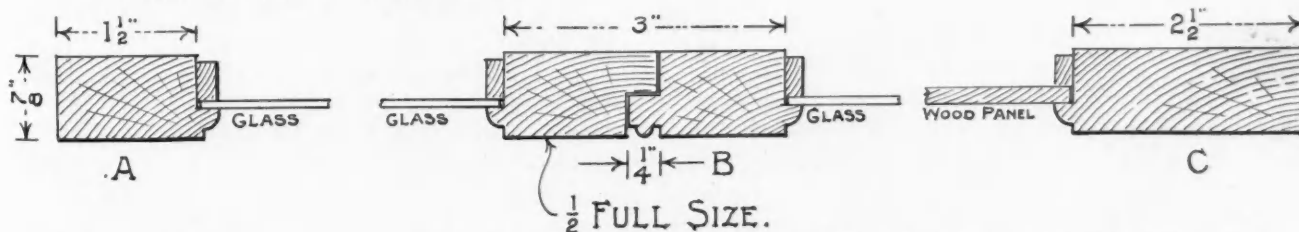
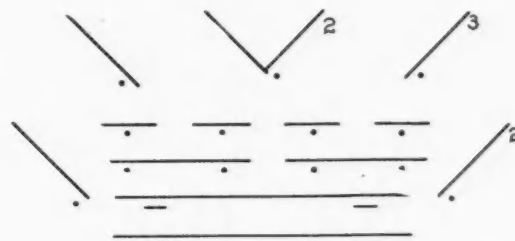
- 7 Pr. Butts, 2½ by 2.
- 1 Elbow catch.
- 1 Cabinet lock, ⅝-inch backset, right hand for double door.
- 2 Cabinet locks, ¾-inch backset, ½ right, for single glass door.
- 2 Cabinet locks, 1¼-inch backset, ½ right, for panel door.
- 5 Key plates.
- 5 Knobs for doors.
- 8 Drawer knobs for small drawers.
- 4 Drop handles for large drawers.

Mr. Carpenter and Mr. Millman, you many times have to purchase hardware trimmings. You can make use of this short hand form in making out your orders to the hardware man. Show him you are up to



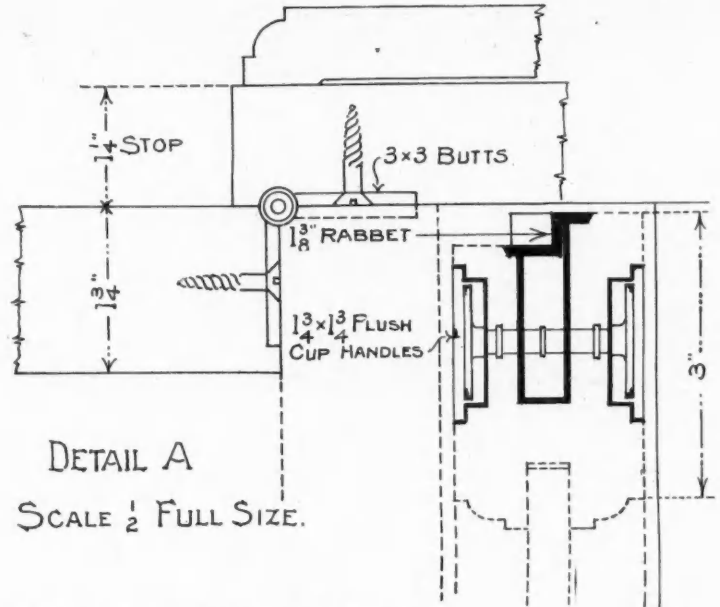
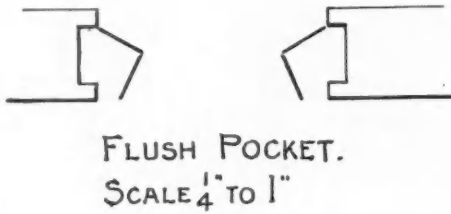
DETAIL NO. 16. SIDEBOARD.

THE HARDWARE MAN'S FORM



Detail No. 16 Illustrating Correct Detailing for Side Board and Hardware Trimmer's Short Hand Form for Listing Hardware Items

DETAIL No.17. FOLDING DOORS.



Detail No. 17—Arrangement and Details of Doors to Fold into Flush Pockets

date. Take this and the other issues which you know will interest him; show him the illustrations; tell him that he should subscribe for the AMERICAN CARPENTER AND BUILDER. The magazine deserves this at your hands because there is no other publication which furnishes so much valuable information.

The Hardware Editor knows of no other item in which the hardware trimmer has to exercise his brain cells more than to trim a set of four fold doors which fold back into pockets. The outer fold, as you see, must form a panel and no hardware must show on it.

Detail No. 17 shows floor plan of same. Mr. Architect, if you will lay out your details for these doors and pocket, the millman will not make so much trouble for the carpenter, and a neat (workman like) job will be obtained.

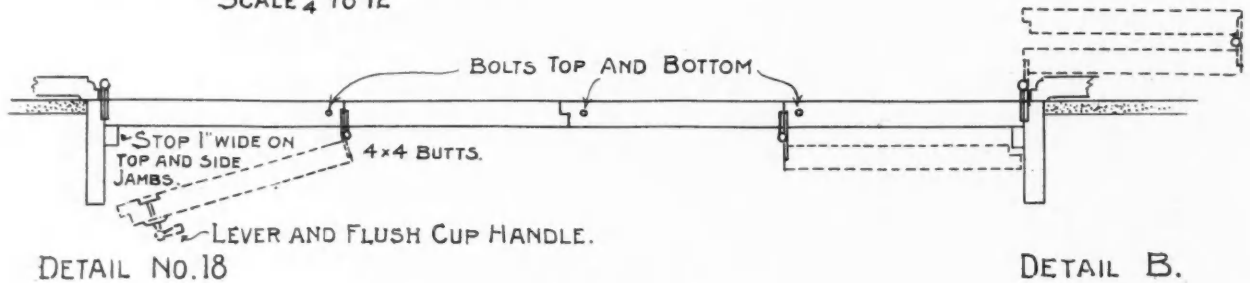
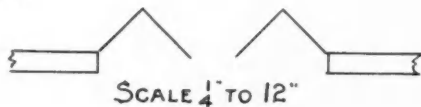
Do not make the doors thinner than $1\frac{3}{4}$ inch, because the flush cup handles cannot be made shallow enough to contain the drop handle, with which you operate the latch and pull open the door.

Detail No. 18 shows this four fold door in a thin wall. This is absolutely the only way that a set of four fold doors should be hung and folded.

This is called the accordion fold.

If the floor plan shows these doors folded so that the inner leaves fold around against the wall, the hardware trimmer, on sight of same, gets cold feet, cold sweat, chill and ague, and a number of other dismal feeling,—(that is, if he is an experienced trimmer!)

If he is not an experienced trimmer he will not experience the above mentioned feelings. He, in his



Detail No. 18—Arrangement for Accordion or Four Fold Doors Showing Only Proper Way

Detail A is half size. A careful study of same will show you that it is the only proper one. The millman and the hardware trimmer will be delighted to supply the owner with an artistic and practical piece of work.

Nearly all of the four fold doors folding back into the pocket are so-called BOTCH JOBS, because they are not properly laid out by the architect.

supreme confidence in himself, says, "Sure, I can do it."

After making a BOTCH JOB of it he will hunt up the bald head experienced trimmer and ask his advice.

Mr. Architect, do not fold these doors any other way than the accordion way.

If you do the butts attaching the outer fold to the jamb must have a leaf 6 to 7 inches in width. When

the doors are closed these butts stick out like a sore thumb; using butts of this width will allow the doors to sag and drag on the floor.

The Hardware Editor now thinks he has convinced his readers that the accordion fold is the proper thing because a butt of regular width can be used in the outer fold. This makes a good rigid application.

Now we come to the interesting part of the question. Mr. Architect, Detail B, shown herewith, is designed especially for you.

Do not use a rabbeted jamb for these doors. Use the regular jamb having stops planted on.

Note the stop, 1 inch in width, on the top jamb. It extends only the width of the outer folds.

No stop on top jamb for the inner folds. This will allow you to swing the inner doors on 4 by 4 butts around against the outer folds, and may be left in this position; or you can swing the entire four folds around against the wall in the other room.

If the stop on the top jamb extended the whole width of the four folds you could not use the flush bolts or latch with a lever and flush cup handle; in fact, you could not operate the doors at all.

Now, wouldn't that be a BOTCH JOB?



A House for Three Dollars

(Continued from Page 43.)

If instead of working yourself you hire all the labor of such an 18 by 18-foot house done for you, your

bill would run up to exorbitant sum of eleven dollars and ninety-five cents. This net price, however, assumes that you scorn ordinary lumber and lay your floor of selected chestnut or oak. The cost as estimated by a mountaineer carpenter of East Tennessee, who assisted with the raising of the house shown in the accompanying illustrations, would run thus:

Felling logs.....	\$ 0.50
Hauling logs.....	.50
Teams used in hauling.....	.50
Two men, 1/2 day each with cross-cut saw.....	.50
Riving boards.....	.50
House raising, four men, 1/2 day each.....	1.00
Covering roof, 1 1/2 days' work.....	.75
Nails.....	1.00
Chimney, 2 men.....	1.00
Flooring, door, etc.....	3.20
Hauling plank.....	1.00
Putting down sleepers and laying plank.....	.50
Chinking, daubing, making and setting door.....	1.00

\$11.95

Once built, this house will stand for two generations without even being reshingled.



Specifying the Time of Removal of Forms

It is safe to say that the majority of failures of reinforced concrete structures has been due to the premature removal of forms. It is not sufficient for an architect or engineer to state that the forms shall not be removed until the concrete has hardened sufficiently to permit of their removal with safety. The time which should elapse before removal should be stated.

Lockwood, Greene & Co., of Boston, architects and engineers for industrial plants, in drawing specifications for reinforced concrete structures, state in very plain terms the time that forms should stay in place, and an idea of just how their specifications read may be obtained from the following extracts from the specifications made for the Aberthaw Construction Co., the concrete contractors on the work in question.

Removal of Forms, Slabs and Beams: Forms shall not be removed from floor and roof slabs in less than seven days. Sides of beams may be removed at the same time as the floor slabs, provided original supports under beams and girders are left in place.

Columns: Where original supports remain under beams and girders coming to columns, the forms shall not be removed from the columns in less than four days.

Supports: The original supports for all beams and girders must remain in place at least ten days, but all beams and girders having more than 30 feet span from center to center of support shall be considered as special cases, and subject to inspection of superintendents of construction before removed.

The length of the time before removal of forms shall be increased on all cases and additional time allowed for each day the thermometer registers at any time during the day or night below 35 deg. Fahr.



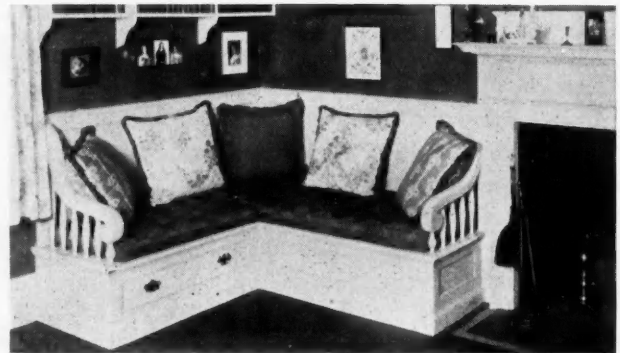
Making Shingles

DETAILS YOU CAN USE

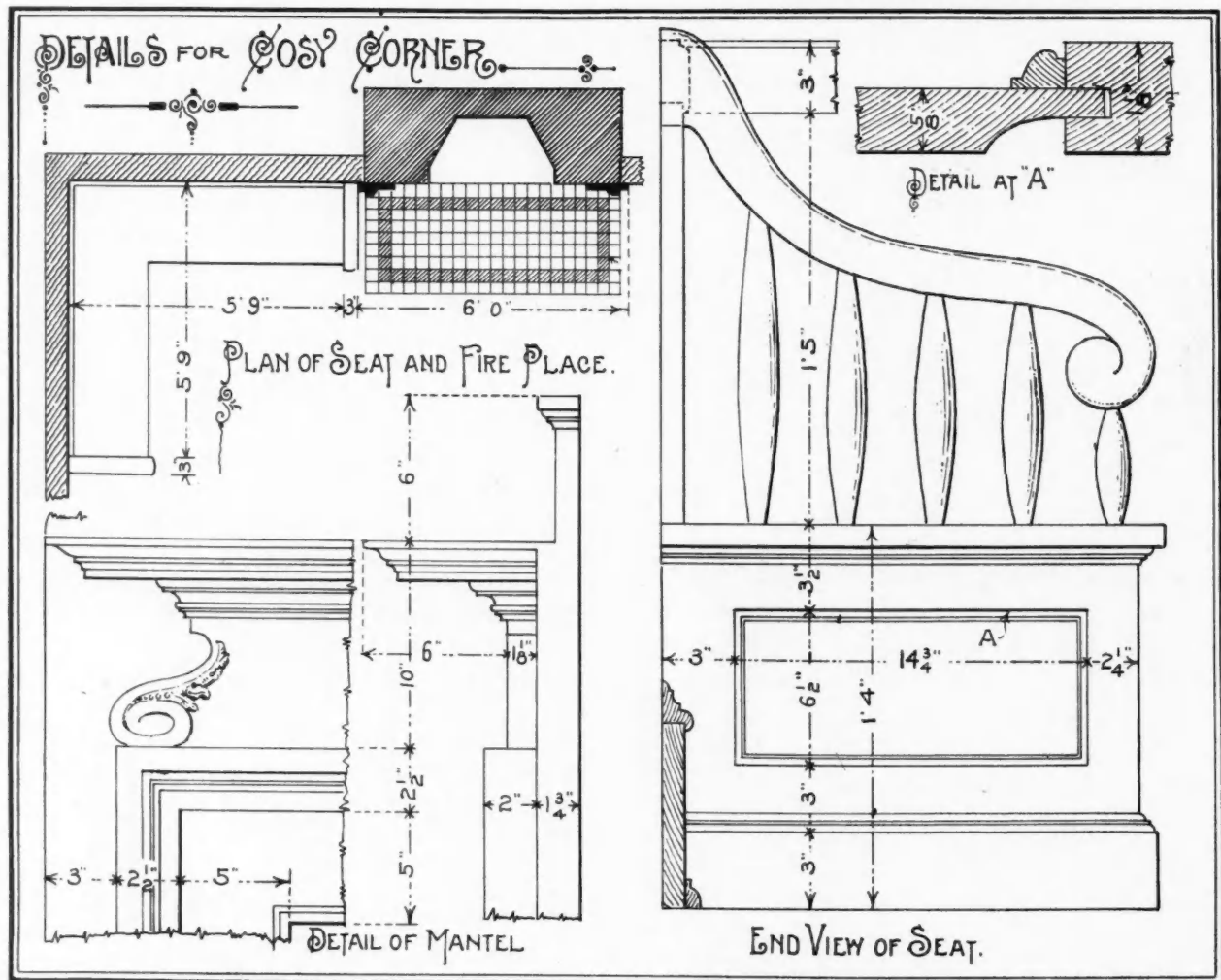
A GOLD MINE OF WORKABLE IDEAS FOR THOSE WHO PLAN AND BUILD

Photos and Working Drawings of Cosy Corner and of Novel Stair with Built-in Seat

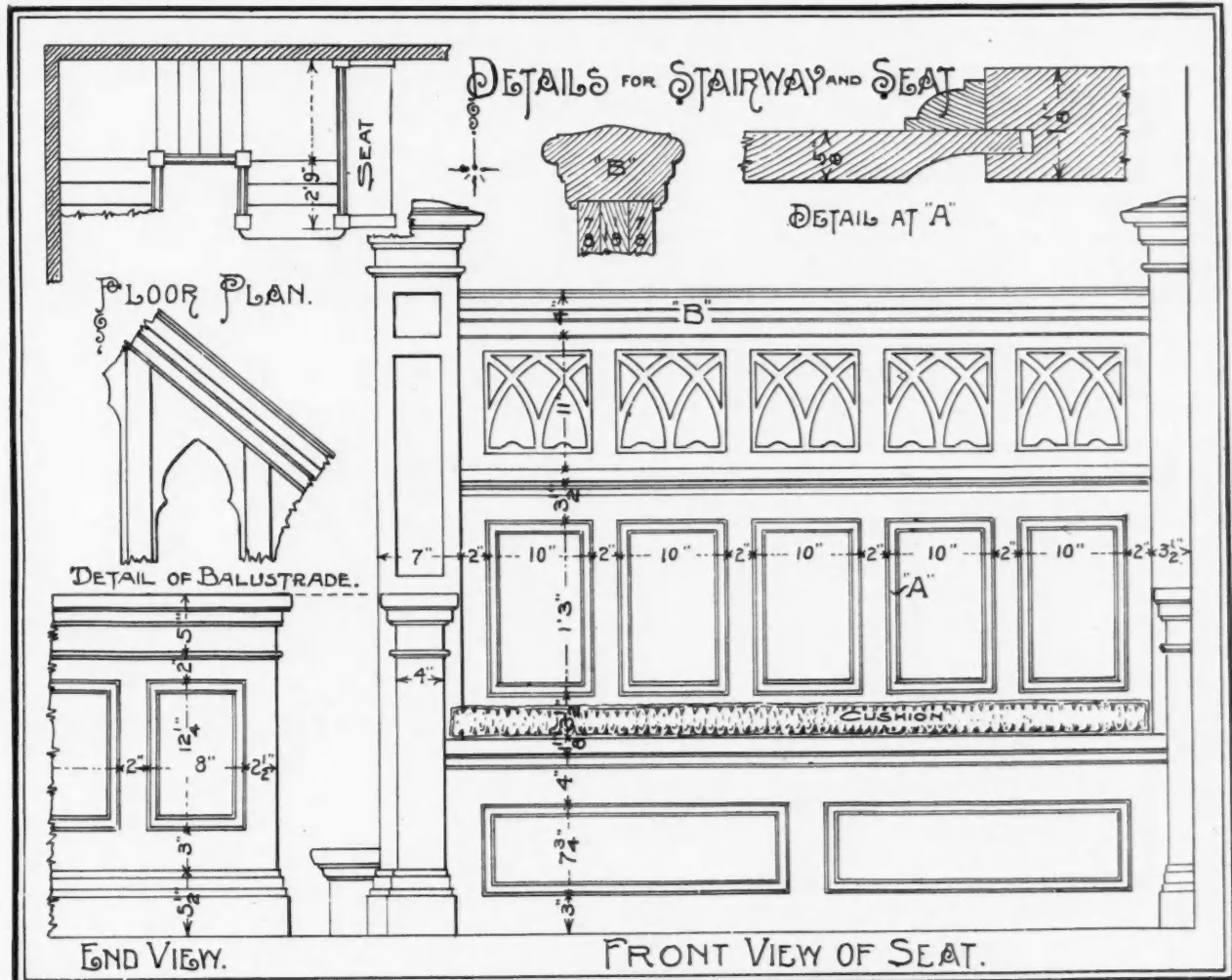
NOTHING should appeal to the home builder as much as particular features which will make for comfort and an artistic arrangement of design and construction as well as utilize space that might otherwise be accounted as an awkward corner or wasted room. It is grasping these little but important elements of design and construction and bringing them into service on every job that play such a big part in the successful work of every carpenter and builder.



Suitable for Library or Living Room



DIMENSIONED DRAWINGS OF FEATURES SHOWN IN PHOTO ABOVE



DIMENSIONED DRAWINGS OF UNIQUE STAIRWAY TREATMENT, BUILT-IN HALL SEAT, AND OTHER FEATURES ILLUSTRATED BELOW

Be always ready with some fresh suggestive feature that will tend to give the home that so-much-sought-after artistic as well as practically "homey," comfortable effect.

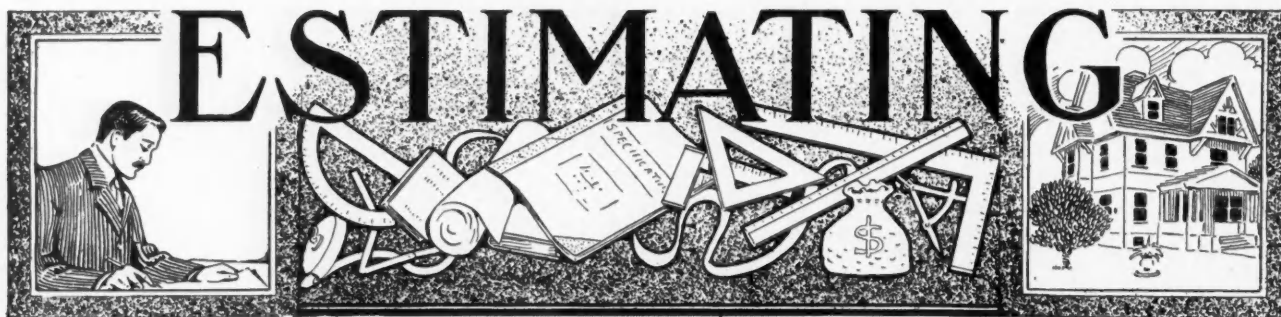
In this department are shown the photographs and detail working drawings of two features which can be used to good advantage in either new or remodeling work.

The first photograph and drawing are of a cozy corner. Note the extremely pleasing effect contained in the photograph of this corner of a room. Reference to the drawing will give the various details of this construction; the plan of seat and fireplace, of mantel and seat end. It will be seen from the photograph that a drawer is provided in part of cozy seat.

The second photo and drawing show an unique treatment of stair with built-in seat. This is a two platform stairway. Note the attractive paneling and pierced work which form the seat back. Details give the floor plan, method of construction and dimensions of all parts of seat design.



Unique Stair Treatment with Built-in Seat



Buying Building Materials Economically

CAREFUL ESTIMATING NECESSARY—WHAT IS A SAFE MARGIN TO ALLOW FOR WASTE—CONSTRUCTION COSTS AS SHOWN BY INDIVIDUAL ITEMS

MOST builders do not know how to buy building materials economically. Contractors handling large operations are able to employ expert estimators whose business it is to keep down waste. But the home builder is ignorant of material values, and so is the speculative builder, because interest charges for extended credit put an artificial level on cash quotations. When architects make the estimates, the inexperienced builder is almost sure to fare better if he took the figures himself, but the average speculative builder prefers to do the buying.

In estimating the cost of building for which plans have not been prepared, it is customary to figure in cents per cubic foot. In city property the cost will run from 6 cents for a frame dwelling with shingle roof, pine floors and finish, without bathroom or furnace, but otherwise a good house, to 20 cents for a brick dwelling fitted with good plumbing, bath, furnace, hardwood finish and well painted inside and out. A speculative building, in New York city with ten-foot ceilings would cost from 15 to 18 cents a cubic foot, or \$1.50 to \$1.80 a square foot. Tenements and cottages to rent usually are figured at from 13 to 16 cents a cubic foot or from \$1.30 to \$1.65 a square foot. The typical New York flat is generally figured at from 31 to 40 cents a cubic foot, hotels range from 35 to 45 cents a cubic foot for first-class structures, from 28 to 38 for second-class structures, and from 24 to 30 for third-class buildings. Churches run from 20 to 35 cents for plain ones and from 30 to 45 cents for ornamental ones.

Construction costs differ. In New York they will be higher than in other cities. Wages for labor are higher there than in any other city in the country. It costs more to haul material, and the demand is steady enough to warrant high prices for materials whether made there or out of town. The average cost of a building in Chicago will run about 13 cents a cubic foot and a similar building in Boston will cost about 15 cents, while a counterpart of either one of these structures will cost over 20 cents to erect in New York. The above figures are for a fireproof building of about 500,000 cubic feet in volume and with floor areas of approximately 40,000 square feet.

New York Building Exceeds Panama Canal Cost

The foregoing fact probably explains why New York City leads the country, if not the world, in the value of its annual building projects. In 1910, \$154,000,000 was expended in building construction in this city, more than half of which was for Manhattan operations. This was one and a half times more than was erected in Chicago, although that was the year when there was a great rush there on the part of owners to get plans filed before the law affecting the heights of buildings became operative. Manhattan's total was about four times that for Philadelphia, and no other city in the world reported more than one-quarter of that amount. It dwarfs the outlay expended upon the Panama Canal in an average year by \$31,000,000.

The extent of the demand for building material is more readily appreciated by such figures as the foregoing, and they supply a basis for conjecture on the losses sustained by builders who either cannot or do not figure close to requirements. The number of dollars involved in failures of builders in that city in 1910 gives a clue to the actual losses sustained by building material interests largely through the inability of builders to figure close to actual needs. The total runs to approximately \$19,000,000.

Where the Wastes Occur

The greatest waste is in the purchase of common brick and lumber, although large sums are lost through careless handling or storage of perishable materials, such as Portland cement, lime and plaster. Carelessness is governed by management, hence it is not an item to be considered under the head of purchase of building materials. Losses arising from careless figuring are inexcusable because it is possible to reduce the element of waste in any building operation to a minimum, even without the aid of an expert estimator.

Take lumber, for instance, the first thing to do is to apply to the New York Lumber Trade Association for a copy of its rules for lumber classification. If they cannot be procured there address the National Hardwood Lumber Dealers' Association, Chicago; the Mississippi Valley Lumber Manufacturers' Associa-

tion of Minneapolis, Minn., or the Southern Lumber Manufacturers' Association of St. Louis. These rules will give the various standards of lumber.

It is then necessary only to have the dimensions of your building, to make estimates. Gillette's rules are standard. In estimating the number of joists for each room (we are now speaking especially of speculative dwelling operations in the suburbs) count the actual number and add one joist; for an extra joist is needed for the wall. Joists are nearly always bridged and for this purpose 2x4 material is used. The bridging is the crisscross bracing between the joists to keep them in upright positions.

Estimating Lumber

Allow 25 lin. ft. of 2x4 bridging for each "square" (100 square feet of flooring). Where 2x12-in. joists are placed 16 ins. apart it will be found that the 2x4-in. bridging amounts to 9 per cent of the number of feet, board measure, of joists. On a plain roof count the number of rafters and add one. In estimating the number of studs for walls and partitions allow one stud for every lineal foot of wall or partition where studs are spaced 16 ins. center to center. This seemingly large allowance is made to cover the doubling of studs on corners, doors and windows. To estimate the quantity of shiplap or sheeting calculate the exact surface to be covered, deducting openings, then add 15 per cent for sheeting and 17 for shiplap on floors, 17 for sheeting and 20 for shiplap on sidewalks and 20 for sheeting and 25 for shiplap on roofs.

Sheeting is laid with 2-in. space on cheap roofs. In such cases deduct accordingly. When sheeting and shiplap are laid diagonally add 5 per cent to the foregoing figures to allow for waste in sawing both ends.

In figuring the amount of siding required, calculate the exact surface, deducting openings, and add 33 per cent if 6 in. siding laid four and a half to weather is used. If it is 4 in. siding add 50 per cent to the surface.

Figuring Flooring

Flooring comes in two classes—dressed or square edged flooring, and dressed and matched flooring. The square edge flooring ordinarily has a face width of about $\frac{1}{2}$ in. less than its nominal width, thus a piece of 6-in. square edge flooring has a face width of $5\frac{1}{2}$ ins. and a piece of 4-in. flooring has a face width of $3\frac{1}{2}$ ins. The loss in the case of the flooring with $5\frac{1}{2}$ -in. face is 9 per cent, and in the case of the $3\frac{1}{2}$ -in. face the loss is 14 per cent. But in addition to these mill losses there is usually waste, owing to bad ends, etc., so that after estimating the exact area of floor, 11 per cent should be added for 6-in. flooring and 20 per cent for 4-in. flooring. Add 17 per cent for 6-in. flooring where dressed and matched flooring is used, 25 per cent for the same in 4-in. flooring, 33 per cent in $2\frac{1}{4}$ -in. dressed and matched, and 40 per cent in

$1\frac{3}{4}$ -in. dressed and matched flooring. Extra allowance must be made if the floor is to be laid under partitions, and if the architect has so spaced the joists that full lengths cannot be used, there may be a very large waste not included in the above allowances. This, by the way, is one of many instances where the inexperienced builder, figuring close, finds himself overwhelmed with extras. Estimate flooring less than one inch thick as one inch. Ceiling and wainscoting are estimated exactly as dressed and matched flooring is estimated.

Buying Common Brick

In the purchase of common brick there is a great deal of waste. Bats, or half brick, result from careless dumping or loading on trucks, and the building department permits only a small percentage of these to go into a wall, generally depending upon the weight the wall has to sustain.

Common brick is sold at wholesale at so much a thousand, depending upon the season of the year, supply and demand. The term "run-of-kiln" means that the brick so sold is taken from the kiln without being selected as to hardness, color or texture. "Culled" brick is that from which all so-called pale or light hards have been eliminated and they possess a "true metallic ring" when knocked together in the hand, thus showing thorough burning and soundness. The retail or "yard" price is that fixed by the dealer and which is quoted to the consumer. It is the wholesale price, plus carting to his yard, and his profit, which varies according to the rating of the customer, the amount of credit he wishes, the distance the brick has to be hauled from yard to job, and the periods over which deliveries will extend. A thousand brick is figured at 40 cu. ft. when laid. There also are companies which deal in second-hand brick, but these seldom or never go into fair grade work except mill construction, and are not important as a marketable building material any more than is second-hand steel, trim and lumber.

Mortar Formulas

The mortar item is an important one for the builder to consider, and in this he must guard himself against waste. A safe proportion is one barrel of cement to one of sand, makes 4.17 cu. yds. of mortar; 1 to 2, 2.84; 1 to 3, 2.06; 1 to 4, 1.62; 1 to 5, 1.33, and 1 to 6, 1.14. That is: one barrel of sand to one of cement will make 4.17 cubic yards of mortar providing the sand has 38 per cent voids. A barrel of Portland cement weighs 380 pounds and the weight of the barrel is figured at 20 pounds more. The size of the barrel varies, due to the difference in weight per struck bushel and to the difference in compressing the cement in the barrel. Four cloth bags make one barrel. Each empty bag weighs one and one-half pounds. If cement is bought in bags a charge of ten cents each is made, but a refund of from eight to ten cents is

allowed upon a return of the bags. Cement ordered in wooden barrels costs ten cents a barrel more than in bulk.

Lime mortar may be mixed one part lime to three of sand, this proportion consuming about nine-tenths of a barrel of lime per thousand of brick, kiln count, the brick being laid with three-quarter inch joints. A common allowance in estimating the cost of mortar for standard size brick is one barrel of lime and sixteenths of a cubic yard of sand a thousand, kiln count.

About one-half a cubic yard of mortar is usually allowed per cubic yard of brick masonry, or seven-tenths of a cubic yard of mortar for a thousand of brick when the brick are laid with half inch joints. If cement mortar is used, the number of barrels of cement per cubic yard of mortar will seldom be less than 1.6 per thousand of brick, or eight-tenths barrel per cubic yard of brick masonry, for if the mortar is made leaner it will not trowel well and cause more loss in labor than is saved in cement.

Standard grades of lime are sold by the barrel, 220 lbs., net. When shipped in bulk, $2\frac{1}{2}$ bushels of 80 lbs. per bushel are usually called a barrel. A barrel holds about 3.6 cubic feet. The average yield of lime paste from the best limes is 2.6 barrels of paste for each barrel of quick lime. This paste is usually mixed with two parts sand by measure. It therefore takes about $1\frac{1}{2}$ barrels of the best quicklime to make three-fourths as much paste as good lime.

A word may here be said about the purchase of lime in bulk. Good lime is protected against air slaking and for that reason it is sealed and certified with the manufacturer's certificate within. This lime sells for a dollar a barrel. Many builders buy their lime in open carload lots, for about sixty cents a barrel, and think they are getting a bargain. As a matter of fact such lime is air slaked and it will take two of these sixty cent barrels to do the work of one barrel of certified lime. Here is where many builders lose money. It is a leak that would be instantly stopped if the builder would only take the time to investigate. Most individual builders do not know this difference until they find their original estimate way out of proportion to what their actual building cost proves to be.

Estimating Lathing

Metal lath is now as generally used as wooden lath, and it is an important item of figuring construction. The standard size of wood lath is $\frac{1}{4}$ ins. x $1\frac{1}{2}$ ins. x 4 ft. There is a special lath, however, which is made in 32-in. lengths. Laths are sold by the thousand in bundles of 50 or 100 laths each. The price is usually around \$3 per M., and 1,500 are required to cover 100 sq. yds. Allow ten pounds of 3d fine nails for 100 sq. yds. when joists are 16 ins. c. to c. and 1,250 laths are usually counted a day's work for a lather. The total cost of wood lathing should be somewhere around \$8.64 per 100 sq. yds. Metal lath runs in

price from 2.65 to 2.84 lbs. a square yard, and the cost varies from 15 cents to 20 cents a square yard. The total cost per 100 sq. yds. for metal lathing should not be much over \$18.50. These figures include the cost of scaffolding and is on a 6,000 sq. yd. basis.

Plastering Estimates

Plastering is generally applied in three coats, scratch, brown and white or finish. On brick walls the scratch coat is often omitted. Plaster is made either with lime or gypsum, known also as plaster of Paris. Some plasters are made with lime gauged with Portland cement. Whatever kind of plaster is used, sand and hair are mixed with the plaster. The hair comes in paper bags which are supposed to contain one bushel of hair when beaten up, and supposed to weigh seven pounds. Some cement plasters are sold with the proper amount of hair mixed in. Cement plaster is commonly sold in 100-lb. sacks, four sacks to the barrel.

In making lime plaster one part of lime paste is used to 2 or $2\frac{1}{2}$ parts of screened sand. About $1\frac{3}{4}$ yards of sand are required per 100 yards of three-coat plaster and about 4 barrels of lime or cement plaster and 2 bushels of hair. The cost of 100 sq. yds. of three-coat plaster should come to \$21.20.

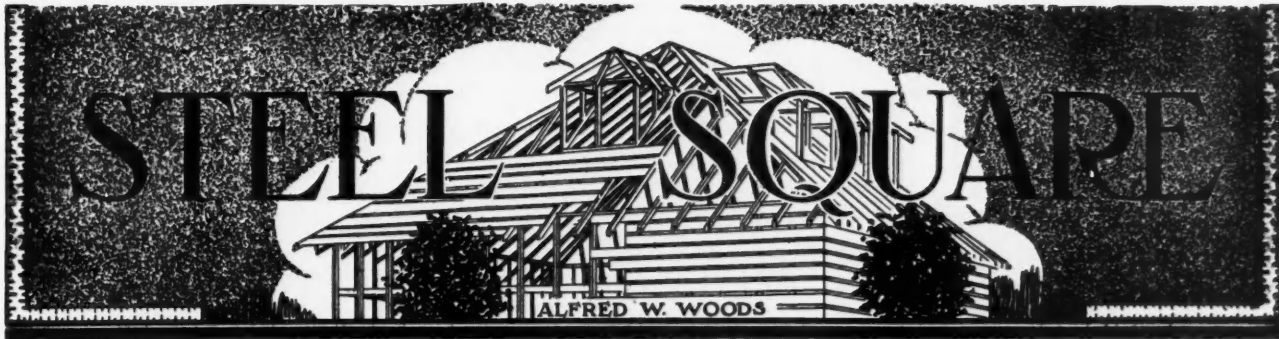
Excavating, front brick, stone, stucco and other exterior material varies in cost according to the character of the work, but none of these represent such serious leakage as do the items herein enumerated.—*Record and Guide.*



Rapid Growth of Aluminum Industry

Not over a generation ago aluminum was little more than a curiosity. It was worth \$15 or more a pound; and its total production in the United States was less than a hundred pounds a year, notwithstanding the fact that aluminum is the most abundant of all the metals in the earth's crust, aluminum oxide forming about 15 per cent. The great progress made in the industry is noted in the fact that a report on bauxite and aluminum for 1910, by W. C. Phalen, just published by the United States Geological Survey shows a consumption in the United States in that year of 47,734,000 pounds, valued at nearly \$12,000,000. The price has thus dropped from \$15 to about 23 cents a pound.

Mr. Phalen states that although aluminum has in recent years become a most important economic metal, it is at present produced only from bauxite, a comparatively scarce mineral, and that even the great discovery which made this possible is only the first stage of wresting the metal from its various rocks and earth combinations. Aluminum is an essential constituent of all important rocks except sandstone and limestone, and is found in all clays. The supply is therefore practically limitless, awaiting only the perfection of a process for cheap extraction.



Possibilities of the Steel Square

TO FRAME THE END OF A POST TO REST ON AN INCLINE WITH THE AID OF THE STEEL SQUARE

THIS question was recently asked in regard to a post resting at a certain angle on a given pitched roof; which question we answered in the May number and stated that we would take up the subject again, going more fully into details, as to what determines the proportions to take on the steel square for obtaining the cuts.

To begin with, these cuts are generally arrived at by laying out diagrams showing the parts graphically; but in this it is our aim to show the relative parts to take on the steel square for obtaining the cuts.

Referring to Fig. 1, it will be plainly seen that the part of the post to be removed must be that part shown below the roof line. Now, if the post rests on the roof square with the ridge, then it is a simple proposition, as the proportions taken on the square

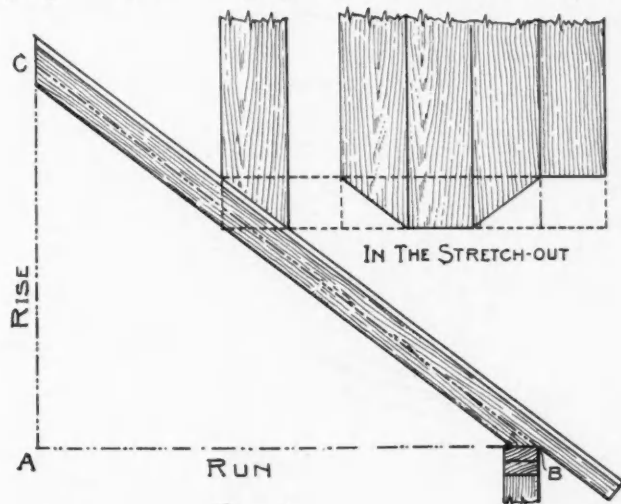
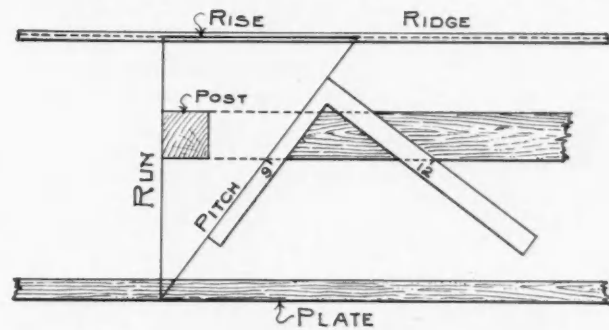


FIG. 1

for the seat and plumb cut of the common rafter will give the angle across the side of the post. For instance, if the pitch is $\frac{3}{8}$ (9 to 12) then 12 and 9 taken on the square will give the cut, as shown in Fig. 2. Two sides of the post would be to the angle as shown, while the other two sides would be a square cut across the face, as shown in the stretchout in Fig. 1. But should the post rest at an angle with the ridge, then it is another proposition and this is where trouble begins with the fellow that has not given the subject more than a casual study.

Now, it should be remembered that the proportions of the run and rise give the cut, as shown in Fig. 2, and it should also be remembered that like conditions must produce the same result in the case of the post when set at an angle with the ridge.

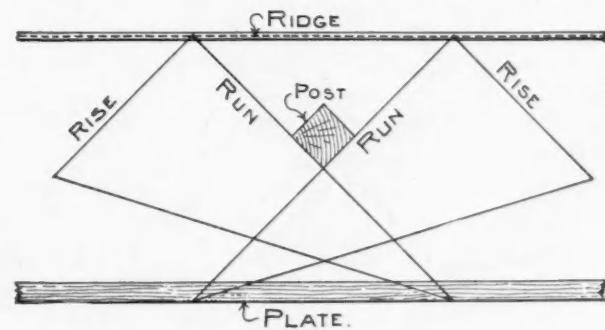
In the first case (when the post is set square with the roof), the cut in question is easily arrived at, as



PLAN.

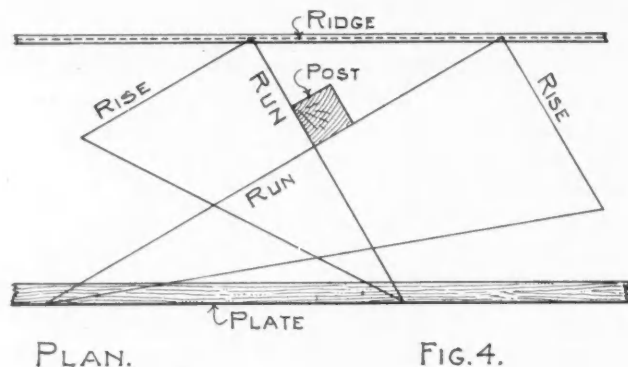
FIG. 2.

that has already been determined in the framing of the common rafter and is a known quantity, but in the latter case, the run must be parallel with the post, consequently it requires a different angle from that used for the cuts of the common rafter, because the post rests at an angle from the run of the common rafter, just the same as in the case of a hip. Therefore, the proportions used for the seat and plumb cut of the hip in that position applied to the post will give the angle for the cut. For instance if the post rests at an angle of 45 degrees from the ridge, the sides of the same would rest at the same angle from the run of the common rafter, as that of the hip in the



PLAN.

FIG. 3



case of a square cornered building; and the same figures taken on the square for the seat and plumb cut would give the angle for the cut on all sides of the

post. That is, if the rise of the common rafter is 9 inches, then 17 and 9 will give the angle on all four sides of the post, whether it is square or not. The side of the steel square on which 9 is taken, will give the angle. When the post rests at other than 45 degrees, the angle on opposite sides will be the same; but of course at different heights on the post.

In Fig. 4 is shown the proportions to use in cases of that kind; and from this it will be seen that it will require a diagram to first arrive at the parts to take on the square.

A CORRECTION. In our last article (page 59, June issue), where it mentioned to find the side of a pentagon with an inscribed diameter of 25' 5", it should read "Then multiply 8.7185 by 25 5/12." In setting this the 25 was left out, leaving only the 5/12.

The Motor-Cycle for Carpenters and Builders

THE BOSS LOSES OUT AND TIMMINS GETS THE JOB (THANKS TO HIS TWO-WHEELED RUNABOUT)

"NOT this afternoon, Mr. Green," the boss was saying over the phone.

"We are pretty busy here in the shop and two of the boys are out on the other side of town on a job—" "I'm sorry, but I can't get anyone out to you this afternoon."

"Have someone out there the first thing in the morning, but—" "Won't do, you say?"—"You're working on your barn and want someone to come right out to help you."—"Do I know of anyone you can get?"—

"Well, let's see. There's a fellow over on the east side—name is Timmins—thinks he's a carpenter. You might get ahold of him."—"I don't think he's very busy, and he's got one of them there motorcycles he dodges about on quite a bit. He ought to be able to get out there and finish up for you this afternoon."—

"Sorry I can't come out myself, but I'm busy and it's a pretty long drive to your place."—

"Why don't I get a motorcycle?"—"Yes!"—"Yes!"—"I'd look fine set up on one of those things."—"Nope, not for me."—"Nothing in that stuff."—"I don't just favor all these new-fangled ideas and machines. Good old horse and buggy suits me."—"Sure."—

"Goodby, Mr. Green."

And Mr. Green calls Timmins. And Timmins goes out on his motorcycle and finishes up the work Mr. Green wants done. And in the future Timmins will do all of Mr. Green's work.

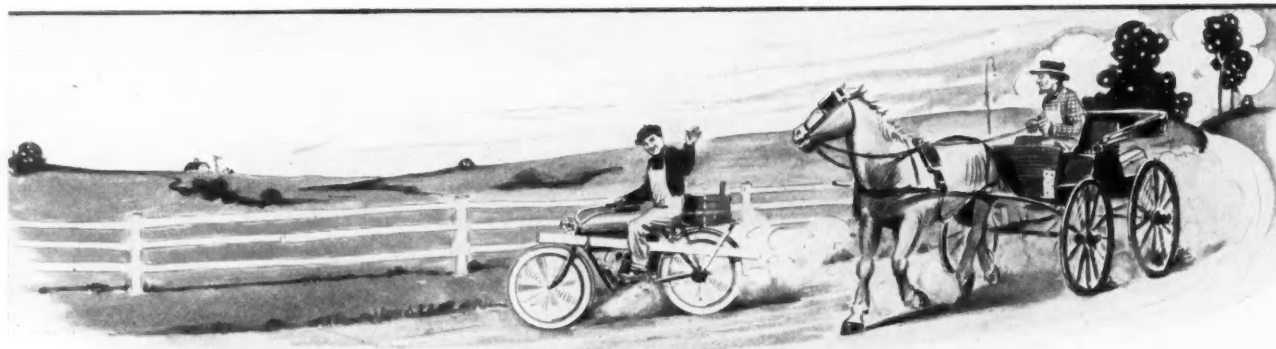
The boss was wrong. Some new-fangled ideas and machines are playing a great big part in this everyday work-a-day of ours, such a big part that none can afford to overlook them or the changing conditions they are developing.

When the bicycle was first marketed it was looked upon as a fad—nothing but a fad that would soon die out. Did it?

True it gave way to the automobile, but the wheel still holds its place as a time-saver and labor helper. The automobile fills that identical position in another sphere.

And the motorcycle has come to fill that gap between the bicycle and the automobile. It has come to stay. It has come to grow in importance in its connection with the life of the day.

The motorcycle can be considered in but two phases—as a pleasure riding vehicle and as a practical, useful, time saving and space conquering, two wheeled



The Ol' Hoss is Beaten and He Knows It—So Is the Driver

commercial runabout.

That in their first phase they thoroughly accomplish their purpose no one can deny. Pleasure bent, motorcycles will carry anyone any place they want to go—in just as quick time as they care to go—and the cost of their operation is a mere trifle.

As a commercial proposition they are demonstrating their worth more fully every day. They are being used for all manner of delivery purposes. They are being used by men engaged in many various occupations and trades. They are an active force in the work these men are doing.

Motorcycles open practically an unlimited territory to any man owning one. The field for your work is materially broadened. Where heretofore your jobs



On Your Next Long Hot Walk to Work Consider the Motor Cycle

have been blocks away motorcycles allow of their being that number of miles distant.

You want something from the shop in a hurry, or perhaps a certain piece of work can be done better at the shop than on the job. The motorcycle is handy and it gets you there and brings you back ere Dobbin would have much more than gotten fairly started.

The boss didn't think he would look very well, "set up on one of those things." Timmins thought otherwise.

Timmins was out for business. He believed in getting away and keeping away from any particular narrowing locality. He would go miles to do a job because he knew it would pay him in the long run. He kept his motorcycle "dodging about" and every dodge made him better known.

The boss had been a good man in his day, but he had allowed himself to slip out of the general up-to-the-minute alertness all about us.

Don't follow the boss—but rather Timmins. There is not a carpenter or builder anywhere who wants to overlook the field the motorcycle holds open.

Undoubtedly there are a good many of you carpenters who have and are making daily use of motorcycles. Wouldn't it be a good idea to let us hear from you? Let us hear just what the machine has accomplished for you; such as widening your field, adding business, etc., etc. Let us hear just how practically useful it is to you every day. You can tell us a lot about that machine and yourself and we want to hear it. Address the Editor.



American Architect Wins Australian Capital Competition

Walter Burley Griffin, of Chicago, has received notice from the home secretary of the Commonwealth of Australia that his plans for the new capital city have been accepted and that in all likelihood he will be commissioned to design the federal buildings and to supervise the construction of the city generally. The price to be awarded to Mr. Griffin is £1,750, equivalent to about \$8,750.

At the time of the organization of the Australian federation, about twelve years ago, it was provided by law that a new capital should be built, as it was desired that neither Melbourne nor Sydney should become the capital. The site selected for the new capital is in the province of Yass-Canberra, midway between Melbourne and Sydney. It is located on the Molonglo river, seventy-five miles from seaboard.

The project involves the expenditure of a vast amount of money, since the site proposed to be ultimately developed covers thirty-two square miles. The site of the city is a plain about 2,000 feet above sea level, almost entirely enclosed by mountains.

The competition was international in scope, there being about one hundred competitors. Mr. Griffin, the architect who has won this signal honor, has been practicing only thirteen years, but during this period he has won reputation as an architect who combines in his work the most modern ideas both in architectural design and in landscape gardening. Mr. Griffin was graduated from the architectural department of the University of Illinois in 1899 and has engaged in independent practice since 1905.

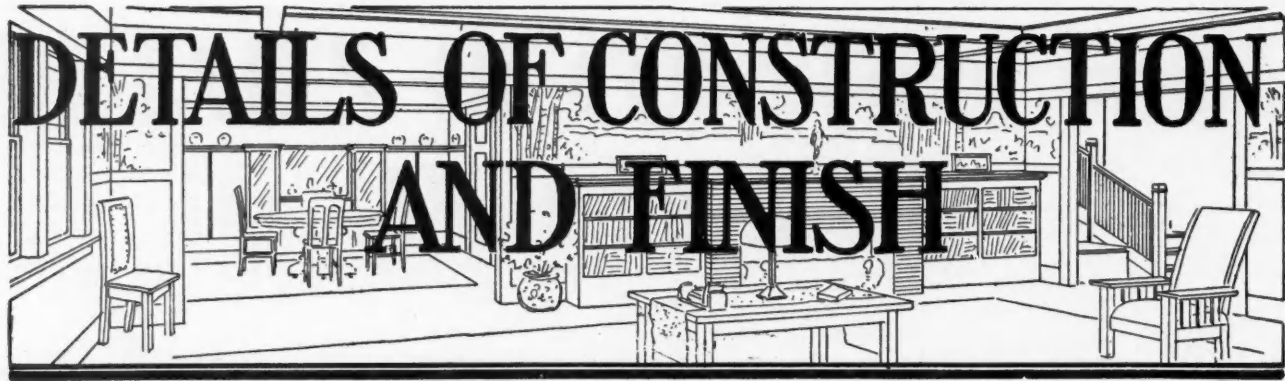
The site of the new capital is now practically a wilderness. There has been, and is to be, no chance for the mistakes and the development along wrong lines that characterize other great cities. The project offers the best opportunity the world has ever known for the development of a city along ideal lines and in accordance with modern principles of city planning.



Cereal Soap

"How do you like the new oameal soap?" inquired the barber, wielding the lather brush with extraordinary freedom.

"Seems nourishing," the customer replied, with a splutter, "but I've had my breakfast."



Suggestions for Novel Interior Features

WORKING DRAWINGS OF THREE PLEASING DESIGNS WHICH CAN ADD MATERIALLY TO THE DECORATIVE SCHEME OF ANY HOME

Detail Drawings By C. E. Schulze

SHOWN this month are three exceptionally clever and attractive features for interior finish. They are completely worked out and drawn to scale. The detailed drawings hold many suggestions which any builder can effectively adopt.

Plate No. 1 shows a buffet for construction upon either side of doors leading to a porch. This presents a very pleasing type for use in any dining room having direct entrance to a porch. Reference to the drawings will show the idea as worked out. Scale is $\frac{1}{4}$ inch equals one foot.

The second suggestion is also for buffet construction—this buffet to be received in a small bay. Glass shelving and wood paneling feature this type of design. Scale is $\frac{1}{4}$ inch equals one foot.

The third detail offered is a treatment of an angle nook in a dining room. This type features fireplace and tile hearth, cupboards with glass doors at extreme sides, while between outside sides of fireplace and cupboards open shelves are placed. A plaster arch is also a feature of this design. Scale is $\frac{1}{4}$ inch equals one foot.

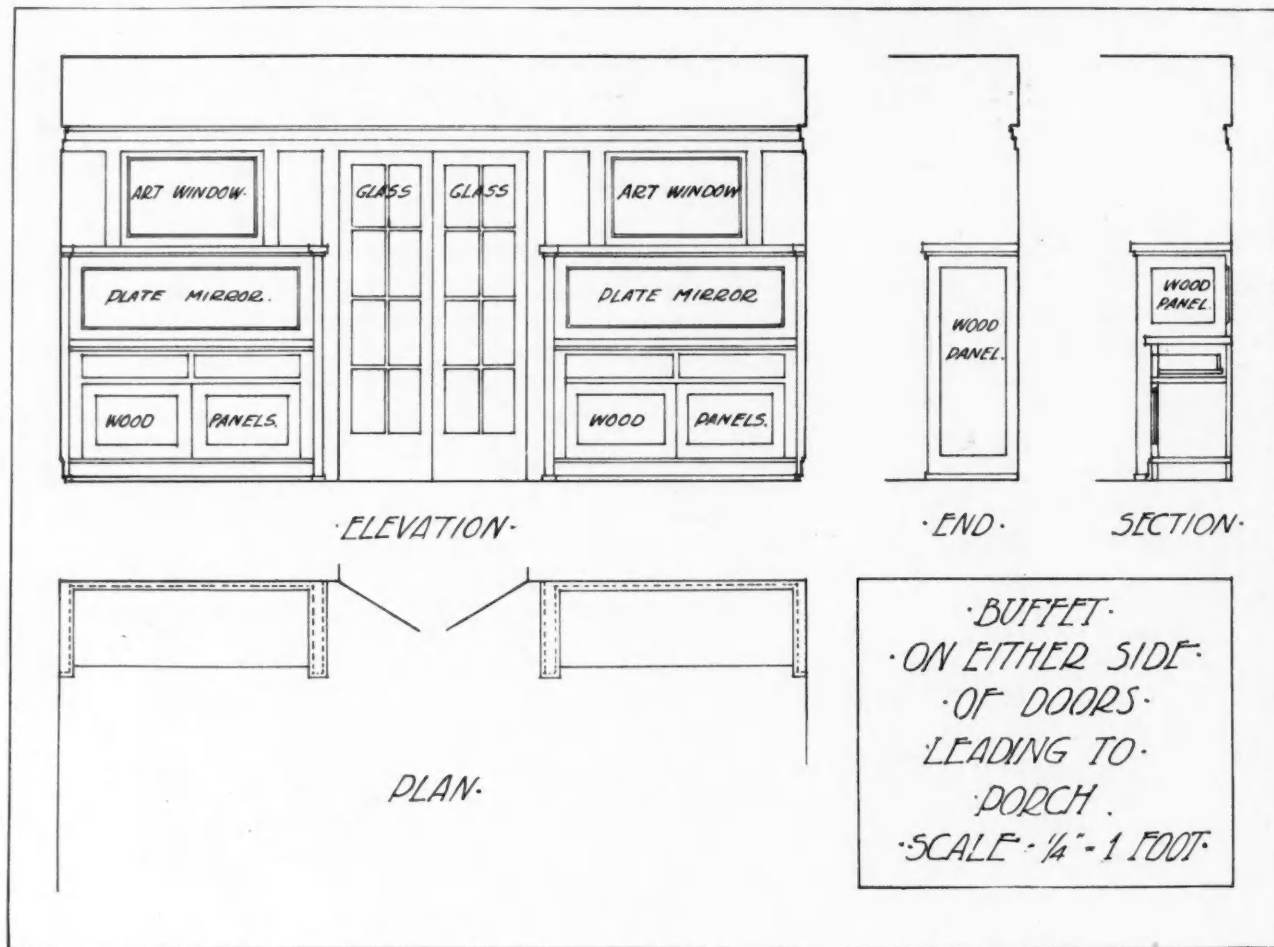


PLATE 1. A BUILT-IN SIDE BOARD NOVELTY

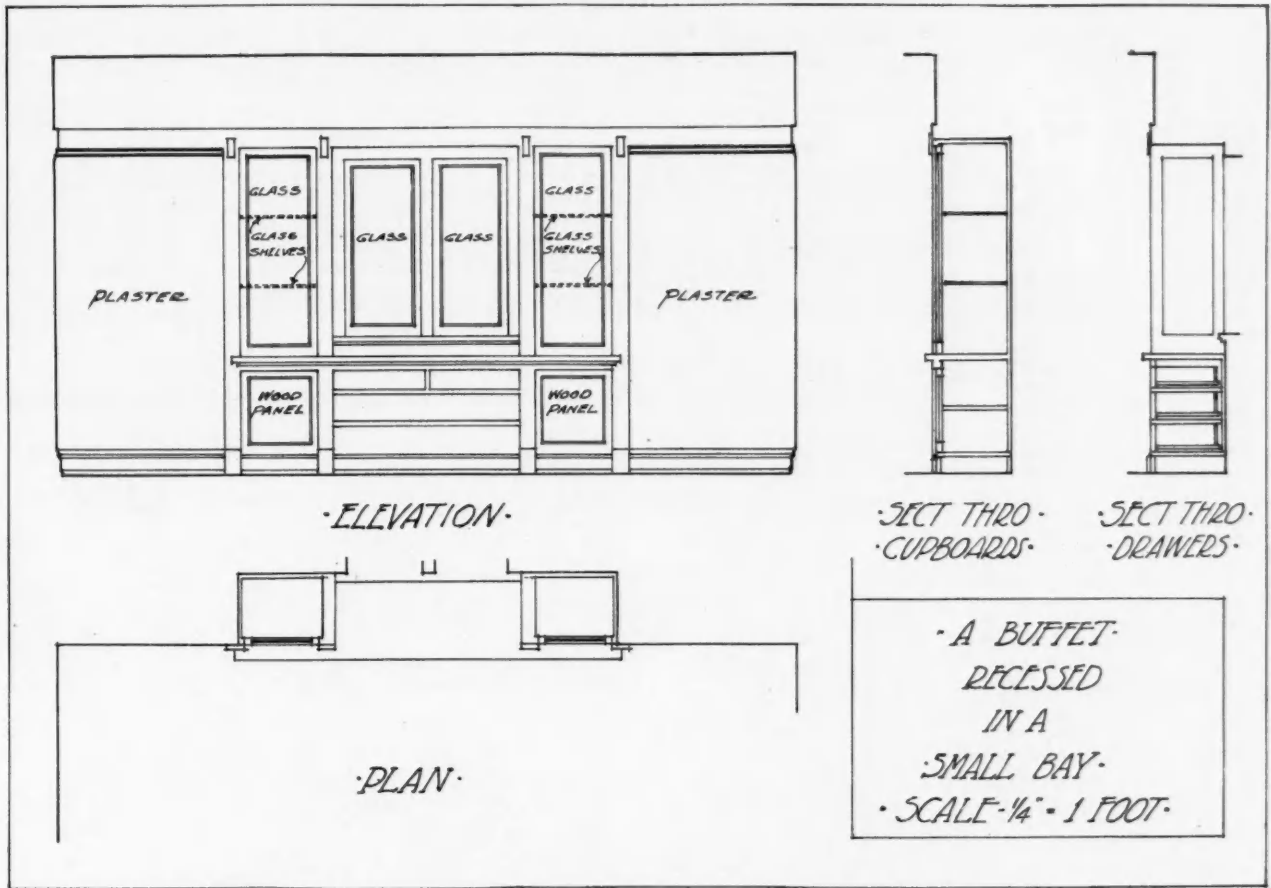


PLATE 2. SIDE BOARD SET INTO WALL

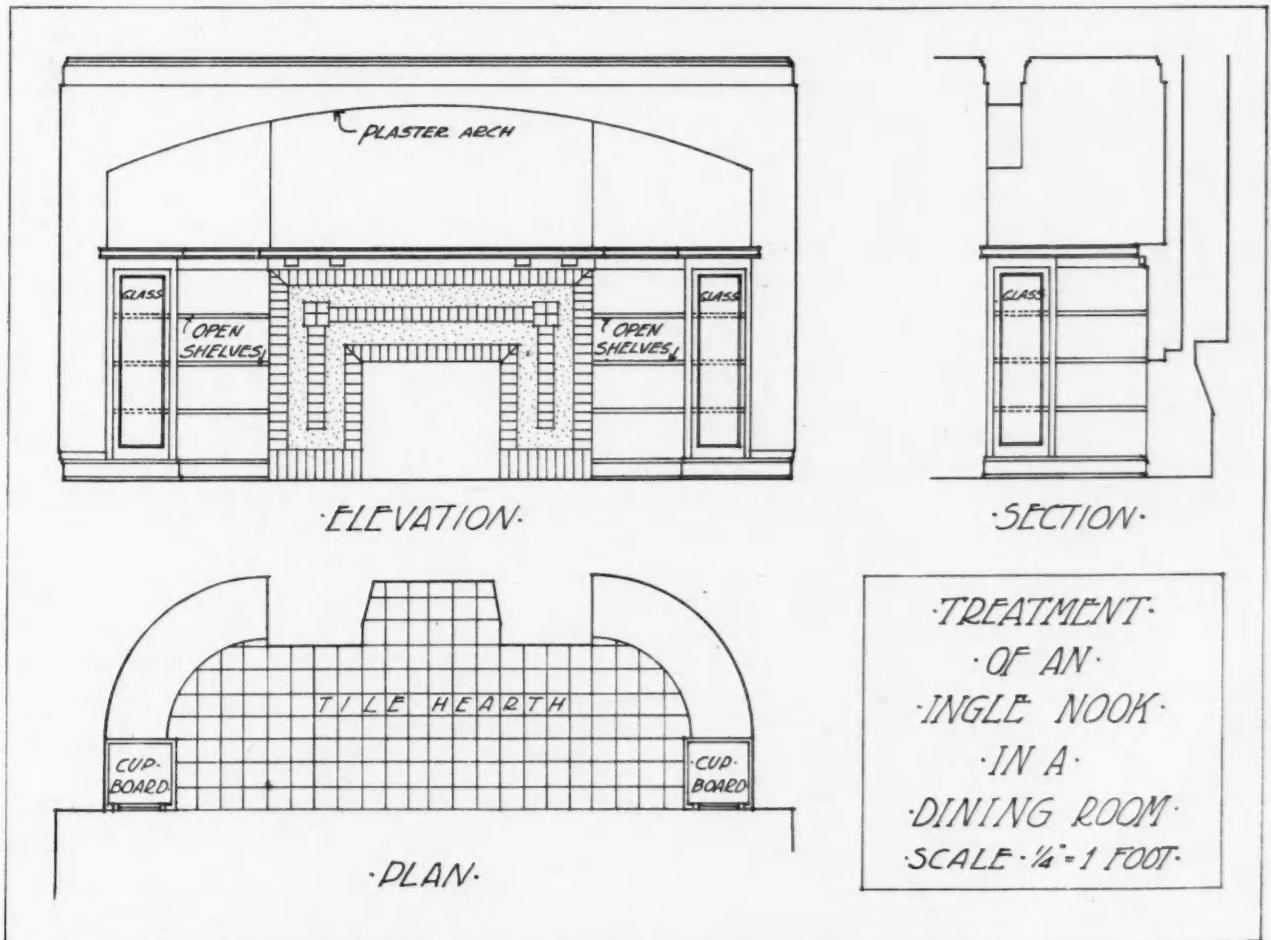
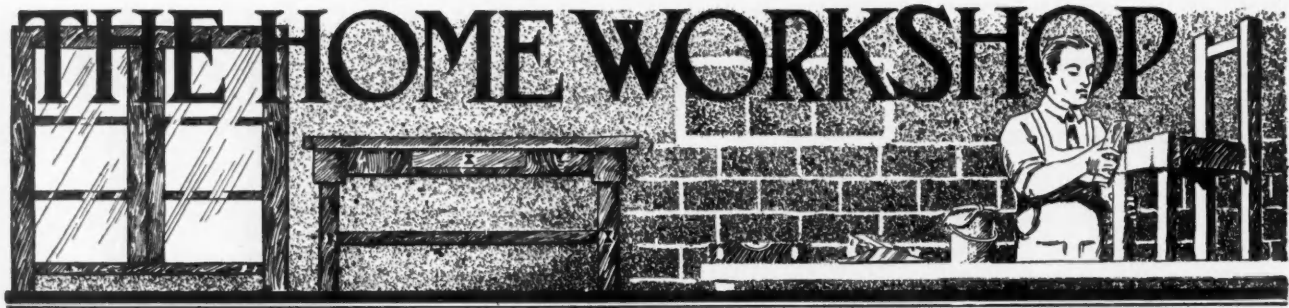


PLATE 3. CURVED INGLE NOOK WITH OPEN SHELVES



Something the Boys Can Make

HOW TO MAKE AND FINISH THE UMBRELLA STAND AND THE TABORET—DIRECTIONS FOR FINISHING

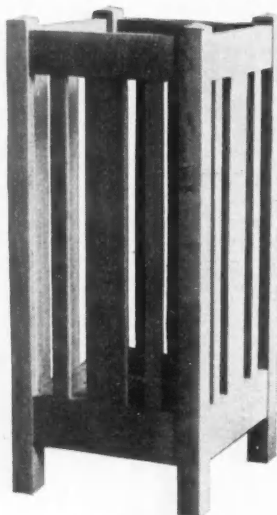
By Ira S. Griffith

THE two pieces offered this month are suited to the ability of boys of high school age. They may be made of any cabinet wood, such as walnut or oak. The taboret shown was made of black walnut and finished in the natural color. The umbrella stand was made of quarter-sawed white oak and finished with a mission colored filler.

STOCK BILL FOR UMBRELLA STAND.

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 by 12 inches, S-4-S.
 Rails, 4 pieces, $\frac{7}{8}$ by $2\frac{1}{2}$ by 12 inches, S-4-S.
 Slats, 4 pieces, $\frac{3}{8}$ by 2 by 21 inches, S-4-S.
 Slats, 8 pieces, $\frac{3}{8}$ by 1 by 21 inches, S-4-S.
 Bottom, 1 piece, $\frac{1}{2}$ by $10\frac{1}{2}$ by $10\frac{1}{2}$ inches, S-2-S.

While the specifications given call for stock, most of which is to be surfaced on four sides to width and thickness, the worker may add to the width a quarter of an inch on each piece and get the stock surfaced on two sides to thickness only if he likes. This latter method will enable him to get his stock from ordinary stock stuff. It is hardly profitable to get stock entirely in the rough. In case the stock is not ordered S-4-S. money will be saved by combining the widths of like thicknesses and ordering each thickness in one piece only.



Umbrella Stand

Begin work by squaring up the various pieces to size. If the stock is S-4-S., square up the lower ends of the posts, measure their length and shape the tops as shown.

Square the rails and the slats to size. Lay out and cut the tenons on these rails.

Stand the posts upright in the positions they are to have relative to one another and mark roughly, as with penciled circle, the approximate locations of the mortises. Next lay them upon the bench with lower ends evened and square knife lines across the faces to indicate the exact locations of the ends of the mortises. Set the gauge and mark the sides of these

mortises, then cut them.

For the slats, do not shoulder and tenon their ends, but lay out the mortise in the rails of a size sufficient to house the whole end.

Thoroughly scrape and sandpaper all the parts, then glue and clamp two of the sides of the stand. Make certain that the frame squares properly and that there is no wind in it.

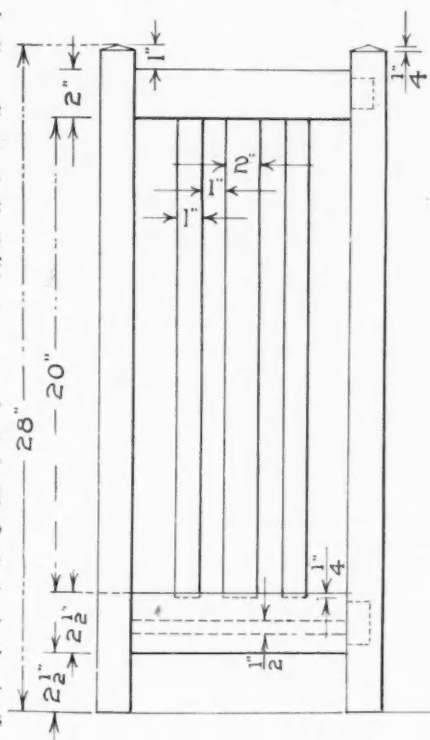
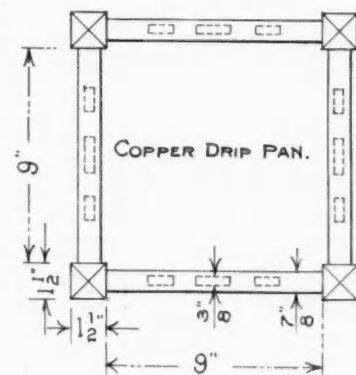
After the glue has hardened upon these two sides the clamps may be removed and the remaining slats and rails placed.

The bottom is to be squared and fitted, being held in place by means of glue-blocks on the underside.

There will be needed a metal tray to catch and hold the water. This is best made of copper or brass.

How to Finish

For a finish the following is suitable: Clean off all glue, for oil finish will not adhere to the wood where there is any glue, and apply a coat of filler colored as desired. Fillers come in a few standard colors.



UMBRELLA STAND.

If the color desired is not of these it may be got in one of two ways: Get a natural colored filler and add to it coloring matter until the desired color is obtained. Another way is to apply before the filler a stain of the color desired. Upon this stain apply a thin coat of shellac and over this, when sanded lightly with fine sandpaper, apply one of the standard colors of filler. If strong contrasts in the grain of the wood are desired this latter method is as suitable as the first.

Filler, as purchased, is in thick paste form and will have to be thinned by the addition of turpentine until it has the consistency of syrup. Apply with a stiff bristle brush—a paint brush that has been about half worn down will be suitable—and force the filler into the pores of the wood well. Allow this to stand until it has flatted, or until the gloss has disappeared and then rub clean with excelsior. Follow the excelsior with a rubbing with waste or a cloth that the high-lights may be clear of the filler.

Allow the filler to stand over night, then apply a coat of shellac. Allow the shellac to harden, then sand with number 00 paper. Upon the shellac apply several coats of some good varnish that will withstand wet-

ting. Rub the first varnish coat with hair cloth or curled hair and the last with raw linseed oil and powdered pumice stone.

To Make the Taboret

For the taboret the following stock will be needed. It is specified surfaced on two and four sides and what was said about the umbrella stock applies to this equally:

Legs, 4 pieces, $1\frac{1}{2}$ by $1\frac{1}{2}$ by $19\frac{1}{2}$ inches, S-4-S.

Stretchers, 2 pieces, $\frac{3}{4}$ by $12\frac{1}{2}$ by 16 inches, S-2-S.

Stretchers, 2 pieces, $\frac{3}{4}$ by $1\frac{1}{2}$ by $14\frac{1}{2}$ inches, S-2-S.

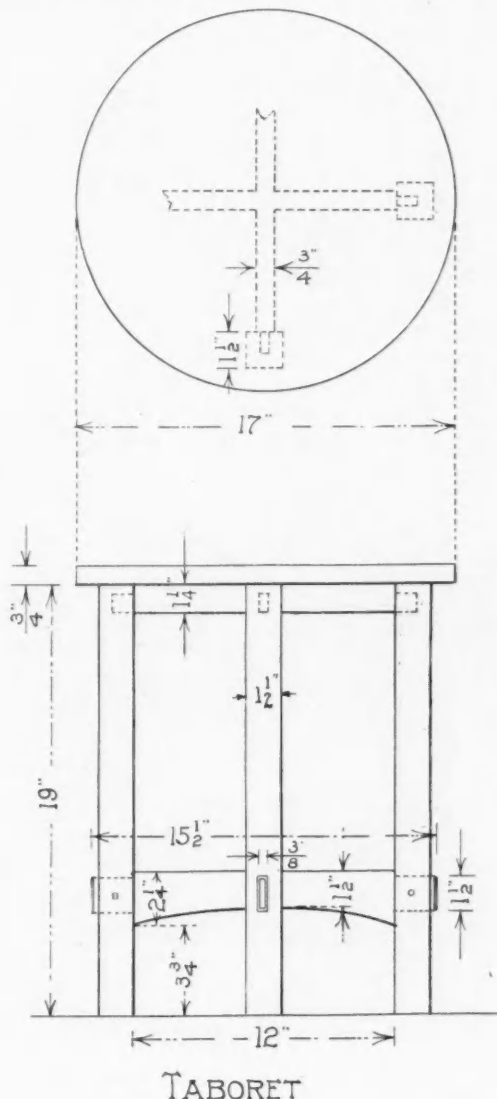
Top, 1 piece, $\frac{3}{4}$ by $17\frac{1}{2}$ by $17\frac{1}{2}$ inches, S-2-S.

Square up the legs to length. Shape the top, using a radius as shown. Square up and shape the stretchers. Lay out and work the tenons on the stretchers and then the mortises in the legs.

Thoroughly scrape and sandpaper the parts, then assemble. A little ingenuity will be required in assembling. If the worker is wise he may plan to have his cross-lap joints so fit that each part of the frame may be clamped without having the crosses in place. Afterward the crosses may be placed and glued and the top fastened to the frame by means of screws from the under side.



Taboret



TABORET

Finish for Black Walnut

The easiest and most satisfactory finish for black walnut is obtained by applying a coat of boiled linseed oil to the prepared wood—best when hot. Allow this to stand for some ten minutes then wipe the surface clean with a flannel cloth and allow it to stand over night. Upon the oil, place a coat of thin shellac, and then, when this has hardened over night, sand lightly with fine sandpaper and apply several coats of a good floor wax. Floor wax is in paste form similar to shoe polish and its manner of application is similar to that used in applying shoe polish, unless, perhaps, less of the wax is used. Too much wax will leave ugly chalk-like spottings. A very thin application is sufficient.



When Varnish Blooms and Turns Milky

This is a bluish-white film, which forms over newly varnished surfaces, and is usually caused by dampness, gas-fumes or smoke. The more elastic a varnish the less liable it is to bloom. Impure air, the exclusion from light and heat have a tendency to make blacks and blues show a greenish shade. The appearance of bloom is indicative of the need of heat and ventilation. When a finishing varnish blooms it can usually be restored by washing with clean water and exposing a short time to sunlight.—“The Colorist.”



Private Garages Growing In Use

A BUILDING FIELD THAT OFFERS EXCEPTIONAL POSSIBILITIES—SOME PRACTICAL DESIGNS

THERE are very few American families that prefer living in a hotel to living in their own home. The average home owner does not consider for a moment the boarding of his animal—plug or thoroughbred that it may be—in a public livery barn. And in much the same light does the average motor car owner view the housing of his gasoline driven vehicle.

The car is part of the family and under all ordinary conditions (excepting those generally met with in the larger cities) should be kept at or near the home, rather than in a public garage.

The latter invariably includes with the car storage a certain number of unpleasant conditions likely to be encountered daily. The private garage offers relief from these—hence its growing popularity.

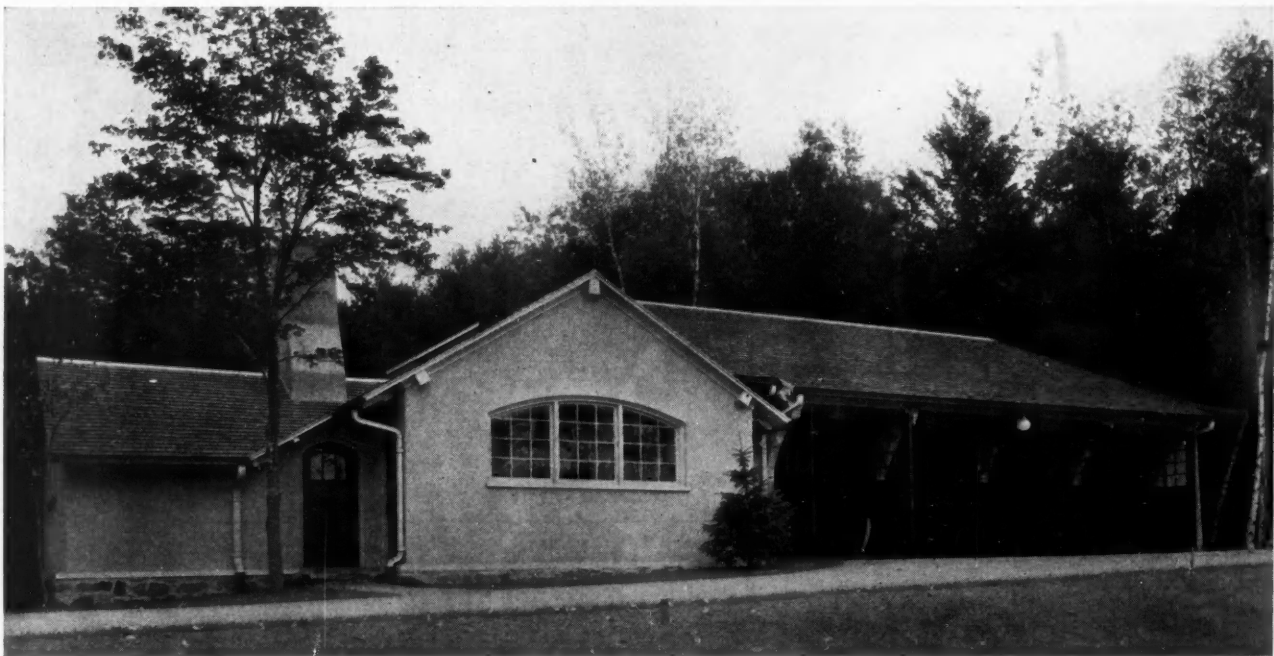
Carpenters and builders who have neglected to give

much thought to garage construction are overlooking a decidedly profitable bit of business. The motor car is here to stay; no one can dispute that. As necessary to the motor car as gasoline or oil is the garage—and the drift is from the public to the private housing for the auto.

Above all, it must be understood that primarily the



Floor Plan

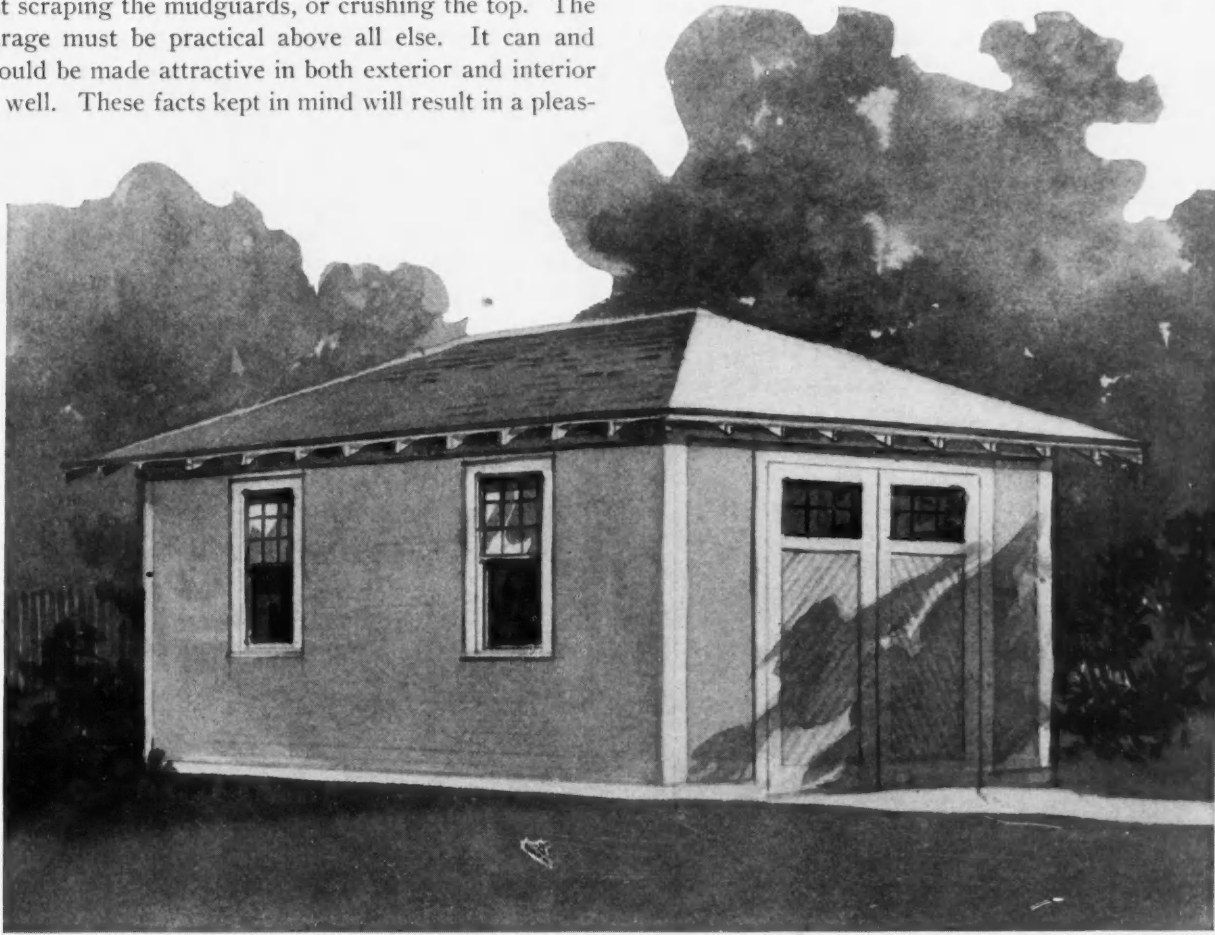


Remarkably Well Designed Private Garage at West Manchester, Mass.

garage is a building strictly for business and not merely to create a certain decorative effect for the back yard. No amount of pretty cornices, small-paned windows or other attractive features will help if the machine cannot be run through the big door without scraping the mudguards, or crushing the top. The garage must be practical above all else. It can and should be made attractive in both exterior and interior as well. These facts kept in mind will result in a pleas-

closet space. The estimated cost of construction of this building ranges from \$700.00 to \$800.00.

It is most important in the construction of any sized garage, whether for public or private use, that certain features be always allowed and provided for.



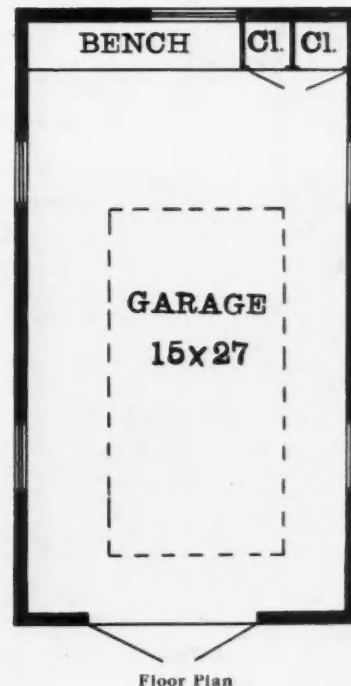
A Good Design for Small, Inexpensive Garage

ing type of construction. Reference to the photographs, architects' perspectives and floor plans accompanying this article establish this.

The photographs are of the garage belonging to Mr. Walter Denegre, of West Manchester, Mass. Reference to the floor plan will show it is a garage constructed to accommodate four cars. A good sized shop is provided, as well as ample closet space and a room for man. The right practice of providing each car space with individual entrance doors has been followed.

For a garage type for single car housing the architect's perspective and floor plan of the one-car garage here shown give both a practical and pleasing building. This is a small frame garage and is suitable for construction upon any city lot. The estimated cost of this building ranges from \$350 to \$400. Note should be taken that plenty of storage space has been allowed, also work bench and closet room.

The third type shown is a two-car frame garage with man's room, work room and ample bench and

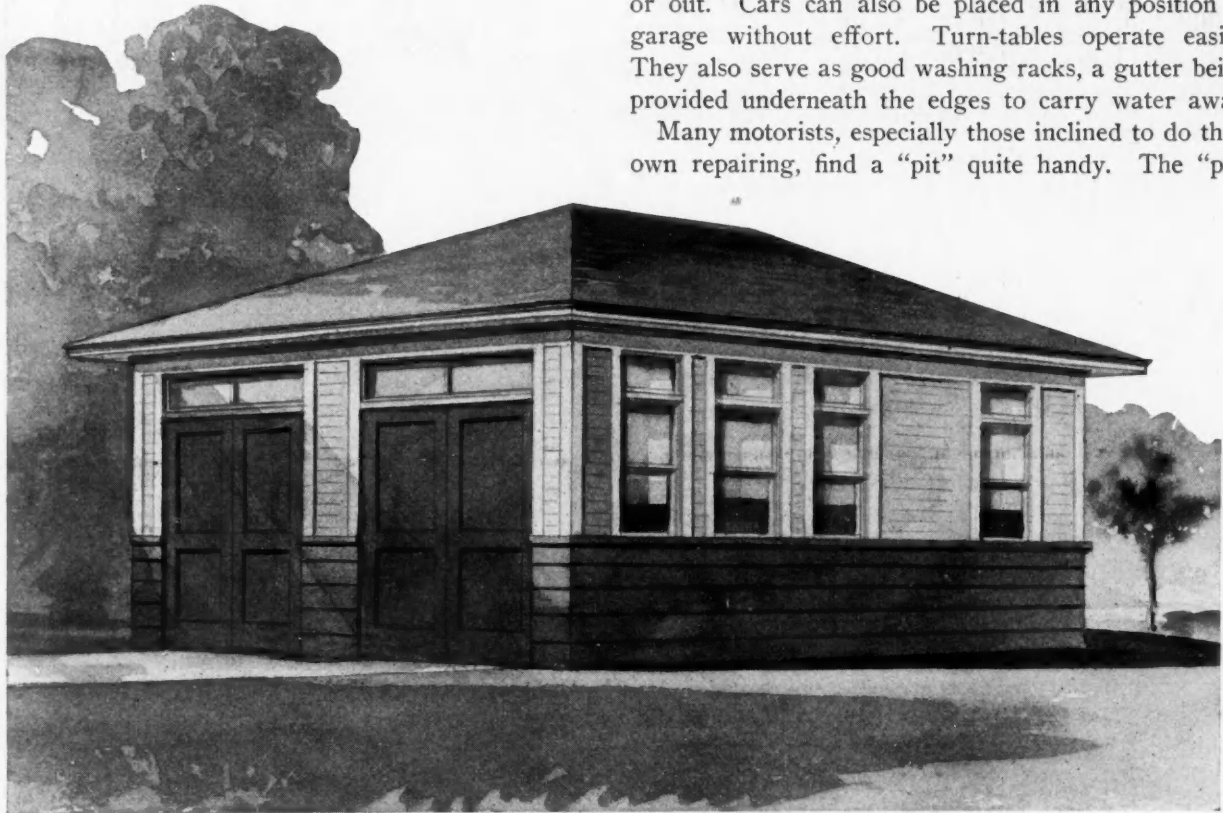


Good light is essential, gasoline storage equipment should be placed at least $2\frac{1}{2}$ feet underground and outside of the walls of the building. The garage floor should be of concrete, sloping to and drained at center, or, as the later practice seems to be, to grade floor towards the door sufficiently so that a slight push given the car or cars will send them out. This would

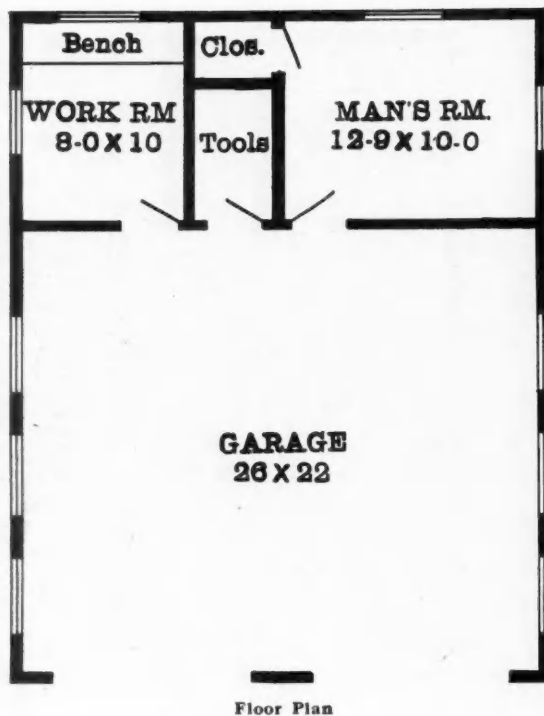
be most useful in case of fire, when there would probably not be time to get cars out under their own power and where shoving would be a dangerous as well as uncertain job.

In garages having only one entrance door for cars the automobile turn-table has been found to be very useful. With this the cars can be easily turned around, which entirely does away with any need of backing in or out. Cars can also be placed in any position in garage without effort. Turn-tables operate easily. They also serve as good washing racks, a gutter being provided underneath the edges to carry water away.

Many motorists, especially those inclined to do their own repairing, find a "pit" quite handy. The "pit"



A Two-Car Garage of Strong, Simple Lines



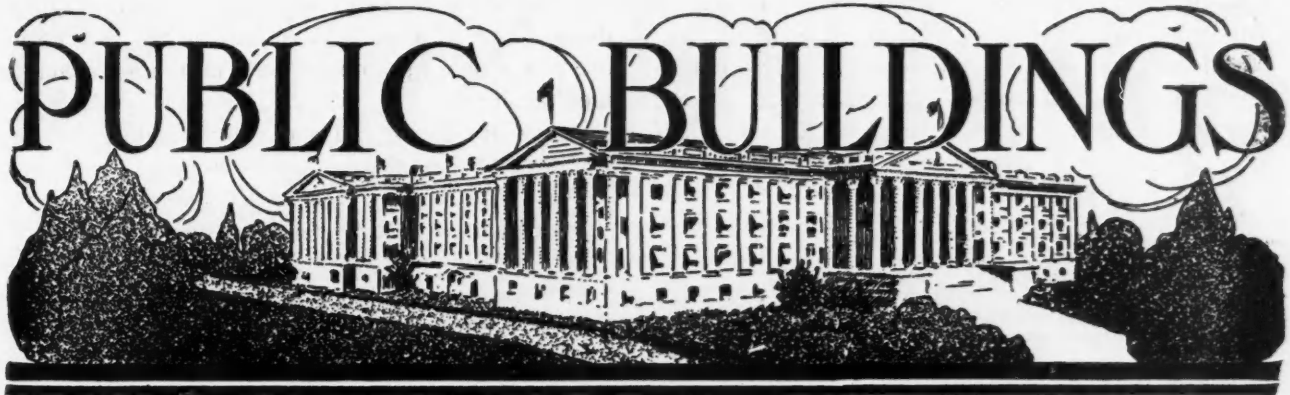
should be in size about 4 feet square, with a depth of from $3\frac{1}{2}$ to $4\frac{1}{2}$ feet. Bottom and sides should be of concrete and a drain provided in bottom. The pit avoids any necessity of lying flat on the back under car to make adjustments or repairs. Pit should have a substantial, well fitting wood covering when not in use. It may be located in any position of garage, but is usually placed so as to have good light and yet be in a spot to easily run car over it.

Such equipment as iron sinks, bench and vise, cupboards for storage, oil tank or rack for oil barrel, tool closets, racks for robes and spare covers, etc., etc., should not be overlooked in the building.



Almost

It was a faithful Swede girl, who, when the winter was coldest and the furnace was not working right, was admonished by her mistress to take an iron to bed with her to warm it. In the morning the kindly woman asked Lena how it worked. "Pritty gude," said she, "Ah had it almost warm by morning."



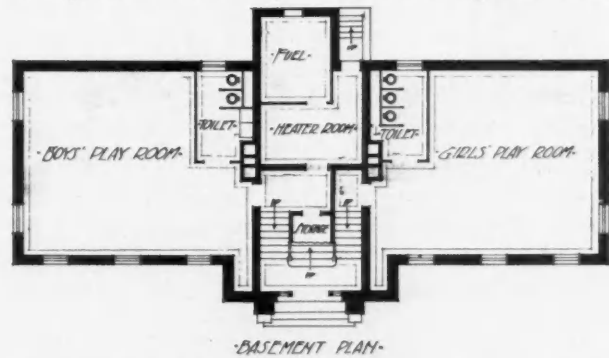
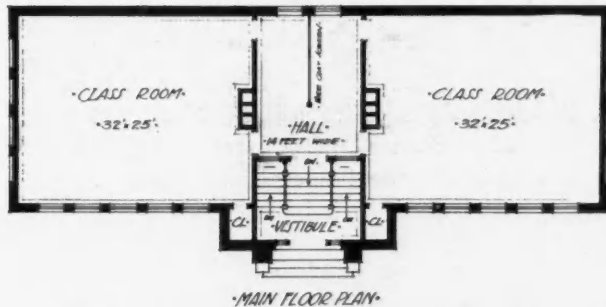
Playrooms Provided in this Small School House

FLOOR PLANS, WITH ARCHITECT'S PERSPECTIVE, OF A PRACTICAL TWO ROOM AND BASEMENT SCHOOL BUILDING

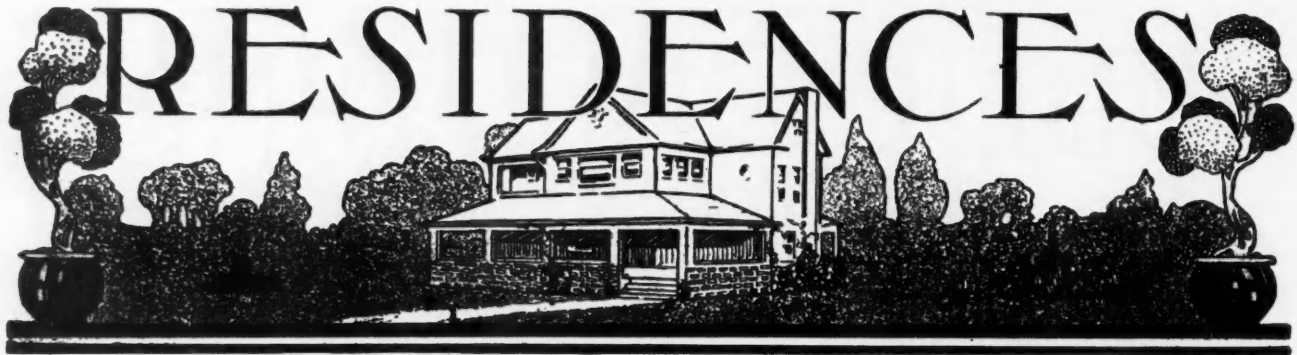
WHAT may be considered the interesting feature of the school building, perspective and floor plans of which are shown here, is that the basement space has been made use of for both boys' and girls' play rooms.

A decidedly unique idea in buildings of this size—and it is a very practical and sensible plan.

Note by reference to the floor plans the concise arrangement with ample room and light allowed.



A Very Attractive Small School Embodying Modern Ideas. Designed by G. W. Ashby, Architect, Chicago



An Attractive Eight Room Cottage

COMPLETE SET OF WORKING DRAWINGS OF A PLEASING BUNJALOW TYPE STORY AND A HALF COTTAGE

THIS cottage type bungalow—perspective, floor plans, elevations, and details of interior of which are given this month—was designed for Mr. Zina B. Carter of Downers Grove, Ill.

It is an eight room structure, with special sleeping porch as distinctive feature. Exterior finish is of clapboarding with shingled roof.

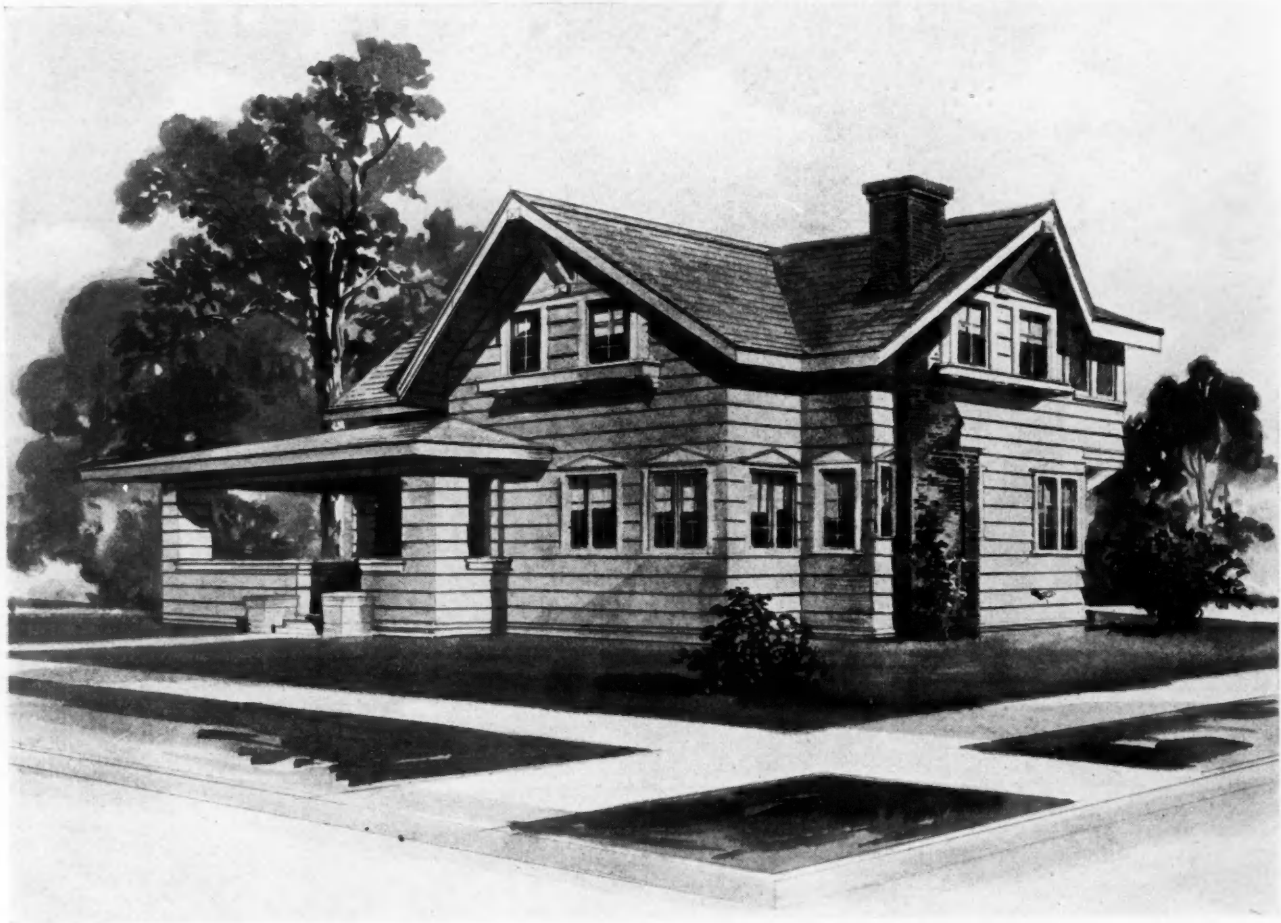
Plan of first floor shows commodious porch has been provided. Entrance from porch is into reception hall, dividing living and dining rooms. In the living room, the alcove fire place—raised one step from floor—with built-in solid seat effect, has been adopted. Another

alcove has book shelf and built-in box seat.

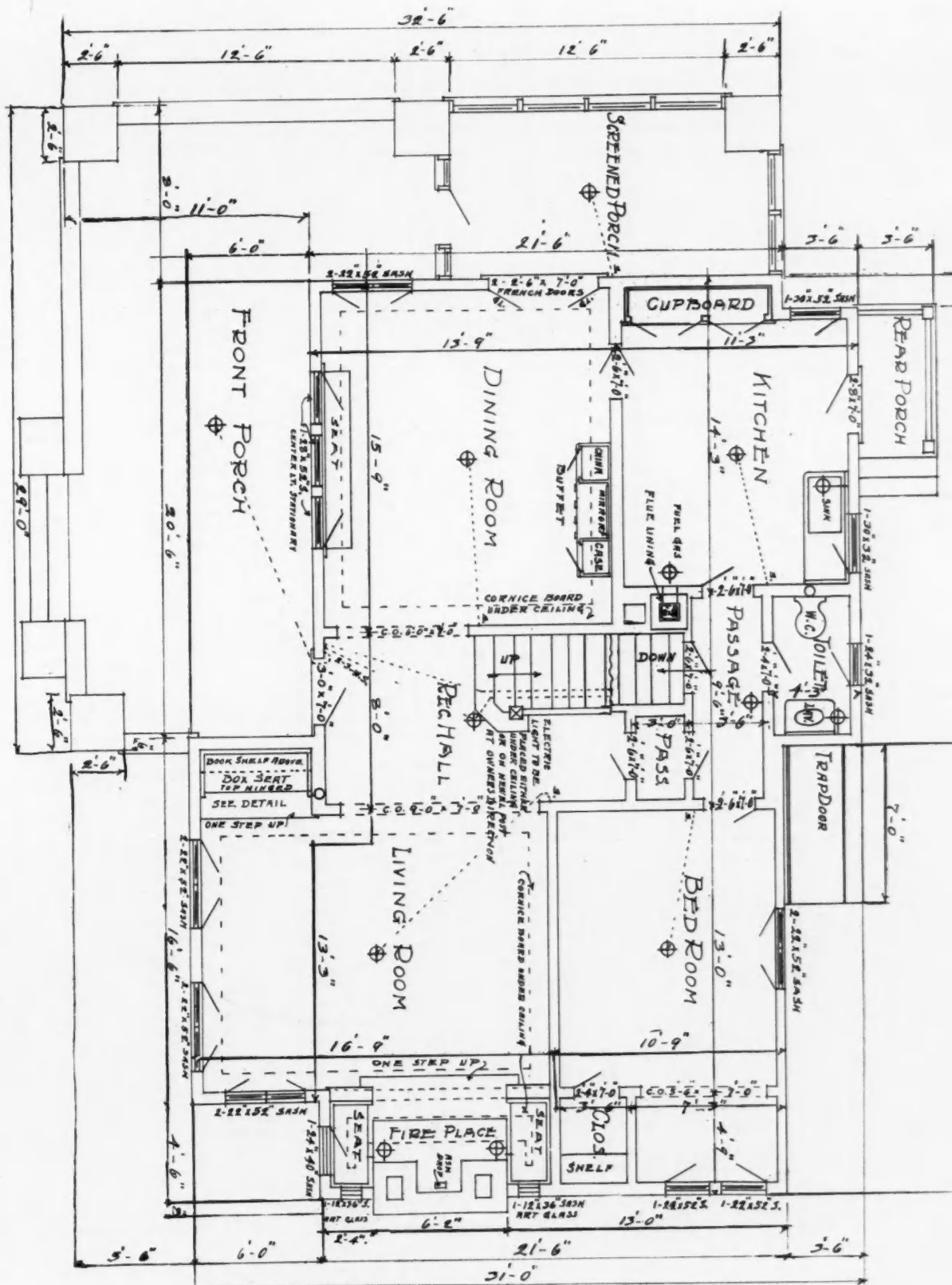
From the dining room entrance is had through "French doors" to screened-in porch. This dining room has a built-in buffet and a large window seat.

Upstairs front bedroom has alcove, also screened-in sleeping porch. The closets of both bedrooms are large.

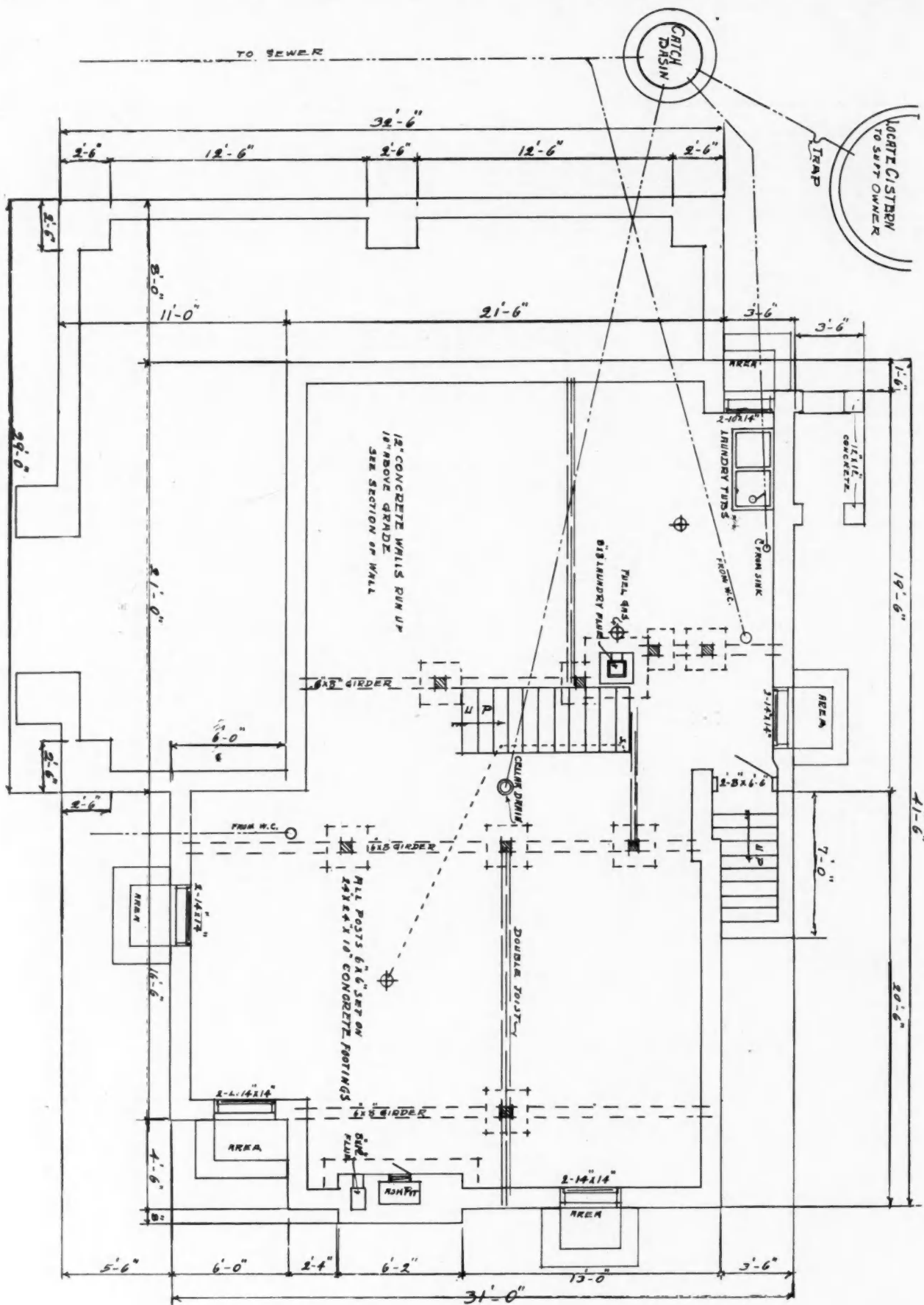
It can readily be seen that the idea of ample space and light, also convenience of arrangement, is carried out throughout the entire house. Note particularly the almost exclusive use of casement windows. This house is estimated to cost about \$4,500.



Artistic Eight-Room Bungalow; Designed for Mr. Zina R. Carter, Downers Grove, Ill.

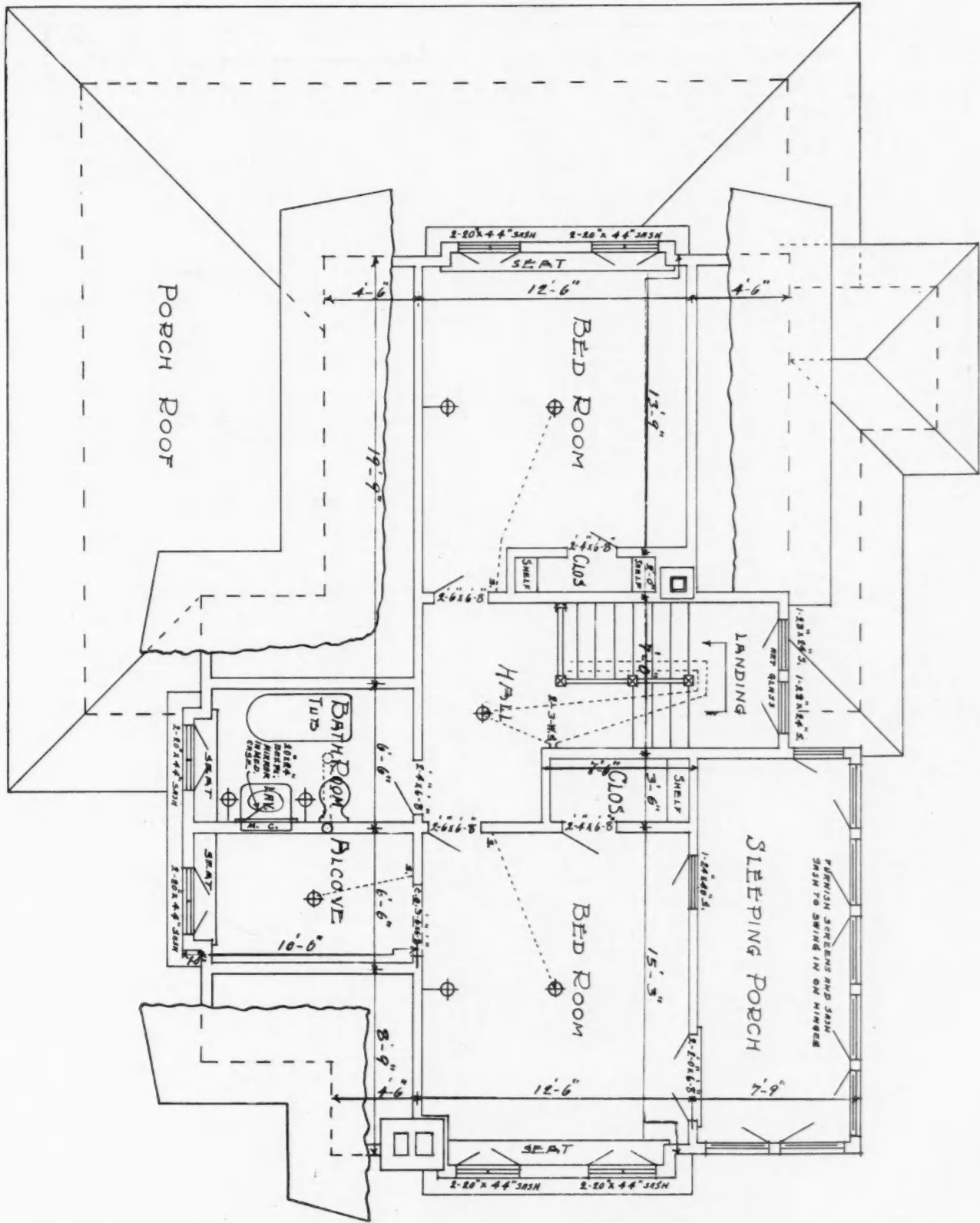


FIRST FLOOR PLAN
(House on Opposite Page)



BASEMENT AND FOUNDATION PLAN

(House on Page 70)



SECOND FLOOR PLAN

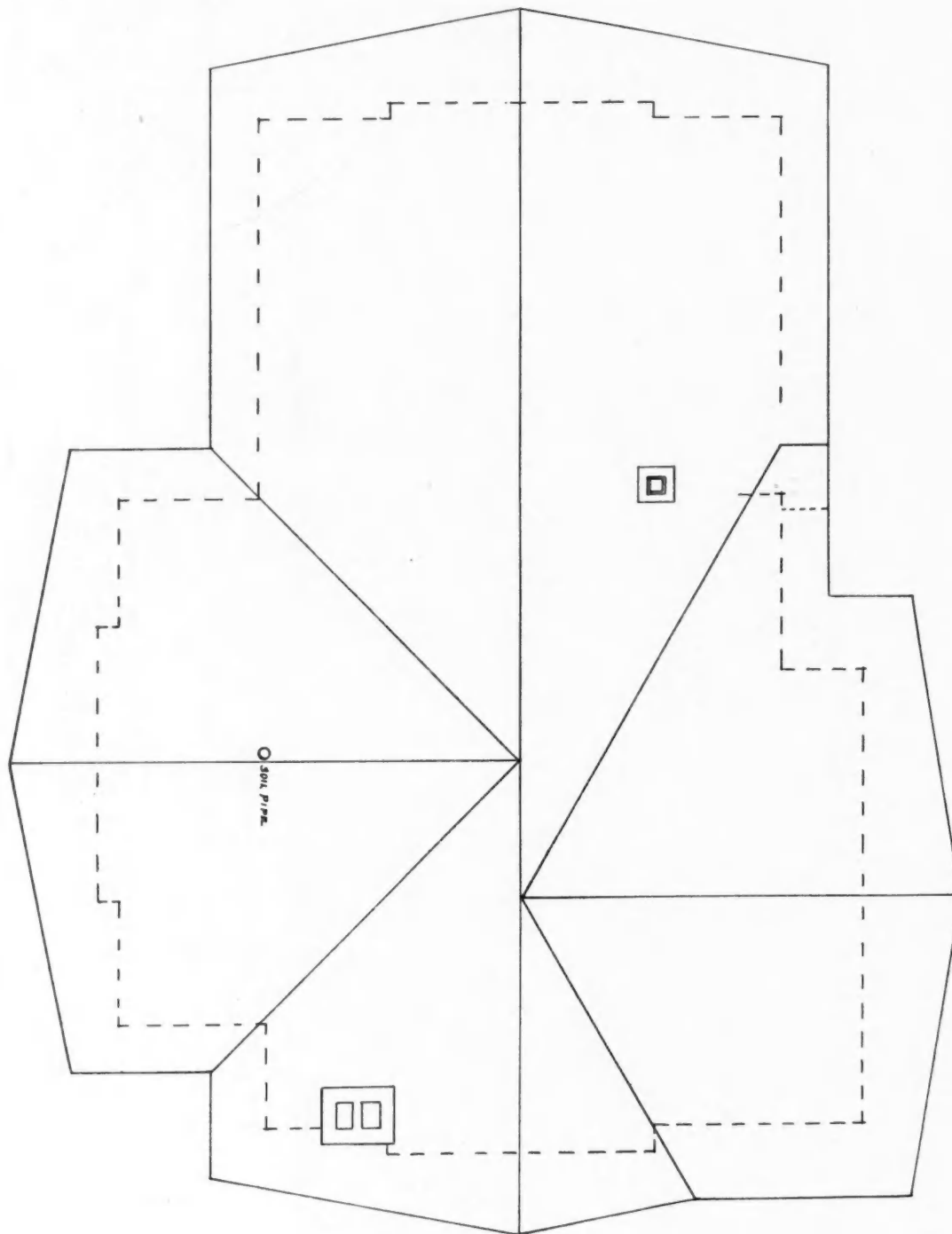
(House on Page 70)

Space to Leave for Pipe Organ

Will A. Watkin, organist of the First Baptist Church of Dallas, Texas, writes recently to the editor of "The Diapason" regarding an abuse which should no longer remain unchallenged. He says that in his experience the architect is rare indeed who leaves anything like an adequate space for an organ chamber in the plans drawn up for the building of a church. As a result there is sacrifice from first to last.

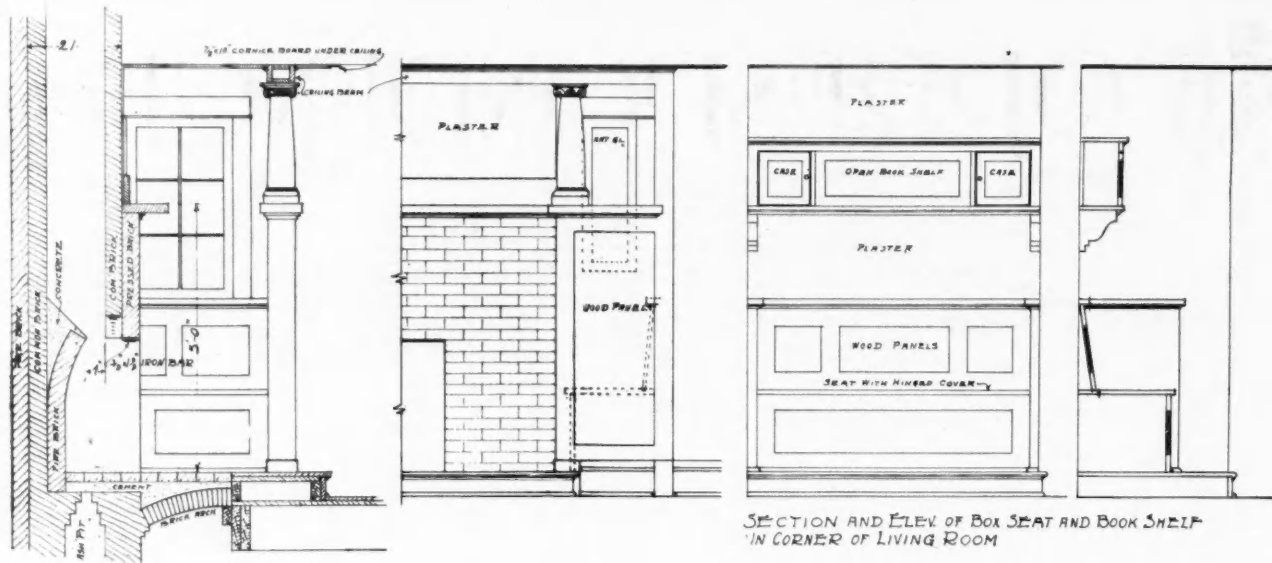
Mr. Watkin says that a church with a seating capacity of 500 should assign a floor space not less than

eight feet in depth by twelve or fourteen feet in width, and a height over the organ of not less than fourteen feet. A church with a seating capacity of 1,000 should give an organ space ten feet in depth by at least eighteen feet in width, with a uniform height over the organ of not less than eighteen feet. A church with a seating capacity of 1,500 or 2,000 should assign for the organ space not less than twelve feet in depth by twenty-two to twenty-four feet in width, and a height of not less than twenty-two feet. It must be understood that these dimensions do not include choir space.



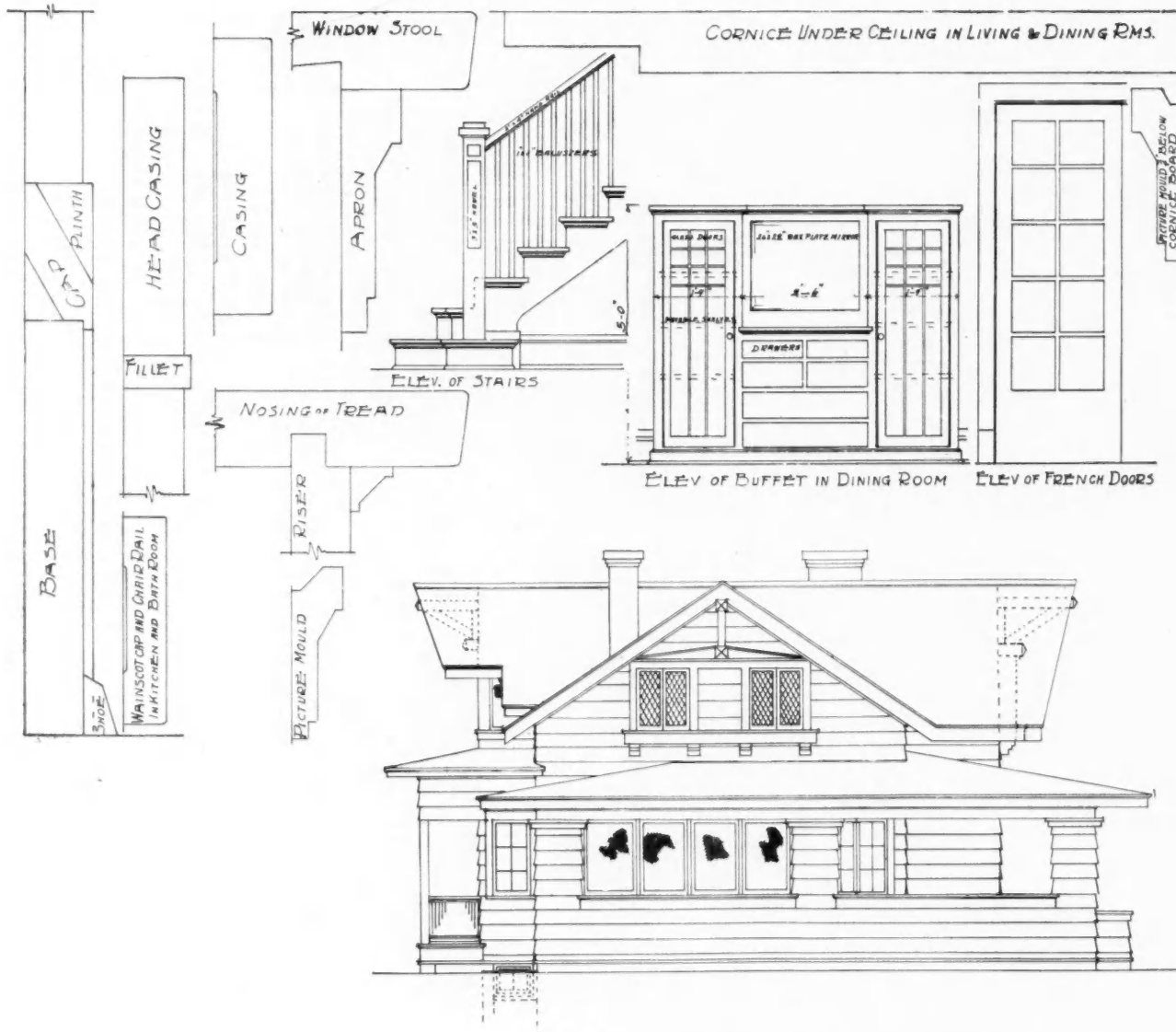
ROOF PLAN
(House on Page 70)





SECTION AND ELEV. OF BOX SEAT AND BOOK SHELF IN CORNER OF LIVING ROOM

SECTION AND ELEVATION OF FIRE PLACE



LEFT SIDE ELEVATION (House on Page 70)



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

Mr. Jetmore Defends Position

To the Editor: Fort Huachuca, Ariz.
 I did not expect to have to defend my letter in the March number of the AMERICAN CARPENTER AND BUILDER, as I thought I was plain enough for the average man to be able to understand it. But it seems that Mr. W. R. Hinckley of Bluehill, Maine, did not read all of my letter in the March number. The heading to my article in March should express my meaning to anyone and I think it would encourage young men to learn the carpenter trade. If the conditions were as I recommend them to be, it would elevate the trade to that standard to which I think it belongs.

The greatest trouble with the trade today is that the number of men who try to work at it have to put every stick up to mark it in order to work it into the building. As I stated in my letter of March number—teach the apprentice how to find the different cuts, etc., and make him learn the rules and principles, and then the steel square will be more familiar to him.

In the June number there is a question asked; if the principles I advocate were thoroughly understood, such questions would not be asked. And another point is this: have you always got a square at hand to figure out all you want to when you are working out a set of plans?

I would like to know what Mr. Hinckley thinks of Mr. A. W. Woods' lesson on what may be accomplished with the steel square, in the June number. I am sure from this article alone he is familiar with all the subjects I advocate in the March number, and his great success is because he knows these principles. As I said before, teach the young man; let him know that he is going to learn something—that when he has served his time he will know that he will be able to handle any kind of a job. Push it along; elevate the trade. This will insure better building, also better general conditions of the business, and better the conditions of every carpenter in the land; and the young man will naturally want to learn the business that will elevate him.

J. C. JETMORE.

✦
Standard Factory Frames

To the Editor: Chicago, Ill.
 I have greatly appreciated the designs offered in the AMERICAN CARPENTER AND BUILDER. I am more interested in factory construction than in houses. In this connection I hope that some time in the future you will publish designs for window frames, sashes and large doors which might be called standard. These are for use in brick and corrugated iron walls where there is no furring nor inside finish. The standard frame desired contemplates say 16 12 by 14-inch lights in each of two sashes (double hung, weighted).

The question is as to the amount of tonguing and grooving and the size of lumber which would be considered best practice. The object is to secure a good frame, but one which would be apt to secure the lowest prizes when sub-

mitted for bids. It should therefore approach "standard." Is future accessibility for repair of sash cords ever considered?
 D. W. STARKEY.

Answer: In reply to the foregoing letter of inquiry, I am submitting one each of frames for brick wall and frame building covered with sheet iron.

Fig. 1 shows a good but cheap standard box frame which is popular for factories on account of its simplicity. The dimensions given are for 1 3/8 sash, which is heavy enough for the size mentioned. If the windows are made 1 3/4 thick, at least 1/2 inch should be added to the width of the pulley stile or jamb and also to that of the back lining, heads and sills.

The figure shows a stone or concrete sill, but in many cases the window sills of factory buildings are made by laying a course of brick on edge; and in the latter case the sill shown would not be wide enough to cover the last joint if the outside course of brick is laid outside of the box. The sill

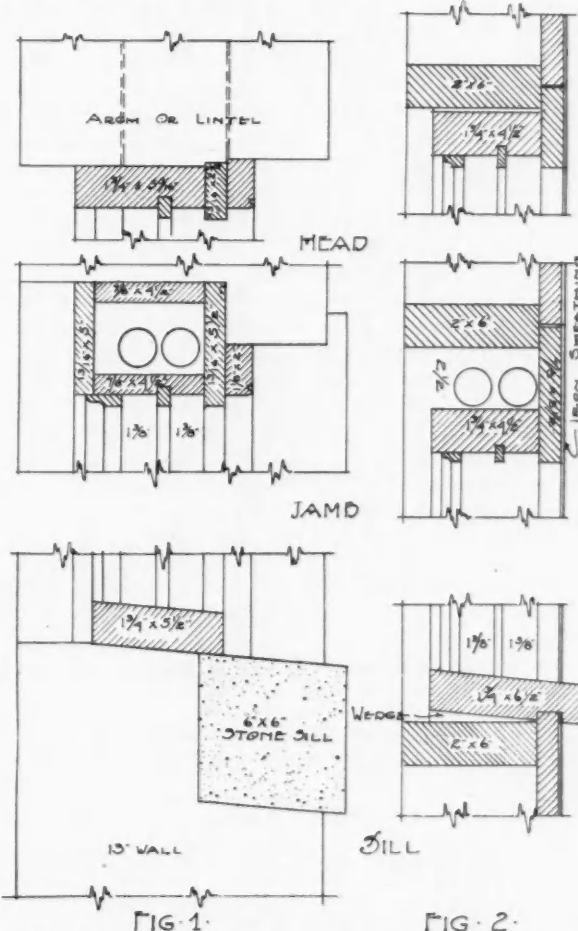


FIG. 1. FIG. 2.
 Details of Standard Factory Window Frames; Fig. 1, Brickwall; Fig. 2, Corrugated Iron

shown extends only between the inside casing of the box and the brick mould or hanging stile on the outside, but if it is to cover the joint in the brick it should be made wide enough to receive the brick mould on top. In this case, the cost would be more on account of stopping the gains in the sill so as not to show the cuts on the outside edge.

The solid head shown in Fig. 1, is sometimes made as thin as $1\frac{1}{8}$ inches, and sometimes made of $\frac{7}{8}$ stuff and a narrow inside casing nailed on to give it width on the inside.

Fig. 2 shows details of plank frames for warehouse windows, and while they are detailed with $1\frac{3}{4}$ -inch jambs, it would not be absolutely necessary to use such thick material, especially if the frame of the building was strong and the openings trimmed solidly. They might even be reduced to $1\frac{1}{8}$ for factory and $\frac{7}{8}$ for warehouse purposes.

It will be noted that the outside casing is made wide enough to meet the sheathing on the studding outside of the pocket, and that the iron siding is brought over flush with the edge of the casing next to the window.

As there is no inside casing to this frame, the weights will always be visible from the inside of the room, but in the box frames for the brick walls, there is a pocket provided in the pulley stile for the insertion of the weights and also for the purpose of any subsequent adjustments.

The frame for the iron covered building is made without a blind stop, the casing being set over $\frac{1}{2}$ inch as in the construction of plain rail windows, the object being to let the iron siding cover as much of the wood as possible.

In regard to the windows for factory and warehouse purposes, they are not made different from other windows except that they are frequently larger and have a greater number of lights. If they are balanced by weights they are made check rail, but if they are small and not weighted, they are apt to be made plain rail or "common." Sometimes they are made to swing on pivots, sometimes they are made of sheet iron and glass and sometimes of steel and glass, but they are not hung in wooden frames and they are not cheap!

The subject of warehouse doors cannot be covered shortly with justice, but briefly, I may say that they are made up of flooring or ceiling in the majority of cases. Sometimes a $\frac{7}{8}$ framework is made up and covered one side with matched stuff; sometimes there are two frames with ceiling between; sometimes there are three thicknesses of the matched stuff. The arrangement of the frames and the ceiling is rather more a matter of taste than of efficiency so long as the different thicknesses are properly crossed and fastened.

Fireproof doors are made by putting up two thicknesses of matched stuff with the grain crossed, covering the whole with sheet asbestos and then with galvanized iron or tin lapped and soldered.

Partitions made fireproof have two sets of doors, one on each side of the walls, and they are held open by balance weights, and work on an inclined track, so that if one part of the building gets on fire and fuses the soft link in the chain holding the doors open, they will both close automatically.

CHAS. CLOUKEY,
Ashland, Wis.



Wants Pine Grading Rules

To the Editor: Lynn, Ind.

I would like to see an article on the grading of pine flooring and siding in the next number of the AMERICAN CARPENTER AND BUILDER.

G. F. BEVERLY.

Answer: Write the Secretary Yellow Pine Manufacturers' Ass'n., St. Louis, Mo., who will send you, free of charge, their booklet, "A Manual of Standard Wood Construction," which contains these grading rules and a good deal of other valuable information pertaining to the use of yellow pine.

EDITOR.

Shingling Tools and Methods

To the Editor: Norton, Kansas.

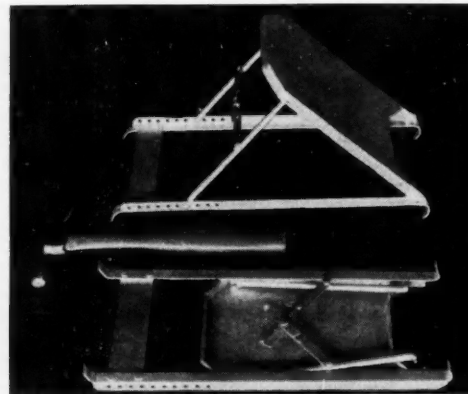
I am a charter member of the AMERICAN CARPENTER AND BUILDER family, having received every one from the first, and they have been a great help to me.

The correspondence department is always very interesting to me and I have learned many things from it.

Of late there has been much said about shingling, the different methods, and the number of shingles laid in a day.

In shingling, as in many other things, quality should never be sacrificed for quantity.

I am enclosing a picture of hatchet with shingling gauge



Shingler's Hatchet With Gauge; Also Folding Roofer's Seat

and my adjustable roof stool ready for use and folded up ready to put into the chest.

This gauge is a piece of round iron three-fourths of an inch across and one-half inch long with a notch cut in one side to the center and a set screw in the side to fasten it to the blade of the hatchet.

Several of the wholesale hardware houses handle these gauges.

The stool is patented, but, as the man who holds the patent wishes to sell it, they have never been manufactured for the market.

I was allowed to measure the model and make these two stools myself.

I hope some company will secure the patent soon and manufacture them so they can be obtained by all who desire them.

By this method a person can lay more shingles, and do it easier, than by any other method I have ever tried. A good shingler, with the gauge, will run six or eight courses at a time and run all of them straight.

By using the stool he has an easy position and free use of himself, instead of being cramped all the time, and by taking so many courses at a time, he does not have to move often enough to make it inconvenient and does not have to be continually scrubbing back and forth over the roof as he would with the straight edge or chalk lines.

WM. B. STAPP.



Runs Belts Grain Side to Pulley

To the Editor: Sharon, S. C.

Since becoming a subscriber to your interesting paper, I have taken great interest in the correspondence columns.

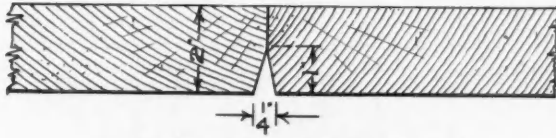
Will give my idea of question asked by Mr. Raguse of Buffalo, N. Y., on the belt question.

The more common practice, it is believed, is to run the belt with the hair or grain side nearest the pulley. This side is harder and more liable to crack than the flesh side. By running it on the inside the tendency is to cramp or compress it as it passes over the pulley, while if it is run on the outside the tendency would be for it to stretch and crack.

FRANK H. BEARDE.

How to Calk the Joints

To the Editor: Red Wing, Minn.
 As I am a subscriber to the AMERICAN CARPENTER AND BUILDER, will answer Mr. Walter J. Eachus' question in the June number, in regard to how big the seam for calking on a boat with 2-inch planking should be.
 I have had some experience in that line and am herewith

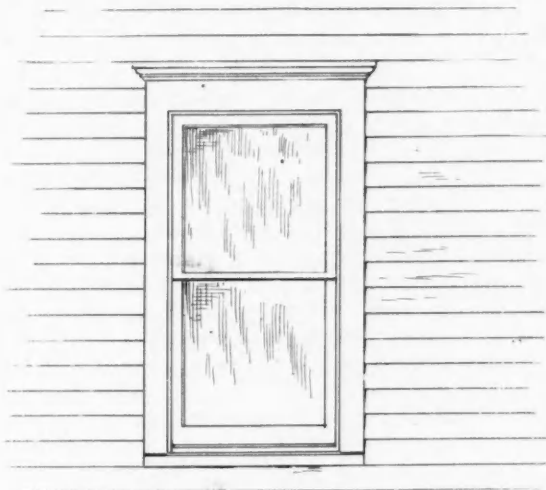


Proper Dimensions for Calking Seams

sending a sketch showing the depth of calking seam and width, also of seam at outer edge of planking. Another thing is to paint the planking with thin white lead and fill the seams with it after you have driven the oakum in place, then take good white lead and whiting and make a putty of it and fill the seams up good and solid before painting the succeeding coats.
C. A. C.

To Space Siding

To the Editor: Convent, La.
 I differ with Mr. Thario and will sustain Mr. Hicks' method on applying siding; it is a system I have been using and it is indispensable. The reason is because siding should finish



Siding Should Finish Flush at Top and Bottom of Openings

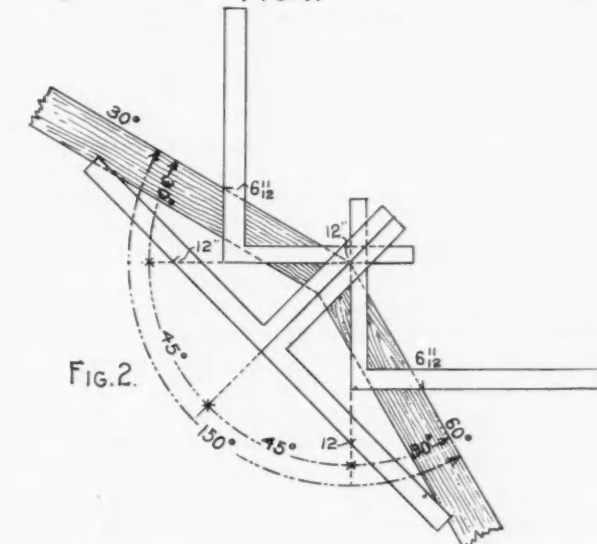
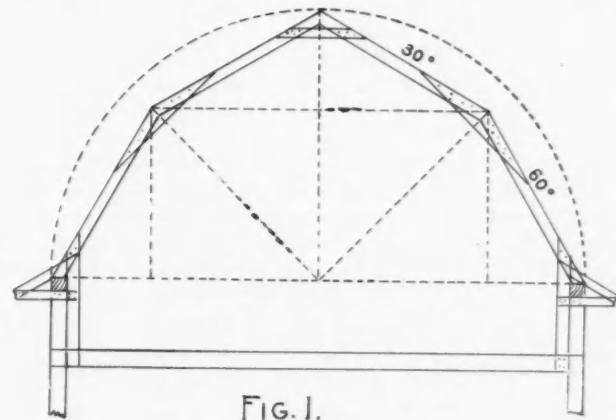
on bottom of openings and top openings, as is illustrated in sketch. Now, it is evidently well known, unless all of the openings are of same height up and same height from sill, they cannot be marked with rod all around and obtain this result. But of course, where it is not particular as to how it comes out at openings, then rod measurements are O. K.
BENNY TUREAUD.

Proportion for Gambrel Roof

To the Editor: Kinderhook, Ohio.
 I have a contract for a barn to be 42 by 60 feet with self-supporting roof, and the pitch to be 1/2 or a 21-foot rise. I would like to know the best place to make the knuckle and what pitch to give the first and second set of rafters to make the best roof. Also the best way to raise the rafters.

Answer: The accompanying illustration shows a very good proportion for a curb or gambrel roof. The first set of rafters has a pitch of 60 degrees and the second set a pitch of

30 degrees. The same figures on the square give either pitch,—that is, if 12 and 6 11/12 are used, the diagonal will represent either pitch by simply reversing the square. These figures will give the seat and plumb cuts, but the joining at the knuckle is at an angle of 150 degrees. This may be obtained by using the same figures by laying off the plumb and seat lines and to this apply the angle of 45 degrees (12 and 12); this will give the desired angle because the seat and plumb lines already laid off represents 30 degrees and the



Proportioning and Cuts for Gambrel Roof Rafters

45 degrees added makes the 75 degrees required for the miter. See the illustration, which clearly shows what determines this angle. So much for this,—but in giving it, we realize that the average man does not care for cause and effect just so he gets the result. The diagram and bevel square is good enough for them, and to them it would be useless to talk any other method.

As to the best way to raise the rafters, would put them together at the knuckle and then proceed as in the case of common straight rafters, using temporary staging in heavy work in the usual way.
A. W. WOODS.

Wants to Know How They Do It

To the Editor: New London, Conn.
 Here in the land of steady habits we think a man who can lay twenty-five hundred shingles in eight hours is doing enough for his pay. Now will you tell me through your correspondence page how the men in Iowa and a few other towns measure shingles that enables them to put on eight and ten thousand?

I always try to do the best I can and rejoice with him who does better, but this is leaving us eastern carpenters so far

behind that I am getting discouraged. If I am not taking too much of your time will you kindly answer the aforesaid question and oblige several readers of our most interesting building magazine.

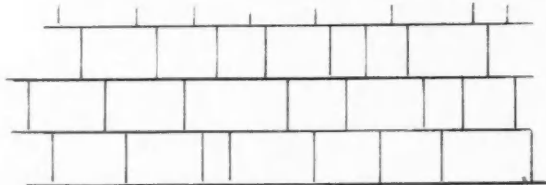


Four Thousand Shingles is Enough

To the Editor: Bluff City, Ill.

If you can find room in your paper for a few lines, I shall be pleased to see these published. I have been a subscriber to your paper only about six months and I like it better than any paper I have ever taken.

I have noticed several articles on fast shingling but I think



Joints "Broken on Third Course"

if a man will put on 4,000 shingles in 10 hours and break joints on the third course and at the same time laying them so that the grain will run the water off instead of in, he will do a great deal better work. What I mean by breaking joints on the third course is shown by the enclosed sketch.



J. C. LAMB.

Carpet Problem Again

To the Editor: Madison, Wis.

Being one of your subscribers, also one of the "chips," I would like to chip in an answer to Mr. Russell's sketch on page 71 of the April issue of the AMERICAN CARPENTER AND BUILDER.

I take it that Mr. Russell has used the figures 12 and 6 on the square corresponding to $\frac{1}{4}$ pitch.

If I am right, these angles at A and C are 36 degrees 34 minutes being equal and by trigonometry:

$$AB = 32.2 \text{ inches.}$$

$$BC = 16.1 \text{ inches.}$$

$$CD = 150 - 16.1 = 133.9 \text{ inches.}$$

$$DE = 100 - 32.2 = 67.8 \text{ inches, and by geometry:}$$

$$CE = \sqrt{133.9^2 + 67.8^2} = 150 \text{ inches, or } 12 \text{ feet } 6 \text{ inches.}$$

I am well pleased with the AMERICAN CARPENTER AND BUILDER and should miss it very much if I couldn't get it.

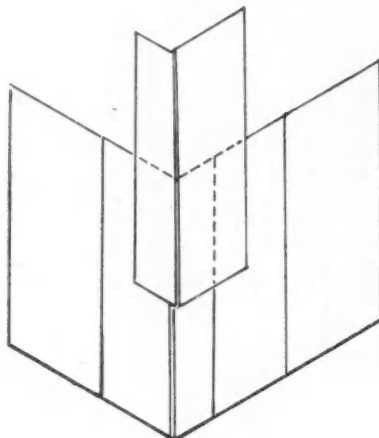


T. H. LEA.

How to Shingle a Corner

To the Editor: Perth Amboy, N. J.

Give us some more of "How to do Work Fast,"—it makes a hit with me.



Shingling Corners

Here's one for shingling the corner of a building. In making your returns make them all the same size. That is, make the parts of shingle on each face of the corner all equal to 5 inches. This will permit using the entire shingle and will enable you to keep your joints out for the three courses. I always beat my dad on the corners, even if he has twenty-five years on me.

HENRY P. LUND.

How He Does Porch Work

To the Editor: Highland, Mich.

It is very interesting and sometimes amusing to read in the AMERICAN CARPENTER AND BUILDER the descriptions of the methods used to obtain certain results. The method relative to wedging steps and risers described in January number by Wm. C. Jasbury is one that is amusing. He, I suppose, is human, and liable to make a break as well as the rest of us sometimes; but just the same his shop kinks prove that he is a master mechanic.

I, for one, believe that the most direct and simple way to do a thing is generally the best, and I shall try to tell how I do some of the things that have been asked about and replied to recently in your paper.

When framing the plate for a porch I locate the center of each column by straight lines on the porch floor or pedestal, whichever it may be, and from these lines mark one half the width of soffit minus the thickness of face board on each side and frame the plate to them. When setting small columns I sometimes fasten the base in place, then with plane and level dress off the high side, making the top level, allowing me to cut both ends of column square. As there is nearly always a bead on the neck of the column, it is an easy matter to square the top end from that. Then to mark the bottom end for cutting square I usually make a gauge by nailing a block on a narrow strip or edging the required length of column from the end and use it to gauge around the column. Another way is to plug the ends and drive spikes about one half way in, in the center of each end and hang in notches on the saw trestles and turn. This is the same principle as marking them in a turning lathe.

I think that C. D. C., in his statement that any carpenter can space off a piece of porch rail and get all the spaces equal, is slightly mistaken, or else he thinks that anyone who cannot do it is not a carpenter. I have seen several such jobs, done by men who claimed to be carpenters and who were good workmen, but the end spaces were $\frac{1}{2}$ the diameter of the baluster wider than the others; also I know some builders who always rip a baluster and nail $\frac{1}{2}$ to each column to even the spaces up. Mr. Wood's reply was good and answered the question; but in actual practice it is very seldom that 2 spaces that are supposed to be equal are exactly so, or that a space between 2 porch columns is exactly the distance planned. Then the column tapers so that the top and bottom rails are different lengths so that to get all the spaces equal both on top and bottom, whether the balusters are straight tapering, bulged, crooked or twisted, requires a little knowledge of how to use the dividers.

I usually cut one end of rail to fit and mark the other end, but before cutting off I add the diameter of baluster to length of rail (at the center if fitted to round column) and space thereto. Then starting at $\frac{1}{2}$ the diameter of baluster beyond the end of rail, and marking with dividers, I get the center of each baluster. Or by starting at one end of rail and spacing and then the other end and squaring across with try square and pencil, I get marks for both sides of the balusters which are more convenient for securing square end balusters than the center marks.

ALBERT GONNE,
Architect and Builder.



Fixture Builders, Step Forward!

To the Editor: Broadalbin, New York.

When I have time I may send you a few suggestions for some commercial wood work fixtures. Anyway I would like to see the art of making some of the present day show cases. I have made several kinds, but would like to see some of this branch of the trade come forward just for a change.

A. E. FOSSETT.

To Find Common Differences of Octagon Jack

To the Editor:

Center Harbor, N. H.

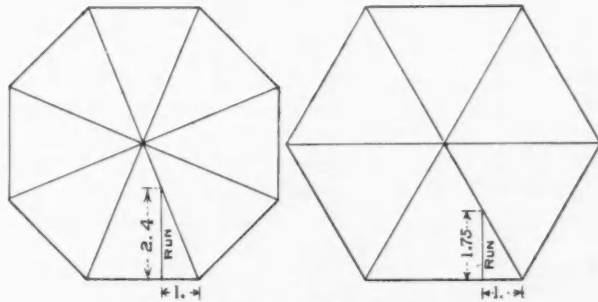
I notice in one your articles you say, to find the common difference of the octagon jack, you multiply the length of the common rafter for one foot run by 2.4 and the product by the spacing and divide by 12. Now, where do you get the 2.4 and why do you use it? Would you use 1.7 in the case of the hexagon jack?

Will Mr. Woods please answer.

H. J. LEIGHTON.

Answer.—To begin with 2.4 is used because it represents the run of the octagon jack, as compared to one foot run of the common rafter and is a fixed factor and remains so regardless of the pitch of the roof.

Now, suppose the roof has a $\frac{1}{3}$ pitch; then the length of the common rafter for one foot run is 1.42 and since



Figuring Octagon and Hexagon Jacks

the run of the corresponding jack is 2.4, by multiplying 1.42 by 2.4 will give the length of the jack for twelve inch spacing and by dividing by 12, reduces the answer to feet and inches. Thus $1.42 \times 2.4 = 34.608 \div 12 = 2$ feet $10\frac{5}{8}$ inches, Answer.

Now, it must be remembered that we are on a sliding scale basis, that is—if the spacing of the jacks were one inch then the length of the jack would be 2 and $10\frac{5}{8}$ twelfths inches, and since that is the length for one inch spacing for sixteen inch spacing, it must be sixteen times what it is for one inch. This is simplified by using the decimal number 34.608 as above found. Thus $16 \times 34.608 = 553.728 \div 12 = 46\frac{1}{12}$ inches.—Answer. The decimal fraction (.728) is discarded because when working in inches, it represents only that part of a twelfth of an inch. Thus, in the above, the fraction represents less than $\frac{3}{40}$ of a twelfth of an inch. Now, we expect some of the good brothers will rise up and accuse us of splitting hairs, but we have not—we just throw them away.

As to the last question as to what figures to use for the hexagon, see the diagram which illustrates both for the octagon and hexagon.

A. W. WOODS.

Reliable Cost Data Most Essential for Successful Contracting

To the Editor:

Chicago, Ill.

In every community are ambitious young men with very limited means, who are looking for an opportunity to better their financial condition, but are undecided in their choice of a trade or profession in which there is an opportunity to advance themselves into the class of well-to-do business men.

In the first place, most young men are too impatient. They expect to start at the top instead of submitting to the long, tedious grind which is necessary to attain their different aims in life.

One of the best opportunities for a young man is in the carpenter trade. There are a great number of very successful contractors who began at the bottom, learned the trade, saved enough to enable them to take a small contract, and

used this as a stepping stone to bigger and better things. They used all the intelligence at their command to place themselves in positions whereby they could take the contract instead of simply working at a salary. For you seldom find a man very rich, who is dependent entirely upon a salary.

The first requisite for a self-made man is knowledge of his profession. We are not considering a man who has inherited wealth, for he can hire all the brains he needs, but the man who must make his own way needs to furnish the gray matter himself.

In the first few years of grind and worry, he must be most observant. Not only must he be perfectly familiar with the methods of doing the work, but should determine how much is done, and how much it costs, for all the labor connected with the operation. By his experience he can see all that is required. He cannot make an approximate guess at it, but must each day jot down the number of men on the job performing the different operations necessary. For instance, in the construction of a residence, a certain number of men worked so long excavating for a foundation, representing so many cubic yards of earth. A certain number worked so long laying a stone foundation, representing so many cubic yards of masonry. And continue with the frame work, siding, shingling, windows, doors, trimmings, etc., in fact, everything entailing any labor expense. With this data compiled on a unit basis he is prepared to estimate the exact outlay for labor. Of course, material delivered at the job, installing heating, plumbing, etc., is determined by applying to subcontractors, but the principal thing is to know the labor cost of the carpentry requirements so thoroughly that the outlay required to complete the contract can be determined in advance.

This case cited is only for an example. Unceasing persistence must be maintained in regard to the cost data, to become equipped for becoming a contractor instead of a contractor's employe. No one understands better than the man on the job, all things required for the completion of a contract. In this case, theoretical figures will be of little value because the data acquired by the wide-awake young man himself is invaluable to him, for combining it with his experience, he has a foundation whereby he is well equipped to make his own way in the world, and if reverses should come he has the same foundation to begin again as he had to make his first start. For the bright, energetic, observant young man, the opportunities for advancement are greater, by first learning the carpenter trade, than there are in any other he may learn.

C. W. OLDER.

Runs Belts Flesh Side to Pulley

To the Editor:

Carbon Hill, Ohio.

I agree with Mr. Robert S. Raguse, as to the running of leather belting with the flesh-side next to the pulley. As the flesh-side is soft and yielding, while the hair-side is more firm. The outside of a belt, as it goes around a pulley, is subject to more tension than the inside. As the flesh side will give more than the hair side, I suppose this is why some insist on running their belts with the smooth side in. Now I think, when running a belt with the smooth side next to the pulley, it will become more or less polished, especially should the belt get a little dry (for the want of oil) and will not transmit as much power as if run with the flesh side to the pulley, because when the flesh side is next to the pulley it will act in compression as well as in tension. Being softer, I believe it will adhere better and that a belt will last longer than if run with the smooth side in.

All leather belting should be kept oiled with some good harness oil to keep leather soft and pliable. Tallow is also good for greasing belts, applying it to the outside of the belt with a brush.

W. A. DONALDSON.

Finds Ad. Pages Valuable

To the Editor: Rhineland, Mo.
The AMERICAN CARPENTER AND BUILDER would be of considerable value to carpenters if it contained only the advertisements. They give one an idea of what tools and materials are being used in building in other parts of the country.

Only this week I made a little wooden piece to be fastened to a rule so as to use the rule as a gauge. I wondered why some one had not placed on the market a device of the kind, but made of metal. I came home yesterday, having been put out of commission by tramping on a nail with the point up. The AMERICAN CARPENTER AND BUILDER was here, and in looking through it I discovered the very thing I was looking for. 25 cts. My order has gone forward for one. S. E. MILLER.



Another Puzzle

To the Editor: Oxford, Maine.
Please find enclosed the working drawings for an ingenious

It is not necessary for a regular shingler to nail promiscuously or put in too few nails in order to lay eight or ten thousand a day. We attain perfection and speed through practice, and that is what gives us the fast shingler; week after week and month after month he shingles and he becomes so he can grab a shingle and nail it on in less time than the average carpenter could select the shingle out of the bunch. He rarely ever puts a shingle back in the bunch, because he runs seven or eight courses at a time, and he always has a place where the shingle will fit. Another thing he always "mouth nails" and becomes so accustomed to it that he always gets two nails at a time, point down, and does not lose any time in turning the nails in his fingers.

I claim a man can be a "fast shingler" or in other words a professional shingler, "buck up" his own shingles, nail two nails to the shingle, each nail about one-half inch from the edge of the shingle, keep his breaks 1½ inches apart, counter break the third course and put on 10,000 shingles a day.

S. N. HARRIS.

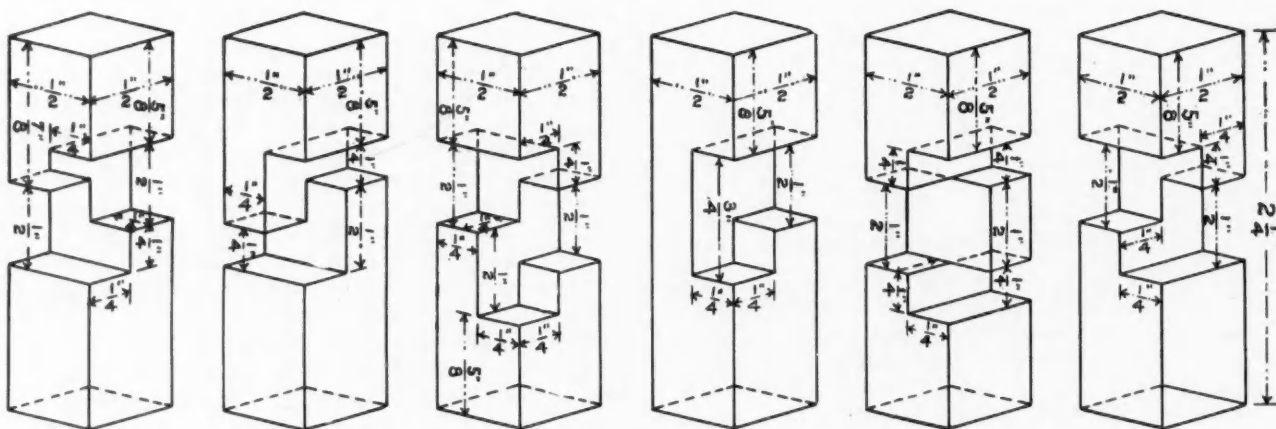


Fig. 1. The Six Pieces for Puzzle, Showing How They Are Cut

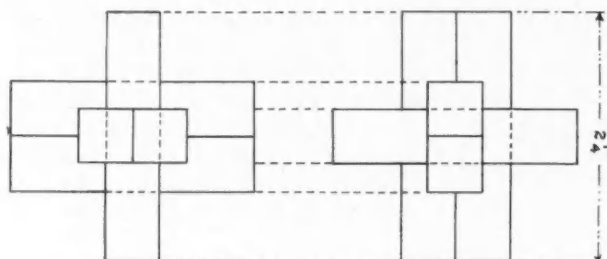


Fig. 2. The "Chestnut Burr" Completely Assembled

puzzle. If the various pieces are cut according to the dimensions given, in Fig. 1, they will fit as shown in Fig 2.

G. E. WINDSLOW.



Defends Fast Shinglers and Tells How They Do It

To the Editor: El Centro, Calif.
In the June issue of your valuable paper is an article by Mr. Wells of Lane, Kansas, blaming fast shingling. With all due respect for Mr. Wells and his ideas concerning shingling, he and I differ on some points.

I thing the flatness of a portion of the roof he referred to was the cause of the nails being rusted and the shingles rotted. My opinion is if the roof had all been of the same pitch the shingles and nails would have been in about the same condition over the entire roof. Fast shingling has nothing to do with the life of the nails if they are properly placed in the shingle, as they usually are by the professional shinglers.

Figuring Unlisted Sash

To the Editor Hastings, Minn.

I desire through your valuable paper to reply to Mr. Joseph Krischke, Jr., of Brownwood, Tex., in regard to figuring cost of unlisted sash extras. The rules here given have been adopted by the Wholesale Sash, Door and Blind Manufacturers' Association of the Northwest, and the General Sash and Door Association:

Larger Sizes than Listed.—Rule 1. (a) For list on 1⅛" and 1⅜" open windows wider than listed sizes, add to the open list for similar window of widest listed size of same height, for each additional 4" or part thereof, 50c list. (b) For list on 1⅛" and 1⅜" open windows longer than listed sizes, add to the open list for similar window of longest listed size of same width for each additional 4" or part thereof, 50c list.

Wide Stiles, Rails or Bars.—Rule 2. For list on 1⅜" open windows, or sash, with stiles, rails or bars wider than regular stock sizes, add as follows:

- (a) For stiles and top rails wider than 2" to glass rabbet, for each additional ¼" or part thereof, add of open list to open or glazed list, 10% list.
- (b) For bottom rails wider than 3" to glass rabbet, for each additional ½" or part thereof, add of the open list to open or glazed list, 10% list.
- (c) For check rails thicker than 1⅜" and not over 1¾" finished sizes, add of open list to open or glazed list, 20% list.
- (d) For vertical bars wider than regular stock for each additional ¼" or part thereof, add of open list to open or glazed list, 5% list.
- (e) For horizontal bars wider than regular stock, for each

additional $\frac{1}{4}$ " or part thereof, add of open list to open or glazed list, 5% list.

Note "A."—When the term "stock quantities" is used in these rules it means ten or more of the articles of one size, style and quality.

Note "B."—For irregular or intermediate sizes in stock quantities, use same list as next larger listed size, both open and glazed.

For less than stock quantities, on sizes not listed, an extra 10% of the open list will be charged.

Note "C."—Unless otherwise specified, when a net extra or a list extra is provided, it will apply to either open or glazed list, and when a percentage of the list is provided, it applies to open list only, and should be applied before glazing is added.

FRANK F. ENGLS.



"Come Home to Roost"

To the Editor:

Alden, Kans.

Here is a picture of a house I built two years ago from a design taken from "Radford's Portfolio of Plans." This



Built by Contractor Friedline from a "Radford Plan"

house is a decided addition to the appearance of this neighborhood, and the owner is well satisfied with it.

H. I. FRIEDLINE.



Higher Position for Thumb-Latch

To the Editor:

Chicago, Ill.

Given a door fitted with check, cylinder lock, handle and thumb latch, what is the correct height to fix such hardware?

Meeting such a combination a short time ago with a particularly stiff check and an unusually low thumb-latch, I instinctively, after unlatching the door, jerked it open a few inches, raised the forearm square with the body, caught the edge of the door at that height (about 43 inches) and opened the door without further effort. This is surely the answer to the above proposition, for at that height and in that position only can a person effectively use the mechanical arrangement of his own body to operate the latch and overcome the pull of the door check, which latter is often considerable and not so easily adjusted as manufacturers would have us believe, being usually set stiff to assure positive closing.

Common sense set the height of the door knob near three feet, where the average person can best use his muscles to turn the knob; let similar reasoning dictate the height of the useful, handsome thumb-latch combination.

This protest might have seemed unnecessary had we consented to fix the thumb-latch at the same height as the knob, but the tendency is to place it much lower. Notice particularly the door of that common type—wide bottom rail—large upper panel of plate glass, see if the lock is not hugging the floor as though loath to trust itself to a 6-inch stile near so much glass.

Get them up where the design and beauty of the pattern

can be seen and admired; where the small keyhole of the cylinder lock can be easily found; where the efficiency of the lock is best—near the middle of the door; best of all, where the door can be opened and closed with the minimum of effort.

FRED BRIGGS.



A Word of Advice

To the Editor:

Vergennes, Ill.

Your communication of 23rd recd.; will say in reply that I did not think of subscribing again as I really do not feel in need of it, although I heartily recommend it to all mechanics, especially carpenters.

I, myself, am an old workman in my 69th year, an old veteran of the Civil War, and have made my business as a builder a lifelong study, and am always glad and willing to give liberal instruction to the young mechanics, although I sometimes feel that it is useless, as a great many of the young men seem to think that they know it all and that the Old Man, or Dad, as they most all call me, is a back number and ought to quit.

Well, men, as long as we live, we may learn something, and you had better spend a small per cent of your liberal wages for instruction and spend some of your leisure hours studying your trade; and you can't expend either in a better cause than to subscribe for the AMERICAN CARPENTER AND BUILDER.

It makes a fine addition to your library; it looks well on your center table; and it will please the "old man" you work for to know that you are a subscriber to it.

I frequently loan mine to some man in my employ and advise him to study it and it always does him good. Young men, read up; you haven't the opportunities that I had as an apprentice. Everything now is a rush and a hurry. But yet you have more time to read than I did. I worked 12 and 14 hours a day, while you only work 8 or 9 at the most.

So get down to business and resolve to get in the swim and hold your job, which you can do if you take the advice offered above.

Yours fraternally,

V. W. WAINWRIGHT,
Contractor and Builder.



Small Green House Plans Wanted

To the Editor:

Wilburton, Okla.

Will you or some of the brothers give plans for constructing a small green house for raising winter vegetables, and how to keep the proper temperature in cold weather when the sun doesn't shine.

J. P. McLARTY.



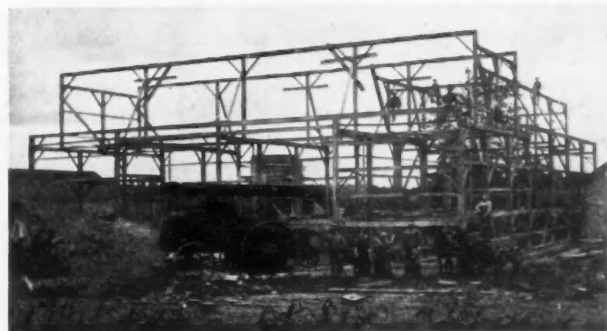
Heavy Frame Barn

To the Editor:

Galion, Ohio.

Here is a photograph of a large barn I put up last summer. It is 80 by 110 ft. in size.

FRANK L. HEFFELFINGER.



Frank L. Heffelfinger and his Men Raising Large Barn

Wants Dictionary of Building Terms

To the Editor:

Rhineland, Mo.

The article by Jesse P. Montz, page 83, June issue, in reply to H. M. Pond, reminds me that the prospectus of "Framing" mentioned that the book was to contain a dictionary or glossary of terms used in carpentry. I was not a little disappointed in not finding the glossary in the book and wrote to the editor about it. I also asked him if he could supply, or knew where I could get a dictionary of carpentry terms. In reply he stated that he knew of no such work. The inquiry by Mr. Pond and the reply by Mr. Montz has caused me to conclude that I am not the only one in the boat. From my own experience and the articles referred to above there would seem to be a demand for a neat little book explaining the meaning of all terms used in our trade.

How soon will the AMERICAN CARPENTER AND BUILDER be able to furnish it to subscribers?

This porch, veranda, piazza and portico question is not the only bad mix-up in our terms. The names of the different members of a cornice (oftener than otherwise pronounced *cornish* by some fellows that count themselves carpenters) seem to be pretty badly jumbled up. Reference to a dictionary or cyclopedia only seems to tangle a fellow up a little more than he was before. Take, for instance, the word "plancher." In order to be frank I must admit that my dictionary is a back number, but here is what I find:

Planch, vt. A plank. See Plank. To plank; to cover with planks or boards.

Plancher. n. A floor.

Now, for all anyone would know who has not some idea of what a plancher is, he might construe it to mean the floor of a barn or hen house.

I do not find the word in the cyclopedia to which I have access.

I think I have also seen the word written *plancier*, but I am not certain of this.

Now let us see what a "frieze" is:

Frieze } (freez) n.
Frize }

2. In architecture, that part of the entablature of a column which is between the architrave and cornice. It is a flat member or face, often enriched with figures of animals &c., &c.

Hold on, now; what is the *architrave*? Well it is too long. I guess you had better look it up for yourself. Then look up *entablature* and if you are not all balled up by that time, you can start at the beginning and try to find out the meaning of the word *cornice*, and that will again lead you back to entablature, and there you are coming out of the same hole you went in at.

I know a fellow who thinks he is a boss carpenter who calls an apron (one of the members of a window frame trim) a "skirt." I don't know where he got it, but that is the way he has it in his cocoa-nut.

Another fellow who has worked at the trade many years calls a fillit a "soffer" (meaning soffit).

Who can tell me the name of the outside lower member of a frame building? viz., the broad board just under the drip cap (also called water table). I have heard it called "base" and "sill board." If we call it base it makes confusion with the inside lower member of the trim in a room. Sill board would seem to be quite appropriate.

Who is going to straighten this matter out so that we may know what we are talking about. That same fellow that calls an apron a skirt calls a gambrel or mansard roof a "bungalow roof." Perhaps he could tell the Editor what a bungalow is.

The above has been mainly seeking information, but before closing I will try to impart some information that may be of use to my fellow carpenters. I have read considerable on the use of the steel square, but to the best of my recollection

I have never seen it mentioned that the rule of proportion may be used in cutting rafters, or rather in laying off rafters.

No doubt many carpenters use this method however. At the same time I know some who would be tied up when it came to figuring by proportion. Nevertheless, it is quite simple. Here it is:

Say a building has a span of 16 ft. and the rise is 5 ft. This is not quite a $\frac{1}{3}$ pitch, so we can not use 12 and 8 on the square. In other words, we might say it is an odd pitch. Here, then, is the problem: We know that 8 ft. is the run of the rafter and 5 ft. the rise. Therefore, 5 is to 8 as X is to 12—(5:8 = X:12). $5 \times 12 = 60$, and $60 \div 8 = 7 \frac{4}{8}$ or $7 \frac{1}{2}$ inches rise for each 12 inches of run.

By using 17 instead of 12 this rule may be applied to laying off hips and valleys. No doubt this will not be a new idea to a great many carpenters, but as I stated above, I do not recollect ever seeing it in print. S. E. MILLER.

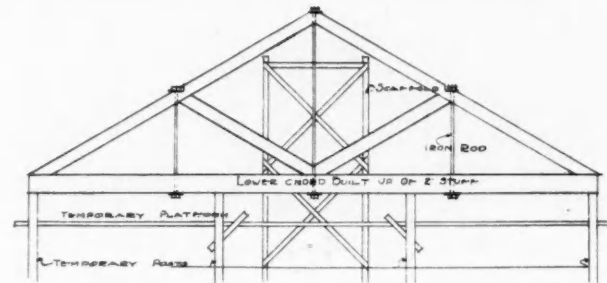


To Erect Heavy Trusses

To the Editor:

Kane, Pa.

In regard to Mr. Radley's request for suggestions as to placing heavy trusses, my suggestion is to build the truss just where it should stand; then it would be already placed. Cut several posts long enough to reach from your floor to the bottom of your truss. Set them on the floor in line with your truss and brace them. Now you can nail your scaffold



Staging for Erecting Heavy Truss in Place; End Posts May be Permanent

bracket to the top of these posts and make a scaffold to work on. Of course you will have your truss already framed by this time so you can proceed to lay the cord, then you can run a derrick scaffold up in the center of the truss just high enough to catch the bottom of the truss rafter. After this is done you will find it an easy matter to put your truss together and make it self supporting with a crew of seven men.

J. W. MENTEER,
Carpenter and Builder.



A Quicker Way

To the Editor:

Oshkosh, Wis.

I note in the January issue of the AMERICAN CARPENTER AND BUILDER, an inquiry from Wm. Vreeland, asking how to scribe the base of a porch column. I also note your reply, now while the miter box way of cutting the column is all right, I rather imagine that I should be reduced to the ranks, if my employer caught me wasting his time and lumber making a miter box.

Here is a quick and accurate way, if you care to have it. Stand your column on end in one corner, that gives you a good chance to tack into the cornice if you are alone, stand it plumb, now take a block or your dividers and scribe. I use a piece of spring steel 18 inches long and $\frac{3}{4}$ inch wide and wrap around column, now scribe it. Take it down and saw to line and you will find it will fit like the paper on the wall. The steel is one of the handiest tools I carry. It can be used in so many different ways.

ALBERT E. NALDRETT.

Advocates Cement Roofs

To the Editor:

Chicago, Ill.

When the architect asks a builder what sort of a roof he would have on his structure, the substance of his answer is that he wants one that won't leak. There is seldom anything said about the appearance of it. It is true that this particular roof will not be seen by its owner often enough to occasion much comment in regard to its looks, but he will have neighbors who will be obliged to live within view of it. The roof may not leak, but were it not for the universal cry for economy of construction, there would be no occasion for a great many of our otherwise beautiful buildings giving the suggestion of squalor.

The typical flat roof of tar and gravel is about as unsightly a detail of architecture as could well be imagined. This can be verified by a view from almost any large city office building. It has become nearly the universal custom to construct roofs of this kind.

The best remedy for this is a roof of cement mortar. One of this kind, made of first class material, properly applied, and with a proper allowance made for water-tight expansion joints, can be made an ornament instead of a disfigurement. A few roofs of this kind have been constructed in Chicago with various degrees of success, and where one has proved unsatisfactory it is because of gross oversight of conditions involved with consequent failure to provide for them. Only the best grade of mortar can be considered, which can be made water-tight. The necessary expansion joints must also be designed to prevent seepage through them.

A roof of this kind will last as long as the building, and should eliminate the frequent bills for repairs, which form a considerable item in the common roof.

Besides being the most serviceable, and in the end, most economical, it is by far the most pleasing to the eye. But it should be borne in mind that the degree of satisfaction derived from a roof of this kind is determined entirely by the care exercised in applying it. To attain this result the builder must not be afraid of a little extra expense, but after the initial cost of installation, the expense is practically at an end, besides the appearance being such that it will need no apology.

C. W. OLDER.



Thinks Estimating by Cubing Unreliable

To the Editor:

Tillsonburg, Ont.

I would like to see discussed in your paper ways of getting the estimated cost of a building by the cubic foot. We are building a church here and asked for competitive sketches, the building to cost \$20,000, with seating capacity of 500 in auditorium and 450 for Sunday school, both on same floor. We have about eight architects competing. None of them will say what their estimated cost will be, only by cubing.

Now, is this a safe way of figuring? It does not appear to me to be; though we have figured on a couple of churches that have been built recently and find they come out very close by figuring 10 cents a cubic foot.

JOHN A. WILSON.



Western Shingling

To the Editor:

Independence, Ore.

I like the paper very much and keep every copy and bind them with oilcloth covers at the end of the year. I have several volumes which I treasure highly.

It seems hard for some of the eastern carpenters to understand that in fast shingling chalk lines and straight edges are not used, just a gauge on the shingling hatchet and a shingling stool is used instead of a scaffold. I will say to Brother Mackenzie, of Providence, R. I., I never in all my career heard of estimating shingles as six inches wide. I cannot

see how he can figure them wider than four inches. A bunch of shingles is 20 inches, or five shingles wide, two shingles long and twenty-five courses thick, four bunches to the thousand, which figures $5 \times 2 \times 25 \times 4 = 1,000$. We all understand that pieces are of different widths of 2 to 18 inches, except in fancy shingles, which are sized to certain width.

JOHN V. WEBBER.

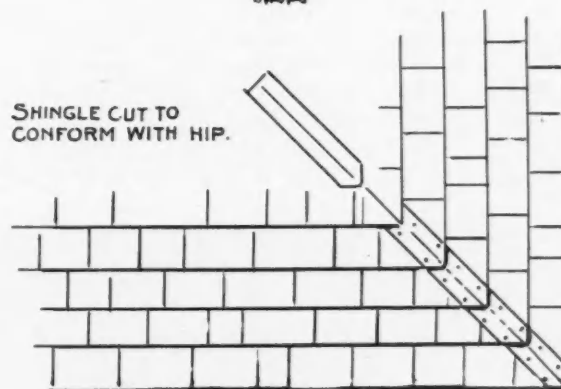
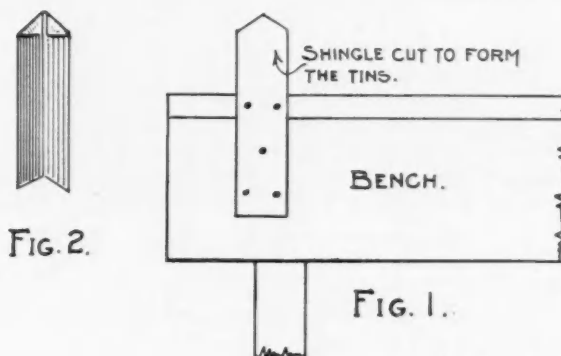


How to Form Tin Hip Shingles

To the Editor:

Highland, Mich.

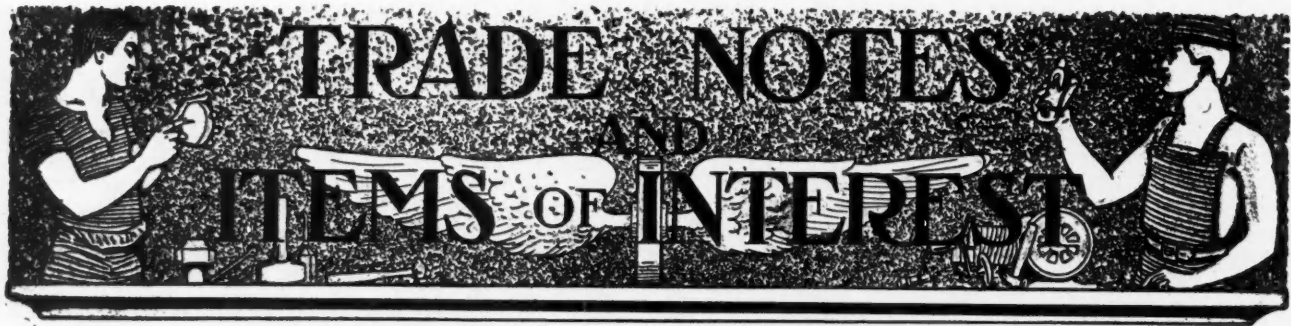
After having shingled hips by several different methods, I am firmly convinced that for economy, dispatch and general appearance, there is no way that surpasses that of using the folded tin hips. I have tried the Boston hip two or three times and found that there are objections to that, as the nails are exposed and the corners curl up and it soon presents a shabby appearance. Some of the hardware dealers in this vicinity carry these tin in stock, cut to size, and it is a small job to make them by simply folding the corners of one end over the butt of a shingle that has been cut and nailed to side of work bench. The shingle should be the same width of tin and cut to the angle of the hip with the courses of shingles, as shown in Figs. 1 and 3. After folding the corners, the tin should be bent lengthwise through the center, as shown in Fig. 2, which is easily done with the hands; for convenience of handling on the roof, they can be nested together by slip-



Home Made Tin Hip Shingle and Forming Gauge; Fig. 3 Shows the Shingles Applied

ping the folded end of one inside of another. I always butt the hip shingles together, as it is not necessary to lap them; using the butts that have been sawed from valley shingles and if the valley and hip are same pitch, they will fit; if not, I saw them to make them fit. These tins effectually hold the hip shingles from curling or the corners from splitting off and falling out. When I cut the tins myself, I usually make them about 4 by 9 inches for a low pitch roof and correspondingly shorter for the steeper pitches.

ALBERT GONNE.



Carey "Ceil Board"

Although Carey "Ceil Board" has been on the market for less than a year, it is being largely specified by architects. This is due to the high merit of this wall board which is manufactured by The Philip Carey Company of Cincinnati, Ohio.

This company, which have manufactured various building materials for more than a third of a century and which are the makers of the famous Carey flexible cement roofing, put name and reputation behind "Ceil Board," and that, in itself, is a sufficient guarantee of the quality of the material.

For more than eight years The Philip Carey Company have been experimenting in the manufacture of a wall board, but not until very recently has a board been made that reached the perfection which is demanded in the Carey products before they are introduced to the public. During these years this company have carefully watched the other wall boards which have been put out, and made thorough tests and exhaustive experiments with them so as to become acquainted with the weak points of like materials and thus eliminate mistakes in their own product.

Before presenting "Ceil Board" to the public the manufacturers claim to have demonstrated that it not only had successfully overcome the weak points of other wall boards, but had had incorporated in it a number of good qualities heretofore unknown in the manufacture of a wall board. It was said that "Ceil Board" combined every good point of every other board on the market and none of the defects.

The finished product is a board $\frac{3}{16}$ in. in thickness, composed of three layers of the finest grade of chip board stock, held in bond by a Gilsonite asphalt cement. The asphalt cement used is the purest obtainable and contains the smallest percentage of volatile oils. It has great adhesive qualities and will not allow the panels of the board to separate under extreme temperature. The asphalt cement also renders the

board thoroughly moisture proof. It is as impossible for moisture to penetrate through the asphalt as it would be to penetrate two layers of pure rubber.

The high grade of chip board stock used, together with the asphalt cement, gives the combined article great tensile strength. It is claimed for it that there is no wall board on the market that can equal it in this respect. A 15" square of "Ceil Board" nailed to the 2-inch side of 2 by 4's resists a pressure of 720 lbs.

As an insulator against temperature, it is very effective, having approximately four times the effectiveness of plaster and twenty-five times the effectiveness of sheet steel. As the board is designed for the lining of walls and ceilings, this fact is an important consideration as demonstrating the powers of the board to conserve heat in a room in the winter time and exclude it from the room in the summer time.

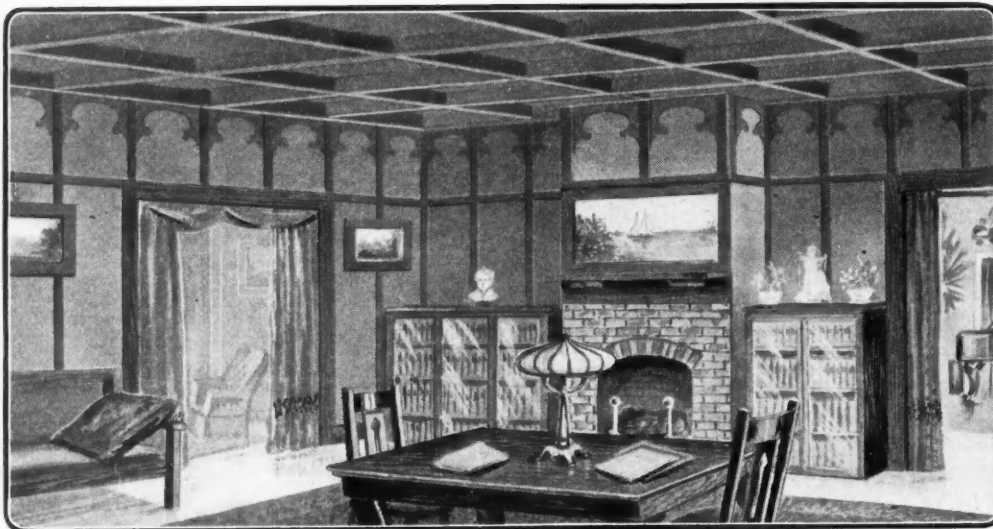
The board is thoroughly hygienic and will neither breed vermin nor admit of their presence where it is used.

The use of "Ceil Board" is becoming almost universal in the building lines. It finds many uses in the home. For the lining of the house from the basement to the attic it is an ideal material. Department stores are using it as a substitute for wood panels and plaster in the backing of display windows, in the building of partitions, demonstrating booths, etc. Office buildings are using enormous quantities of it as a substitute for wood in the building of office partitions. In fact, it is used in a multitude of ways where wood or plaster has heretofore been used.

"Ceil Board" it is claimed, has a decided advantage over other wall boards in that it can be decorated in any conceivable manner that wood or plaster can be decorated. It takes wall paper nicely and presents the same appearance when finished as a plastered wall. It can be tinted with cold water paints or painted with oil colors. Some of the imitations of various woods shown on "Ceil Board" are most

beautiful. It may be paneled, finished in imitation tile or marble or covered with burlap. The scope of its decorative possibilities depends entirely on the skill of the individual decorator.

Its manner of application is very simple, it being nailed directly to the studding and joists in new work or applied directly over old plaster, when the job is in the hands of a competent artisan, or nailed to the furring strips, in this latter instance when it is put up by an unskilled person. When thus properly applied the board will not shrink or buckle.



Artistic Paneled Walls and Ceiling Using Carey "Ceil Board"

A special process in the manufacture of the board has been evolved which brings about this latter condition and which is one of the strongest points. It is furnished in widths of 32" and 48" and in any length desired. Irregular shapes and sizes are furnished when required. It is shipped in bulk, in bundles, and in crates, and weighs approximately 650 lbs. to the 1000 sq. ft. in bulk, 750 lbs. in bundles and 800 lbs. in crates.

Notwithstanding the many advantages which "Ceil Board" has over plaster, it is cheaper in the initial expense and requires no outlay for its up-keep. Only so much of this board is paid for as is actually used in covering the walls. It can be furnished in such sizes that there will be practically no waste in its cutting. There is not the expense incident to plaster that comes with the delay occasioned by the plasterers taking possession of a new building during which time the carpenter foreman is being paid for practically no work done. The carpenter applies "Ceil Board" and as soon as it is put up it is ready for decoration. There is no long waiting for the drying of walls as there is where plaster is used.

To meet a demand among builders which could not be met by "Ceil Board" or any other wall board on the market, The Philip Carey Company has lately produced what is known as "Waterproof Ceil Board." This is an absolutely waterproof material and, so far as we know, the only board of its kind ever manufactured or put on the market. It has met with wonderful success and the demand for it is increasing daily. This board is of the same construction as "Ceil Board" with the added quality of being thoroughly proof against penetration by water. The statement that it is waterproof is made after tests of samples of it were submerged in water for eight hours and when taken out were found to have taken in none of the water. It is recommended by the manufacturers to carpenters and builders for use where there is a likelihood of its coming in contact with water, steam, heavy vapors or extreme and constant dampness. For a sheathing material behind porous concrete blocks and bricks it is an ideal material and one that has long been looked for. For the lining of damp basements, veranda ceilings, summer houses, garages, steam rooms in laundries, engine rooms in factories, etc., it has no substitute. They recommend it for use wherever a waterproof board of great durability is required and where decoration is less essential than the utility and effectiveness of the board.

The Philip Carey Company maintain a large and capable staff in their "Ceil Board" Estimating Department which is anxious to co-operate with carpenters and builders in working out their problems in wall and ceiling covering, as well as making suggestions for the artistic decoration and practical application of "Ceil Board." This Department will be glad to furnish samples of the two boards mentioned as well as literature on the subject to those who write "Ceil Board" Estimating Department, The Philip Carey Company, Lockland, Cincinnati, Ohio.



Reliable Builders' Hardware

The T. B. Rayl Company of Detroit, Mich., with a backing of 37 years' successful experience in builders hardware, are now offering building contractors their facilities, low prices and quick service.

They state that while they handle only good goods, never sacrificing quality to price, builders will find their prices extremely low.

The T. B. Rayl Company desire to get into touch with contractors and builders. A specialty of their business is handling carefully the jobs sent them from out of town. They are always glad to furnish estimates for builders' hardware on plans and specifications sent them; they will also furnish samples as desired. Address them, T. B. Rayl Company, 112-116 Woodward Ave., Detroit, Mich.

A Large Municipal Garbage Reduction Plant

By W. H. Radcliffe

Somebody once said that a modern packing plant utilizes every part of the American hog except the squeal. In point of efficiency the new Municipal Garbage Reduction Plant of Columbus, Ohio, belongs in the same class, for in disposing of 80 tons of garbage every day, it wastes nothing except the water in the garbage.

This new plant is especially interesting by reason of its saving \$35,000 to \$40,000 per year in the cost of collection and disposal of garbage, the fact that it is the first municipal plant of its kind ever erected, and because throughout its construction and operation the most modern and efficient methods have been practically applied.

Previous to 1895, the scavenger system was in use in Columbus for the removal of garbage, rubbish and dead animals. Each householder, according to this system, hired scavengers to haul the refuse and dispose of it.

From 1895 to 1905 the city contracted for the collection and disposal of refuse, paying for it once a year. This system was never satisfactory, the collection service being

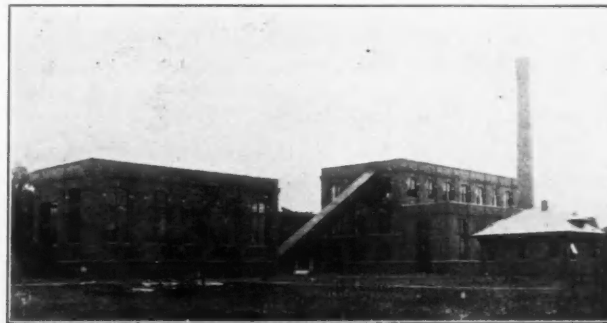


Fig. 1. Municipal Garbage Reduction Plant at Columbus, Ohio

poor and unsystematic. On Sept. 25, 1905, the City Council passed a resolution requesting plans, specifications and estimates of cost for providing a means for disposing of the garbage collected by the city.

As a result of this, Mr. I. S. Osborn, a well known Cleveland engineer was selected for the work in July, 1908. The plant was erected at a cost of approximately \$190,000 and placed in regular service in July, 1910; since that time it has been in continuous operation, self-supporting itself by the sale of by-products, which consist chiefly of grease and fertilizer.

The reduction plant was designed with a capacity of disposing of 80 tons of garbage in twelve hours, or 160 tons per day, when operating continuously for 24 hours. The capacity is sufficient to take care of the city for a number of years and at the same time care for any emergency in case of breakdown.

The plant as a whole consists of four buildings, as shown in Fig. 1: The Unloading Building, illustrated at the left, the Reduction Building next in order to it at the right; an office Building; and a small Stable.

The Unloading Building is used for the unloading and assorting of all garbage delivered at the plant. It is 45 feet by 85 feet and has elevated railway tracks extending through it. The Reduction Building contains the reducing machinery consisting of digestors, roller presses, grease separating tanks, refining and storage tanks, drying equipment and evaporators. It also contains the boiler plant, machine shop and water supply pumps. The part containing the digestors, presses, dryers and storage

rooms is three stories high, and the other part one story high. This entire building covers a space 80 feet by 167 feet and is provided with a radial brick chimney, 72 inches in diameter and 150 feet high, constructed for the boilers and the gases from the reduction machinery.

Both the Unloading Building and the Reduction Building are fire-proof with steel columns, floor beams and roof trusses, and concrete floors. The walls are of brick, and the roof is constructed of hollow terra-cotta tile on which is laid 4-ply J-M Asbestos Built-up Roofing.

This Asbestos Roofing, made by the H. W. Johns-Manville Co., New York City, is an all-mineral covering, especially adapted for flat-topped roofs on account of its great durability. It is built upon the roof of successive layers of pure Asbestos Felt and Trinidad Lake Asphalt, both of which are weatherproof and fireproof materials unaffected by gases, heat, cold or acids.

When the garbage is delivered at the plant, it is dumped into loading cars, weighed, and then spread upon the floor of the Unloading Building where the free water is drained off and the grease in the swill water separated by evaporation. After the garbage is assorted, it is conveyed to the digestors, of which there are eight, where it is cooked from six to eight hours with steam at 60 to 70 pounds pressure. When cooked, it is discharged into a receiving hopper which is directly connected to a roller press. Four digestors, one receiving hopper and a roller press constitute one unit, and there are two of these units in the plant.

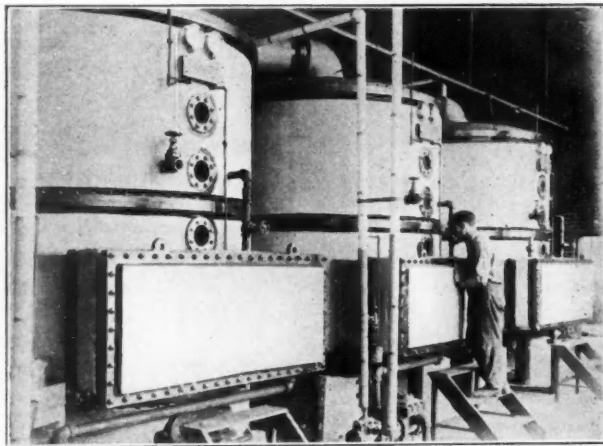


Fig. 2. Interior View of the Municipal Garbage Plant Shown in Fig. 1

As the material passes through the press, the water and grease pressed out are conducted to separating tanks where the grease is separated from the water by gravity. After separating the impurities from the grease by heating, the grease is pumped into storage tanks for shipment and sold for approximately \$100.00 per ton.

The tank water, after the grease has been separated, goes to an evaporator where it is condensed and comes out in the form of a syrup. The solid refuse from the roller presses is fed into a revolving cylinder dryer constructed with a steam jacket and a blower. To this material, when dry, is added the concentrated syrup from the evaporator, which produces a high grade of tankage from a mechanical and fertilizing standpoint, and this is stored for shipment and sold for approximately \$10.00 per ton.

All the steam pipes, evaporators and dryers, also the digestors (in part) are covered with J-M 85 per cent Magnesia Blocks finished with J-M Asbestos Cement and

canvas jackets, all supplied by the Cleveland branch of the H. W. Johns-Manville Co.

During the first six months of 1911, there was received at the plant 7,066 tons of garbage which resulted in net receipts of \$29,615. This showed a profit of \$2.07 per ton over the cost of disposal of the garbage.

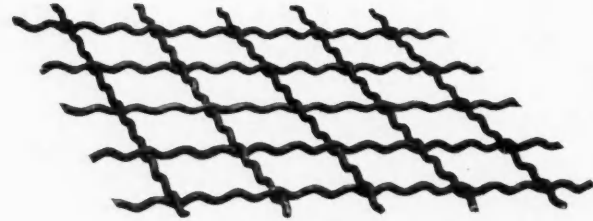
As an illustration of what can be done by a Municipal Garbage Reduction Plant efficiently designed and carefully operated in a city of 182,000 inhabitants, this Columbus plant establishes an encouraging precedent.



Buffalo Reinforcing

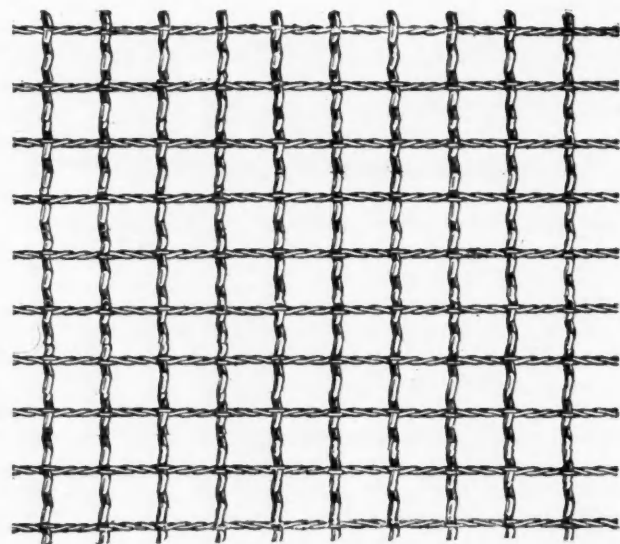
The progress made in the past few years by the use of concrete reinforced with steel has been so rapid, and so many of the largest building operations have adopted this system of fire proofing, that now a system that combines fire resisting qualities with load carrying capacity is readily admitted to the specifications of the foremost architects and engineers.

In addition to fireproof floors and arches for buildings, other uses for reinforced concrete are floors of bridges, the construction of culverts, tunnels, shafts, sewers, retaining walls, footings, etc.



Buffalo Crimped Wire Reinforcing

The Buffalo Wire Works Company, Buffalo, N. Y., have placed on the market their Buffalo reinforcing fabric for concrete, which concrete engineers, architects and contractors are endorsing very highly. The fabric is woven with carrying wires of various sizes and with cross wires securely locked at right angles, the meshes being of suitable size to meet any requirement. It can be woven into bundles from 200 to 400 feet in length, ready to be rolled out on the forms for floor or roof slabs, and is especially adapted to sewer and conduit construction. It is claimed that this reinforcing can be installed on work at about 20 per cent less cost than



Reinforcing Fabric for Concrete

Our Certified Plans Save Contractors From 25 to 50 Per Cent on Cost of Materials



Home of I. N. VANCE.

Saved Over \$300

Wellington, Missouri.
Gordon-Van Tine Co., Davenport, Iowa.
Dear Sirs: I have completed my house from your plan No. 129, and I want to tell you, gentlemen, I am more than pleased with your lumber in quality and quantity, both.

I think I saved from \$300 to \$400 by buying the lumber from you instead of buying from the Lumber Trust.

I am ashamed to tell you that you sent enough extra lumber to build me an auto garage, but you certainly did, and when I get ready to build another house Gordon-Van Tine Company will get the order.

Yours truly,
I. N. VANCE.

Saved Over 30 Per Cent

Brighton, Iowa.
Gordon-Van Tine Co., Davenport, Iowa.

Dear Sirs: The two shipments of lumber were received from you in good order. The grades were much better than those furnished by our home dealer, saying nothing about the price, which was 30 per cent lower than the best figures we could get elsewhere.

The 2,000 feet of matched lumber which we ordered in the first car to make a car lot sold right on the ground at what it cost us, without a bit of trouble.

Yours truly,
DAY & BENNETT,
Builders and Contractors.

Saved \$150

Leeton, Mo.
Gordon-Van Tine Co., Davenport, Iowa.

Kind Sirs: Got your draft today and had received and unloaded car of lumber yesterday. Lumber was satisfactory to all parties concerned—in fact, was better than we could have gotten anywhere in our home lumber yards. Will save about \$150 all told. I will not be in the least afraid to take contracts, figuring your lumber as per grades ordered. Will say about receiving car of lumber that we had the confidence that we paid for same before opening car at all, and began loading the nine wagons waiting to be loaded. Had twelve men and every one expressed his opinion as above expectations. Left check at bank to cover all charges.

Thanking you for the low prices and highest grades, I beg to be ever a customer of Gordon-Van Tine.

W. E. SWEARINGEN, Contractor.

Saved Over \$400

Eagle Grove, Iowa.
Gordon-Van Tine Co., Davenport, Iowa.

Dear Sirs: In buying two carloads of lumber of you, I find I have saved over \$400. Besides this, I have bought one car of millwork for a large country residence. The millwork included five large fancy windows, which were away beyond our expectations in beauty and clearness of glass. I know of no better way to build a good house cheap, and at the same time give a blow to the lumber trust, than to buy of Gordon-Van Tine Co. My lumber always arrived at Eagle Grove within five days after receiving bill of shipment. My lumber, shingles and lath were better quality than we ever get at our home dealers. Wishing success to Gordon-Van Tine Co., I remain a customer.

IRA D. McVICKER.

Gordon-Van Tine Company

620 Federal Street

(193)

Davenport, Iowa

The Gordon-Van Tine Company's Certified Plans for Houses, Bungalows and Cottages embody the very latest architectural ideas and enable the builder to save 25 to 50 per cent on the cost of the Special Millwork and other building material called for in the specifications. Each plan carries with it the Gordon-Van Tine Company's certified estimate on the actual cost of all of the material required. Thus the saving is insured at the very outset, eliminating any possibility of a bill of "extras," which invariably results where "theoretical" plans are employed.

Widest Architectural Experience

These plans are the work of our own architects of wide experience, who devote their entire attention to designing high-class residences. They are specialists in this class of architecture, and over 100,000 splendid homes have been built from their plans. We know of no firm of architects who have had such experience and training.

Gordon-Van Tine Certified Plans Houses—Cottages—Bungalows

Each Gordon-Van Tine Certified House Plan is accompanied by a set of specifications, complete in every detail. The specifications cover all items of construction, recommending the best materials to be used and the correct method of construction. Also an itemized List of Materials, so specific that nothing is left to chance.

How Certified Plans Cut Building Material Cost

These plans are based on the bed-rock prices of Gordon-Van Tine Millwork and Lumber. They embody the newest architectural ideas. They call for a great deal of specially designed Millwork—beautiful Staircases, handsome Porches, special Art Windows and exclusive designs in Doors. Were these items made specially to your order at local planing mills the cost would double or treble the prices at which the Gordon-Van Tine Company will supply them.

Thousands of Special Designs in Millwork

For years the Gordon-Van Tine Company has been constantly adding to its regular stock the most popular special designs in Stair Material, Porch Material, Windows, Doors, Grilles and Columns, Mantels, Moldings and other finishing material. Each new item added to the line is made up in very large lots, which automatically brings the prices to the lowest possible point.

For instance: A Staircase that formerly, when made specially to order, cost \$90, is now sold for \$23.93.

A Craftsman Door that, made singly, cost \$15, is now made up in thousand lots and priced at \$9.50.

A Beamed Ceiling for a room 14x18,

that formerly cost \$65 to \$75, is now supplied from regular stock at \$14.50.

Thus these Certified Plans secure to the home builder the double advantage of the very newest and most exclusive millwork designs and an actual saving in cost of from 50 to 75 per cent.

How to Secure the Book of Certified Plans

We have assembled in one beautiful volume the cream of our Certified Plans for Houses, Cottages and Bungalows. Over 50 designs, showing actual photographic reproductions of exteriors, together with complete floor plans and detailed descriptions.

Choose your plans from among these beautiful designs and insure a saving of at least half the cost on all the material required.

The only way to secure the saving is to build from these plans or to have our architectural bureau draw up special plans, specifying Gordon-Van Tine materials.

In writing for the Free Book of Certified Plans, be sure to enclose 10 cents to cover postage and mailing. Use the convenient coupon.

Gordon-Van Tine Co.
620 Federal St.
Davenport, Iowa

Gentlemen:
I am going to build a and enclose 10c to cover postage and mailing on your

Book of Certified Plans



Lumber and Millwork for this 7-Room House, \$1,038

Name.....
Town..... State.....
Street..... Occupation.....

When Writing Advertisers Please Mention the American Carpenter and Builder.

any other class of material, owing to the ease with which it conforms to the shape of the work. This reinforcing is made in any width up to 6 feet.

Another reinforcing product of the Buffalo Wire Works Company is the Buffalo crimped wire reinforcing. This material is the original form of wire reinforcement for concrete from which all other styles have been evolved. It has lost none of its popularity, however, as it is made to suit any or all individual requirements, there being no limit to the different sizes of mesh and wire in which it can be woven. It can also be made into sheets or rolls of any desired size and shape. All waste is therefore eliminated and the contractor can order it to suit the layout of his job so that labor is saved in placing it in position.

For further information concerning these reinforcing materials, as well as wire lathing, fencing, etc., address the Buffalo Wire Works Company, Buffalo, N. Y.



New Catalog by Standard

We have received from the Standard Scale & Supply Company a copy of their latest catalog which was issued around the first of last month. This is a very attractive catalog number and details in complete form the entire "Standard" line of concrete mixers and contractors' hoists.

This company are manufacturers of low charging mixers of the batch type. Among one of the mixing machines they are making is what they term their "Standard" low charging mixer with "cart charger."

This mixing equipment is especially designed for rapid work and to do away with the use of wheelbarrows for bringing the materials from the piles to the mixer. Several carts, each having capacity of one batch for the mixer, are used and are taken to the piles and the proper proportions for one batch

of stone or gravel, sand and cement are placed in the carts. By using the hoist at the mixer with a rope or cable for attaching to the carts, they are brought on to the mixer platform where the complete batch is dumped into the mixer as soon as the previous batch is discharged. The cart is then taken back by the man who guides it to the mixer and the rope removed from the empty cart and attached to another loaded cart and the process is repeated. By using several carts, the workmen shoveling or filling them can always load the empties and have several batches ready if there is a few moments delay at the mixer, for moving or for any reason.

Standard mixers are so-called low-charging mixers from the fact that they are built low and so designed that they can be charged directly from barrows, requiring only slightly inclined runways instead of being high above the ground.

The "Standard" full line, includes, in addition to their batch concrete mixers which are furnished with steam or gasoline engine equipment, scales, steam engines and boilers, gasoline engines, contractors' hoists, wheelbarrows, carts, trucks, etc.

A copy of their new No. 144 catalogue can be had by addressing the company—the Standard Scale & Supply Company, 1345 Wabash avenue, Chicago, Ill.—or from their offices in either New York, Philadelphia or Pittsburgh.

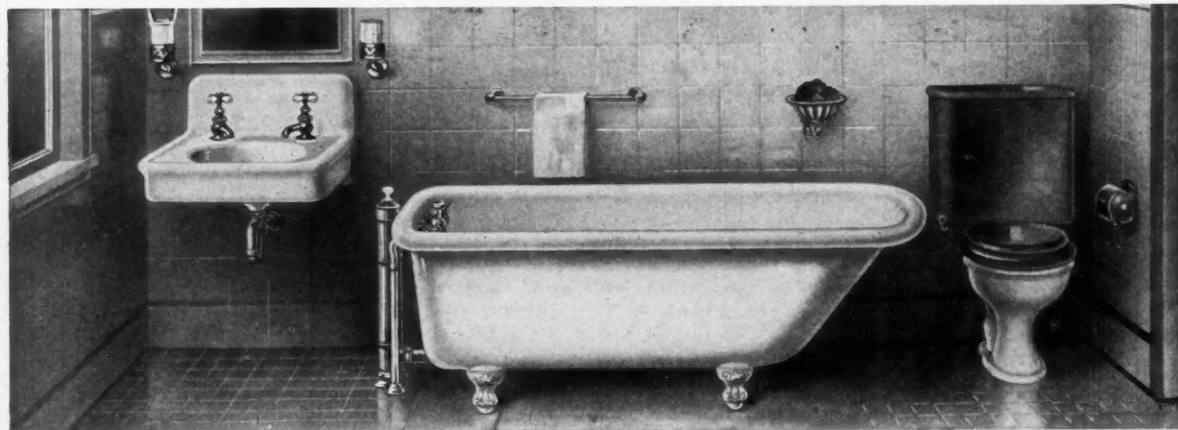


BOOKS RECEIVED

"Notes on Heating and Ventilating"

By John R. Allen, Prof. of Mechanical Engineering,
University of Michigan. Published by
"Domestic Engineering," Chicago.

The present is the third edition of this well-known work. Those who are acquainted with the former editions pronounce it a thoroughly reliable book on this important subject.



The rent agent calls attention to the Wolff Plumbing Fixtures as the best guarantee to the prospective tenant of the high grade of the plumbing system—indeed, the type of the whole building is many times inferred from the use of WOLFF material throughout.

The worries from "assembled" plumbing, contrasted with the perfect service of the all-built-by-one-house Wolff Plumbing, makes it easy for the architects to use Wolff specifications.

L. WOLFF MANUFACTURING COMPANY

MANUFACTURERS OF

PLUMBING GOODS EXCLUSIVELY

The Only Complete Line Made by Any One Firm

General Offices
601-627 W. Lake St., Chicago
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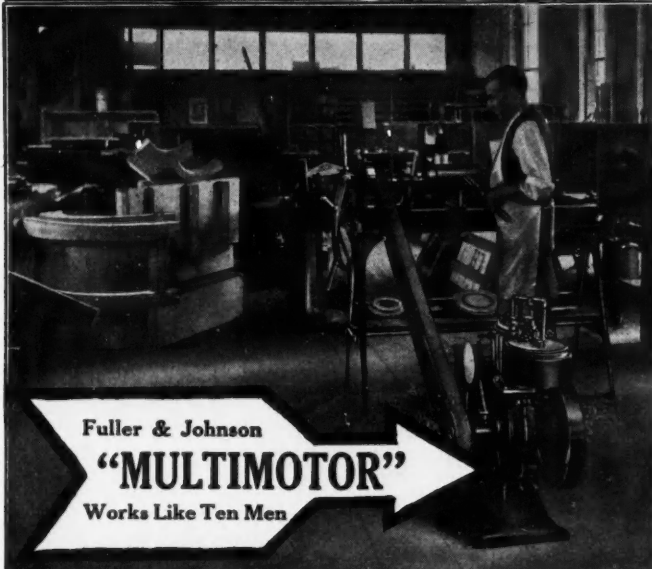
Cleveland, Ohio
Washington, D. C.

Kansas City Mo.
Cincinnati, Ohio

Buffalo, N. Y.
Dallas, Texas

When Writing Advertisers Please Mention the American Carpenter and Builder.

Stop Pedal-Pushing and Crank-Turning!



Fuller & Johnson
"MULTIMOTOR"
 Works Like Ten Men

Let the Fuller & Johnson "Multimotor" turn the wheels in *your* shop. It will turn them quicker and easier than three men, at a cost of *less* than a cent an hour. This wonderful engine is small in size but a giant in power.

Day in and day out this mighty little worker goes on piling up profits for its owner.

It never gets sick or tired—never wants a "raise"—never wants *anything* but a few cents' worth of grocery-store gasoline and a little lubricating oil. On this fare the "Multimotor" runs all hand-power or foot-power machines—jig saws, lathes, emery wheels, grindstones, drills, etc.

The "Multimotor" is "just-what-the-doctor-ordered" for carpenters, contractors and owners of small shops.

Fuller & Johnson "MULTIMOTOR" Shop Engine

In design, material and construction the "Multimotor" equals the best automobile engines. It is the simplest, neatest, strongest and most reliable little engine ever built. Comes to you *complete*—there's no "extras" to buy—nothing but gasoline and lubricating oil.

Safe Portable Power

The "Multimotor" is air-cooled, fool-proof and cannot freeze or overheat. Every important working part is protected by dust-proof case. It is a marvel of simplicity and needs no attention while running.

The "Multimotor" only weighs 250 pounds and is easily moved anywhere. Mount it on trucks and pull it wherever the job is. For *indoor* use, *outdoor* fuel tank can be supplied if desired, insuring perfect safety.

This marvelous power-maker is making machinery hum all over this continent. Set it anywhere, fill the tank, oil up and start the engine. It is work-hungry all the time.

Engines for Every Use

We are the builders of the famous Farm Pump Engine, which is practically the same as the "Multimotor" with pumping gears added. Needs no belts, arms, jacks or special platform. Pumps 270 to 2,450 gallons every hour.

We've just brought out a new line of high-grade, popular-priced gasoline engines which meet the requirements where larger engines than the "Multimotor" are needed. Prices are absolutely the lowest at which high-grade engines can be sold for.

Send for FREE Engine Book

Write for full information about the "Multimotor" and Farm Pump Engine, also our new line of popular-priced, high-grade, all-purpose engines.

If interested in large engines, ask for catalog of Fuller & Johnson's Famous Double-Efficiency Engines.



Power "on tap" for
 less than a cent
 an hour with a
 "Multimotor"

"Handy as a Pocket
 in a Shirt"

Patented in the United States, Canada and other foreign countries. Other patents applied for.

FULLER & JOHNSON MFG. CO.

7 Ames Street
 (Established 1840)

Madison, Wis., U. S. A.

When Writing Advertisers Please Mention the American Carpenter and Builder.

\$2.50 for a Simonds Saw



That isn't too much to pay for a first class saw. Manufacturing cost and cost of material fix the price of such a saw. Simonds Steel is the most uniform and finely textured edge-holding steel that we turn out of our Simonds Lockport Steel Mill. The handle is selected apple wood, nicely carved and highly polished.

To grind the blade to an accurate and true taper from cutting edge to back and from heel to point; to properly form and file the teeth; to give the blade a finishing touch of high polish and etch the name "Simonds" on it; are matters that require workmen of experience and skill. With a saw made by such men you can do your best work.

The saw that hangs right, doesn't bind in the cut, takes no more kerf than necessary, cuts evenly all along its edge, and holds its cutting edge for an extra long time between filings, is the economical saw for you to buy.

Such a Simonds Saw you can get in either Cross-Cut or Rip style tooth, any standard number of points per inch, in 26-in. length, for \$2.50; other lengths corresponding prices.

We sell direct only where Simonds Saws are not carried in stock by local Hardware Dealers.

Each Simonds Saw is packed in a separate case. The case is a neat, convenient way to carry the Saw, and is often kept by Carpenters for just this purpose.

If you have not received a copy of Simonds Carpenter Guide, write us and we will send one free. Are you buying Simonds Saws from your local dealer?

Simonds Manufacturing Company

Fitchburg, Mass.	Chicago, Ill.	Montreal, Que.
New York City	New Orleans, La.	Seattle, Wash.
Portland, Ore.	San Francisco, Cal.	London, Eng.
Vancouver, B. C.	Lockport, N. Y.	St. John, N. B.

When Writing Advertisers Please Mention the American Carpenter and Builder.

A New Process for Protecting Metal

Lohmannizing—it is called—and it should be of intense interest to every builder. Galvanized metal is extensively used in construction work now-a-days and practically all are thoroughly familiar with and understand the galvanizing process.

What is said to be a superior protecting process cannot help but create considerable attention among those dealing in, or actively using, galvanized sheets; and, in order that this new method and the results it effects may be well under-



Cross Section of Hot Galvanized Sheet, Magnified 65 Times. Showing that the Protective Coat is Simply a Covering Such as a Coat of Paint Would Be



Cross Section of Lohmannized Sheet, Magnified 65 Times, Showing Permeation of Sheet by the Alloy

stood, a brief comparison of the lohmannizing and galvanizing processes, including the precise and superior action of the former, is given.

The exact differences between galvanizing and lohmannizing is found in the difference between a layer and an amalgamation; for, as is well known, galvanizing coats the sheet while lohmannizing causes the protective and protected metals to blend and become as one.

References to the cross section of galvanized sheet, magni-

CAST IRON COLUMNS

IN ALL LENGTHS UP TO 12 FEET
CARRIED IN STOCK

CHEAPER
THAN WOOD,
STRENGTH
AND
DURABILITY
CONSIDERED



A-5
Special Cap

FIRE AND
WEATHER
PROOF
PRACTICALLY
INDES-
TRUCTIBLE

Immediate shipment will be made on orders for cast iron columns from our stock as follows:

Net Prices F. O. B. Foundry, Coshocton, Ohio

	A-3 Plain Cap and Base	A-4 Moulded Cap and Base
5 inch columns 12 feet long, each	\$ 6.40	\$ 7.10
7 " " 12 " " "	9.60	10.60
9 " " 12 " " "	13.00	14.50

The above prices are given on a column 12 feet long over all including cap and base. For columns of different lengths deduct per foot

5 inch columns	\$.25
7 " "35
9 " "50

A-5 Special Cap, each, 5-inch \$1.75, 7-inch \$2.50, 9-inch \$3.25

Prices on larger size columns on application.

A-3 Plain Cap
and Base

A-4 Moulded
Cap and Base

Safe Load in Pounds for Cast Iron Columns

Made Up from Base and Top Castings	5-inch Column		7-inch Column		9-inch Column	
	Cap and Base 10 in. Square		Cap and Base 12 in. Square		Cap and Base 14 in. Square	
	Approximate Weight	Capacity	Approximate Weight	Capacity	Approximate Weight	Capacity
Length						
6 Feet	135 Pounds	38,400	222 Pounds	71,800	288 Pounds	90,500
6 Feet 6 inches	145 "	37,000	239 "	69,800	310 "	90,500
7 Feet	155 "	35,600	256 "	69,200	332 "	90,500
7 Feet 6 inches.	165 "	34,200	273 "	67,600	354 "	90,500
8 Feet	175 "	32,900	290 "	65,500	376 "	90,500
8 Feet 6 inches.	185 "	31,500	307 "	64,500	398 "	90,500
9 Feet	195 "	30,300	324 "	62,900	420 "	90,500
9 Feet 6 inches.	205 "	29,000	341 "	61,300	444 "	89,100
10 Feet	215 "	27,800	358 "	59,700	466 "	87,400
10 Feet 6 inches.	225 "	26,600	375 "	58,100	488 "	85,700
11 Feet	235 "	25,500	392 "	56,500	510 "	84,200
11 Feet 6 inches.	245 "	24,400	409 "	54,900	532 "	82,500
12 Feet	255 "	23,300	426 "	53,400	554 "	81,000

JAMES B. CLOW & SONS

HARRISON STREET BRIDGE, CHICAGO

FOUNDRIES: COSHOCTON, OHIO.

NEW COMERSTOWN, OHIO.

SAVE THIS PAGE FOR FUTURE REFERENCE.

OTHER CAST IRON SPECIALS WILL FOLLOW

When Writing Advertisers Please Mention the American Carpenter and Builder.

fied 65 times as illustrated, shows that the zinc is merely a layer having no stronger adhesive powers than a good coat of paint. The sponsors for this new process claim that on iron and steel, zinc when thick—as it should be—cracks readily; when thin it is porous—in each case the sheet is imperfectly protected. Zinc and iron have a natural aversion for each other, and galvanizing has no method of creating an affinity between the two metals. The "pickling" in galvanizing is supposed to be a cleaning process. In reality it merely cleanses the surface of the sheet, and leaves the thousands of microscopic pores still filled with foreign matter. Acid from the pickling is frequently evident after the sheet has been through the washing bath, and this acid, together with the impurities in the pores, occurs between the zinc layer and base metal. This adulteration causes oxidation, the coating is bulged out from the sheets, and finally crumbles and chalks, leaving the bare sheet exposed.

By the Lohmann process, on the other hand, so they claim, the alloy is made to penetrate into the most minute pores and crevices, and to blend with the sheet so perfectly that the two metals are inseparable. The key to this amalgamation is the Lohmann bath, which cleans the pores, as well as the mere surface, of the sheet, and deposits throughout an amalgamating agency which reverses the natural iron aversion for members of the lead family. Then, when the sheet is immersed in the molten alloy this amalgamating element evaporates, carrying with it all oxidizing agents, and creating a vacuum in all the pores and cavities. Since Nature does not allow a vacuum, the alloy, of course, forces its way into every opening, and blends with the sheet.

A glance at the illustration of sheet lohmannized with zinc, magnified 65 times, shows permeation of the sheet by the zinc alloy. Sheets lohmannized with lead show the same extent of penetration as when zinc is used but for corrosion-

resistance the lead sheets are by nature superior to those lohmannized with zinc. For while zinc is naturally soluble in acids, lead is absolutely non-corrosive in the presence of all acid conditions of any atmosphere.

Also lead is much more elastic than zinc, and a sheet lohmannized with lead will stand any kind of strain, to the breaking point of the sheet, without in any way marring the lead surface.

Brine, coal smoke, even sulphuric acid in its most powerful form, have no effect on it.

This lohmannizing process is controlled by the Brier Hill Steel Company of Youngstown, Ohio, and further particulars regarding it and the securing of license for the process of making lohmannized sheets may be obtained directly from the company.



Niagara Junior Wall Plug

The illustration shown herewith shows the new Niagara Junior wall plug, made by the Niagara Falls Metal Stamping



Works, Niagara Falls, N. Y. It is galvanized, and is intended for building into walls of brick, stone, and concrete, and can be put in place in one-tenth of the time it takes to take out mortar and drive in a wooden plug, and is

four fold more secure. It takes a nail to perfection and holds it with unyielding grip. By its use furring or lathing strips, wall strips, shelf brackets, base boards, window and door frames and casings, and any other attachment to walls, can be fastened and anchored with great convenience and security.

Attention Mill Men!

We are making a specialty of built-up work for interior trim, panelled and flush wainscoting, veneered casings, base-boards, etc., in both plain and figured woods.

Can build up to 7' x 16'. Send in your specifications; we would like to quote you.



The F. Eggers Veneer Seating Co., TWO RIVERS, WISCONSIN

When Writing Advertisers Please Mention the American Carpenter and Builder.



**Shingles,
Slate and Tile
become loose
and blow off—**

Certain-teed Roofing

Quality Certified—Durability Guaranteed

**is tighter than tight—sold under a 15-year guarantee
—costs less money—put up in rolls or shingles**

YOU know and we know that wood shingles warp in the sun and rain, become loose and blow off—that the quality of wood shingles is not what it used to be. While tile makes a handsome roof, it is heavy and expensive—it will not stand sudden changes in temperature, and as a consequence the repair expense, on account of the cracking and breaking of the clay tiles, is something enormous. Tin roofing is expensive to apply, requires constant repair of broken joints and rusts out completely in a short time. Corrugated metal roofing, because of the poor galvanizing used today, requires constant repainting, and in spite of this will soon rust out and go to pieces.

**Certain-teed Roofing is put up in both rolls
and shingles, and guaranteed for 15 years**

Save money and get a better quality of roofing. Ready roofing—Rubber, Mica or Gravel finishes—on account of small expense of application, *low cost*, really wonderful durability (having been tested on the roof for twenty years) will save you money and insure your getting a *better* quality of roofing.

Millions of rolls of Certain-teed Roofing now giving satisfaction on the roof. Remember we are not coming to you with an untried, experimental roofcovering—Certain-teed Roofing is weatherproof—millions of rolls are in actual use on the roofs all over the world today. There was a time when ready roofing was an experiment—but that day was passed years ago with us.

When you buy ready roofing from your local dealer see that the Certain-teed label shown on the roll to the left is pasted on each roll and you will be protected from paying double what the roofing is worth and be assured of getting roofing of maximum durability.



General Roofing, U.S.A.'s
Largest Manufacturer of
Roofing and Building Papers.

GENERAL ROOFING MFG. COMPANY
 York, Pa. Marseilles, Ill. E. St. Louis, Ill.
 Minneapolis, Minn. San Francisco, Cal.

Try Certain-teed Roofing at our risk. The fifteen-year guarantee protects you in every detail. Certain-teed Roofing means quality certified and durability guaranteed. So you really are trying it at our risk. See your local dealer today—insist on this guarantee on every roll.

At Least Investigate

—every far-sighted person can see the wisdom of knowing about this wonderful, modern product which saves money, time and labor and is indestructible. So send in this coupon for our book B-T3, "**How to Build for Less Money**"—it is free for asking—and it will tell you all about this roofing.

Free Book Coupon

Without obligation on my part, please send me your book, B-T3, "**How to Build for LESS Money**," and I will read it. This book is to be sent to me postpaid and absolutely free.

Name _____
 City _____
 State _____





Insure Yourself AGAINST Plaster Troubles

Use our Hard Wall Plasters and be certain of the profit you make on every job. Don't let your profit slip away gradually because of repair work on plastering jobs that won't stand up under service. Repair work foots up big for you—it means money lost on the job in the end.

In using heavy, cracky, lime mortar plasters you are inviting all sorts of plaster troubles and they will bob up at you every day.

You have to make your jobs good to keep your customers satisfied. A poor job is your worst enemy, while good plastering jobs bring you in business every day.

Just bear in mind what we are telling you—you cannot turn out positive, permanent, satisfactory plastering jobs with heavy, cracky, lime mortar plasters. They always require constant repairing.

With our Hard Wall Plasters you'll do a job once and only once. No repairing or re-fixing of any sort. They cost you much less in the long run because they save you time and money on every job.

Our Hard Wall Plasters—Climax Wood Mortar and Hercules Wall Plaster—will produce certain, no-kick results for you. They are made entirely by us from our own gypsum rock. They are the most satisfactory plasters you can buy. Read just what they are.

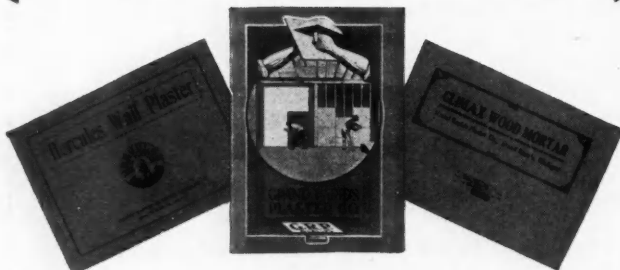
Climax Wood Mortar

is extensively used. It is a wood fiber plaster made of pure gypsum rock. It is the best plaster made. The fiber adds about one-third to the bulk of the plaster, making it cover a greater area with less weight and maximum solidity and tensile strength. It is absolutely fire-proof. Its density prevents vermin. It is not affected by water. It is durable, flexible and pliable. Plastic and very easy to spread—any plasterer can apply it. It is adhesive and permanent. It does not contain one particle of sand.

Hercules Wall Plaster

is a gypsum rock hair fiber plaster—we do not sand at the factory. It makes a wall that is dense, durable, hard, tough and economical. It is absolutely fire-proof. It dries quickly after applying. It spreads better and with less waste than any other wall plaster. We use only high grade hair in its manufacture and it contains no chemicals, acids or vegetable matter.

These Books Sent To You—FREE



We want to send you a set of these books. They are sent FREE and there is no obligation on your part in asking for them. We simply want you to be sure and learn all about Hard Wall Plastering. Know just exactly what it is. Know the many advantages Hard Wall Plasters have over heavy, cracky, lime mortar plasters.

These books will also explain to you in detail our Climax Wood Mortar—Hercules Wall Plaster—Superior Wood Fiber Plaster—Gypsum Wall Plaster and Sackett Plaster Board. With these books we will send you our room measurement booklet—from it you can tell at a glance the number of square yards in a room.

Drop us a line today. Just say you want the set of Hard Wall Plaster booklets we have for you. With them we will send you the name of your nearest dealer handling our plasters. He has a complete stock of them so you'll be able to get G. R. plasters immediately.

GRAND RAPIDS PLASTER COMPANY
GRAND RAPIDS MICHIGAN



"Remember the
TRADE MARK"

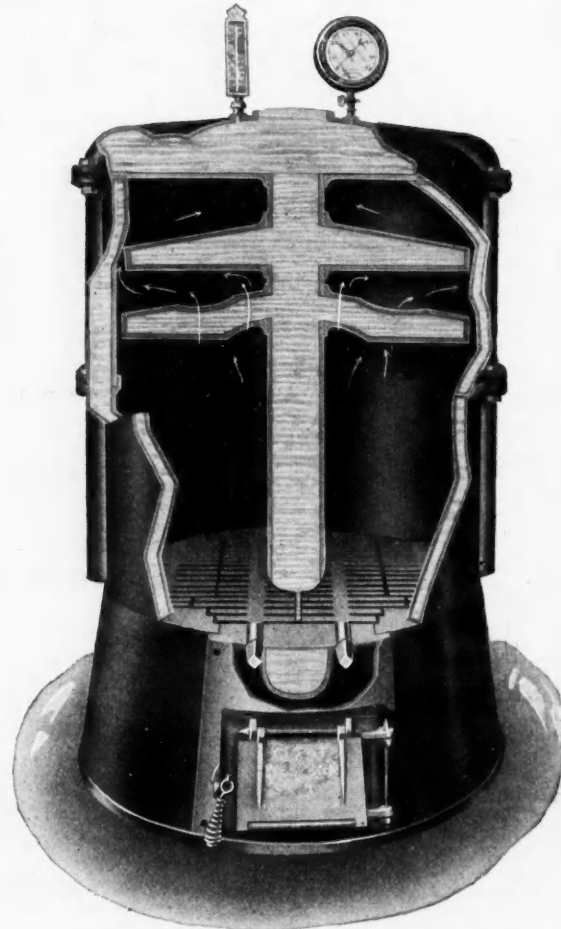


N. B. We solicit inquiries from Michigan, Ohio, Indiana, Illinois, Wisconsin, Kentucky, Tennessee, West Virginia, and Pittsburgh, district, Pa., only. Freight rates will not permit shipment to other territory.

The Sterling System of Hot Water Heating

The system of hot water heating which is termed "The Sterling System" is manufactured by the Consumers' Heating Company of Marshalltown, Iowa.

This system is in extensive use and has been giving very general satisfaction for a number of years past. The "Sterling" heater itself is extremely simple and this simplicity makes for a source of great economy in the actual using of the heater.



"Sterling System" Water Heater

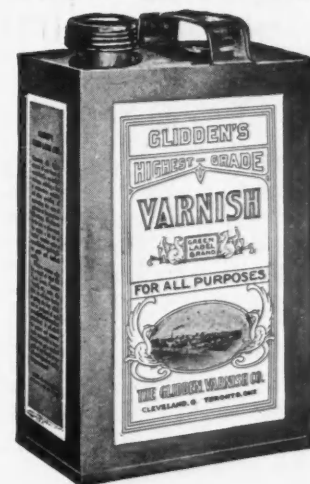
The "Sterling" system in use gives a clean, sanitary, even heat. The principle of construction of the heater provides that fully 90 per cent of the aggregate fire surface is direct heating surface. This is gained through the use of the center column running up through the center of the fire and the fact that the entire shell of the boiler is cast hollow.

The former feature carries one-half of the amount of water that passes through the heater through the hottest possible place in the fire. The latter feature spreads a thin sheet of water over a prime heating surface extending from base of heater to dome and over crown sheet at top. The fire-pot of the heater is deep and provides for a large bed of coals. The combustion space above the fire is high and this allows of perfect combustion with the use of any kind of fuel.

AMERICAN CARPENTER AND BUILDER readers interested in the heating problem and desiring full information regarding the complete Sterling system can obtain from the manufacturers—the Consumers' Heating Company, Marshalltown, Iowa—a very attractive, interesting booklet issued by the company and which they entitle the "House of Perpetual Summer." In addition to this booklet complete particulars concerning their boilers, radiators, valves, pipe fittings, etc., will be sent.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Good Business for the Architect and Builder



IT PAYS the Architect to *write* Green Label Varnishes *into the contract*. It pays the Contractor and Builder to *make sure* that genuine Glidden quality goes on the *job*.

Not "*or equivalent*"—for there is *no* equivalent.

It's this matter of proper finishing—of beautiful permanent protection of the woodwork and floors that insures the future satisfaction of the owner—and reflects *lasting* credit on the man who wrote the specifications and the man who carried them out.

So it is good business to go by the Green Label—*always*.

The Glidden name has stood for *quality* varnish for nearly half a century. We made our standard the highest—and *kept* it there.

We do not know "all there is to know" about Varnish—never expect to. But we've been busy learning all the time—*Perfecting Good* Methods, supplanting *Good* materials with *Better* ones which we search the world to secure regardless of cost—and training here, under Glidden guidance, a corps of expert varnish makers and chemists—every man of them a specialist—the greatest varnish organization in America.

Glidden's Green Label Varnishes of Vitality

are full of life, elasticity, durability. The Glidden way of perfect blending and refining—of long time aging—means a product of perfect *Uniformity*. Glidden Varnishes dry just quickly enough but not too quickly, and set without dust. They bring out *all* of the natural beauty of the wood. They are proof against *Hard Knocks* and *Heel Nails*.

There's Quality in Every Drop

Five splendid specialties—each grade has its special purpose:

M. P. Durable Exterior	- -	\$4.00 Per Gallon
M. P. Durable Interior	- -	3.00 Per Gallon
M. P. Durable Floor	- -	3.00 Per Gallon
Velvet White Enamel	- -	5.00 Per Gallon
Superior White Enamel	- -	5.00 Per Gallon

The Glidden Varnish Company

Factories: CLEVELAND OHIO TORONTO, CANADA
Branches: NEW YORK CHICAGO LONDON

When Writing Advertisers Please Mention the American Carpenter and Builder.

The Parks Ball Bearing Woodworkers

One of the most complete line of woodworking machines manufactured is that made by the Parks Ball Bearing Machine Company of Cincinnati, Ohio.

This company now build foot, hand and belt power woodworking and saw machines having various attachments designed especially for practical shop use for carpenters, cabinet workers and woodworkers in general. A particular feature of all their machines is that they are ball bearing. The claim made for these ball bearing machines is that they save about half the power. The machines will stand a high speed under heavy pressure.

Shown here is the Parks heavy double table circular saw, 6-inch or 12-inch jointer and 22-inch band saw with reversible spindle shaper, swing cut-off saw, 3-inch jointer or moulder, groover and tenoning and boring attachments.

This is, of course, a belt power driven equipment. It embodies eight machines ready for instant use and additional attachments if wanted can be added. Specifications include from front edge of jointer plates to rear end swing cut-off saw, measurement of 9 feet 4 inches. The total width from outside edge of shaper table on left, including tight and loose pulleys on right side is 65 inches. The width of table proper is 43½ inches.

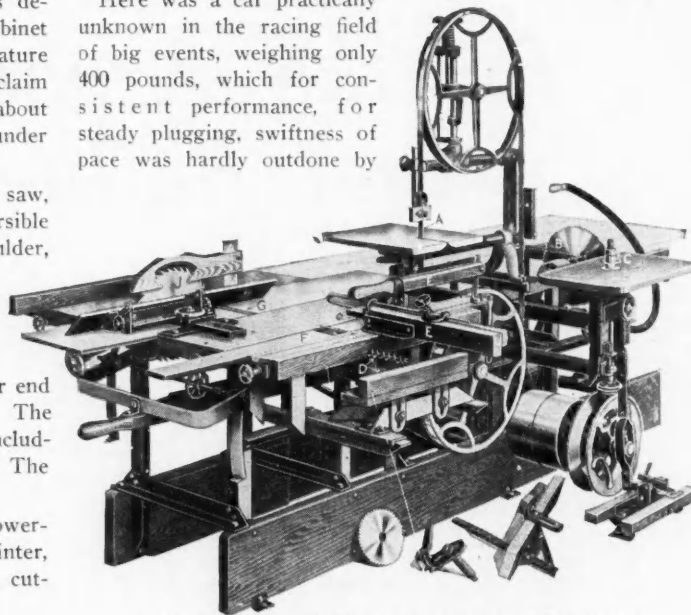
Regular equipment includes circular saw raising and lowering mandrel, band saw, 3-inch jointer, 6 or 12-inch jointer, tilting guide, tenoning guide, boring attachment, swing cut-off saw, reversible spindle shaper.

The complete line of Parks ball bearing woodworking and saw machines is illustrated and detailed fully in an attractive 64-page catalog issued by the company. This catalog can be had by addressing the Parks Ball Bearing Machine Company, Fergus street and C. H. & D. Ry., Cincinnati, Ohio.

The Race is not Always to the Expensive

For thousands and thousands of Americans who are automobile hungry but are shy on the price, one of the most interesting developments of the Indianapolis speedway race on Decoration Day was the showing made by a Schacht car.

Here was a car practically unknown in the racing field of big events, weighing only 400 pounds, which for consistent performance, for steady plugging, swiftness of pace was hardly outdone by



Parks Heavy Double Table Combination Woodworker

any car in the race, regardless of price, power, weight or any other consideration. That the Schacht finished fifth in this galaxy of the picked machines of the world is enough to put it on the map once and for all among the most desir-

NO PAINT *Ever* Needed on this Roofing



The need of coating or gravel on a roofing is positive proof of its weakness—positive proof that the materials in the roofing would dry out, rot, rust, decay or otherwise deteriorate without such protection—positive proof that the roofing itself can't last long unless protected with a *mineral*.

Instead of a perishable animal or vegetable material only temporarily protected with a *thin layer of mineral*, such as paint, slag or gravel, J-M Asbestos Roofing is *one solid mass of minerals*. Not a particle of perishable material in it.

J-M Asbestos Roofing consists of layer-on-layer of pure Asbestos Felt securely cemented together with genuine Trinidad Lake Asphalt. Asbestos is a rock, or stone, and of course stone needs no coating to make it last. And the Asphalt Cement between these stone layers is the same mineral that has withstood the severe duties of street paving for forty years. So J-M Asbestos Roofing is an *all-mineral* roofing.

J-M ASBESTOS ROOFING

is the *only* ready roofing that never requires a single cent's worth of coating or other protection. Its first cost is its *only* cost. Other ready roofings are a continual trouble and expense—for the paint and gravel wash and blow off and have to be renewed every few years.

Because of its mineral or stone construction, J-M Asbestos Roofing is also rust-proof, rot-proof, and acid-proof. And fire that will melt iron won't ignite this roofing.

We sell J-M Asbestos Roofing direct from our nearest Branch where we have no dealer.

GET THIS CURIOSITY FREE

We want you to see the curious Asbestos rock which yields the long, soft, pliable yet practically indestructible fibers from which we make J-M Asbestos roofing, Theatre Curtains, Stove Mats and hundreds of other Asbestos Products. We know it will convince you better than anything we can say that a roofing made of this indestructible stone must also be practically everlasting.

Simply send a postal to our nearest Branch and say "Send samples of Crude Asbestos and your handsomely illustrated Catalog No. 303."

H. W. JOHNS-MANVILLE CO.

Baltimore
Boston
Buffalo
Cincinnati

Chicago
Cleveland
Dallas
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Minneapolis
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When Writing Advertisers Please Mention the American Carpenter and Builder.

The "ABC" of BEAVER BOARD Construction

The seventh of a series of twelve monthly talks to carpenters about the practical use of *Beaver Board*, the pure-wood-fibre wall and ceiling material that is durable, economical, artistic; has none of the disadvantages of lath, plaster and wall-paper; and is appropriate to any type of building new or old.*

Beaver Board is essentially a proposition for Carpenters and Builders

CHAPTER VII

Architectural Service

THE hustling carpenter who wants to get inside work all the year round, build up a reputation and establish a profitable and growing business, should investigate what we are doing in this line.

The service of our Architectural Designing Department is absolutely free—and is even more valuable to the carpenters than to the individual users.

This is the way to get the most out of it:

1. Send for the booklet, "Beaver Board and its Uses" (see illustration 1) and get all the facts about the wonderful possibilities of Beaver Board.
2. With the book you'll get a blank application for estimate (see illustration 2) which you can quickly fill out, giving dimensions of room, distances of joists and studs, position of openings, etc. If you are doing a whole house, tell us the number of rooms when you write for the booklet and we'll send extra blanks.
3. When we get the blanks or plans we will send you complete estimate and full instructions. We will also send blue prints (see illustration 3) showing an appropriate scheme of panel arrangement that will be artistic and work out most economically. *This puts you under no obligation whatever.*
4. All necessary instructions for applying Beaver Board are carefully packed with each shipment; and full details as to nails, decorative strips, mouldings and plate-rails, panel sizes, etc., are also explained in the booklet.

By making use of this free service, many a man has made a reputation for himself as an expert at Beaver Boarding. You can do it. Get busy. It's pleasant work, it's profitable, and the demand for it is spreading at a tremendous rate. Write today.

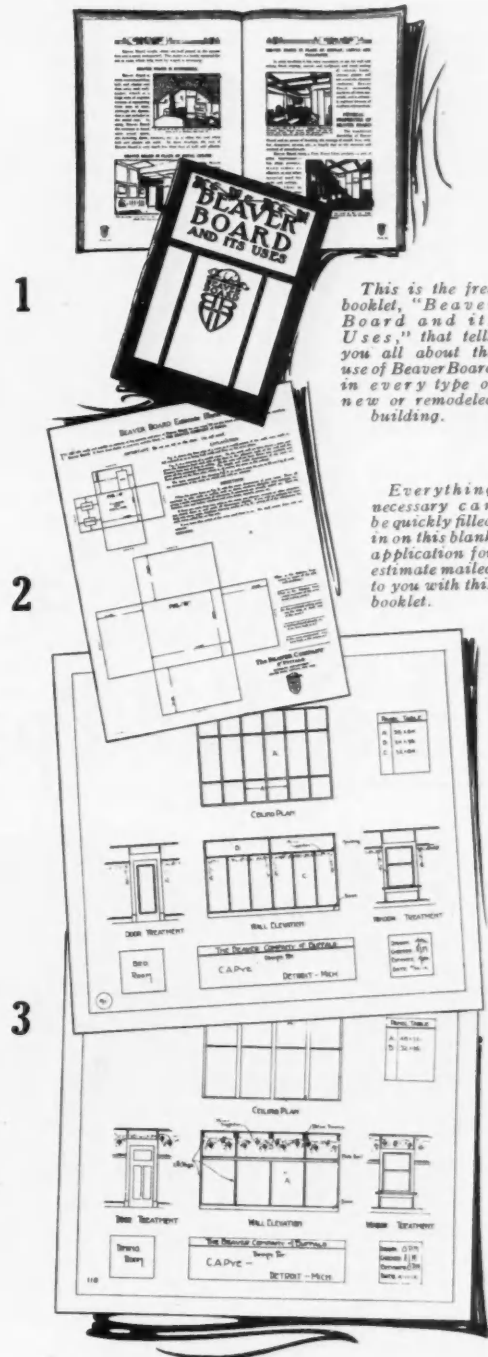
*These chapters began in the January number. We'll send you duplicates of any you've missed.

THE BEAVER COMPANIES

Address all correspondence

UNITED STATES 437 Beaver Road, Buffalo, N. Y.
 CANADA 377 Wall Street, Beaverville, Ottawa, Canada
 GREAT BRITAIN 4 Southampton Row, Russell Square London

When Writing Advertisers Please Mention the American Carpenter and Builder.



This is the free booklet, "Beaver Board and its Uses," that tells you all about the use of Beaver Board in every type of new or remodeled building.

Everything necessary can be quickly filled in on this blank application for estimate mailed to you with this booklet.

When desired, we send blue prints suggesting harmonious and effective panel designs, with full instructions for application.



TRADE MARK



Booth constructed of Ideal Wall Board, used by W. B. Brown & Co., Bluffton, Ind., for wood chandelier exhibit at Chicago household show.

Beautiful Panel Effects WORKED OUT WITH Ideal Wall Board

One of the modern building materials that every contractor and carpenter should know about is Ideal Wall Board.

For that reason, we ask you to write us for a sample, so that you can see how durable and well made it is; and for the illustrated booklet, so that you can see the charming effects that can be achieved with it.

The interior decorating tendency of today is away from the commonplace plaster and towards paneling.

No other material is so well adapted to paneling and other attractive effects as Ideal Wall Board.

The man who gets it in his house will be satisfied—yes, he'll be delighted with it—depend upon that.

He'll like it for its beauty, its durability, and its cost—which latter is less than that of lath and plaster.

So post yourself on Ideal Wall Board. Find out what it is and why it is being so widely used by writing for a sample and the booklet.

THE
Roberds Manufacturing Company
100 Railroad St., Marion, Ind.

able cars built. It has strengthened its place in the confidence and esteem of the motor public immeasurably by this performance.

Just one Schacht started, and one Schacht finished, and one Schacht was in the race and in the eyes of the watchers every minute. The time for the 500 miles was 6; 46; 28, an average of 73.8 per hour. And at the finish the Schacht was "as good as new," not a bolt or a nut loose. Nothing but tire trouble stopped the Schacht in its beautiful fly from hour to hour.

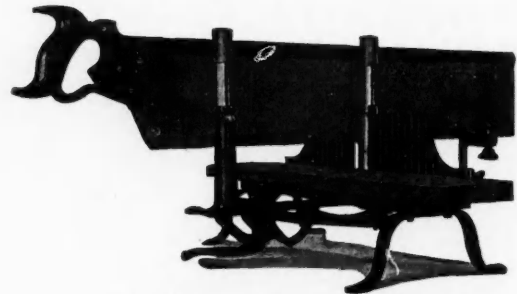
We say this means a lot to the general public as well as to the motorists because no car of such a low price has ever before won such a victory in such company. The natural inference is that "If the Schacht can do this it is good enough for me." That is what will occur to many who have thought they would wait for a car until they could pay the high price. Furthermore, it is a promise of even better things among the lower priced cars in the future.

Those on the inside have always had a wholesome respect for the Schacht, but few of us hardly expected quite as much as the Schacht gave us this time. Our congratulations to the Schacht Motor Car Company of Cincinnati, and to "Farmer Bill" Endicott who piloted their little crimson car to this triumph.

The Crown Miter Boxes

From the Crown Tool Manufacturing Company of Ottumwa, Iowa, makers of the Crown miter boxes, comes some circular matter which is descriptive of these Crown miter boxes and details their various superior features.

These Crown miter boxes have both a high and a low stop and saw can be raised 1½ inches above bed by release lever. A particular feature of this machine is that the release lever can be operated while holding the handle of the swinging



The Well Known Crown Miter Box

bar. This enables the operator to use one hand to hold stock and at the same time swing saw to any desired angle. The high stop holds saw 5¼ inches above bed while placing stock for cutting.

The machine has a positive center and octagon stop, also a graduated brass circle and any degree can be obtained very easily.

The release lever has an eccentric latch which locks the swinging bar securely at any place without the use of a screw driver or lever.

The Crown miter boxes are made of cast iron malleable iron and steel. They have oak bottoms ¾ inch by 5 inches by 24 inches. Extra lengths are made up specially. Crown miter boxes are manufactured in four sizes.

In addition to the making of Crown miter boxes the Crown Tool Manufacturing Company include in their varied line the manufacturing of saws, bevel try-squares, nest of saws, saw sets, folding handles, draw knives, ratchet braces, expansive bits, automatic screw drivers, automatic hand drills.

The company have a special agency proposition they are offering carpenters and builders and for particulars as to this and circular matter concerning the various tools of their making address the Crown Tool Manufacturing Company, Ottumwa, Iowa.

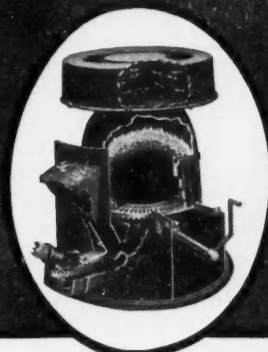
When Writing Advertisers Please Mention the American Carpenter and Builder.

Plan for an Underfeed NOW

GET READY TO

Cut Your Coal Bills

$\frac{1}{2}$ TO $\frac{2}{3}$



To Contractors and Builders

SEND us your building plans and we will furnish free engineering plans and advice as to actual cost of installation of an Underfeed. It will pay you to recommend the Underfeed. Millions who read national publications are seeing the following money-saving advice in the July issues.

"In these days of summer heat be wise. Prepare for the chill of an early winter by installing an **Underfeed** Furnace or Boiler. Plan to reduce your heating expense next winter. Act now. Don't wait for the fall rush. The Underfeed positively cuts coal bills $\frac{1}{2}$ to $\frac{2}{3}$. It has done it for thousands the past ten years, never failing to produce adequate, **clean, even** heat in the very coldest weather. Let us prove it." You, Mr. Builder, will add to your own reputation by specifying

THE PECK Williamson Underfeed FURNACES BOILERS

Underfeed systems are adapted for *all* buildings—large and small—Homes, Apartments, Churches, Stores, Theaters, Armories and Halls.

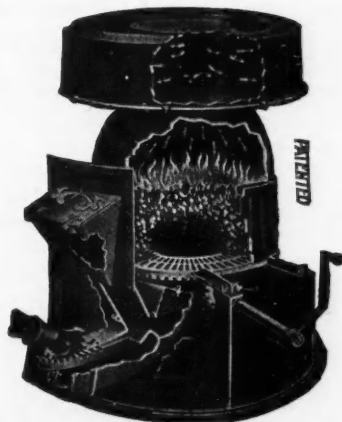
W. N. Chandler, University City, St. Louis, Mo., writes: "Three years ago I installed an Underfeed. My fuel bills ranged, previous to that time, between \$105 and \$120 a season. After the first season's use—1909-10—I was greatly surprised to find my bills reduced to \$48. The following year—1910-11—they were \$44, and this year with our extreme severe winter, \$56. I have no trouble whatever in heating my house to any desired degree."

Underfeed Boilers produce results as satisfactory as Underfeed Furnaces.

Howard Weiss, Seigfried, Pa., 1st Vice President Pennsylvania Ass'n of Postmasters, wrote April 19, 1912: "Last winter my two Underfeed Boilers saved me \$122 in coal cost."

The Underfeed is easily regulated and requires little attention. Fire is on top and in direct contact with the most effective radiating surfaces. Even heat results—no blanketing of fire with fresh coal as in ordinary furnaces. No alternating chill and heat. Always steady, *even* heat.

The Underfeed Furnace, with casing removed, cut away to show how coal is forced up under fire which burns on top.

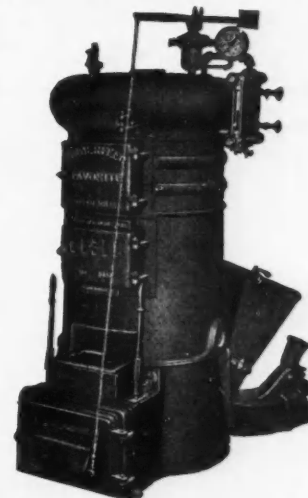


This illustration shows the Underfeed Boiler

The Underfeed soon pays for itself and then keeps on saving for its owner practically for a lifetime. Think what this saving means to you—coal bills reduced $\frac{1}{2}$ to $\frac{2}{3}$ every winter. In the Underfeed, cheap slack soft coal and pea and buckwheat sizes of hard and soft coal yield *more* heat, *cleaner* heat and more *even* heat than high priced coal in other heaters.

Smoke and gases, wasted in other heaters, pass up through the fire in the Underfeed, are consumed, producing more heat. This means perfect combustion—no gases or smoke, no soot, no clinkers and but few ashes.

Every Contractor and Builder should send for the Underfeed Furnace Booklet or Boiler Catalog and fac-simile letters of appreciation from Underfeed users—all FREE.



THE PECK-WILLIAMSON CO.,

436 W. Fifth Ave. - - CINCINNATI

When Writing Advertisers Please Mention the American Carpenter and Builder.

New Erie Hoist Booklet

We are in receipt of a new bulletin recently issued by the Erie Clutch and Pulley Company of Erie, Pa., which details in a very thorough manner their line of portable contractors' farmers' and builders' hoists; friction clutches; pulleys and couplings; and hangers.

The Erie people make a complete line of the above equipment and their latest booklet, through illustration and descriptive matter explains their machines in an interesting and instructive manner.

Carpenters and contractors interested in equipment of this nature can obtain complete information from the manufacturers direct. Address the Erie Clutch and Pulley Company, Erie, Pa.



An Extraordinary Roofing Fire Test

A crowd of about 600 in Houston, Texas, among which were the Fire Insurance Commissioner of the City of Houston, the Fire Marshall, and a large number of the most prominent architects and builders, witnessed a novel and very effective fire test of a ready roofing a short time ago.

A miniature house was built about 7 feet high by 6 feet wide, and covered on all sides with J-M Asbestos Roofing, as shown in Fig. 1.

The lower part of the building was embedded three inches in the ground, and around three sides fire wood was placed, as shown in Fig. 1. The fourth or open side of the structure, was left clear.

There was strong wind blowing, and when the kindling was ignited, and the fire well under way, as shown in Fig. 2, the fire made such an intense heat, that the large crowd surrounding the house had to retreat from the sides and rear to a distance of at least ten feet.

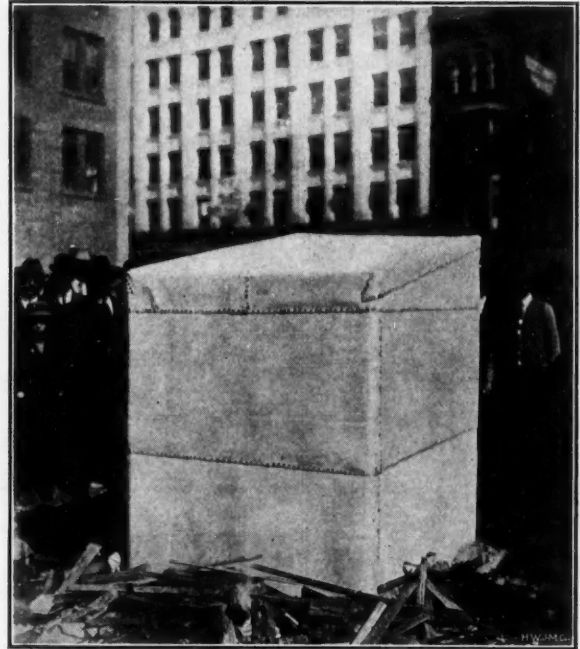


Fig. 1. Test House Covered with J-M Asbestos Roofing

During the test, while the flames were going all over the building, the spectators were invited to step inside the house and see how cool it was, and it actually was cool and comfortable with the exception of a little smoke which the wind drove within.

After the fire had been burning for about 15 minutes, it was extinguished. The roofing was not injured in the least, being only blackened by smoke. Then the ashes were removed, the



FIRE

Will not Spread
Sparks or Cinders
Will not Ignite

REX
FLINTKOTE
ROOFING

At Oakland, California, a severe conflagration broke out at the plant of Burnham-Standeford Company. An entire block, consisting of planing mills, machine shops, etc., was burned, with the single exception of a small portable house, as shown above, which was roofed with **Rex Flintkote**. It was such a severe test and so notable an example that our Western Representatives, W. P. Fuller & Company of San Francisco, put a large sign on top of it to call attention to this remarkable achievement.

Could you ask for more convincing proof than this?

Millions of dollars worth of property are annually destroyed by fire which might be saved by greater care in the selection of roofing material.

This is the opinion of the leading Boards of Fire Underwriters, who endorse **Rex Flintkote** as one of the most fire resisting prepared roofings on the market and accept it on the same basis as metal, slate or tile.

But is that all? Not by a long ways. To its extraordinary fire-resisting qualities must be added its unusual weather and storm resisting features.

The worst storm you can imagine cannot harm **Rex Flintkote**. We have pictures and letters to prove it. Write for them.

Isn't this the kind of roofing you want on your building?

Rex Flintkote will cost you a little more than many other roofings, but it will do more and it's worth more

Write today for booklet, A-C-7.

FLINTKOTE MFG. CO.

88 Pearl St.

BOSTON, MASS.

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A Varnish Text-Book Every Carpenter Should Send For

WE WANT every carpenter to own a copy of our free book: "Natural Woods and How to Finish Them." It will prove helpful in gaining a sufficient knowledge of varnishing to give intelligent advice.

Safeguard the final appearance of your handiwork by seeing that good varnish is used.

Many times the customer employs no architect. You are the chief advisor. The satisfaction for the entire job is up to you and you only.

Then is when you need to know good varnish from bad—even if you don't apply the goods yourself. Then and at many other times you find occasion to refer to as good

and true a book as "Natural Woods and How to Finish Them." When you come to do any work for yourself you will

certainly need it.

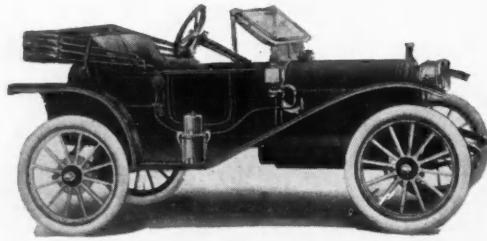
Send for a copy today. Give it a permanent place in your tool kit.

BERRY BROTHERS, Ltd., Detroit

BERRY BROTHERS' VARNISHES

"Natural Woods and How To Finish Them" Sent Free

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F. O. B. Detroit, with same power plant that took the world-touring car around the world—4 cylinders, 20 H. P., sliding gears, Bosch magneto. Equipped with top, windshield, gas lamps and generator, oil lamps, tools and horn. Roadster, 110-inch wheelbase, \$850. Long-Stroke "32" Touring Car \$900.

Hupmobile

\$750

We believe the Hupmobile to be, in its class, the best car in the world.

And the most modern machinery; the most skilled mechanics; the very best of materials; and engineering ability of the highest calibre are all enlisted in making it so.

Hupp Motor Car Company

1255 Milwaukee Avenue

DETROIT :: MICHIGAN

Canadian Factory, Windsor, Ontario

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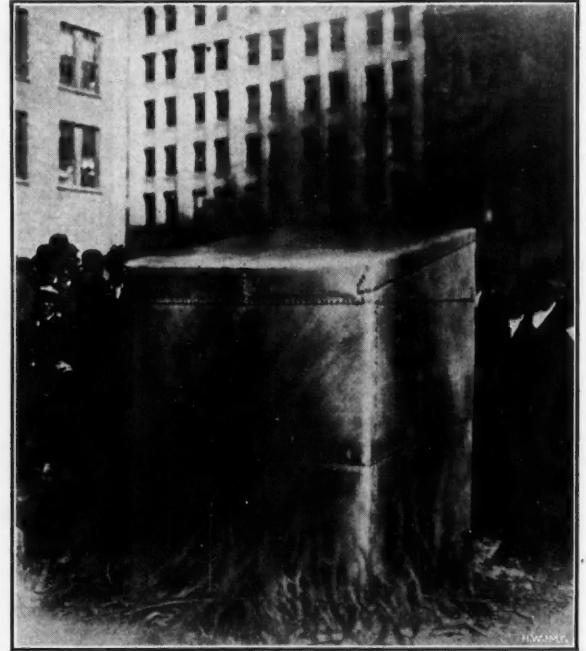


Fig. 2. The Intense Heat from a Wood Fire was Applied to the Asbestos-Covered House for Fifteen Minutes

roofing torn off where most blackened and, as shown in Fig. 3, the boards underneath were as fresh and in as good condition as when they had been put on, with the exception of a few spots where the natural sap of the pine had oozed out.

Mr. E. R. Parker, the fire marshal, was one of those who were inside the building during the fire test. The day before, he had unqualifiedly endorsed this roofing for use in the so-called fire district of Houston, an area about two miles in diameter, where a very destructive conflagration recently occurred.

The J-M Asbestos Roofing on which this test was made is manufactured by the H. W. Johns-Manville Co., whose home office is in New York, but who have an office in Dallas. This roofing is made of pure, long-fibred asbestos (stone) felt, securely cemented together with Trinidad Lake Asphalt—two practically indestructible minerals.

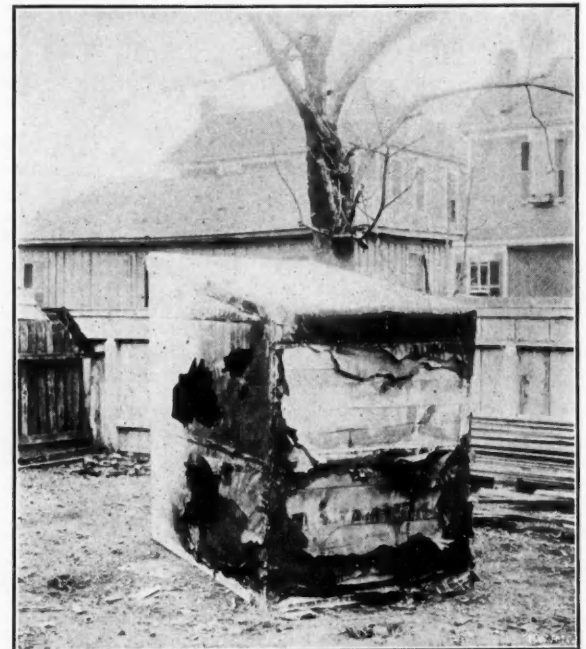
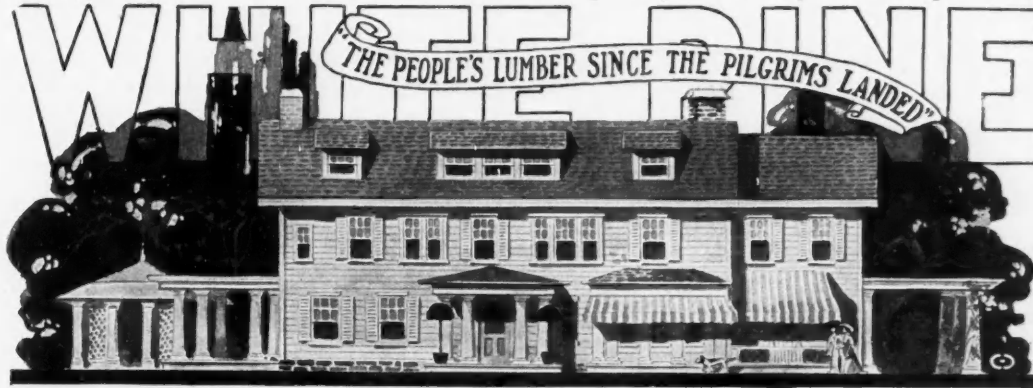


Fig. 3. After the Fire was Extinguished and the Roofing Torn Off, the Boards Underneath Were Found to be in as Good Condition as When First Put On

GOOD CARPENTERS KNOW

these Good WHITE PINE FACTS. Other folks are rapidly learning. And don't forget that notwithstanding the known **superiority** of WHITE (and NORWAY) PINE and the tremendous quantities of it used, there is still "plenty of it", *just as dependable as ever.*



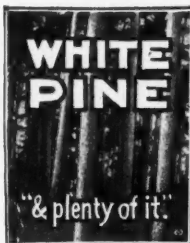
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STAIR RAILS



COLUMNS ETC



Insist upon White Pine for Your House

("The Wood America is Mostly Built of.")

The predominant use of White Pine in home building for more than 250 years demonstrates conclusively that this is the one wood chosen by the best judges for

Siding, Sash, Doors, Stair Railings, Exterior Trim, Pillars, Cornices, Pergolas.

Your carpenter will tell you it is the most *workable* wood. Your painter will tell you how well it takes and holds paint. Your own eyes will convince you of its beautiful texture, grain and finishing qualities.

The evidence of centuries of use (in buildings still standing) *proves* its durability.

Norway Pine, (the half-brother of White Pine) is the only wood that is "as good as White Pine" for most uses.

For sturdy, structural members of a house, such as roof-boards, studding, joists and sills, and for screen-doors and windows, Norway Pine is *ideal and its Cost is Low.*

The *kind* of wood you use is one of the most important factors in home building. Your architect will tell you how notably good White Pine is for all its proper uses.

Wherever carved wood-work is desirable, as in grilles, newel-posts, panelling, colonial pillars—White Pine is supreme—just as it has been for 250 years.

AND THERE'S "PLENTY OF IT" YET.

WRITE US FOR COPY OF NEW FREE BOOK "WHITE PINE VALUE IN HOME BUILDING."

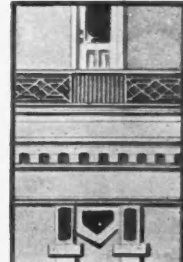
You will find it full of valuable ideas about how and why to use White Pine in **YOUR NEW HOME.** You can't afford to "go it blind" on this question. Write today for your copy of entirely NEW booklet.



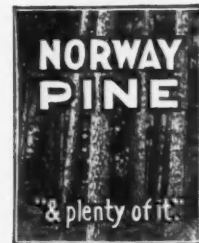
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HIGH CLASS SIDING



EXTERIOR TRIM



We will give you the names of reliable dealers who will furnish at fair prices all the WHITE (and NORWAY) PINE you want, with quick deliveries assured.

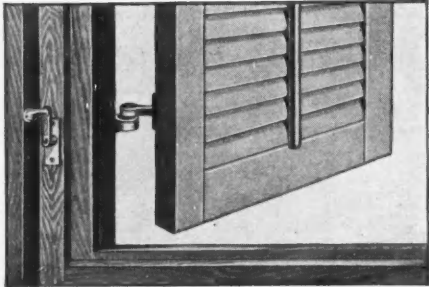
NORTHERN PINE Mnfctrs.' Assn., 1119 Lumber Exchange, Minneapolis, Minn.

When Writing Advertisers Please Mention the American Carpenter and Builder.

The Mallory Shutter Worker

Outside blinds or shutters are coming back, in fact they have already arrived. The great popularity of the Colonial style for houses has brought back the outside blinds. Every Colonial house that is correct in detail must have them.

Outside blinds or shutters are both ornamental and useful. Our forefathers couldn't get along without them, even though the old fashioned shutter fixtures were very inconvenient about opening and closing. Modern ingenuity has now solved



Small Inconspicuous Ratchet Swings Blind and Holds it in Any Position

this difficulty however. The outside blinds today are being equipped with Mallory's Standard Shutter Worker, which avoids all inconvenience and makes the heretofore ornamental-only blind serviceable as well.

The illustration shows view of shutter and worker from within. For detail drawings showing the arrangement and working of the Mallory shutter worker, the reader is referred to the Builders' Hardware Department of the July AMERICAN CARPENTER AND BUILDER. There you will find the outside blind question fully discussed.

With the old style blind fixtures it was necessary to raise

both window and screen, lean away out of the window and reach around and full the blinds into place when opening or closing them. This was and is a nuisance. Fortunately it is no longer necessary. If the blinds are equipped with the Mallory shutter worker a turn of the little handle on the window casing adjusts the blind easily, holding it securely at any angle desired.

With the vogue of Colonial style houses today—all of which should have outside blinds to be correct—there is naturally a great demand for these modern shutter workers. Every builder should know about them.

Address Mallory Mfg. Co., 514 Broad St., Flemington, N. J., for complete information.



Awards in Cement House Competition

In the recent competition inaugurated by the Blaw Steel Centering Company for the best designs for concrete residences to cost not more than \$3,000.00, the following awards have been made by Professor A. D. F. Hamlin of Columbia University, who acted as judge:

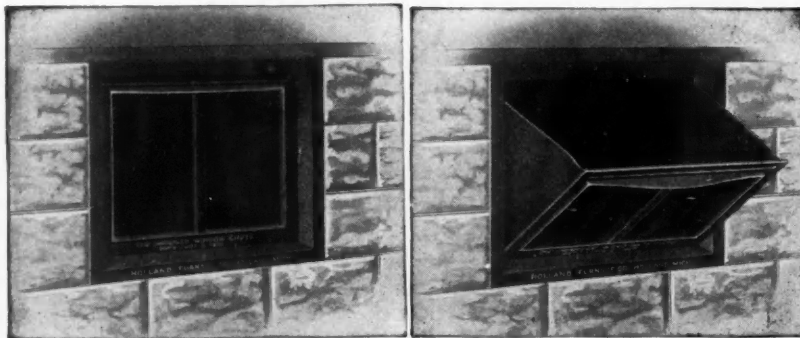
First Prize—\$100.00. Mr. E. Parmiter, room 202, 25 West 42nd Street, New York City.

Second Prize—\$75.00. Mr. Wm. C. Lurkey, 144 Winslow Avenue, Buffalo, N. Y.

Third Prize—\$50.00. Mr. Jack Lehti, Apt. 103, The Eckington, 4th and T Streets, N. E., Washington, D. C.

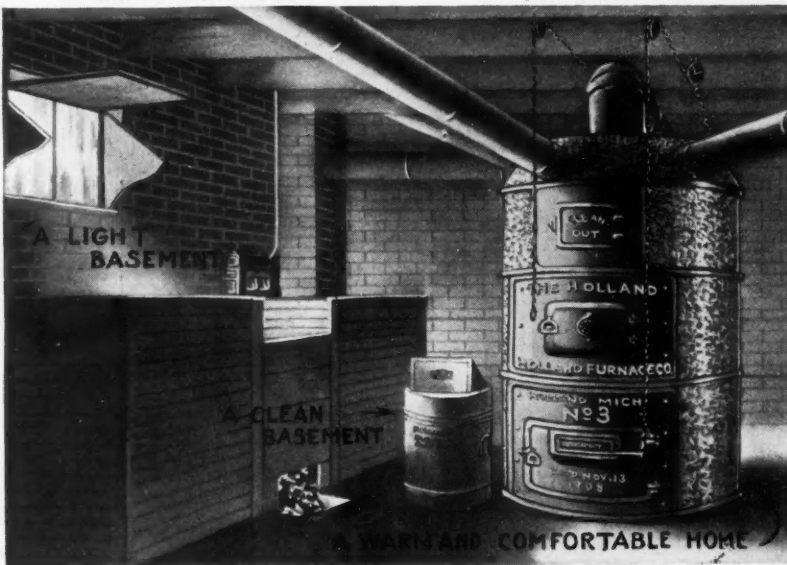
Fourth Prize—three awards—\$25.00 each. Mr. Grover Lipert, 418 West Doty Street, Madison, Wis. Mr. Everett Crab, 904 State Life Bldg., Indianapolis, Ind. Mr. Clyde W. Smith, 3236 Fifth Ave. S., Minneapolis, Minn.

We are informed that there will be published by the company, shortly, in booklet form, the designs and specifications of the prize winners; also the designs and specifications of some forty other contestants.



Closed—A Real Window

Open—A Perfect Chute



HOLLAND HOUSE EQUIPMENT

never fails to thoroughly please and satisfy owners. And that is what you always want to do—Carpenters and Builders.

Please and satisfy the owners because the owners—the men for whom you build make your reputation as a carpenter, friend or inquirer has great weight—and means much to you in dollars and cents.

Holland equipment is always reliable. Our Window-Chute—our Holland Furnace with Holland Installing Service—our Dustless Ash Cans—you need never hesitate to recommend and use. This is the sort of home equipment owners like to have—the sort of equipment carpenters and builders like to put in.

We want to tell you in detail about Holland House Equipment. About our Window Chute—our Furnace and Installing Service—our Dustless Ashers, etc. Drop a line today that you want full particulars from us. Booklets, descriptive matter, etc., FREE. And you'll be mighty glad you sent for them.

HOLLAND FURNACE CO. HOLLAND - - - MICH.

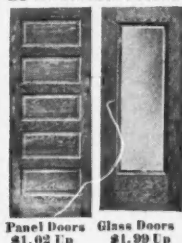
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HERE'S the finest chance Carpenters, Contractors and Builders ever had to get their building material, lumber and millwork *at less than wholesale prices!* We ship everything for building direct to *You*, guarantee all goods to be absolutely new (no wreckage) and guarantee also safe delivery and perfect satisfaction. Send today for our brand new 176-page catalog of Millwork and Building Material. It contains 3,000 superb illustrations and 8,000 bargains for *you* to save money on. Get our magnificent Book of Modern House Plans also. Shows you how to build and save 33 1/3% to 50% on everything. We ship you lumber, flooring, doors, windows, mouldings, porch-work, building paper, hardware, tinwork and roofing. *H. H. Manning* Pres.



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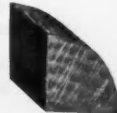


Panel Doors \$1.02 Up
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Economy Rubber Roofing
1 Ply, 35 Lbs. **\$1.10**
Guaranteed 5 Years
2 Ply, 45 Lbs. **\$1.35**
Guaranteed 7 Years
3 Ply, 55 Lbs. **\$1.60**
Guaranteed 10 Years
Rolls Contain 108 Sq. Ft.



100 Feet of Quarter Round—Dealer's Price \$1.00. Our Price . . . 25c



Save Money

Mr. Contractor or Builder, buy at wholesale prices. Everything we sell is brand new—no wreckage.

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\$773 We will furnish complete all lumber, millwork, hardware, spouting, paint—everything except masonry and labor to build 7-room house. Plans free. A113.

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All kinds of building hardware, you can't beat our goods or our wholesale prices.



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For These Stairs Complete—Dealer's Price is \$65.00

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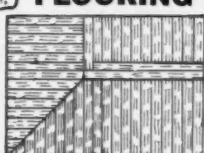
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Perfect guaranteed house paint—Single gallon cans only **\$1.25**
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Quarter Sawn White Oak — to cover one square foot **12c**

GLAZED WINDOWS
of all kinds ready for quick shipment.

2 light **53c up**
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Clear Lattice 30c
Per 100 feet



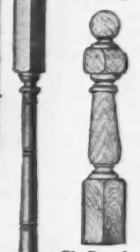
Handsome Colonnade \$11.50

Yellow Pine in the White—a popular style. Made also in Oak 12.85. Other styles and finishes up to \$59.00. Mantels and Consols also.



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Clear Fir 4x4—8Ft. **50c**



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\$24.50
Buys This \$40 **MANTEL**



Equipped with Grate Complete
Don't buy a mantel until you examine the many beautiful designs in our free catalog. You will find just what you want at the price you want to pay.



\$333 we furnish you all material complete necessary to build this barn. Outside measurements 23 1/2 x 40 ft. We ship direct all rough lumber, framing timbers, plank flooring, roofing, hardware, sash, doors and painting material. Everything but labor, cement and stone. Design A145.

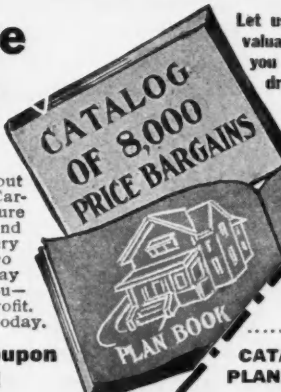
CHICAGO MILLWORK SUPPLY CO.
AMERICA'S GREATEST SASH AND DOOR HOUSE

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Don't cheat yourself out of any more profits, Mr. Carpenter or Builder. Figure your jobs with our aid and make 15% to 25% of every contract. Get these two free books and learn our way of dealing direct with you—cutting the middleman's profit. You get the benefit. Write today.

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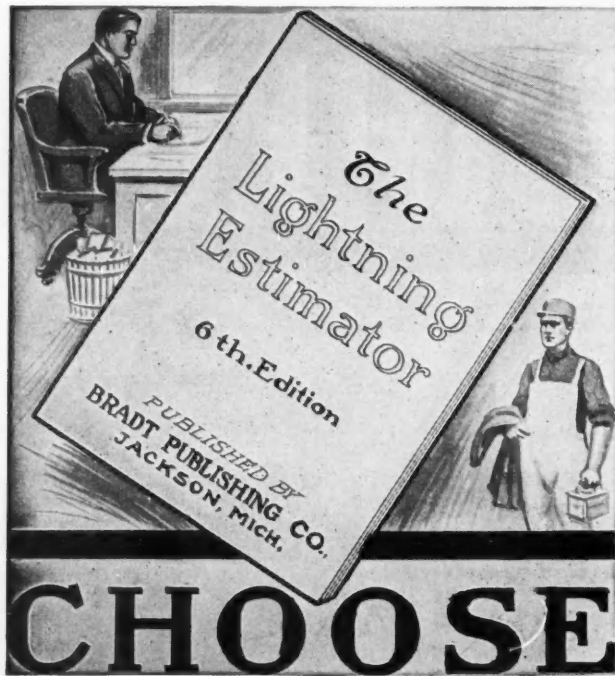
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Send 10c for postage and mailing Plan Book

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Don't hesitate to grasp this opportunity to win success, for there's always room at the top for the man who knows how.

The LIGHTNING ESTIMATOR

stops worry, lying awake nights, over or under estimating and guessing—in fact, by showing you how to estimate the cost correctly, it spells the word **\$ucce\$\$** for you. Don't do yourself an injustice by passing up the greatest opportunity ever offered to Carpenter, Contractor or Builder.

The New Sixth Edition of the LIGHTNING ESTIMATOR

will teach you: How much time and material involved in each part of your work; how to figure on unfamiliar work; how to estimate quickly and correctly on a large job; how to estimate on time, material and prices in all parts of the country.

This Book is written by a man who has made good in this profession, and is based on hard, solid facts, secured by the knocks of experience, making it an invaluable guide to any one engaged in or those about to enter the building business.

If you are just starting out, here is your chance to get a firm foot hold. If you are an old timer and getting a little behind the times, here's your chance to brighten up and get some new ideas.

This Edition is bound in cloth, profusely illustrated—a feature not found in other books of this kind. The price, \$1.00. Don't delay. Send for it today.

BRADT PUBLISHING CO.

1260 Michigan Avenue

JACKSON, MICH.

Furnace Time is Here Again

No—not the actual firing of the furnace—but the deciding of just what furnace will best suit the particular type of structure that is to be heated.

This furnace question is more and more being "put up to" the contractor, builder and carpenter. And, as this seems to be the case, it behooves every contractor, builder and carpenter to get in, and keep in, close touch with the furnace situation.

There are furnaces—and there are furnaces. And as long as it seems to be the favoring custom to hold the contractor or builder responsible for the sort of furnace put in, every



Satisfactory Furnace Made by the Home Furnace Co., Detroit

man recommending and installing a furnace should be positive that he is putting in the right furnace.

Investigate the various claims and propositions of the various manufacturers carefully before determining upon any particular type. There are many good furnaces made, so there is really no excuse for the carpenter or builder who now-a-days installs a poor furnace.

Among one of the largest manufacturing furnace companies in the world at the present time is the Home Furnace Company of Detroit, Michigan.

The Home people have been building furnaces for years and their furnaces are in extensive general use. They always guarantee that the highest standard of efficiency known to the science of heating is to be found in their furnaces.

This company build many types of furnaces and heaters, and among all are featured certain points of construction, such as exceptionally large air space between the castings of the furnace and the outside casing. Anti-clinker grates are always used, also sectional fire pots. All joints between the different sections of Home furnaces are deep cup joints, which, when packed with asbestos, effectually prevent the escape of smoke or gas.

Other especial features of Home furnaces are detailed fully in the attractive catalog this company issue upon the furnaces and heaters of their manufacture.

At the present time the Home company have a special agency proposition they are making contractors and builders. For particulars as to this and other information, also for their complete catalog those interested should address the Home Furnace Company, Detroit, Michigan.



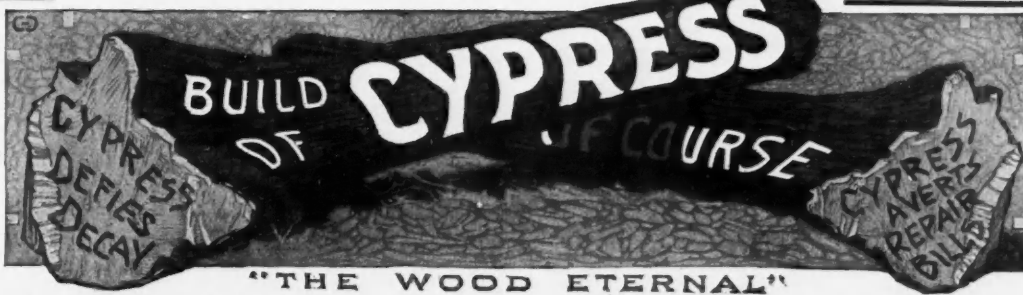
Artificial Decorative Stone

The Art Stone Company, Waynesboro, Pa., have something brand new that every builder will be interested in. They

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WHEN YOU BUILD (WHATEVER YOU BUILD) BUILD "FOR KEEPS"!

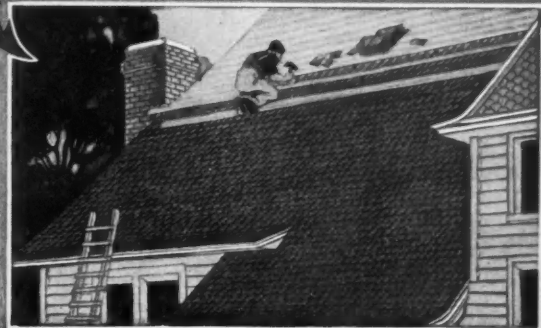
This is BUYING Time



See that you get Cypress and "No Substitutes"



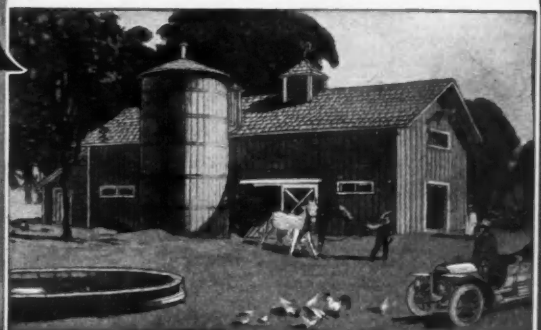
WRITE TODAY for Vol. 9 of the CYPRESS Pocket Library telling about Cypress siding—and why.



VOL. 7 (Cypress Pocket Library) is "the most valuable SHINGLE book ever printed." Yours by mail on request.



CYPRESS —"the only GREENHOUSE Wood"—or for Pergolas, Trellises etc. Ask greenhouse men. Get Vol. 3.



FARM and Country Home Improvements of Cypress never "run down." Vol. 22 covers Tanks and Silos also. Get it.



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EVERY FOOT of every Porch, Sleeping Balcony or Fence should be CYPRESS. Vol. 16 covers it. Write today.

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INSIST ON CYPRESS AT YOUR LOCAL DEALER'S. IF HE HASN'T IT, LET US KNOW IMMEDIATELY
"CYPRESS—AND NO SUBSTITUTES"

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When Writing Advertisers Please Mention the American Carpenter and Builder.

have a patented process by which polished artificial marble or granite can be made in any color or graining, reproducing perfectly the natural stone for ornamental work, either exterior or interior. They can also show any builder how to use concrete in a thousand other ways that heretofore have seemed impossible, doing the work with home-made apparatus and without machinery, at trifling cost.

They are now offering builders district rights on this process. This is worth investigating. Address Art Stone Company, Box A, Waynesboro, Pa.



Hand Mixer for Plaster and Concrete

Up to the present time there has always been a crying need for a light, handy and substantial small batch concrete mixer for bridge contractors and bridge construction jobs, especially for the small job where but a few yards of concrete are to be placed and where the work will not warrant the shipping out of the large, heavy and expensive mixer. Knowing



this great need, about two years ago a western bridge contractor conceived the idea that it might be possible to invent some sort of a light, handy mixing machine that would answer this purpose.

After many experiments and after making several experimental machines, the "Northfield" mixer was finally invented.

It was invented by a professional bridge contractor and especially designed for bridge construction work, and for foundations, abutments and floor work. This "Northfield" mixer, however, has proved successful for other purposes besides mixing concrete. It's mixing apparatus gives such a thorough mix that people soon began using it for mixing mortar and plaster; it has been a success for that purpose.

The machine has certainly filled the bill in every particular, for bridge contractors all over the country, the manufacturers inform us, are falling over themselves to buy this machine. Less than 30 days ago the Great Northern Bridge Company of Minneapolis, Minnesota, purchased a trial machine and have had it used on two different construction jobs under two different foremen to try it out. The reports of these two foremen were so gratifying that less than a week ago this concern placed an order for 10 more of these machines. About two weeks ago the Fargo Bridge & Iron Company of Fargo, North Dakota, tried out a machine on their work, with the results that they sent in their order for the second machine. A lot of big building contractors in Cleveland, Ohio, have got started to use this machine, and during the past 10 days four of these machines were shipped to different building contractors at Cleveland. Three of these machines were shipped by express, as the contractors were in a hurry and wanted to try out the machine on their job while it would save them money. "Think of it, shipping concrete mixers by express." A concrete mixer so light in weight that it is economical to ship anywhere in the United States and yet save money on the job after it arrives. This machine is said to mix as high as 90 cubic yards per 10-hour day when operated by 5 men. What can be the use of spending hundreds of dollars for a big, heavy power machine when a little, light weight, handy rig like this "Northfield" mixer will do all the work at less expense.

On another page of this issue you will find an advertise-

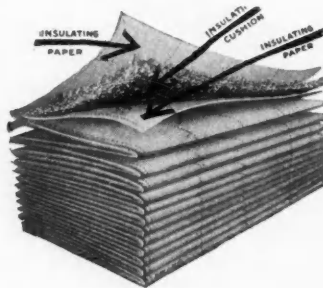
One Layer of Keystone Hair Insulator Equals Many Layers of Sheathing Paper

both for insulating purposes and for sound-deadening.

There is just as much difference between Keystone Hair Insulator and ordinary building or sheathing papers as between a woolen blanket and a cotton sheet.

Keystone Hair Insulator consists of a rather thick sheet of hair felt (hair is Nature's own protection against heat and cold—Nature's own insulator) securely fastened between two sheets of strong, non-porous building paper.

This construction confines, in a single layer, which can be applied in a single operation, more dead air than can be confined between many layers of ordinary building or sheathing paper used without any filling. While a single layer of building paper, be-



cause of its dense nature, confines no dead air at all.

The amount of dead air, you know, determines the insulating value, for dead air is a perfect non-conductor of heat, cold and sound.

It is due to this large amount of dead air that Keystone Hair Insulator keeps a building cool in Summer, warm in Winter and quiet at all times.

It is absolutely inodorous and vermin-proof. Will not dry out, rot, or attract moisture. And will not carry flame.

There is plenty of proof—in the form of comparisons and tests by users of the superiority of Keystone Hair Insulator. You will find all the facts interestingly told in a booklet which we will send on request, together with sample.

H. W. JOHNS-MANVILLE Co.

Manufacturers of Asbestos and Magnesia Products

ASBESTOS

Asbestos Roofings, Packings, Electrical Supplies, Etc.

Albany
Baltimore
Boston
Buffalo

Chicago
Cincinnati
Cleveland
Dallas

Detroit
Indianapolis
Kansas City
Los Angeles

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Milwaukee
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Pittsburgh

San Francisco
Seattle
St. Louis
Syracuse

Toronto, Ont.

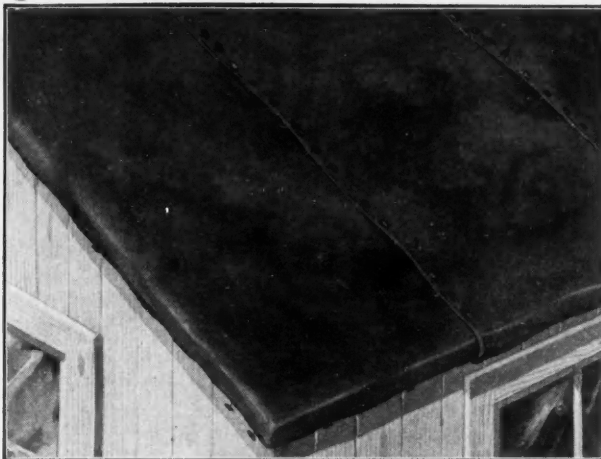
Montreal, Que.

Winnipeg, Man.

Vancouver, B. C.

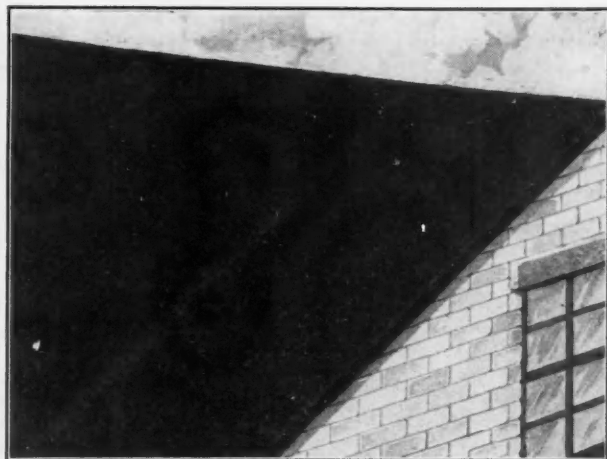
(1339)

When Writing Advertisers Please Mention the American Carpenter and Builder.



Ordinary Composition Roof—Unprotected

Where nails rust and work loose—seams open and water leaks through.



A Carey Roof—Protected—No Joins

No nails on surface to work loose—entire roof sealed over—it lasts.

Choose the Protected Roofing

THE Carey Flexible Cement Roofing efficiently protects your building as long as the building stands, *because it is itself protected.*

After the Carey Roof is laid and the rolls are overlapped and securely nailed to the sheathing boards, the Carey Patent Lap *protects* the nails and joins by *sealing them over*, and then is itself protected by being covered with a heavy layer of asphalt cement.

In all other "ready" roofings the joining nails are unprotected—exposed to the elements—and become rusted. In a short time the action of the weather, through contraction and expansion, *loosens the nails*, thus permit-

Carey's Flexible Cement Roofing

ting the joints to open up and water to work through—rendering the roof totally inefficient. A strip or cleat is sometimes placed over the nails,

but water soon works under these strips and proves this method of "protection" ineffective.

The "heart" of the Carey Roof—a heavy body of flexible Asphalt Cement—is protected between strong Woolen Felt and tough Calcutta Burlap, in turn protected by an outer layer of Asphalt Cement. The life and flexibility of the Cement Body are permanently preserved by being hermetically sealed from the action of the elements.

46 branch houses, giving national distribution, make it convenient for owners, architects and builders in all parts of the country to investigate this roofing. Let us show you what service Carey Roofs in your vicinity are giving. Generous sample of Carey's Roofing will be sent upon request.

THE PHILIP CAREY COMPANY

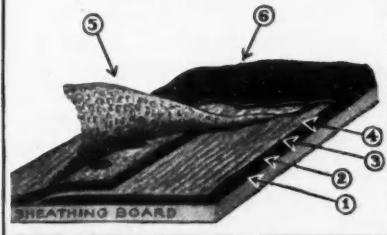
General Offices and Factories: 58 Wayne Avenue, Lockland, Cincinnati

Allentown, Pa.	Chattanooga	Harrisburg	Los Angeles	New Orleans	Rochester	Syracuse
Atlanta	Chicago	Hartford	Memphis	New York	San Francisco	Toledo
Baltimore	Cincinnati	Havana	Milwaukee	Oklahoma City	Scranton	Toronto
Birmingham	Cleveland	Jacksonville	Minneapolis	Philadelphia	Seattle	Wheeling
Boston	Dallas	Kansas City	Montreal	Pittsburgh	Spokane	Winnipeg
Buffalo	Denver	Knoxville	Nashville	Portland	St. Louis	Washington
Charlotte	Detroit	Little Rock	Newark, N. J.			

Write nearest branch if not familiar with name of our local dealer.

Unequaled Construction of Carey's Roofing

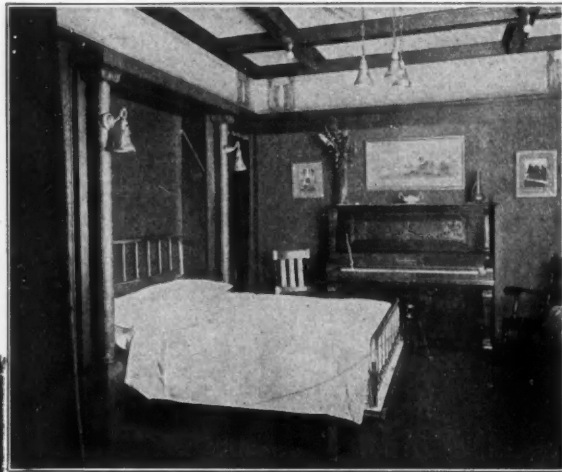
1. Firm foundation of special woolen felt, manufactured in our own mills.
2. Solid flexible body of our special tempered asphalt cement composition (the "heart" of the Carey Roof), laid on wool felt foundation.
3. Strong Calcutta Burlap imbedded over cement body, protecting it.
4. Asphalt compound imbedded into Burlap and preserving it.
5. Carey Patent Lap (extension of the Burlap) which covers over nails along the joins.
6. Asphalt compound that cements down the Carey Patent Lap and makes the Carey Roof a solid sheet over top of building.



When Writing Advertisers Please Mention the American Carpenter and Builder,

How to Utilize Every Inch of Space to the Greatest Advantage

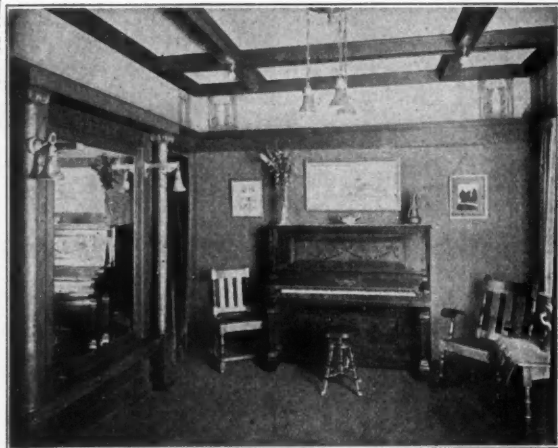
PERFECT WALL BEDS Solve the Space Question



Space utilization means increased area for the builder, consequently increased income. It means that the owner can provide a more attractive and convenient home for tenants with greater profits to him.

Three Rooms Equal to Five

Require less furnishing and are made more attractive by the richly finished console or side board which conceals the bed.



Ample ventilation is provided—More sanitary than the old style bed, for the reason that the space beneath can be kept clean without the laborious moving of the bed.

Prospective tenants will appreciate builders efforts to give them the best.

Builders:— Investigate before building. Let us plan for you how to utilize every inch.

PERFECT WALL BED CO.

430-2 S. Wabash Ave.

CHICAGO, ILL.

ment of this machine. The manufacturers—the Northfield Iron Company, Northfield, Minn.—will ship under a guarantee of satisfaction or your money back, and give you a chance to try it out before you decide whether you are satisfied. †

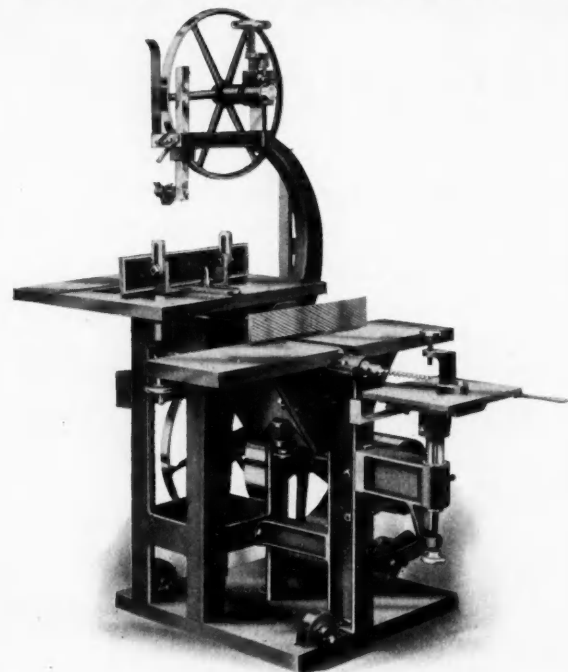
The Tannewitz Woodworker

There is being manufactured by the Tannewitz Works of Grand Rapids, Michigan, a woodworking machine which has proven to be in every respect a type of woodworker that does efficient, thoroughly satisfactory and economical work under general shop conditions.

This woodworker, which the Tannewitz people style their "Type C," is a substantial, portable, all cast iron universal woodworking machine. It combines four machines in one—a band saw—a saw bench—an 8-inch jointer and planer—a mortiser and borer.

This woodworker is built entirely of cast iron, which is of itself a surety of long wear. It is substantial in every detail and has the best of workmanship throughout.

Some of the specifications of this "Type C" woodworker include saw bench table, measuring 24 inches square, 12-inch saw rising 3½ inches above table, height of saw table above floor is 34 inches, saw table raises to regulate depth of saw cut, table may be tilted for band sawing 45 degrees, band saw wheels measure 20 inches in diameter, guards on



Tannewitz "Type C" Woodworker

both front and rear sides of band saw, length of jointed knives is 8 inches, length of all arbor boxes is 4 inches. Two heavy bolts hold band saw frame in place. One minute's time is all that is necessary to remove band saw frame when large circular sawing is to be done. A band saw block can be put on in under ten seconds.

The machine is entirely portable, one man being able to move it about easily. The heavy floor base is provided with three 1¼ by 6 inch wheels, one of which swivels. Total net weight of this four-in-one machine is around 700 pounds.

The Tannewitz Works issue a very complete folder illustrating and describing this machine, which they will be glad to send to all AMERICAN CARPENTER AND BUILDER readers interested in any way in woodworkers. For this, write the Tannewitz Works, 315 N. Front Street, Grand Rapids, Michigan.

When Writing Advertisers Please Mention the American Carpenter and Builder.



WHITE MOTOR TRUCKS



WHITE Motor Trucks are, without doubt, the best known motor truck in the United States today. Among the prominent users of motor trucks in this country, the owners of White trucks are by far in the majority.

In the first place, White trucks are made in capacities of 3-4, 1 1-2, 3, 5 tons, making them suitable for practically every line of business.

Secondly, White trucks are designed and built in the best possible manner for the service they are to perform. They have passed through the real test—the test of service—and have made good.

Lastly, White trucks are manufactured by a company which has had the confidence and respect of the industrial world for over fifty years. The name of the White Company is the best guarantee in the world of the sterling quality of White trucks.



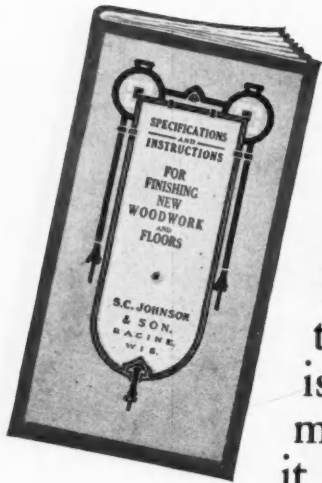
The White Company

CLEVELAND

MANUFACTURERS OF GASOLINE MOTOR CARS, TRUCKS AND TAXICABS

When Writing Advertisers Please Mention the American Carpenter and Builder.

Will You Read This Book If We Send It Free?



THIS book is the work of expert authorities. It gives instructions how to obtain best results; shows how much material is needed for certain work; lists shades best adapted for different woods; quotes prices on the best wood finishes. It is brimful of information that brings success to every reader. Be sure to get a copy. It is the result of 30 years' expensive experiments and tests. The reason why we give it free is because it tells about

Johnson's Wood Finishes

We want every contractor and builder to know all about our wood finishing materials and try them at our expense, so with the booklet we give you generous samples of Johnson's Wood Dye and Flat Wood Finish.

**Over \$200,000 Worth of Experience Is
Behind This Book—Ask For Your Copy**

We have been manufacturing Wood Finishes for over 25 years and know just what contractors and builders need. Our book and samples will bring you the information you want. Get them today.

S. C. Johnson & Son,

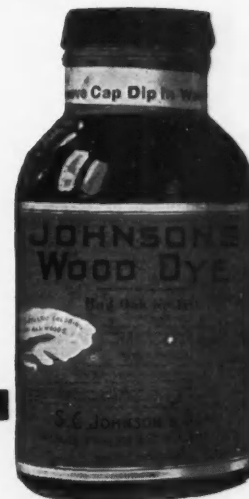
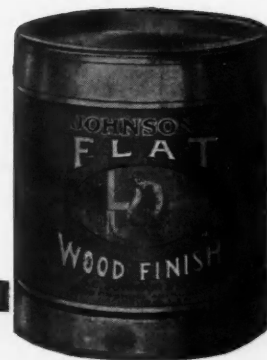
*"The Wood Finishing
Authorities"*

Racine, Wisconsin

Generous Samples FREE

To Builders, Architects, Contractors

LET us send you free samples of Johnson's Flat Wood Finish and Johnson's Wood Dye, also a copy of our Instruction Book. Architects, Contractors, Painters and Home Owners are enthusiastic over the results obtained and the big saving made possible with them.



Johnson's Wood Dye

is made in 15 popular shades as follows:

- No. 126 Light Oak
- No. 123 Dark Oak
- No. 125 Mission Oak
- No. 140 Early English
- No. 110 Bog Oak

- No. 128 Light Mahogany
- No. 129 Dark Mahogany
- No. 130 Weathered Oak
- No. 131 Brown Weathered Oak
- No. 132 Green Weathered Oak

- No. 121 Moss Green
- No. 122 Forest Green
- No. 172 Flemish Oak
- No. 178 Brown Flemish Oak
- No. 120 Fumed Oak

Gallons \$3.00—Half-Gallons \$1.50

Test samples on any work you have in hand. Note how quickly Johnson's Wood Dye dries, so that dust and dirt have no chance to settle in the finish. Observe how it penetrates and brings out all the beauty of the grain without raising it in the slightest degree. In addition to this, the fastness of color, ease of application and practical economy will also appeal to you.

Johnson's Flat Wood Finish

is a liquid—an easy spreading preparation, manufactured especially for finishing interior woodwork of new residences and buildings—as well as furniture—and equally valuable for refinishing old surfaces.

This flat wood finish opens a new field for the contractor and builder. By the use of Johnson's Flat Wood Finish, you can make estimates on hand-rubbed effects that will land the contract every time—give your customer perfect satisfaction—and make you a good profit besides.

Don't fail to secure Instruction Book No. A. C. B. 7 and samples at once. If your dealer isn't supplied, write us and we will send them direct on receipt of postal or coupon.

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

"The Wood Finishing Authorities"

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

Please send me free samples of Johnson's Flat Wood Finish and Wood Dye Shade No. Also Instruction Book A.C.B.7

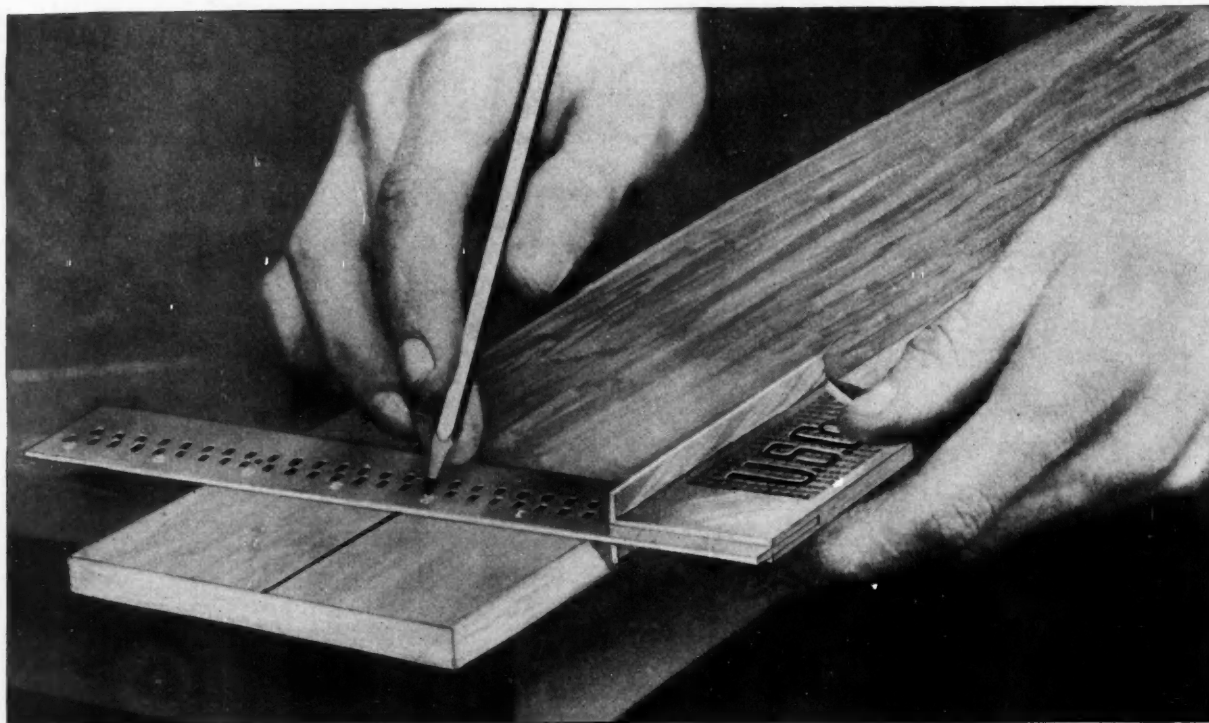
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His Address.....

My Name.....

Address

When Writing Advertisers Please Mention the American Carpenter and Builder.



Shireman Patent Try Square and Gauge Made by Pennsylvania Saw Co.

The Common Sense Try Square and Gauge

What is claimed by its manufacturers to be the most practical and common sense try square and gauge manufactured is the Shireman patent try square and common sense gauge now being made by the Pennsylvania Saw Company of Frackville, Pa.

This try square and gauge is the invention of a practical carpenter of twenty years experience. As the accompanying illustration will show the blade is made from a high grade spring steel which is carefully hardened and tempered. It is graduated by sixteenths and the pencil holes are in perfect alignment with the graduated marks. The butt is made of

The work of applying is quicker and easier when you use

NEPONSET WATERPROOF Building Papers

(Red and Black)

Ordinary rosin sized paper soon absorbs moisture, leaving the house unprotected against dampness and cold. Soon the wetting and drying out causes the paper to tear around the nail holes. Often, it slips down between the boarding and siding. Then the house is without protection against draughts.



Home of Geo. Hodson, Newark, N. J. Neponset Black Waterproof Building Paper used

NEPONSET Building Papers are absolutely waterproof. They keep out dampness and cold as long as the house stands—save a ton of coal each winter. Any home owner will gladly pay \$8.00 or \$10.00 to have his home protected with NEPONSET *if* you tell him why.

Write for the NEPONSET Proposition.



Branch Offices:
New York
Washington, D. C.
Columbus, Ohio

F. W. Bird & Son, East Walpole, Mass.

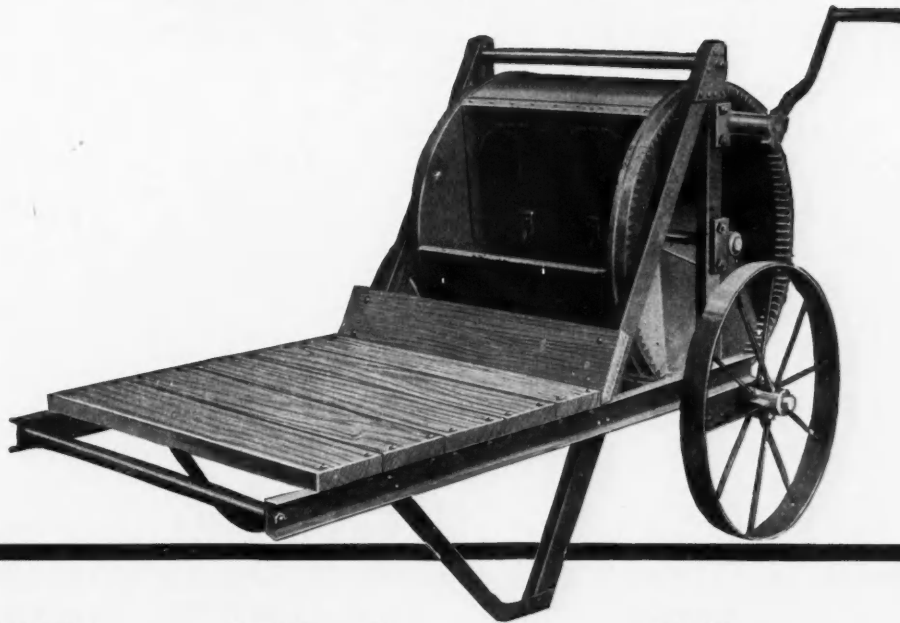
Established 1795

Canadian Plant, Hamilton, Ontario

Branch Offices:
Chicago, Ill.
Portland, Ore.
San Francisco, Cal.



When Writing Advertisers Please Mention the American Carpenter and Builder.



Why Take a Chance on Crude Methods of Mixing Concrete?

Lay down your shovel and look around you. No matter how small the yardage, first class concrete is worth while; and first class concrete is impossible at prevailing prices, unless mechanically mixed. The old shovel and hoe methods are obsolete—they don't pay. But surplus capacity and weight, cost of operating, erection and haulage make a power mixer unprofitable on the small job. There's *no escape* either way. The progressive contractor **MUST** use the

SMITH HAND MIXER

It is a batch mixer with a capacity of $2\frac{1}{2}$ cu. ft.—a thoroughly tested machine, guaranteed to mix in *three turns* of the drum — a **MIXER** capable of reliable service under long, hard service — a **REAL** mixer backed by the best and oldest firm of mixer builders in the U. S. This machine will improve your work and increase your income at the same time.

Write for our special Smith Hand Mixer proposal and booklet No. 17.



The T. L. SMITH CO.
1333 Majestic Building, MILWAUKEE, WIS.

HARWELL PLACE
ATLANTA, GA.

W. J. CULLEN
30 Church Street
New York City

OLD COLONY BLDG.
CHICAGO, ILLINOIS

When Writing Advertisers Please Mention the American Carpenter and Builder.



How this Contractor got the Job at Highest Price

THERE'S a money-making suggestion here for you. "I commenced a job this morning which I got although I was the highest bidder. My bid was accepted on account of being able to complete the work fifteen days sooner than the other contractor, because I am using Compo-Board. * * * Here is what happened on another job. Compo-Board delivered yesterday at 3 p. m.—put up at 11 a. m. today, papered at 2 p. m.—and the room will be occupied tonight. I have used Compo-Board on cold, damp walls and it has given entire satisfaction." John B. Walls, Philadelphia, Pa.

You can afford to specify or recommend only a wall board that will give the greatest satisfaction. You're safe in recommending Compo-Board. It's not only impervious to heat, cold, moisture, vermin, not only fire-resisting, and non-warping, strong and durable, but it has several exclusive features. Can be papered, painted or kalsomined just as satisfactorily as a plastered wall, with or without panels.

Send your name on a postal card for free booklet and sample. Learn why the government and others who know prefer Compo-Board. It may be the most profitable postal card you ever wrote.

NORTHWESTERN COMPO-BOARD CO.
5777 Lyndale Ave., No. Minneapolis Minn.



PLASTERGON
WALL
BOARD

The Only Successful Substitute for Lath and Plaster

is endorsed by

**CONTRACTORS, ARCHITECTS,
BUILDERS AND CARPENTERS
EVERYWHERE**

If you haven't seen **Plastergon**, you haven't seen the Wall Board that's better.

It is the only chemically treated pulp or fibre Wall Board on the market. It's durability, lightness and the ease with which it can be handled makes it doubly acceptable to builders.

Send for a sample of **Plastergon** today. Then you'll see why the demand for **Plastergon** is rapidly growing every week.

You'll know why this treated Wall Board stands the racket; why it resists heat and cold; is fire and sound retarding; moisture and vermin proof. Why not write today for sample and live information?

Plastergon Wall Board Company
Dept. A. Tonawanda, New York

aluminum, making it light and durable.

The special advantage of this square is that its use does away with all guess work. The line is exact and true. Carpenters will undoubtedly find it a most practical and convenient tool to have about.

Detailed information concerning this square, also the many various saws and other tools of their making may be had by writing the Pennsylvania Saw Company, Frackville, Pa.



Another Luther Grinder

A new machine just put out by the Luther Grinder Mfg. Co., Milwaukee, Wisconsin, fills a long felt want for an efficient sharpening machine that can be packed into small space. This is their Dimo-Grit grinder No. 35.

All the mechanism of the machine is contained within the wheel itself. The wheel is hollowed out to contain a series of four driving gears and pinions. These produce a speed of twenty revolutions of the grinding wheel to every turn of the handle, which is said to be higher than most of the other sharpening machines on the market today. All bearings are constructed in one piece, and everything is enclosed and dust proof. The machine is finished in red and black enamel. The wheel is of Dimo-Grit, the new "diamond" sharpening substance.

The space required for carrying this grinder is scarcely greater than the wheel itself. The wheel is 5½ inches in diameter, and the entire machine packs in a box 5¾ inches long. All the different parts, including the handle, clamp, tool rest etc., can be easily and quickly taken apart for packing. Its particular use is to be found with carpenters for their tool chest, and for all others who have tools to be kept sharp, but who cannot have them in a permanent work shop.



Interesting Steel Sash Book

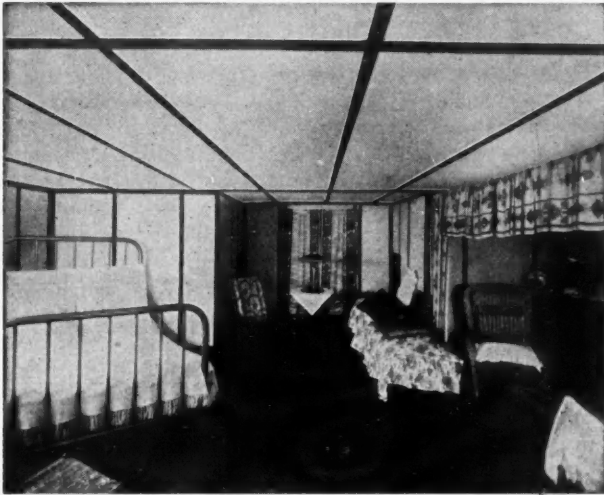
The Trussed Concrete Steel Company of Detroit, Mich., manufacturers of the "Kahn System" have recently issued a very complete book upon their United steel sash.

It is a 100 page book that is worked out in a very thorough and interesting manner, many illustrations of United steel sash in actual usage being shown, also suggestive working plans, sketches, etc., making possible the use of this sash under varying conditions.

United steel sash include standard pivoted side wall sash; vertical and horizontal sliding sash; center pivoted and top hung continuous sash; movable partitions of steel and glass; sliding and swing doors and casement sash.

This is undoubtedly the most comprehensive publication on steel sash that has even been issued and it can be of great value to any contractor and builder. It will be mailed by the Trussed Concrete Steel Company to any AMERICAN CARPENTER AND BUILDER readers who have actual construction work in which steel sash can be used. Address the Trussed Concrete Steel Company at Detroit, Mich.

When Writing Advertisers Please Mention the American Carpenter and Builder.



Utility Wall Board is a tough fibre board put together with two insulations of Natural Water Proof Asphalt, rolled under tremendous pressure into one solid compact sheet and surfaced on both sides with special moisture proofing—

It is the only Wall Board
Made Under This Scientific
Moisture Proof Process

Utility Wall Board

takes the place of both lath and plaster—It is very tough and durable—It is easily cut with an ordinary saw and is nailed direct to the studding.

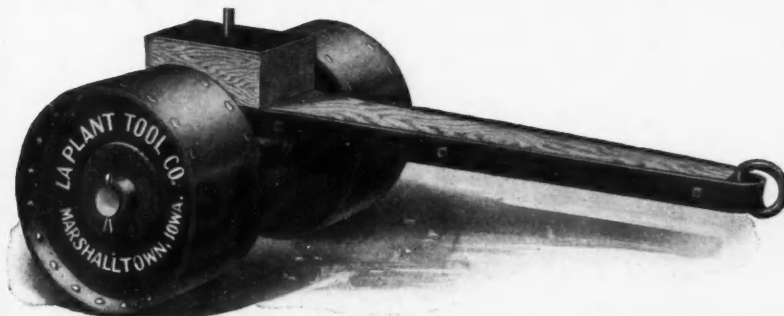
It will not warp, or crack, or shrink—and may be decorated in any style desired.

Any one who can use a hammer and saw can put it on and there is none of the muss and dirt of plastering—You don't even have to wait for it to dry.

It is used in building the new house—and in making over the old—Put it on right over old and cracked plaster if you wish—The cost is less than lath and plaster.

*We want to send a sample to every carpenter
and builder and home owner. Write for yours.*

The Heppes Company, 4503 Fillmore St., CHICAGO, ILL.



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.

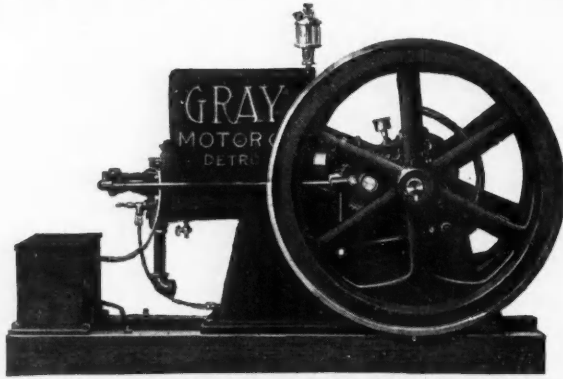
Marshalltown, Iowa

When Writing Advertisers Please Mention the American Carpenter and Builder.

Contractors and Builders Rapidly Installing their Own Power Plants

Every day in the year more carpenters and builders are awakening to the fact that there is real economy in having a shop equipped with wood-working machinery of various kinds and a satisfactory power plant for operating the same.

It is rapidly coming to the point where less and less material is being sent out to the planing mills for sawing, planing, shaping, finishing, etc. The contractor finds that he can get



This illustration shows the type of both the 2 and 4 H. P. 4-cycle Gray Engine. Wired up ready to run—water cooled with full tank in base.

much better service, get his work done when he wants it, just as well, if not better, and save considerable money, by installing his own plant and having the work done on his own premises, or, as in many cases, a portable outfit is used and the work along this line is done right on the job.

The Gray Motor Company of Detroit, Michigan, manufacturers of gasoline engines in a large variety of sizes, make a 4-H. P., 4-cycle engine that is particularly well adapted

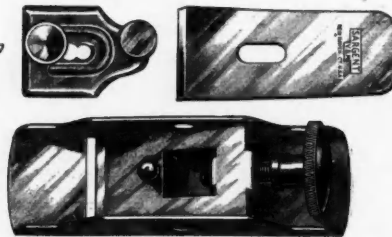
to the use of the average contractor and builder.

This 4-H. P. engine weighs in the neighborhood of 700 lbs. It is a substantial, well built machine that develops big power, and an engine that undoubtedly can be used on a larger variety of work than any other one size manufactured. The engine has a bore of $4\frac{3}{4}$ by stroke 6 inches, and its normal speed is 250 revolutions. Speed can be changed while engine is running, from 200 to 300 revolutions per minute, by means of special speed changing screw on the governor. The automatic governor on this engine takes care of any variations in the load automatically, and works about as near perfectly as any gasoline engine ever manufactured.

The real beauty of this 4-H. P. engine is, that it has the power to pull the larger machines, but at the same time can be throttled down to operate machines that require only 2 to $2\frac{1}{2}$ H. P., and uses fuel in proportion to the power being used, consequently makes an extremely economical outfit to be used where there is a large variety of work for a gasoline engine to do.

While this engine makes an excellent stationary outfit to set up in the work shop, it is also light enough so that it can be mounted on a truck and easily hauled from one job to another, and its features of easy portability are another good recommendation.

In addition to this 4-H. P., the Gray Motor Company also make smaller and larger sizes of engines—a $1\frac{1}{2}$, $1\frac{3}{4}$, $2\frac{1}{2}$, 6, 8 and 12 H. P. sizes. Although, as previously stated, the 4-H. P. is the engine particularly well adapted to the needs of the average contractor. The $2\frac{1}{2}$ -H. P. is another engine that would meet the needs of great many contractors and builders where only a small amount of machinery is to be installed, and where the contractor only wishes to do the lightest work on his own premises. In this case the $2\frac{1}{2}$ -H. P. would meet the requirement in fine shape. It is practically



Notice the Few Easily Adjusted Parts of this ALL STEEL Block Plane

Then consider that it is light, unbreakable and indestructible—a handy tool that you, as a practical mechanic, need.

The size and shape will permit you to carry it in the pocket of your apron or overalls and you will find it particularly desirable for work on scaffoldings, etc.

It is strong, substantial, serviceable and has a powerful clamp that holds the cutter in place. Fully warranted by the makers.

It bears the stamp



a guarantee of high grade and superiority quality.

Made in two finishes:

No. 4206, Highly Polished.

No. 5206, Nickel Plated.

Sold at hardware and tool stores.

The Sargent Tool Book, which fully describes all Sargent Planes and other tools, sent free on request.

SARGENT & CO., Tool Makers

No. 1149 Leonard Street, New York

When Writing Advertisers Please Mention the American Carpenter and Builder.

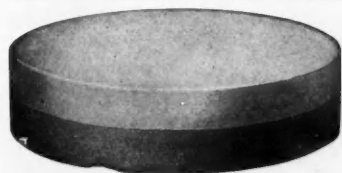
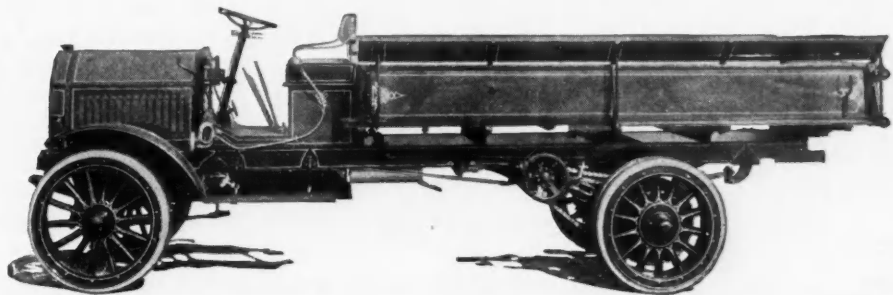
Schacht —a Powerful Truck
that Builds Big Business!

Contractors and Builders have found that the never-failing, reliable Schacht Truck is worth more to them in dollars and cents than 6 to 8 teams and wagons. The Schacht way is the *one* economical way of handling building material and heavy hardware.

Just write us *today* for illustrated booklet. Learn the whole truth about the Schacht Truck.

The Schacht Motor Car Co.
2846 Spring Grove Ave. -:- CINCINNATI, OHIO

One to Five Ton Capacity



Put a Carborundum Sharpening Stone Under an Edge Tool

—some difference, isn't it. Note how it takes hold—how quickly and easily it brings the tool to an edge—no wearing or rubbing—the Carborundum stone cuts clean—leaves the tool edge keen and smooth—and does it in half the time of the ordinary stone.

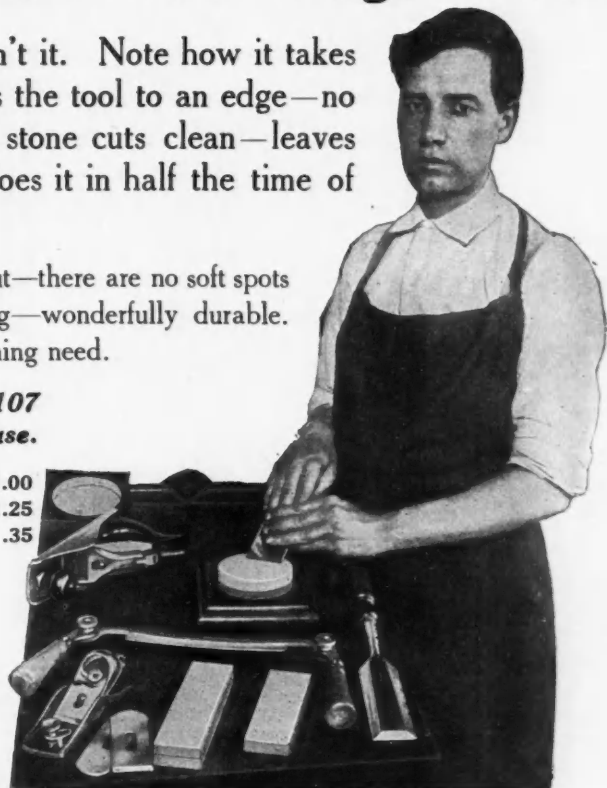
Every Carborundum stone is uniform throughout—there are no soft spots or sand streaks—always free and fast cutting—wonderfully durable. Made in all shapes and sizes for every sharpening need.

The Round Combination Bench Stone No. 107 is just the right thing for the carpenters' use.

- Carborundum Round Combination Bench Stone, \$1.00
- Carborundum Oblong Combination Stone, - 1.25
- Carborundum Pocket Hone, in case, each, - .35

At your hardware dealer or direct.

The Carborundum Co.
NIAGARA FALLS, N. Y.



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"The Handiest Tool in The Tool Box"

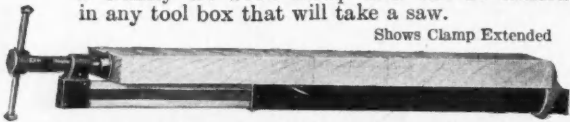


This Cut Shows use as Short Clamp

HERE is the sensation of the year. A new tool that has already become a necessity with thousands of carpenters and builders who have long felt the awkwardness, the clumsiness, the slowness, the weakness and the inconvenience of the old style clamp.

COBB EXTENSION CLAMP

The Cobb Extension Clamp is made entirely of pressed steel; has a closed limit of 1½" and extends to 38" and 50" according to size. It is light, neat, strong, compact, rigid and indestructible, can't possibly slip or mar, has flat bottom to prevent falling over. Weighs no more than a clumsy all wood clamp and can be carried in any tool box that will take a saw.



Shows Clamp Extended

Does Anything Any Other Clamp Will Do Does Many Things No Other Clamp Can Do

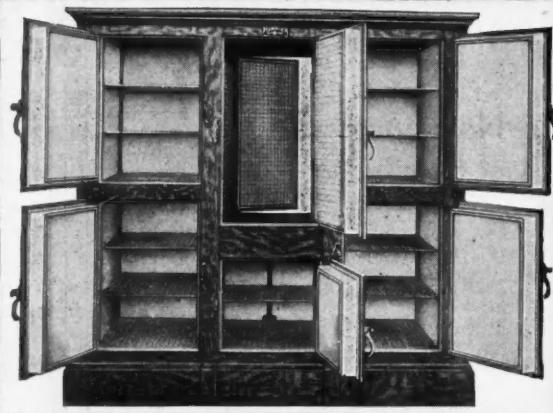
Order a pair direct from this advertisement with the privilege of returning them and getting your money back if you are not pleased.

No. 3, size closed 23½" — clamp limit 1½" to 38". \$4.25.
Price per pair (2 clamps).....

No. 4, size closed 29½" — clamp limit 1½" to 50". \$5.00.
Price per pair (2 clamps).....

ROOT-JAMES & COMPANY, Ltd.

Dept. 1. MOLINE, ILLINOIS



A Herrick Opal Glass Lined Refrigerator used in some of the finest homes.

Your clients will pay your price more cheerfully and appreciate your service greater if you save them all the trouble of the ice man's calls.

You can do this without cost to you by using the Herrick Outside Icing Refrigerator blue print book No. 41. Free to Architects, Contractors and Builders. The new editions just off the press.

They can lock the house and know that the refrigerator will be iced.

There is no dirt left on the floors to clean up.

During cool weather this style Herrick saves the cost of icing.

Let us help you to give better service.

Drop a postal in mail today for No. 41. Free plan book.

Herrick Refrigerator Co.

WATERLOO, IOWA

the same engine as the 4-H. P., the same design and the same general lines, only made in the smaller size. The 6 and 8 H. P. are also excellent propositions for the contractor who needs that much power, and in many cases the larger sizes would be the proper selection.

It would be well for the contractor or builder who is considering the installation of a power plant, to address the Gray Motor Company, 661 U. S. Motors Bldg., Detroit, Mich., and get their literature describing their line of gasoline engines, and also get their recommendation as to power. It would be well, when writing, to state the kind and number of machines that are to be operated.



Royal Ventilating Equipment

Nothing is of more importance in the construction of any building than the proper providing of ventilation. It has come to be realized that this is essential and, this fact established, it has been next in order to make a study of the different methods proposed and in actual usage.

The Royal ventilation system has proved itself through years of service upon buildings of every description to be one of the most efficient and practical ventilating methods it is possible to install.

Royal ventilating equipment is made by the Royal Ventilator and Manufacturing Company, Philadelphia, Pa. Their ventilators—of which they make every type and size—afford a certain positive, continuous, ventilation for such buildings as schools, factories, churches, barns and general farm buildings, mills, residences, etc., etc.

The Royal ventilators can be had to suit every condition. They are made round, square and rectangular; with glass, metal or combination top; of galvanized iron, charcoal iron and cold rolled copper. All of the Royal ventilating equipment is storm, frost, bird and insect proof.

This company issue a very complete and interesting catalog explaining in detail, through illustrations and descriptive matter, their large line of ventilators and showing them in extensive actual usage.

A copy of this catalog may be had by any AMERICAN CARPENTER AND BUILDER reader interested in the subject of ventilation and ventilating equipment by addressing the Royal Ventilator Company, 417 Locust Street, Philadelphia, Pa.



A New Text Book

The Berger Manufacturing Company has recently issued a very elaborate, extensive treatise on the subject of Metal Lumber, a substitute for wood.

The pages of this Text Book is filled from cover to cover with most valuable building information.

It has isometrical drawings, sectional views showing the application, installations and erection of different types of buildings, fire tests, etc.

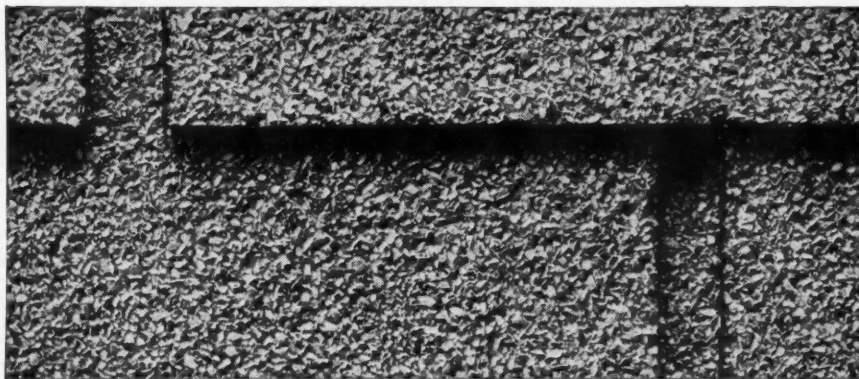
The material which is referred to mainly in this treatise is a sheet metal product which replaces wood stick for stick.

It does not replace structural steel; being lighter in character and having prongs which take the place of nails.

We understand that by writing direct to The Berger Manufacturing Company, General Offices Canton, Ohio, a copy can be secured gratis.



When Writing Advertisers Please Mention the American Carpenter and Builder.



This Cut Shows the surface of Flex-A-Tile Shingles—Beautiful, Convenient, Durable.

Did you ever see a more beautiful roofing than this? Note the chipped slate surface—Imagine the effect in the natural dark red, or green, or gray coloring—

FLEX-A-TILE ASPHALT SHINGLES

are new, durable, inexpensive. They are made of solid asphalt into the surface of which is embedded chipped slate or granite—rolled in until it becomes an actual part of the material and can't come out. The natural color of the slate or granite gives the coloring to the shingles and these colors can't change—they can't fade.

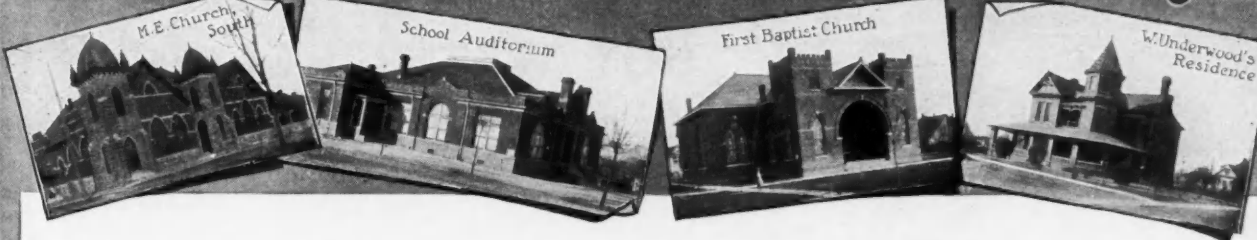
Flex-A-Tile Shingles are cheaper than wood shingles that have been stained. They are easier to lay—and they will last as long as the house stands.

It's a Winning Proposition for Any Carpenter and Builder.

Write today for a free sample of Flex-A-Tile Shingles and the Flex-A-Tile book.

THE HEPPE'S COMPANY 1010 45th Street Chicago, Illinois

How One Town Uses CORTRIGHT Metal Shingles.

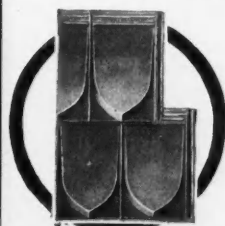


Look at this BIG business —churches, public buildings and handsome residences—where you can use Cortright Metal Shingles just as well as on the more modest dwellings or smaller bungalows.

Cortright Metal Shingles

are so attractive and offer so many advantages to property owners that Contractors and Builders find,—besides making attractive profits that their whole business rapidly increases, for each user is so well pleased that one sale invariably means repeat orders.

If you could talk with some of the other men in your own line who have investigated and adopted CORTRIGHT METAL SHINGLES in the past twenty odd years, we would not have to urge you to write for our special Contractors and Builders proposition, but **if you will send for this proposition you will realize what a good opportunity you have overlooked.**



WRITE US NOW

CORTRIGHT METAL ROOFING CO.
PHILADELPHIA AND CHICAGO

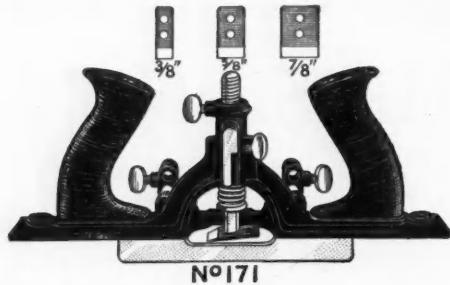
When Writing Advertisers Please Mention the American Carpenter and Builder.

Stanley Company's Door Trim Plane

This new plane which has but recently been put on the market by the Stanley Rule and Level Company of New Britain, Conn., will make mortises for butts, face plates, strike plates, escutcheons, etc., without the use of any butt gauge or chisel.

The particularly original feature of this plane is the method of mounting the cutter, which can be instantly set to work from either end of the plane or across it.

The cutter is cushioned by a spring which prevents taking a heavier chip than can easily be carried. A fence regulates the portion of the cut and insures its sides being parallel. The depth of the cut is governed by a positive stop. This plane can also be used most successfully as a router plane



for surfacing the bottom of grooves, or other depressions parallel with the general surface of the work. The plane is japanned, has nickel plated trimmings, rosewood handles and three forged steel cutters.

A circular describing this new door trim plane in detail and including complete instructions for its use may be secured by any AMERICAN CARPENTER AND BUILDER reader by writing to the Stanley Rule and Level Company, New Britain, Conn.

Interesting Work Issued by Cement Manufacturers Association

From the Association of American Portland Cement Manufacturers whose offices are in the Land Title Building, Philadelphia, Pa., comes a very attractive complete and interesting book "Factories and Warehouses of Concrete."

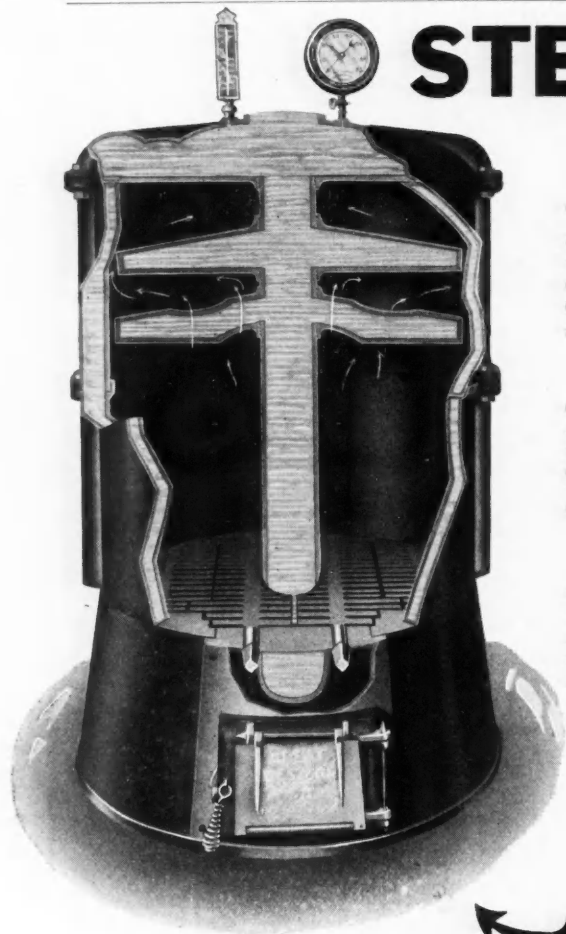
This work was recently issued by the association in the general interests of cement and shows this material's entire adaptability for construction work.

This book of 124 pages, presents to the prospective builder, architect, contractor and engineer, information of extreme value concerning concrete warehouses and factories. Two hundred and thirty-five buildings are shown and detailed information is given about forty-seven of them together with the letters from the owners of these buildings printed in fac-simile.

Examples of the work of one hundred and thirty-two architects, one hundred and ninety-three engineers and ninety-seven contractors are shown and the buildings illustrated house one hundred and ninety-eight different industries.

The introduction is a logical and concise treatment of the various advantages of concrete construction. There is also a short description of the method of removal of a concrete building. One page has been devoted to illustrations of prominent concrete buildings in which fires have occurred, and there is a short statement relative to this subject.

The book is too expensive a one to distribute free but the association makes only a charge for the cost of printing and postage. The book will be sent upon receipt of fifty cents and anyone interested in any form of construction work may rest assured that they will obtain information and facts from it worth many, many times that amount.



STERLING

HOT WATER HEATER

- ☞ Hot Water is recognized as the very best system for heating any home. True, it costs a mere trifle more to install but it saves that extra cost very quickly in economy of fuel consumption.
- ☞ Hot Water heat is steady, satisfying, clean—and it's healthful, too.
- ☞ The Sterling System is unbelievably simple and this simplicity is a source of great economy to the purchaser.

Not an Expense but Real Economy

- ☞ Durability and up-keep considered, The Sterling System is really cheaper than any hot air or stove heat. That means much to your clients, Contractors and Builders. It means a great deal to and for you, too.
- ☞ Heat economy and satisfaction are wanted in every home. You can be sure of true heat satisfaction in every building in which you install The Sterling System.

Easily Installed in New or Old Buildings

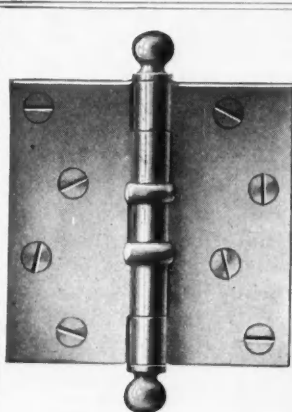
- ☞ Owing to its simple construction it can be readily installed in a building already built. It requires very little room indeed. Anyone, almost, who can handle tools can install the Sterling as we send complete heating plans absolutely Free. These plans are made by competent heating engineers.

Contractors and Builders

THE STERLING SYSTEM is just what you have been looking for. Our book—"The House of Perpetual Summer"—is something you ought to have. It will pay you dividends. Send for it today. Don't neglect to find out about THE STERLING SYSTEM before installing any particular heating equipment.

CONSUMERS' HEATING COMPANY
MARSHALLTOWN, IOWA

When Writing Advertisers Please Mention the American Carpenter and Builder.



Perfectly Hung Doors

which swing smoothly without
Creaking
or
Binding
are obtained by using

Stanley's Ball Bearing Hinges

Friction eliminated.
Oiling unnecessary.
The Non-Rising Pins will not work up from the joint.

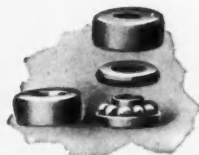
Made of Wrought Steel or Bronze and handsomely finished.

Ask your dealer or write for Circular "A"

The Non-Rising Pin

THE STANLEY WORKS
New Britain, Conn.

New York TRADE MARK Chicago



The Ball Bearing Washer with dust proof brass cap.



Residence of E. W. Twaddell, Deyon, Penna. Roofed with Asbestos "Century" Shingles by E. S. Parson, Philadelphia, Architect; and Simon Helster, Wayne, Contractor. From an Artist's Drawing.

Asbestos "Century" Shingles

"The Roof that Outlives the Building"

Fire loss from inflammable roofs costs the property owners of this country over Forty Million Dollars a year—fires that start outside the building, due to somebody else's hard luck or carelessness.

A man cannot change his neighbor's habits—but he can guard against them by roofing with Asbestos "Century" Shingles.

These shingles are made of reinforced concrete—of cement reinforced with interlacing asbestos fibers.

They are made by the "Century" process, which distributes the asbestos evenly in the cement.

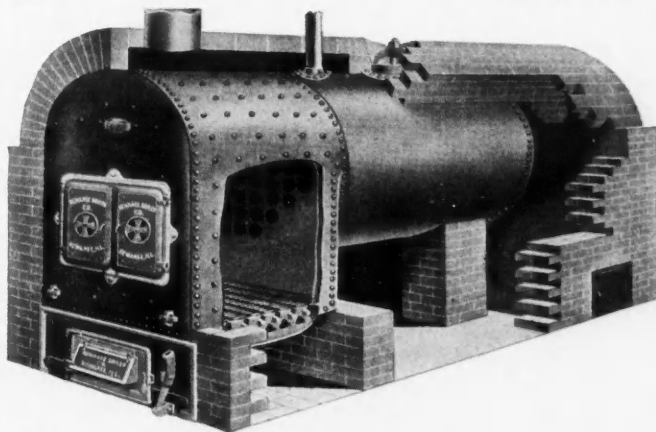
Neither cement nor asbestos will burn. And, thanks to the "Century" process, these shingles will not crack in the fire—split, chip or warp.

Feature Asbestos "Century" Shingles by name. Write us for prices and terms—and Booklet "Everlasting 1912."

Keasbey & Mattison Company, Factors
Ambler, Pennsylvania
Branch Offices in Principal Cities of the United States

KEWANEE Fire-Box Boilers

Have set a high standard for themselves and for all others, for a quarter of a century.



Their unbroken record of Success is easily accounted for by

The invariably high skilled labor employed,
The high quality of Mild Steel used,
The high combustion chamber so essential to a perfect combustion and economy of fuel,
The long life of the boiler,
The slight expense for repairs,
The low water-line,
The low head room required,
The fact of being in a single piece,
The ease of installation,
The impossibility to crack right when you need it the most.

There is no investment which will produce the dividends that a **KEWANEE** boiler will.

There is no equal for Apartment Buildings, Schools, Theatres, Hotels, Hospitals and Manufacturing Buildings

KEWANEE BOILER COMPANY

KEWANEE, ILLINOIS

Makes also the only KEWANEE Garbage Burning Water Heaters

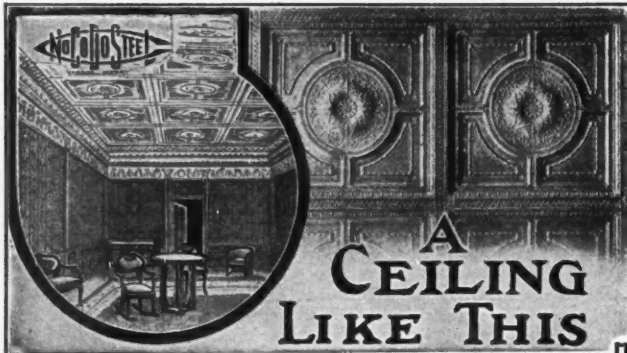
Chicago
Salt Lake City

New York
Los Angeles

St. Louis
Toronto, Canada

Kansas City

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A CEILING LIKE THIS

is for a large, high room, but we have others for smaller rooms.

Ceilings in **Stamped Steel** for Public or Commercial buildings. Ceilings of modern refined designs for private residences. Tilings in **Steel**, for Bathrooms and Kitchens.

Half the labor of erecting a metal ceiling is strictly Carpenters' work, that is, the scaffolding and furring. Once started, they can finish it as well or better than anyone else. Secure our agency and push them.

Catalogue on request

Northrop, Coburn & Dodge Co.

No. 29 Cherry St.

--

NEW YORK

**UNION
METAL
COLUMNS**

**Union
Metal Columns**

follow the classic designs of ancient Greece and Rome.

In the substitution of steel for wood not an atom of charm or beauty is lost—but a new element of value is added.

Union Metal Columns are indestructible—used in Porch, or Pergola, they will outlast the structure in which they are incorporated.

Specified by the most eminent architects and designers of America, these columns have earned an enviable repute even among those who deprecate the slightest departure from ancient forms.

The catalogue which we will be glad to send you upon request, illustrates the artistic use to which Union Metal Columns have been applied in beautiful homes and buildings throughout the country. We have a special proposition for Builders and Carpenters. Write to-day.

The Union Metal Manufacturing Co.

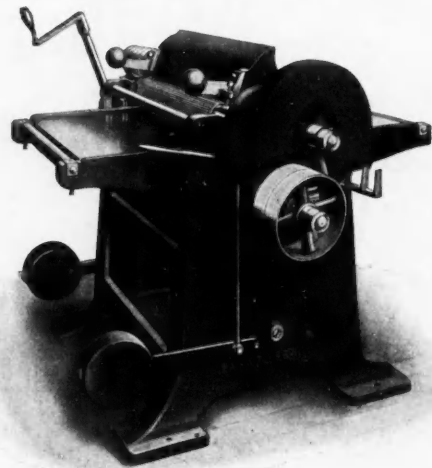
1402 Maple Avenue
CANTON, OHIO

The Contractors' Favorite Surfacer

J. A. Fay & Egan Company make a complete line of small shop tools for the carpenter-contractor and builder operating his own wood-shop, and they have won universal favor, being in use in practically every shop of this kind in the country. But no one of their machines has been so widely recognized and generally adopted as the No. 2 Centennial Surface Planing Machine, illustrated herewith. This is their most popular tool for this kind of work, and has had an immense sale for years, there now being several thousand of them in use. And it continues in popular favor unabated.

Of course, the reason for this extraordinary demand is, that it is built right—is just the right size—does perfect work at a minimum cost, and sells at the right price for all engaged in this work.

The frame is a single cored casting, and has sufficient weight, and enough floor support to prevent any vibration. The No. 2 may be equipped with circular cylinder with thin, self-hardening steel knives, and setting, jointing and



Fay & Egan's No. 2 Centennial Surface Planing Machine

grinding attachments. The feed consists of four solid steel rolls, the in-feeding roll being fluted and weighted.

Especial attention is called to the efficient manner in which all exposed gears have been completely covered by cast iron hoods, eliminating any possible chance for an accident resulting from exposed gears.

This machine is made to plane material 16", 20" and 24" wide, and 6" thick, and will do all general light work, and surface sash, doors and blinds at a very low cost. It takes up small floor space, and does not require much power. It certainly meets the requirements of the contractor in every way.

Any further information will gladly be given to interested parties upon request. The manufacturers' address is 545-565 West Front Street, Cincinnati, Ohio.



Miniature "Titelock" Shingles for Dealers

We learn from the Milwaukee Corrugating Company of Milwaukee, Wisconsin, manufacturers of "Titelock" metal shingles, that they will send miniature sets of these shingles to dealers upon request.

This offer affords every dealer, contractor and builder an opportunity to become thoroughly acquainted with the principle of "Titelock" construction and application upon roof. The miniature shingles are in every way—though on a considerable smaller scale—duplications of the original "Titelock" type metal shingles. They are finished in an attractive

When Writing Advertisers Please Mention the American Carpenter and Builder.

YOU ARE INTERESTED
IN THIS TEST
CONTRACTORS
and BUILDERS

This Nail
Made of



NO LOSS Under Test

These
Parts
Tested
Alike



THIS
is a
Regular
STEEL
Wire Nail
Nearly
Destroyed

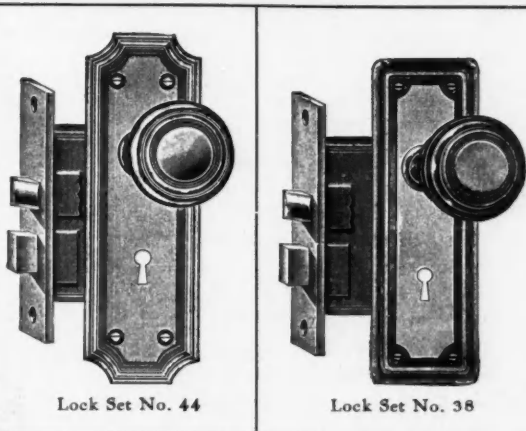
You Use Good Material.
Why Not Use Durable Nails?

Toncan Metal nails are sold under a positive 25-year guarantee against disintegration and corrosion. They are the **cheapest non-corrosive nails** on the market. They will last about three times as long as ordinary nails (when exposed to the weather), and about twice as long as galvanized nails. Unequaled for shingles, tin and slate roofing, porch and fence work, etc., or for any purpose requiring outside nails.

Send for price-list and free sample.

IGOE BROS., 61-71 Metropolitan Av., Brooklyn, N. Y.

Specifications
American Society
Testing Materials



THE T. B. RAYL CO., Detroit, Mich., with 37 years experience in Builders Hardware, offer their facilities to building contractors who want good goods, low prices and quick service. Send in your plans and specifications for estimates. Samples furnished. The two lock sets illustrated are in old brass or copper at 40c set, or real bronze at 85c set. Write us for other prices.

T. B. RAYL CO.

112-114-116 Woodward Ave., DETROIT, MICH.



**VENTILATION
BY THE
ROYAL SYSTEM**

is not an experiment—but a scientifically perfect and thoroughly proved method for ventilating buildings of all kinds.

Through a quarter century's continued use the Royal has proven to be the **best** and **cheapest** means for ventilating

Schools, Mills, Factories, Churches, Residences, Barns, Farm Buildings, etc. Also for preventing down draft and creating a strong up draft in chimneys.

ROYAL VENTILATORS

are Storm, Frost, Bird and Insect Proof, and are **ALWAYS VENTILATING, DAY AND NIGHT—RAIN OR SHINE.**

Made in **ROUND, SQUARE AND RECTANGULAR** types with both **GLASS AND METAL TOPS** of all metals.

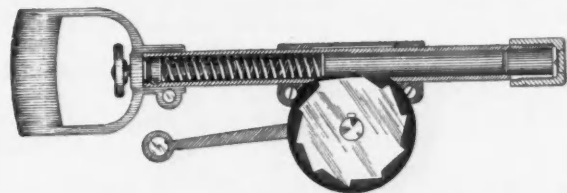
All types and sizes carried in stock for immediate shipment.

Ask the Man Who Uses Them!

Let us send our Catalog,
it's Free.



Royal Ventilator Company, 417 Locust St. Philadelphia



PHILLIPS' SPRING HAMMER

For Drilling Holes in

**Stone, Concrete, Brick,
Marble, Tile Conduit, etc.**

Will drill 10 times faster than by hand, strikes 800 to 2000 blows per minute.

An indispensable tool for Carpenters, Steam Fitters, Plumbers, Stone Masons and Electricians.

Simple in construction and action. Fully guaranteed.

You turn the crank, the spring does the work.

Makes perfectly round and straight hole $\frac{3}{8}$ " to $1\frac{1}{2}$ " in diameter, true to size from start to finish.

Write for prices and full particulars today

ORR & LOCKETT HARDWARE CO.

Established 1872
14-16 West Randolph St. - CHICAGO

When Writing Advertisers Please Mention the American Carpenter and Builder.

manner and will undoubtedly prove good business producers for both the dealers who secure and exhibit them and the company in whose interests they are distributed.

The Milwaukee Corrugating Company's "Titelock" metal shingles are thoroughly known among the building field. They have been extensively and successfully used.

Their shingles are made of the best I. C. full-weight open-hearth terne plates, in two artistic patterns. They are both painted and galvanized. As they are absolute proof against lightning, fire and water they may be considered practically indestructible.

The galvanizing of the metal is done after the shingles are formed rather than before. This method insures no raw edges, cracks or abrasions of the zinc coating and absolutely guards against any part of the shingle becoming rusted.

"Titelock" metal shingles are made in sizes 7x10 and 10x14 inches. Various trimming pieces, for use with the shingles, are also manufactured by the Milwaukee company. Full descriptive matter concerning these metal shingles can be secured by any AMERICAN CARPENTER AND BUILDER Reader by writing the company at its Milwaukee office.

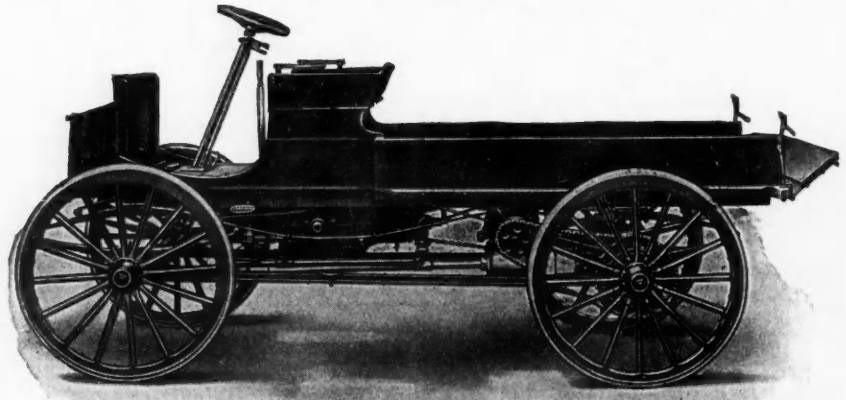
✱ The McIntyre Steel Truck

As carpenters and builders generally are beginning to recognize what great value a light motor truck can be to them in their daily work they are more and more showing a decided interest in the make-up of various trucks and posting themselves upon the many mechanical details of

construction found in power wagons.

One of the most successful types of motor trucks of the day are those which are being made by the W. H. McIntyre Company, of Auburn, Indiana.

The McIntyre Company are building both the two and four cylinder type trucks of from 600 lbs. to 3 tons capacities. Shown here is the double cylinder, horizontally opposed



McIntyre's Money Maker for Builders

motor, all steel frame, McIntyre truck which has been proving so successful in light and medium heavy delivery operations.

This all steel frame truck has ample power equipment, a good speed range, is well built throughout and is both easy and economical to operate.

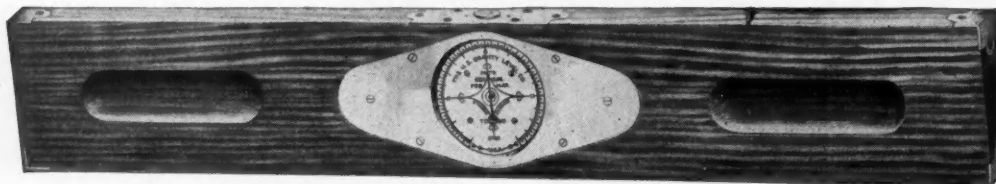
The McIntyre Company will furnish complete details concerning all the trucks of their manufacture upon request. For these, their catalogs, etc., write the W. H. McIntyre Company, 14301 West 7th Street, Auburn, Indiana.

This is a cross section of a

Winthrop Asphalt Shingle

Note the taper—thickness and weight all on the exposed butt where it is needed. Made of solid asphalt—with a chipped slate surface—wonderfully handsome, absolutely weather proof and as durable as the house itself. Uniform size—easy to lay.

We Want to Send a Free Sample to Every Carpenter and Builder
WRITE FOR IT
WINTHROP ASPHALT SHINGLE CO., 8 61st Street, CHICAGO, ILL.



SENSATIONAL
NEW
LEVEL

THE LEVEL THAT TALKS. Yes, it almost talks out loud. Your old spirit level registers that you're off "about so much," a regular "by guess and by golly" proposition. The U. S. Gravity Level says "Hold on, Jim, your off just $\frac{1}{8}$ of an inch to the foot." It doesn't leave you to guess how much—the dial registers it unerringly. You shift your job $\frac{1}{8}$ and it's level—you know it—you don't have to use the level again to test; thus you save valuable time. When you see the "U. S." you'll dump your spirit level as cheerfully as you cast aside iron nails for wire ones. Write today for full size picture of level and complete descriptive matter.

THE U. S. GRAVITY LEVEL COMPANY, Dept. H., 1341-48 Nicholas Bldg., Toledo, Ohio

When Writing Advertisers Please Mention the American Carpenter and Builder.

Granite

TRADE MARK

ROOFING



SIX INCH SOLID LAP
SAFEGUARD

A six-inch lap is better than a three-inch lap. It gives better protection against leaks and permits nailing down on the under sheet only, so that no nail heads appear on the surface. Otherwise this is the same Granite Roofing that we have sold for 26 years for use on great factories. It is immune from damage by coal smoke or cinders, and it has a sea grit surface which makes painting entirely needless. Behind it is a reputation that has Passed the Quarter Century Mark.

EASTERN GRANITE ROOFING CO.
19 Battery Place, New York

Chicago Pittsburgh

WANTED

Carpenters and Builders

¶To one wide awake Carpenter and Builder in each locality we offer a fine opportunity to increase his profits.

Are You This Man?

¶Write at once and ask us for our co-operative selling plan. How we work with you and help you secure the heating contracts in your community.

Home Furnaces

¶Home furnaces and boilers are the result of years of labor and manufacturing experience.

¶20,000 pleased customers.

¶Average price, including pipes, registers and all materials.

Warm Air Furnaces	Steam Boilers	Hot Water Boilers
5 Room House, \$50.00 . . .	\$125.00	\$150.00
6 Room House, 60.00 . . .	150.00	180.00
7 Room House, 70.00 . . .	175.00	205.00
8 Room House, 80.00 . . .	200.00	240.00

¶Every Furnace Guaranteed.

¶If you want the newest and best in heaters, write us.

Home Furnace Co.

Detroit, Mich.



MAJESTIC

FOUNDATION
COAL CHUTE



¶Protects the building just where most needed — above the opening.

¶The heavy steel hopper catches all the coal.



¶When not in use, the hopper lies in the bottom of the chute body. ¶The door locks automatically either open or closed. Strictly burglar-proof ¶With 1/4-inch wire glass or steel panel in door.

Write for circular and address of nearest dealer.

MAJESTIC FURNACE CO.
995 to 1001 Sixth Avenue Huntington, Indiana

Hotel Cumberland

New York

Broadway at 54th Street
Near 50th 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

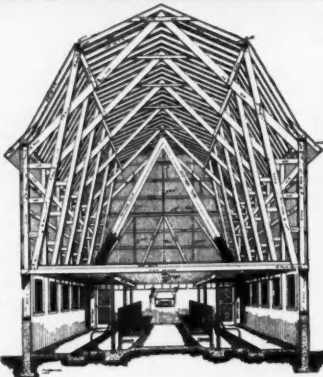
HARRY P. STIMSON, Formerly with Hotel Imperial.

Only New York Hotel Window Screened Throughout.

When Writing Advertisers Please Mention the American Carpenter and Builder.

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

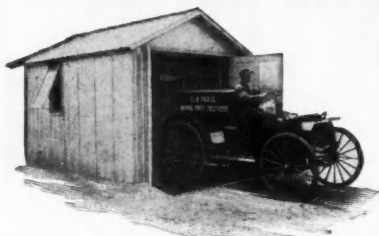
We have complete blue prints, specifications, floor plans and lumber bills for several different types and sizes of modern dairy barns. Ask about them. Also ask how to get the free help of our Architectural Department.

This valuable, interesting book will be mailed to you free if you tell us these facts. "For whom do you expect to build or remodel Dairy Barns? (Give names and addresses). When? For how many cows? Address."

James Mfg. Co.
8575 Cane Street
FT. ATKINSON, - WIS.

Prudential Portable Steel Shelters

(Patented)



"Made in Baltimore"

Sheds, Boat Houses, Outing Cottages.

For Garages, Implement Shelters, Work Shops, Hunting Lodges, Storage

Anyone Can Erect Them

They require no frame, no woodwork, nor any foundation.

When put up they are very rigid, sanitary, weather-proof and fire-proof. They will not rust and when dissembled occupy very compact space.



Contractors and Builders! The erection and sale of these buildings open a new and profitable field for you.

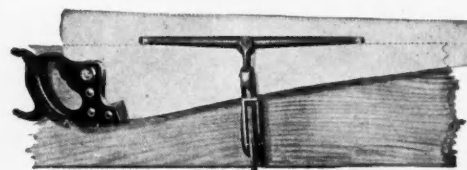
Write for prices, catalogues and discounts.

C. D. PRUDEN & CO., SOLE MANUFACTURERS
STATION C
BALTIMORE, MD., U. S. A.

The Gunn Folding Saw Clamp

This handy little instrument which is being marketed by the Joseph Woodwell Company of Pittsburgh, Pa., will be of interest to all who make any considerable use of a saw.

This Gunn folding saw clamp will instantly fasten itself to work bench, tool box, window sill, to the edge of a board, plank, joist, stick of timber,



In Use

pile of lumber, rail of fence or any other suitable place, without the aid of screws, nails or any other means of fastening. And it stands very firm.

It is half the length of a rip saw and weighs $3\frac{1}{4}$ pounds. It is made of the best malleable iron, japanned, and is warranted not to break. It folds like a jack-knife and can be easily carried in a coat pocket. It occupies no more space in a tool box than does a hatchet or claw hammer.

The Woodwell company have an agency proposition to offer any carpenter and builder located in territory in which they are not now represented. To all interested in this Gunn self fastening folding saw clamp a circular detailing it in every particular will be sent. For this address the Joseph Woodwell Company, 201 Wood Street, Pittsburgh, Pa.



Rapid Accurate Estimating

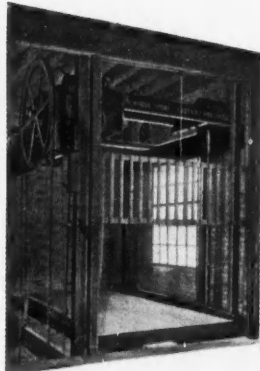
When estimating on a job some builders simply look at the plans and say, "That job is worth so much," while others sit down and go carefully over the plans and specifications, measure up and take a few notes of some of the things that will be required. The former are taking great risks, which do not pay, and the latter are adopting very unsatisfactory methods. Now, a builder should give his whole attention to reading off, measuring up and writing down everything required, even if it takes longer time than anticipated.

The question is, can he afford the time to do it? Consider the value of many hours and days contractors spend in taking off quantities, the neglect of the other work, which requires all their attention, the doubtful chance of obtaining the contract, the sleepless nights spent in trying to come to a satisfactory conclusion in their efforts to figure out what it ought to be, and a hundred and one other worries which help to shorten this brief span of life.

Slipshod estimating and guess work have ruined many a good man. A builder is anxious to get the work and may have inside information that his efforts will be fruitful, but even so, he is liable to overlook something or many things. His familiarity with a particular class of work makes him over-confident. He sends in his tender and is accepted. Perhaps his was not the lowest, but he honestly believed that he gave a fair, reasonable offer to do the work with a marginal profit. When the work commences and as it advances he discovers that he overlooked the ceiling joists, or didn't reckon on the strapping, or some other items. If only one item be omitted, however small, he is that sum the loser. "But," he may say, "what does it matter? I have allowed sufficient elsewhere to cover that." Thus he cuts a piece off the top of his pants to make them longer at the bottom.

No man can be a success until he can make a reliable estimate of the actual cost of everything required in the

When Writing Advertisers Please Mention the American Carpenter and Builder.



LEITELT Freight Elevators

We can furnish you with freight elevators for any purpose—and for either power or hand operation.

Let us figure with you and advise you as to the most practical equipment for you to install.

- We Make Complete*
- DOUBLE BELT ELEVATORS**
(line shaft drive)
 - SINGLE BELT ELEVATORS**
(electric motor drive)
 - HAND POWER ELEVATORS**
 - CARRIAGE AND AUTOMOBILE LIFTS**
(power and hand)
 - HYDRAULIC LIFTS**
(direct plunger type)

Our freight elevators are in extensive use. They are mechanically right in every detail. They give continuous satisfactory service under the most severe usage. They are built of the best materials.

Take up the elevator question with us. Let us send you our Catalogue C and other descriptive matter. Write now for this and any other information you want.

ADOLPH LEITELT IRON WORKS
GRAND RAPIDS, MICH.



The Plastic Relief Mfg. Co.

945-949 N. Halsted Street
Chicago, U. S. A.

ORNAMENTAL PLASTER WORK

CEILINGS PANELS

CORNICES COVES

CAPITALS BRACKETS

ARCHITECTURAL DECORATIONS

INDIRECT LIGHTING COMPO
BOWLS

Ceiling number 16



Don't Miss This Opportunity

We Want One Carpenter or Builder in Every Community to Demonstrate, Take Orders for and Apply Our EDWARDS METAL SPANISH TILE ROOFING on a Liberal Commission.

Here is a chance to build up an independent, profitable business for yourself right at home. Many carpenters are now devoting their entire time to selling our metal roofing. Others have made big profits simply devoting part of their time to selling and laying our Metal Spanish Tile.

Edwards Metal Spanish Tile

Is being advertised in the leading magazines and is now known to thousands of home builders and owners everywhere. Wherever it has been used it has made a decided "hit" because it shows off to good advantage on the roof and has numerous points of superiority over any other style of roofing.

Architects are specifying Edwards Metal Spanish Tile, for they know it will do away with roofing "troubles." Builders like it because of the finished appearance it gives any house on which it is used.

Our Metal Tile are stamped out of the highest quality Worcester terne plate in exact imitation of the most expensive Terra Cotta Spanish Tile. They come either "dip" painted or heavily galvanized size 10 x 14 inches. Our patented interlocking side lock makes it possible to make a perfectly moisture-proof roof without soldering. Edwards Metal Spanish Tile afford the fireproof advantages of Terra Cotta Tile, but are much lighter in weight, cost but a trifle more than ordinary roofing and will last a lifetime.

WRITE US TO-DAY 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 some one else will be given your territory. **DON'T DELAY. WRITE TO-DAY FOR OUR SPECIAL AGENTS' PROPOSITION.**

The Edwards Manufacturing Co.

"THE SHEET METAL FOLKS"

401-417 Eggleston Ave. CINCINNATI, OHIO

THE WORLD'S LARGEST METAL ROOFING, METAL SHINGLES AND METAL CEILING MANUFACTURERS

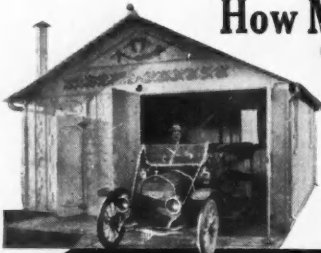


Note the construction of patented interlocking device, protecting nail heads from weather and providing perfectly for expansion and contraction of the metal.

When Writing Advertisers Please Mention the American Carpenter and Builder.

job and do it quickly. Then, and then only, can he tell how much he will gain, and only a systematic method will enable him to do this, and place him in a position to do good work to the satisfaction of the owner, the architect and all concerned. He then impresses the architect with his sincerity and ability, increases his clientele, and improves his banking account, building up a reputation and obtaining a lasting advertisement which cannot be secured by any other means.

Rapidity doesn't mean so much in making an estimate; but it gives the builder more time for looking after his business.



How Many People in Your Town Have Bought Autos this Season

A good many of them are keeping their cars in public Garages—and are ripe for a change. It's expensive! Get their order for a

Pruden System Fireproof Garage

One season's garage bills buy it. Comes complete in self structuring. Interlocking units of metal. Strong, durable and handsome as masonry. You erect in few hours and get a fine profit for your time and work.

We Can Give You Quick Shipment

on a Pruden Building. All styles in stock. Write today for Catalog and special prices to contractors.

METAL SHELTER COMPANY, 9-90 W. Water St., St. Paul Minn.
Patentees and Sole Mfrs. Pruden System Buildings.

3 1/2 INCH STAR SCRIBERS



With exclusive adjustment slot, as plainly shown in cut. Allows use of 1/4 inch of pencil before readjustment. Made in two styles—sharp or broad point. Price 25c, polished steel; 30c, nickel plated.

Order Today

And specify whether you want sharp or broad point. Postage stamps accepted. We can also furnish steel point, fitted for any Star Scriber, Price 10c. Round pencils 5c.

POTTER BROTHERS

612 W. 110th St., NEW YORK



The Bradt Publishing Company, of Jackson, Mich., emphasize these facts in their ad. this month and offer a solution of these problems to those sending for the last edition of the Lightning Estimator.

We might say this concern has advertised in every issue of this journal and we know them to be reliable.

Taylor Portable Steel Derrick

Tested at factory, is hoisted and swung a complete circle 1900 lbs. Shipped ready to operate. No wrench or tools required to set derrick on job. Made in two sections. Beam section connects post by tipping in a vertical position and projects at such an angle to clear side wall of building and has sufficient height to hoist wheel-barrows, window frames and timbers. One man can climb a ladder with either section. Consider the durability of a derrick constructed entirely of malleable Iron and Steel and that of Wood, more compact, more powerful.

Derrick complete with three way block, channel steel brackets, bolts for attaching to building, price \$40.00, and four and one-half cents per ft. for crucible steel cable attached. Drum capacity 300 ft.

Special platform and chains for attaching derrick to gondola railroad cars, price \$15. Chains for hoisting wheel-barrows, price \$2.

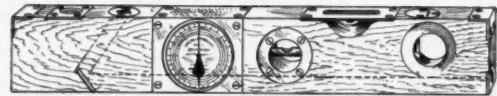
JOHN L. TAYLOR, Manufacturer

Taylor Portable Steel Derricks
Phone Monroe 3966 1034 W. Lake St., Chicago



The American Combined Level and Grade Finder

SIDE VIEW



TOP VIEW



All progressive and up-to-date Carpenters, Contractors and Mechanics are getting one of our levels and grade finders.

An instrument with which at one glance you can get the true slant on any line or grade, either in degrees, inches or percentage, or all at one time, and will at once give the exact distance needed to plumb up to a true level.

The longitudinal recess shown in cut is well worth the low price of the instrument. Note the additional level glass, now placed in middle of instrument, giving with pointer or hand on dial three guides for leveling. The most practicable, durable and convenient instrument of the day.

Write at once for large list of testimonials and special introductory price given only to first applicants with privilege of taking agency.

American Level & Grade Finder Co., Box 255, RAILROAD, PA.

"I Have Color-Mixed Several Carloads of Saw Dust With Green Fluid"



Cement Mach. Supply Co., Denver, Colo., April 30, 1912
Denver, Colo.

Gentlemen:—During past two years my Coltrin Mixer has mixed 6000 cu. yds. of concrete for all kinds of work, sidewalks, floors foundations, piers, etc. I have also color-mixed several carloads of saw dust with a green fluid which was used on floor of stock yards stadium during annual stock shows. The total expense for repairs during the time have owned mixer, will not exceed \$10.00, and it is in good running condition today.

I have received \$6.00 per day as rent for my Coltrin on several occasions. The mixer has more than paid for itself and I am perfectly satisfied. Very truly yours,

FRED LIND.

THE COLTRIN CONTINUOUS-BATCH MIXERS

SHIPPED ANYWHERE ON FIVE DAYS TRIAL

Write for Catalog

The Knickerbocker Co., Jackson, Michigan

When Writing Advertisers Please Mention the American Carpenter and Builder.



Just a turn of this little crank opens or closes your shutters

The MALLORY SHUTTER WORKER

opens or closes your shutters from the inside without raising the sash or screens, and securely locks them in any position when closed. Compactly made, neatly and attractively finished to suit your woodwork. Any carpenter can put them in place on old or new houses, whether frame, brick or stone. :: :: :: :: ::

If your dealer hasn't them, send for illustrations and descriptive price list to :: :: :: ::

MALLORY MFG. CO.
514 BROAD STREET
FLEMINGTON, N. J., U. S. A.

Antiseptine

Registered

Shingle Stains

"Wood preserving stains that stay put."

The New Standard in Exterior Stains

Antiseptine Shingle Stains are made of the well known wood preserver Antiseptine in combinations with selected pigments.

Antiseptine cannot evaporate from the wood like creosote and the Antiseptine insures lasting coloring effects by permanently protecting the pigments.

Antiseptine Stains have been welcomed by all who are building reputations as well as building houses, as the first REAL step ahead in exterior stains.

Antiseptine Stains at first cost, cost you NO more than the ordinary kind of stains—and they save you time, labor, money and worry in the long run.

We want to send you sample Antiseptine Stains on wood. You want to get these.

Made only by

American Wood Preserving Co.

1345-1351 North Branch Street

Incorporated 1892

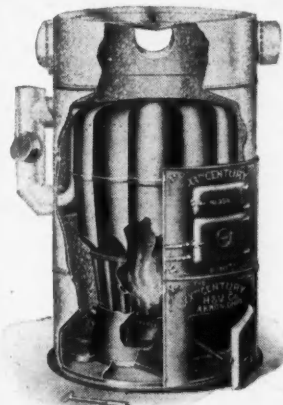
CHICAGO

Phone, Dearborn 119

Antiseptine

Registered

Shingle Stains



Every Builder Knows—

That, after all, no house is ever satisfactory unless it can be the most evenly, cleanly, perfectly and economically heated that is possible. Whether the heating be of Steam, Hot Water or Warm Air, it matters not. The very building of that house demands the best possible consistent with cost of installation, maintenance and operation.

You Can Burn Cheap Grades of Soft Coal or Screenings

as perfectly, cleanly, and easily, and at a much lower cost and with perfect satisfaction with

Warm Air Heaters

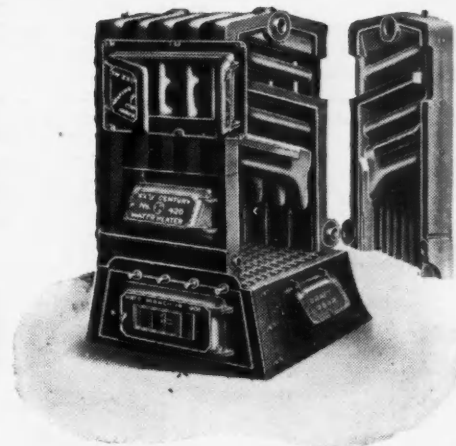
XXth Century Hard or Soft Coal

Steam and Hot Water Boilers

The remarkable design (our exclusive patent) of our Fire Pot in both Heaters and Boilers, guarantees absolute combustion, ease of operation, and the lowest possible fuel-cost. Examine one and see why.

Every Pound of Fuel is Made to Produce the Maximum Amount of Heat Units—No Heat Units Wasted

Builders: should ask for our catalogue and prices—the most sensible features ever embodied in heaters and boilers that have stood the test for years. Write us.

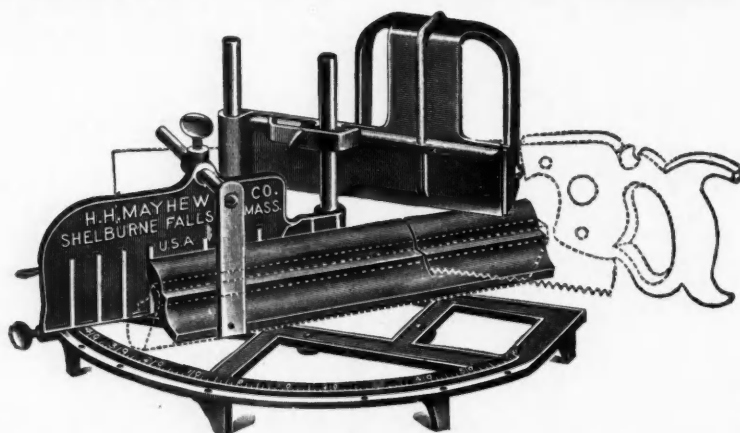


The XXth Century Heating and Ventilating Co.

Akron, Ohio

When Writing Advertisers Please Mention the American Carpenter and Builder.

MAYHEW 60° MITRE BOX



This box embodies more distinctive features than any other made

Designed for Simplicity, Accuracy, and Durability. Strictly a right hand tool for mitering.

Box embodies a new feature in reversing the principle commonly used on other boxes.

Any of three saws may be used — Panel — Hand or Back saw.

Saw guide adjustable for any thickness of saw.

Extreme mitre to 60° without makeshift. May be used as a stationary or pivot box by use of the pin posts.

In mitering duplicate cuts there is no restriction on length.

Will cut compound mitre.

Parts take down into space 10x10x4 inches.

Weight 15 lbs. complete.

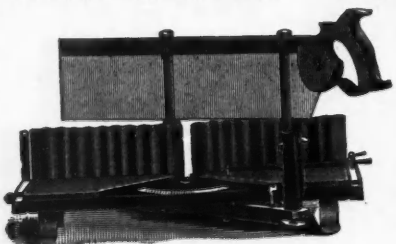
Box contains full directions for use.

PRICE EACH, \$10.00

H. H. MAYHEW COMPANY, SHELBURNE FALLS, MASS.

GOODELL MITRE BOX

Made of STEEL - Cannot Break



First in Quality and Improvements
Automatic Stops for holding up saw.
Corrugated Backs Graduated.

Gauge for duplicate cuts and many other features

Send for Circular "C"

GOODELL MFG. CO., Greenfield Mass.

BOVEE FURNACES at Manufacturer's Prices

SAVES 50 PER CENT of COST; 40 PER CENT of FUEL
Most Durable, Most Economical Furnace Sold

Has a perfect ventilating system for every part of the building

RESIDENCE HEATING PLANT
Hot air registers in five rooms; cold air return in two rooms; 40-in. Furnace, 20-in. Fire Pot, 28-in. Combustion Chamber, 10,000 cubic feet Heating Capacity.

Special Price, \$65
CHURCH AND SCHOOL HEATING PLANT
One large hot air, two cold air registers, 54-in. Furnace, 32-in. Fire Pot, 40-in. Combustion Chamber, 40,000 cubic ft. Heating Capacity.

Special Price, \$95
Horizontal Furnaces with large doors or larger furnaces and more piping at proportionately low prices.

Bovee Grinder & Furnace Works, 50 8th St., Waterloo, Ia.

LUFKIN
Tapes & Rules

are Standards of Accuracy, Durability and Workmanship.

SEND FOR CATALOG

THE LUFKIN RULE CO.

SAGINAW, MICH.

NEW YORK
LONDON, ENG.
WINDSOR, CAN



Use KEROSENE Engine Free!

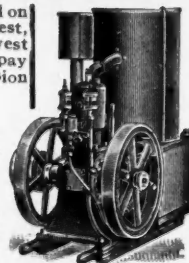
Amazing "DETROIT" Kerosene Engine shipped on 15 days' FREE Trial, proves kerosene cheapest, safest, most powerful fuel. If satisfied, pay lowest price ever given on reliable farm engine; if not, pay nothing. No waste, no evaporation, no explosion from coal oil.

Gasoline Going Up!

Gasoline is 9c to 15c higher than coal oil. Still going up. Two pints of coal oil do work of three pints gasoline.

Amazing "DETROIT"

—only engine running on coal oil successfully; uses alcohol, gasoline and benzine, too. Starts without cranking. Only three moving parts—no cams—no sprockets—no gears—no valves—the utmost in simplicity, power and strength. Mounted on skids. All sizes, 2 to 20 h. p., in stock ready to ship. Engine tested before crating. Comes all ready to run. Pumps, saws, threshes, churns, separates milk, grinds feed, shells corn, runs home electric light plant. Prices (stripped), \$29.50 up. Sent any place on 15 days' Free Trial. Don't buy an engine till you investigate money-saving, power-saving "DETROIT." Thousands in use. Costs only a postal to find out. If you are first in your neighborhood to write, you get Special Extra-Low Introductory price. Write! (188)



Detroit Engine Works, 495 Bellevue Ave., Detroit, Mich.

When Writing Advertisers Please Mention the American Carpenter and Builder.

ABOUT—"The Standard" Mixing Equipment AND Hoists— READ

All of our Batch Mixers are low charging and consequently require no mechanical elevating arrangements or platforms. In all "Standards" the materials are charged directly into mixer from the platform about two feet from ground.



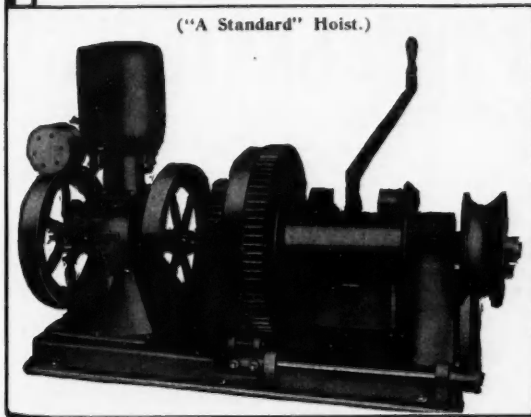
("The Standard" Low Charging Mixer with Hoist for Mixed Concrete.)

"The Standard" Batch Mixers are always ready for use. They are of simple construction. Nothing complicated—nothing to break down—about them. "The Standard" discharging arrangement operates simply from either end of the drum. This saves extra man required with other machines. "The Standard" is easy running. Practically no friction. Requires less power, less fuel, less attention than any other mixing equipment. "The Standard" machines are moderate in weight. They can be moved very easily from job to job.

Our "Standard" Low Charging Mixer with Hoist for Mixed Concrete—(shown here) is made for the easy, quick and inexpensive handling of the mixed concrete without the necessity of having separate hoisting equipment. One engine drives both the mixer and the hoist. This equipment is especially adapted for general building work, silos, towers, tanks, etc., etc. We can furnish you with this equipment in various sizes and capacities, and with or without reversing hoist for operating two cage elevator.

This "Standard" Hoist with either gasoline or steam power is especially designed for building construction and contractors use for either single line hoist or double platform elevator.

Contractors and Builders—we can furnish you with the highest type of mixing equipment, steam engines and boilers, gasoline engines, contractors' hoists, wheelbarrows, carts, trucks, etc., etc., at prices that MUST interest you. Before buying any equipment get in touch with us—get our new catalog No. 144 and our prices. No. 144 will explain "Standard Equipment" to you in detail. Drop us a line that you want your copy of No. 144 RIGHT NOW.



("A Standard" Hoist.)

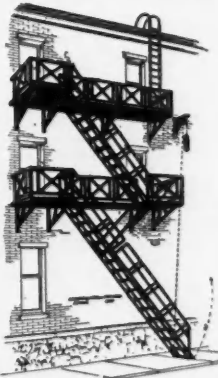
The Standard Scale and Supply Company

CHICAGO, 1345-1347 Wabash Ave.
PHILADELPHIA, 35 S. Fourth St.

NEW YORK, 136 West Broadway
PITTSBURGH, 243-245 Water St.

Why Not Represent Us
In Your Locality?

You Can Build Up A Profitable Business Through Our Catalog



Fire Escapes

Wire and Iron Work is needed in every locality. The field for selling and installing this work was never larger. Take Fire Escapes for example—every city and village has certain fire regulations—all require that fire escapes be used on theaters, opera houses, schools, hotels, halls and other public buildings. This is a big market in itself, and one that you can profit from.

Now here is your opportunity—simply act as our local agent in connection with your regular building work. We are large manufacturers of Wire and Iron Work. We can make anything of this type you can possibly want. You sell from our catalog. When special work is wanted you send us the particulars and we will furnish you with detailed estimates.

Just a few of the lines we manufacture include—
Fire Escapes, Folding Gates, Partition and Balcony Railings, Stairways, Window Guards, Shutters, Porticos, Fencing, Stable Fittings, Jail Cells, Vault Doors, etc., etc.

Don't overlook this proposition. It can point your way in developing a substantial Wire and Iron Work business without any outlay for stock. Send for our large builders Catalog No. 434. Have it on hand and use for selling and reference. It details our line fully—sizes, description and prices. Let us send you a copy and our complete particulars—NOW. Get a letter in to us before some one else gets the business.

E. T. BARNUM, Wire and Iron Work DETROIT, MICH.

When Writing Advertisers Please Mention the American Carpenter and Builder.

THE COAST LINE TO MACKINAC

DETROIT CLEVELAND BUFFALO NIAGARA FALLS
TOLEDO PT. HURON GODERICH ALPENA ST. IGNACE

THE CHARMS OF SUMMER SEAS
Spend your vacation on the Great Lakes the most economical and enjoyable outing in America. Daily service is operated between Detroit and Cleveland, Detroit and Buffalo; four trips weekly between Toledo, Detroit, Mackinac Island and way ports; daily service between Toledo, Cleveland and Put-in-Bay. A Cleveland to Mackinac special steamer will be operated two trips weekly from June 15th to September 10th, stopping only at Detroit every trip and Goderich, Ont., every other trip.—Special Day Trips Between Detroit and Cleveland, During July and August.—Railroad Tickets Available on Steamers. Send 2 cent stamp for Illustrated Pamphlet and Great Lakes Map. Address: L. G. Lewis, C. P. A., Detroit, Mich. Philip H. McMillan, Pres. A. A. Schantz, Gen'l Mgr. Detroit & Cleveland Navigation Company



Largest Apartment Building in the World,
"THE BELNORD," New York.
Oak Flooring Used.

OAK FLOORING

Increases the Renting and Selling Values and Attracts a Better Class of Tenants

Builders and owners will find it a clinching argument to say "It's floored with OAK FLOORING." It is the biggest single feature to look for in any house or apartment building. It imparts an air of refinement and elegance. It is the modern flooring.

OAK FLOORING ¾ inch thickness by 1½ inch or 2 inch faces can be laid over old floors in old homes or over cheap sub-floors at a very low cost. It is cheaper than carpets or pine flooring. When laid it has all the appearance of heavy flooring.

There is a solid satisfaction and lasting pleasure in the substantial and dignified appearance of OAK FLOORING.

Contractors and carpenters find it very profitable to lay ¾ inch stock over old floors in old homes during dull periods. A little canvassing is all that is necessary to secure jobs. A carpenter or handy man can lay OAK FLOORING successfully.

For durability, OAK is the best. OAK FLOORING laid thirty years ago, after very hard use, is still in good condition.

Write for Catalog

THE OAK FLOORING BUREAU, 886 Hammond Bldg., DETROIT, MICH.

SPECIAL PLANS from YOUR OWN SKETCHES

LESS THAN HALF USUAL PRICES

WE will furnish finished drawings and full sets of blue prints and specifications from rough sketches of residences, bungalows, garages, farm and outbuildings, and all kinds of public and private buildings.

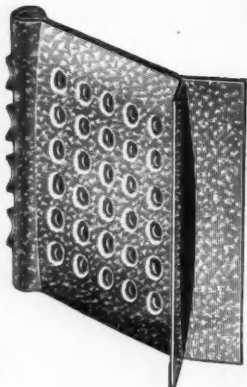
Write Us for Estimate on all Special Work.

SAVE TIME- COST AND WORRY

We have over 3,000 different designs of residences of all types which have been built in all sections of the country. We furnish \$75.00 to \$100.00 plans for only \$5.00 to \$15.00 per set, including details and typewritten specifications. Plans sent out same day order is received. Write us for catalog of our plans, books and magazines.

THE RADFORD ARCHITECTURAL CO., 178 W. Jackson Boulevard, CHICAGO

Architects, Contractors, Builders



To meet in price the competition of inferior plugs recently put on the market, we offer our

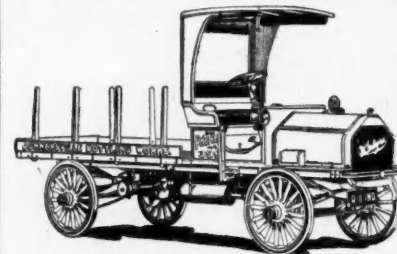
NIAGARA JUNIOR

It is in every way excellent, made after the same fashion, with the same material and workmanship, as our regular plug. The plug measures 2-¾" x 2-½".

Leaflets 57-57C
Sample plug to anyone interested.

NIAGARA FALLS METAL STAMPING WORKS

Manufacturers of Hardware Specialties
NIAGARA FALLS, N. Y., U. S. A.
Wall Ties, Veneer Ties, Sash Pulleys, Sash Chain, Embossed Metal Letters and Figures
57A



McIntyre

STEEL TRUCKS

Will save you money--

By Keeping Material on the Job.
By Reducing Running Time to the Work.
By Enabling You to Oversee More Work.
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ALL THIS AT LESS EXPENSE.

It's cheaper to feed gasoline to a McIntyre than oats to a horse.
TRUCK CAPACITIES 600 LBS. TO 3 TONS. CHASSIS PRICES \$600 to \$3,000.
Learn how to add to your profits and convenience by sending for catalogue AC to 14301 W-7th St., Auburn, Ind.

W. H. McINTYRE COMPANY

Vehicle building since 1869. We also build pleasure cars.

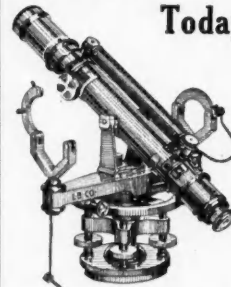
Why Waste Time and Money



when you can save both by using a WHITE'S IMPROVED LEVEL. This Instrument is inexpensive and efficient, and is made to meet all the requirements of the General Contractor. Full particulars and catalogue sent on request.

DAVID WHITE CO. Dept. C, 419 E. Water St., Milwaukee, Wis.

Tomorrow's Success Depends Upon Today's Preparation



Prepare yourself and secure a

Beckmann Instrument

The first element of success is accuracy. Our instruments are all guaranteed accurate. Send for CIRCULAR Y.

THE L. BECKMANN CO.

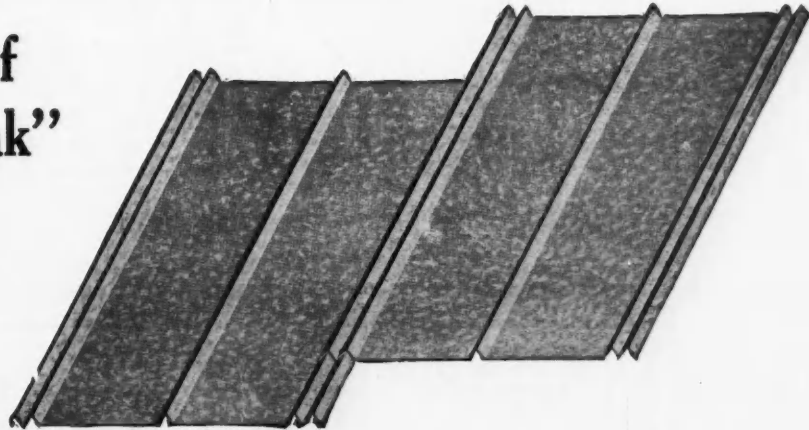
500 Adams St. ESTABLISHED 1874 TOLEDO, OHIO

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Justright Galvanized Roofing

**"That Simple Roof
That Don't Leak"**

- Absolutely Weather Proof**
- No Wood Strips Required**
- No Special Tools Required**



This wonderful roof will give **satisfaction**. It can be applied by anyone who can apply V Crimp or Corrugated Roofing. Agents wanted in unoccupied territory.

If your dealer does not handle this roofing, write

The Moeschl-Edwards Corrugating Co.

8th Street - - - COVINGTON, KY.

Manufacturers Sheet Metal Building Material—Interior—Exterior



**GOOD BYE THE
FRONT RANK'S
TOO HOT WE'RE
GOING HOME**

HEAT SATISFACTION

When combined with low fuel consumption means a whole lot to the one who lives in the house—the man for whom you are building. The combination is found only in the

Front Rank Steel Furnace

These furnaces are constructed on correct principles. They are built with the idea in mind of giving the very greatest amount of heat. We found out by experience that

Cast Iron Is Not A Safe Material

From which to construct a furnace, inasmuch as the gases leak through cast iron into the outside casing. We use **NOTHING BUT STEEL PLATES** in all parts which enclose the fire.

Front Rank Furnaces Are Absolutely Gas Tight

It is impossible for gases to get into the outside casing or hot air ducts. There is not a feature of merit in any modern furnace that is not found in the construction of the FRONT RANK. There are, however, splendid features in the FRONT RANK that you will find in no other furnace on the market. **THEY ALWAYS SATISFY.**

The Front Rank is the Last Word in Furnace Perfection

Burns successfully any kind of wood or coal. Get in touch with us today. We have a splendid proposition for you.

HAYNES-LANGENBERG MFG. CO.

FOREST PARK BOULEVARD
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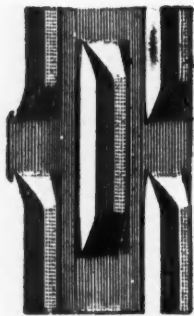
One Man Can Do All Of Your Sidewalk and Floor Finishing and Save You Money

With our long handled finishing tools one man can do the work of a whole gang in finishing cement sidewalks and floors. This means a saving of labor—also more profit on every job. Worth looking into isn't it?
 Our long handled finishing tools—Trowels—Jointers—Edgers—Floats—effect a big saving in any concrete sidewalk or floor work. Workman operates them standing up—no sore backs and sore knees. He can cover ten times as much space and the work he does is uniformly far better than any of the "old time way" work.
 Trowel blades are made of saw blade steel. They give thorough and long wear. All castings are malleable—insuring against any breaking. Entire trowel is absolutely rust-proof.
 Our jointers, Edgers, and Floats operate easily, speedily and perfectly. All are as equally well made as our trowels.

You Can Use Our Tools for 10 Days—FREE

We will send any separate tool, or a complete set, to any responsible contractor and builder on a 10 days FREE TRIAL. No money in advance. Use our tools for 10 days and see for yourself if they are not actually a great deal better than we claim. Then send us the money or send them back. We will send you a catalogue, and other descriptive matter about our tools, if you'll but ask us to. Mail a postal today and let us show you the positive value of these tools in your work.

TWENTIETH CENTURY MANUFACTURING CO., 1620 Lowe Street, Chicago Heights, Ill.



Easily Erected
A Great
Plaster Saver

**WHEN
YOU
NEED**

METAL LATH

("Sykes Trough")

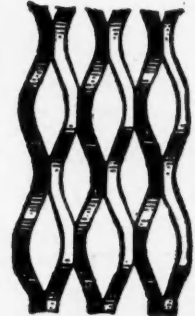
Either Sheet or Expanded
and Want the Best
Manufactured

("Expanded Cup")

Made in all gauges from all kinds of sheets,
"Anti-Rust" "Painted" "Galvanized."

Address

**Sykes Metal Lath and Roofing Company
NILES, OHIO**



The Best for
Stucco or Cement
No furring
strips required

1853



1912

Fine Beveled Edge
Shank and Socket

Chisels



Butt Chisels

Plain and Beveled Edges

Send for illustrated Catalog

Buck Brothers, Millbury, Mass.

365 Days Trial

Our service department will co-operate with any Builder, Contractor or Architect who wishes to specify or install a dependable heating equipment. The

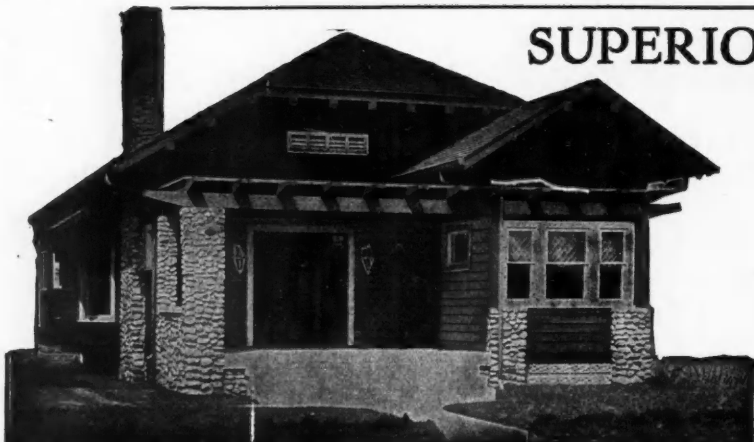


JAHANT DOWN-DRAFT FURNACE
 solves the heating problem for residences, schools, hotels, churches and similar structures. Our 365 day "Guaranty Bond" insures absolute satisfaction. Don't take the risk of spoiling your plans by specifying the ordinary "stock" furnace. Send us details, sketches or blue prints of the building to be erected, and we will furnish, without cost, special plans, specifications and blue prints of a heating equipment guaranteed to furnish plenty of heat at a minimum cost for fuel. We will tell you the cost of this special Jahant Down-Draft Furnace. If you include the Jahant in your finished plans we will pay freight on the complete shipment, including furnace, pipes, registers, all fittings and the necessary tools. The special plans we send give full directions for installing.

Write for our free Specification Hand Book. It tells all about the Jahant and our co-operative plan.
 The Jahant Heating Co., 85 Mill St., Akron, O.
 Furnace Builders for over 30 years

DOWN DRAFT

**\$10 DOWN \$10
A MONTH**



SUPERIOR SHINGLE STAIN

Represents quality both in color and durability. We use only the very best elastic and preserving oils, thoroughly mixed by the latest improved machinery.

COVERING CAPACITY

One gallon will cover 150 square feet when applied with a brush. Dipping requires 2 gallons for 1000 shingles.

GUARANTEE

Superior shingle stain is sold under our absolute guarantee never to crack, scale, peel or flake off as paint does, and to retain its color as well or better than any stain on the market. 50c per gal. in bbl. and 1/2 bbl.

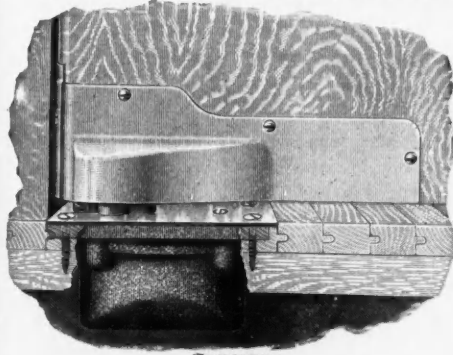
Freight Charges Allowed on all Shipments

Write Dept. S. for color card.

**NORTHWESTERN MFG. CO.,
135 1/2 So. Illinois St. INDIANAPOLIS, IND.**

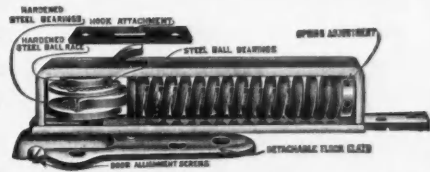
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STANDARD DOUBLE ACTING SPRING FLOOR HINGES



CHECKING.

It is a door check and hinge combined. It automatically closes the door without a slam. It prevents children from being knocked down. It prevents injury to hands if caught when door is closing. It stops door exactly at center. It holds door open automatically when desired. It renders the action of door absolutely noiseless. It will outwear three of the spring hinges now in common use.



UNCONTROLLED KIND

Sold by the Hardware Trade.

THE STANDARD MFG. CO.
SHELBY, OHIO, U. S. A.

We also make pivot check for double-acting doors.



Automatic Sash Holders

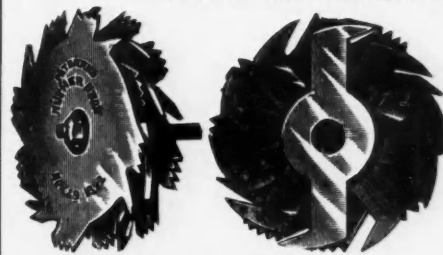
do away with Sash Weights, Cord, Pulleys, Pocket Frames, etc.

A positive and durable device that holds window in any position desired and that cannot get out of order. For old as well as new windows. No broken cords, no binding pulleys, no rattling windows. And they are economical—Made in three styles, for sash weighing up to 8 lbs., up to 20 lbs. and to 35 lbs. and more. If your hardware dealer does not have them send us \$1.00 for a trial set, charges prepaid, together with your dealer's name. ANYHOW send for literature and prices.

Automatic Sash Holder Mfg. Co
52 Church St., New York

Huther Bros. Patent Groover or Dado Head

(Will save its cost in three days' time)



Can be used on any Circular Saw Mandrel

For cutting any width groove from 1/4" to 2" or over. Will cut a perfect groove, either with or across the grain, and leave edges smooth. Will ship to any responsible firm on ten days' approval; if not satisfactory you are at liberty to return at our expense. We also make a specialty

Showing Arrangement of Cutters 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.** 1000 University Ave. ROCHESTER, N. Y.

"A Bit of Utility"

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

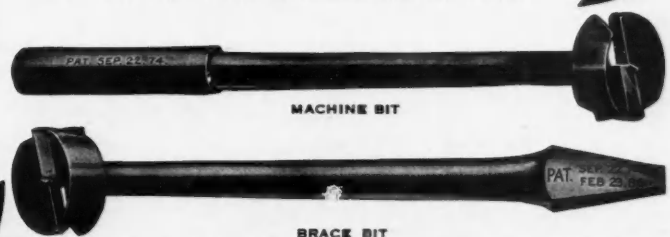
Doesn't matter how hard the wood is, no consequence whether it is full of knots, or the grain awkward to negotiate. The Forstner Bit works with equal smoothness under any condition and leaves a true polished surface on every job.

Unequaled for Delicate Work

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

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

The Progressive Mfg. Co.
Torrington, Conn.



The Marvel locks shut automatically, is burglar proof, and ornamental. Is made of heavy wrought steel plates.

Circular for the asking.

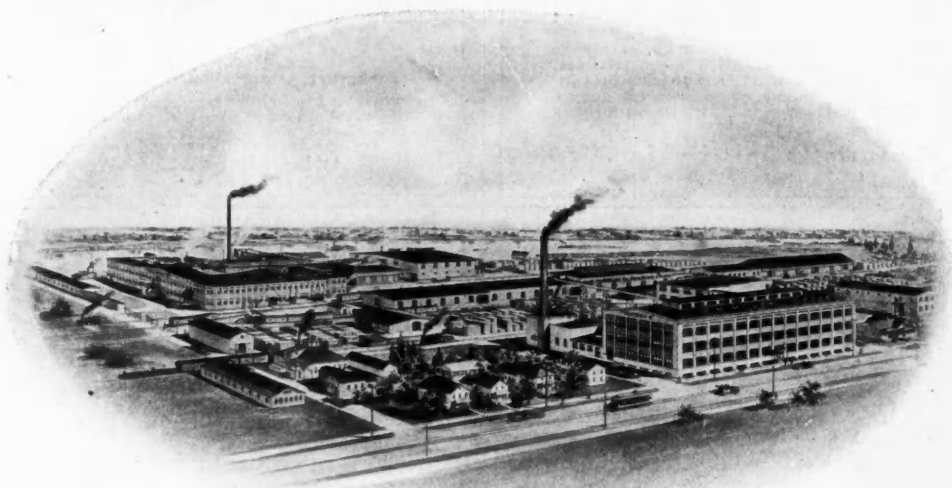
INTERSTATE MFG. CO.
OSKALOOSA IOWA



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“MAX-ROYAL” Veneered Doors

are recognized as **Standard** even by our competitors—they will agree to furnish Doors “just as good”, but never better. You are safe in buying the original.



HOME OF THE MAX-ROYAL VENEERED DOORS

Our New Catalog No. 28 is now ready. Would you like a copy? If so, drop us a card.



THE R. McMILLEN CO., Oskosh Wis.

*Established Thirty-five years--Pioneers in the making of
Oak and Birch Veneered Doors--Front Doors a Specialty*

BRANCH OFFICES

CHICAGO ILL.

Room 909, Stock Exchange Bldg.

WASHINGTON D. C.

No. 1703 Kilbourne Place

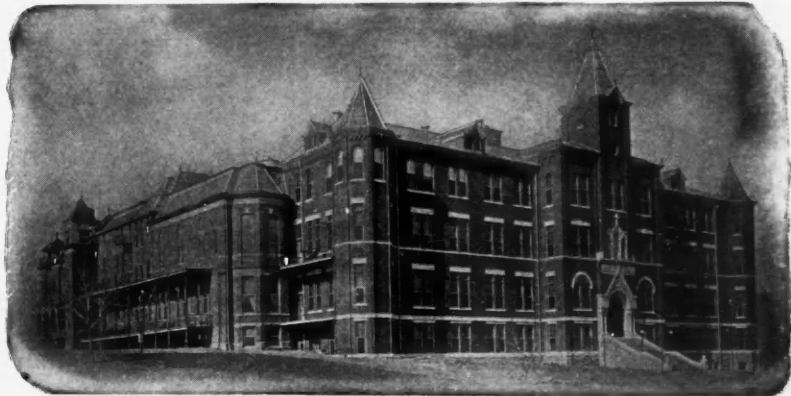
NEW YORK CITY

No. 1123 Broadway

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ST. FRANCIS HOSPITAL, Colorado Springs, Colorado, is a very fine building, as this photograph shows. No expense or care was spared to make it THE BEST AND MOST SANITARY hospital in the West. After exhaustive competitive tests, the authorities decided to roof it with THE BEST COVERING FOR ROOFS KNOWN—for

Walter's Galvanized Metal Shingles Last

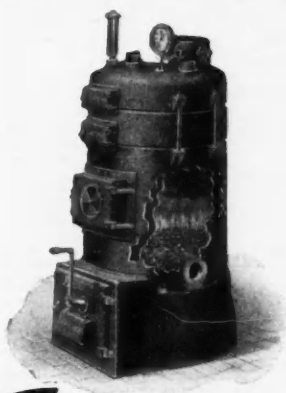


INVENTED AND PLACED ON SALE BY THIS COMPANY IN 1885

Here is a sample of the roofing accepted by this Hospital and by thousands of other public and private builders. IT WAS THE ORIGINAL DESIGN OF THE INVENTOR IN 1885 AND IS THE FIRST SHINGLE COATED WITH PURE ZINC EVER MADE. Hand dipped so that every crevice is FILLED. No chance for rust to creep in EVER. Send for free sample and confidential information. Might as well have THE BEST.

NATIONAL SHEET METAL ROOFING COMPANY

Inventors of the FIRST Metal Shingle
JERSEY CITY, NEW JERSEY



“Everybody’s Doin’ It Now!”

At least, all of the best builders are.

**Doin’ What?
Why!
Specifying**

GILT EDGE Furnaces and Boilers

They have found it is easier to sell houses with a heating plant of established merit.

If you are going to build either a house or a hotel, it is worth \$\$\$ to you to get the Gilt Edge catalogue.

Write the manufacturers

R. J. Schwab & Sons Co.,
295 Clinton Street
MILWAUKEE WIS.



FOR CANVAS ROOFS



Order the Scientifically Prepared—

BAYONNE ROOF AND DECK CLOTH

Easiest to lay—
Lasts longest.
Requires but ONE COAT OF PAINT. The treatment permeates the fabric and preserves the fibre.

BEST FOR PIAZZA ROOFS AND PORCH FLOORS

Ask for Sample Book A-6 and Prices

JOHN BOYLE & CO., 112-114 Duane Street New York
202 and 204 Market Street, ST. LOUIS

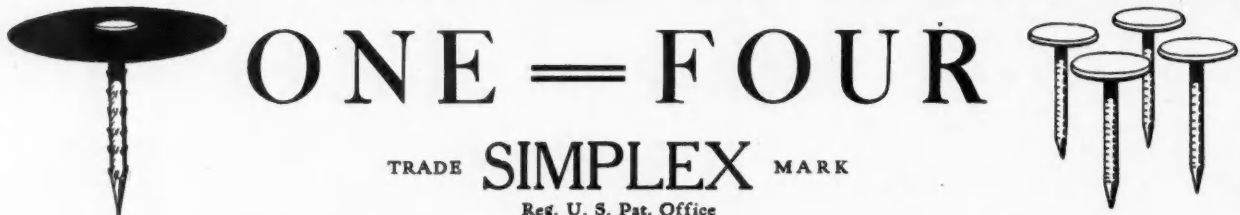
The Standard Brand of White Canvas
All Widths—All Weights—Any Quality

Our co-operative department gives complete instruction for laying
BAYONNE or GULF STREAM

John Boyle & Co.'s Awning Stripes have been the Standard for fifty years



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ONE = FOUR

TRADE **SIMPLEX** MARK
Reg. U. S. Pat. Office

Order your prepared roofing to contain **SIMPLEX NAILS** One **SIMPLEX NAIL**, has as much head surface as four so-called large headed nails

Sold by Jobbers *Head Surface Tells*

Manufactured by **H. B. SHERMAN MFG. CO.**, Battle Creek, Michigan

You Can Set It Right the First Time



It is the New

Russell Jennings Solid Head Expansive Bit

ISN'T this the kind of an Expansive Bit you have been looking for? Of course it is! It is adjusted by a worm in mesh with a rack formed on the cutter, and one turn changes the diameter exactly $\frac{1}{8}$ ". A slight pressure on the clamping screw keeps the worm from turning, so the cutter can't creep. Great, isn't it? It is made with Precision turned shank or ordinary bit shank, and is built for hard service. *Send for Our Bulletin on Precision Tools.*


RUSSELL JENNINGS MFG. CO. :: **Chester, Conn.** 21-69

C. E. JENNINGS' ARROW HEAD EXPANSIVE BITS

Stearns' Patent April 1, 1884. Jennings-McElroy Patent December 19, 1905, and A. B. Jennings' Patent March 1, 1910

After once setting the cutter for any given sized hole, the mechanic can bore Any Number of Holes and Every hole will be the Same Size.

By means of the micrometer screw the cutter can be instantly adjusted to one thousandth of an inch.



SEE THAT BEVEL ON CAP AND CUTTER

CUTTER CANNOT SLIP!

NOTE MICROMETER SCREW ADJUSTMENT.

SEE THOSE TEETH! CUTTER CANNOT CREEP

PRICE INCLUDING TWO CUTTERS AS FOLLOWS:

No. 11 $\frac{1}{4}$ " Bit (Large) with Nos. 3 and 4 Cutters, cutting from $\frac{3}{8}$ " to $1\frac{1}{4}$ " and from $1\frac{1}{4}$ " to 3 inches \$2.00 each

No. 12 $\frac{3}{8}$ " Bit (Small) with Nos. 1 and 2 Cutters, cutting from $\frac{3}{8}$ " to $1\frac{1}{4}$ " and from $1\frac{1}{4}$ " to $1\frac{3}{4}$ " inches 1.75 each

Our No. 1 Bit will take the place of 35 Auger Bits Costing \$35.00.

When you cannot procure from your local Hardware Dealer, we will mail, prepaid, on receipt of P. O. order, for above price.

These Bits are put up in a neat waterproof canvas Scabbard with extra pocket for cutters.

Special Information regarding our C. E. Jennings' Arrow Head Expansive Bits. The cutters are graduated in 32nds of an inch. By moving the cutter 1-32 in. the diameter of the hole is increased 1-16 inch; or one-half turn of the micrometer adjusting screw will move the cutter 1-32 in., and increase the size of the hole 1-16 in. To bore a perfectly smooth hole, remove the bit as soon as the screw point pricks through; insert the screw point into this prick-mark from the opposite side from which the hole was started and bore until the hole is finished.


C. E. JENNINGS & CO., :: **Sole Manufacturers** :: **42 MURRAY STREET, NEW YORK**

1810 THE JAMES SWAN COMPANY 1912

SEYMOUR, CONN.
Manufacturers of

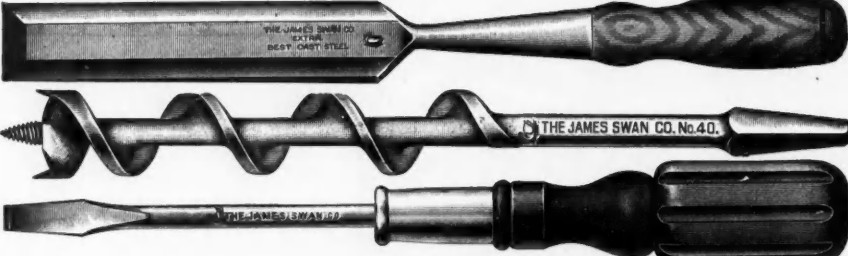
Mechanics' Tools, Augers, Auger Bits, Draw Knives, Chisels, Hollow Augers, Gimlets, Boring Machines, Gouges, Screw Drivers, etc.

Send for Catalogue



TRADE MARK

Inquiries Solicited



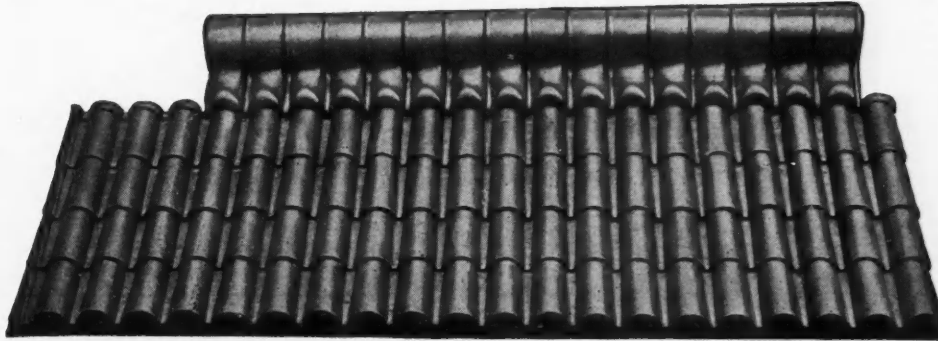
When looking for quality buy goods with the "Swan" trade mark.

When Writing Advertisers Please Mention the American Carpenter and Builder.

Mullins Metal Tile Roofing

has won widespread and lasting favor because of its many superior qualities. Beauty, simplicity, durability—these are its salient characteristics. Absolutely storm-proof and water tight.

When put on according to directions, Mullins Metal Tile Roofing is guaranteed to keep in perfect condition for years. No other roofing can equal it for all-round satisfaction. Many of the finest buildings in this country are equipped with it.



We also make Cornices, Building Fronts, Finials, Tympanum panels, Rosettes, Faces and other architectural ornaments. Many thousands of designs to select from.

Ours is the largest and best equipped factory of its kind in the world. We use

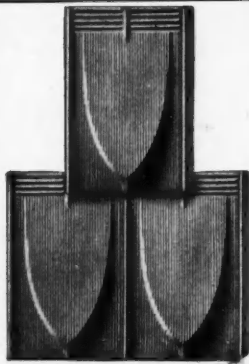
only the finest materials. Every artisan in our employ is a masterhand. Our prices are attractive, our services prompt. Glad to submit quick estimates on special jobs.

Catalogue along any desired line will be sent you by return mail.

The W. H. Mullins Co.

214 Franklin St.

SALEM, O.



Style "B"—Showing Method of Laying

PLACE YOURSELF ABOVE YOUR COMPETITOR

AND SELL **"TITELOCK"** THE BEST

METAL SHINGLES made. They are business-getters and money makers. FIRE, WATER AND LIGHTNING PROOF.

Write for Samples and Prices

MILWAUKEE CORRUGATING COMPANY
MILWAUKEE, WIS. KANSAS CITY, MO.

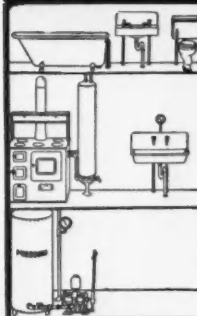
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WASHINGTON, D. C

WATER WORKS \$37.80
FOR COUNTRY HOMES



EVERYTHING KNOWN IN
Plumbing Goods

Pumps, Windmills, Etc.

—DIRECT AT—
Manufacturer's Prices

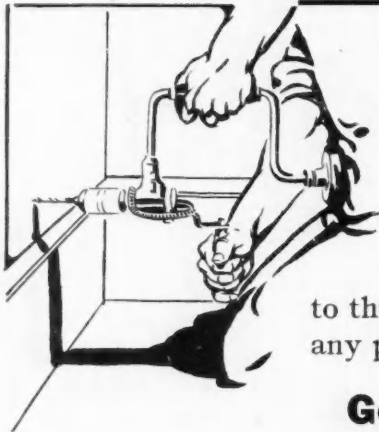
Send for Big Low-Price Catalog—FREE

Missouri Water & Steam Supply Company

904 S. 6TH STREET

ST. JOSEPH, MO.

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This Drill Brace No. 192 Makes Difficult Boring Easy

The gear as shown by illustration is attached or detached by turning a thumb screw, but what is not shown is that when set it is as rigid as if keyed on. Its possible adjustment to three positions gives the user 100% efficiency in any corner or in any position or angle.

Gear Attached or Detached by Thumb Screw

The ratchet is an improved device so arranged that both dogs can be thrown out of mesh at the same time, allowing free operation of drill gears.

With drill gear detached, the brace is our regular 10 inch Sweep, tool with all its patented improvements — universal chuck, taking all sizes and shapes of shanks patent ratchet, non-splitting free-acting centre handle and ball bearing head.

Adjustable to any Position

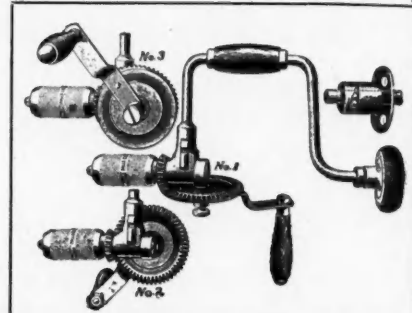
Of fine appearance and works perfectly.

MILLERS FALLS CO.

28 Warren Street

::

NEW YORK CITY



A 1912
PRODUCTION

BLACK, 75 Cents. NICKEL, \$1.00.

Will be pleased to mail you a sample of this tool on receipt of the above price, provided your dealer does not carry them.

OTIS A. SMITH

ROCKFALL, CONN.

CARPENTERS and JOINERS

JUST A WORD!

ABOUT THIS NEW "COMPLETE" SAW SET

Every practical, common sense feature is embodied in this tool. A few of which are:

Adjustable side gauge which brings the point of each tooth under the anvil. Top Clamp Screw when adjusted, regulates the amount of set. The setting or wearing surfaces are made of Tool Steel and carefully hardened. Front Screw holds down Saw, allowing free use of left hand. Compact, Attractive and Low in Price.

NOTE—Our Special brand Clamps, have notches on the bottom of the bar, instead of on the top.

Per pair, 1 foot.....	\$2 70
" 1 1/2 feet.....	2 85
" 2 ".....	3 00
" 2 1/2 ".....	3 75
" 3 ".....	4 00
" 4 ".....	4 50
" 5 ".....	5 00
" 5 " heavy.....	7 50
" 6 ".....	8 50
" 7 ".....	9 50
" 8 ".....	11 00
" 9 ".....	12 50
" 10 ".....	14 00

These clamps have steel bars and screws and malleable iron parts.

The New Adjustable and Perfection Clamps are made in the following lengths and sizes:

2, 3, 4 and 5 foot have... 1 1/2 x 1/2 inch bars.

5, 6, 7, 8, 9 and 10 foot have 1 1/2 x 1/2 "

Joiners' Clamps—1, 1 1/2, and 2 foot have hand-wheels for rapid work, 1 1/2 x 3-16 inch bars.

In ordering parts always make sketch, to avoid delay.

Write for circular Dept. H.

Hargrave's New Adjustable SPECIAL Clamp.



Hargrave's Perfection SPECIAL Clamp.




Hargrave's Joiners' SPECIAL Clamp.



THE CINCINNATI TOOL CO., CINCINNATI, O., U. S. A.

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Mr. Contractor and Builder
Why not equip the home or other building you are erecting with

Davis Acetylene Lighting?

You can greatly increase your income by selling and installing Davis Acetylene Lighting Systems for new buildings and during dull seasons for buildings already erected. No previous experience required and we help you get started. Write us for cost of equipping a building and for our terms to salesmen.

Architects desire to recommend the best and we, therefore, invite them to carefully investigate what we have to offer.

Davis Acetylene Company
90 Crawford St., Elkhart, Ind

This Tool Will "Pry" Into Anything

It has the strength and leverage for safely opening packing cases, taking up floors, removing scaffolding and other like jobs that carpenters, plumbers and electricians come up against every day. Sizes 14 and 23 inches. Drop

forged from special formula steel.


"BONNER" Pry Bars

are about the handiest things a mechanic or electrician can keep in his kit. They are the only tools that will do fast housewrecking and save lumber. The only Pry Bar that will pull a nail as high as a man can reach. Dealers make money handling Bonner Pry Bars.

C. E. BONNER MFG. CO., Champaign, Ill.

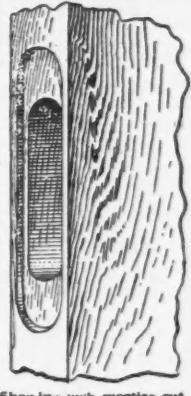
UNIVERSAL LOCK MORTISER

In use in all large cities. No builder should be without one



Will cut lock mortises, including setting in of face plate, in any desired size, in hard, soft or cross-grained wood of every description, in from 3 to 6 minutes. No boring or chiseling required. Every machine guaranteed. Makes a perfect job. Easily operated. Agents wanted where not represented. Testimonials and descriptive booklets furnished on application to

UNIVERSAL LOCK MORTISER CO.
GEO. O. ROGERS, Sales Manager
3400 ALLIQUIPPA STREET PITTSBURGH, PA.

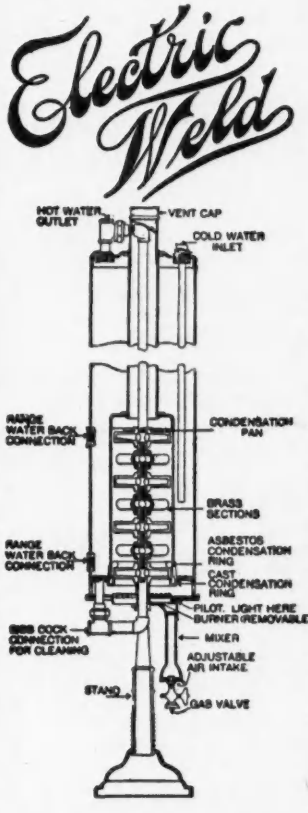


Showing such mortise cut, including face plate setting

Electric Weld

Combination Boiler and Gas Water Heater

The self-contained storage system. Illustration shows arrangement of enclosed Heating Chamber, Vent, and parts. The advantages of this Type are many, in addition to the maximum efficiency thus obtained. Adapted to Large or Small requirements, without change in design of fixtures or method of installing. Widest choice as to location of fixture. Economy of space. Absence of delicate or intricate parts. No special Meters or Service pipes required. Lowest possible maintenance cost. Moderate initial cost. Minimum cost of operation (service considered). Double Circulation. Primary Circulation equal to other types. Secondary Circulation equal to thirty-five per cent of total efficiency—altogether absent in other types. Automatic or Intermittent Service optional, without adjustment of parts or breaking connections. Range or Furnace Connections provided for. Auxiliary Steam Coil, for High or Low Steam Pressure, if desired. This type represents one-twentieth of total number of Gas Water Heaters in service, and is essential if water heaters are to be popularized.



Labels in diagram: NOT WATER OUTLET, VENT CAP, COLD WATER INLET, RANGE WATER BACK CONNECTION, CONDENSATION PAN, BRASS SECTIONS, ASBESTOS CONDENSATION RING, CAST CONDENSATION RING, PILOT LIGHT HERE BURNER REMOVABLE, MIXER, ADJUSTABLE AIR INTAKE, GAS VALVE, STAND, BRASS COCK CONNECTION FOR CLEANING.

JOHN WOOD MFG. CO., Conshohocken, Pa.
Branches Throughout United States

\$HULTZ WINDOW BARS

WRITE FOR FULLY ILLUSTRATED CATALOGUE FOR STORE FRONTS

SHULTZ'S ALL STEEL CORNER POST CO. ST. JOSEPH, MO.

Handsome, Strongest, and most Practical Bar on the Market. Long Life—nothing to rot out. Glass bedded on Spanish Cork preventing cracking or crushing of glass. No putty, yet Absolutely Water and Dustproof. Simply incomparable with old fashioned styles. They add immensely to the Beauty, Utility and Rental Values of Buildings.

ARE LOW IN COST
Architects, Contractors and Owners are invited to write me for descriptive literature, prices or estimates. All Steel Cork Bedded and Ventilated Bottom Bar Also Shultz Patent Burglar Proof Coal Chute.

ALL-STEEL BURGLAR-PROOF COAL CHUTE
The Newest, Strongest and most Convenient Coal Chute made. Prices also Lowest. No modern residence complete without it. Locks itself when closed up. Can only be opened from inside. Architects, Contractors and Owners are invited to write for descriptive circular.

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¶ This Trade Mark on a tool means both **insurance** and **assurance**—insurance against tool troubles, and assurance of the most tool satisfaction. Use the coupon and receive interesting information.

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About One Key A Minute

One of our customers writes “We made 65 keys in one hour and sixteen minutes.”

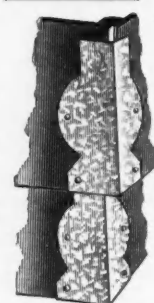
Our “M. I. P.” Key Filing Machine makes perfect duplicate pin tumbler keys. Cannot possibly injure the master key and should pay for itself in a day.

The price is \$3.00 for the machine complete with two filing guides and our new model clamp attachment, delivered by mail free.

Send for illustrated circular fully describing this remarkable little labor saving device.

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87 New Street, NEW YORK CITY

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You can now give your customer the popular mitre-corner effect without the slow careful work of cutting and fitting bevels. USE METAL BUILDING CORNERS.

They take the place of corner boards. Save fully \$2 worth of time in finishing each corner. Make a stronger and neater job

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If you've never used Gossett Hinges for full length window screens, say so and we'll send you a sample pair free.



Can be used as a

**Music Cabinet
Book Case or
China Cabinet**

Measurements:

Width 26 inches
Height 42 inches
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Veneered Columns

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Special Prices to the Trade.

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You can find a big demand for our work in your locality—and you'll build up an independent business for yourself. Give just a small portion of your time to this and you'll profit by it.

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THE MACK IRON AND WIRE WORKS COMPANY
SANDUSKY OHIO

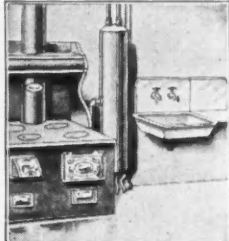
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Save all cost of skilled labor. New method. My big, new book tells you how to install your own water system or modern heating plant. Under this practical Gibbons method you can do it yourself. Plans furnished free. Immense saving on all materials. Before you build, before you make improvements send for my great book. It is post-paid free to you.

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Builder's LEVEL With Tripod and Level Rod Complete \$15.00

This is a level built especially for builders and contractors. It will do your work as quickly and as accurately as the most expensive engineer's level. It can't be beat for all kind of foundation work, getting angles, ditching and laying walks. Has high grade achromatic telescope giving sights up to 1200 feet. Equipped with very sensitive ground level vial—silver circle graduated to degrees. Solidly constructed hard wood tripod with steel points. Hardwood rod, 5 feet closed, extending to 9½ feet, with sliding target. Rod graduated to feet— inches and ¼ inches.

A complete leveling outfit for building use. Level, Tripod, Rod, Carrying Box and accessories. **\$15.00** Outfit complete. only

Send for this level outfit today. We guarantee you will be satisfied. If you are not more than pleased we will return your money.

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To the Person Submitting the Best House Plan

READ THE CONDITIONS CAREFULLY

FOR the purpose of securing the best house plans of practical builders in all sections of the country, we will give away a whole carload of lumber—sufficient for the building of a house. The shipment will include common lumber, flooring, ceiling, siding, framing timbers, shingles—anything that the prize winner desires.

This extraordinary prize goes to the person who submits to us before August 1, the best plan for either a farm house or a town house. Every builder in the country has some favorite plan. You undoubtedly have yours. Send it in. It may win the prize. It doesn't matter so much about the form in which it is submitted. Mail either a blue print or a rough sketch, and, if possible, send us a photograph of one of the houses you have built according to the plan. Accompany plans with list of material used in construction. Enclose stamps if you desire plans returned.

The prize car will be made up of some of the best fir and cedar lumber ever turned out of our Northwestern mills. You know the lasting qualities of fir and cedar. Therefore you can appreciate what this offer means.

All plans will be passed on by a board of judges consisting of two carpenter contractors, one draftsman and two practical men engaged in the building material business. After the prize winner has been selected, forty others will be chosen as deserving honorable mention. To each of these we will give a coupon entitling him to a 10 per cent discount from our regular rock-bottom prices on the first bill of lumber ordered from us.

This means a big saving, when it is considered that our regular prices are manufacturer's prices. We sell direct from our mills, enabling you to eliminate all middlemen.

Remember, the contest closes August 1st. All plans must reach us before that date to receive consideration. Send yours in as soon as possible. Send for detailed information about the contest. Mail coupon now.

COUPON
HEWITT-LEA-FUNCK CO.
623 First Ave.,
Seattle, Wash.
I would like to enter your house-plan contest for the prize car of lumber. Send full particulars.

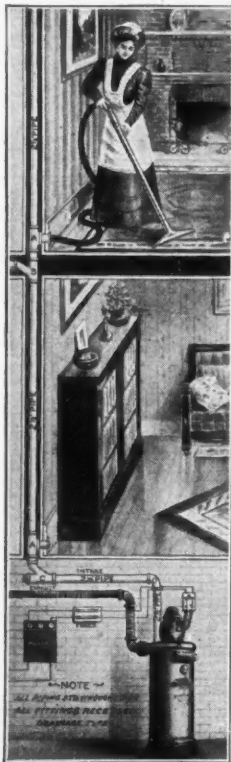
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LOWEST IN PRICE
FIRST IN SHIPMENT
623 First Ave. Seattle, Wash.

Name

Address

Occupation

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Building for the Future

requires that you make provision for stationary vacuum cleaning precisely as you make provision for stationary heating, lighting and plumbing.

Really efficient air cleaning depends upon the volume of air moved in a given time, and this requires piping of ample capacity. Therefore you should always use 2½-inch pipe if you want to be able to install the most efficient and economical system of cleaning.

THE TUEC STATIONARY Air Cleaning System

operating in connection with piping of this size does the most effective work at the lowest cost. Competitive tests prove conclusively that the TUEC is superior to all other vacuum cleaning systems in the following particulars:

- 1—Greatest air capacity per minute at openings.
- 2—Sufficiency of vacuum inside every orifice.
- 3—Lowest cost of operation.
- 4—Simplicity of design and strength.

- 5—Nothing to wear out or make trouble.
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- 7—Noiseless running.
- 8—Labor-saving tools.
- 9—Minimum floor space required.

More than two thousand buildings were equipped with TUEC systems during the past year and a thousand more, now in course of construction, are being piped for TUEC installation.

We make a special truck machine for buildings which cannot be piped.

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THE UNITED ELECTRIC COMPANY, 30 Hurford Street
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Tuec Companies in All Large Cities

Direct from the
Manufacturer

A Wonderful Paint Offer

If any of your buildings need painting, write at once for our free paint sample offer. We sell the best ready mixed paint in the world at lowest prices ever heard of—55c a gallon for the best Barn Paint, \$1.15 a gallon for the finest House Paint in quantities. We pay the freight charges.

Guaranteed for Ten Years

We furnish full directions how to do any job, and just now we are making a surprisingly liberal offer. Write at once and get this great paint offer, free shade samples, strong testimonials and valuable paint information. Just say "Send me your latest paint offer." Address

Crosby-Frank & Co., 298 Peoria Street, Chicago, Ill.

50c FOR THIS Clamp Fixture

*It is Unequaled for Strength—
Quick Action and Last-
ing Qualities*



Write for Catalog of Sheldon's Clamps and Vises.

E. H. SHELDON & CO.
184 Nims Street :: :: MUSKOGON, MICH

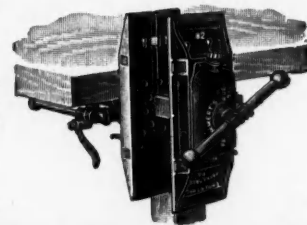


EMMERT UNIVERSAL VISES

are recognized as the greatest Time-Savers and conveniences ever offered the woodworker. Convenient and easy in operation. Will hold work in any desired position. More than 50,000 in use today. Sold on approval and guaranteed satisfactory.

Write for full description and prices.

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Structural Slate
Blackboards**

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Ninety Years Old



32 POUNDS COATING

Made Continuously Since 1822—

but more vigorous than ever. Now made from the new alloy—**Copper Bearing Open Hearth Steel**—the material which will revolutionize the roofing business.

Write for full information on MF Roofing Tin—"the terne which turns the elements," and our other brands of high grade Terne Plates. We also manufacture Apollo Best Bloom Galvanized Sheets, Black Sheets, Corrugated and Formed Roofing and Siding Products, Cambridge Metal Lath, etc.

American Sheet and Tin Plate Company

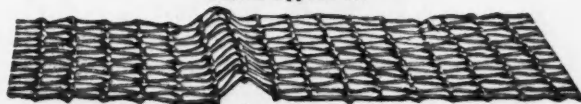
General Offices: Frick Building, Pittsburgh, Pa.

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GRIMM'S GALVANIZED CORRUGATED WIRE LATHING

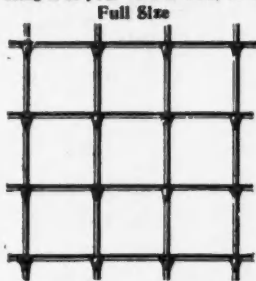
"Patent Applied for"



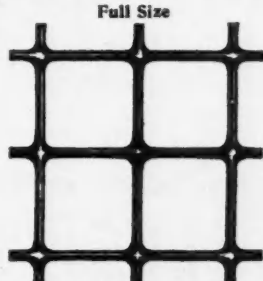
IT'S ALL IN THE V

THIS V-shaped corrugation eliminates furring, keeps plaster clear of wall, thereby securing air space and dry atmosphere. Gives necessary STIFFNESS without added weight, such as is necessary in most forms of stiffened Wire Lathing in which rods or small angles are woven into the fabric for stiffening purposes.

Plaster keys so firmly that it WILL NOT CRACK or drop off. This lathing is absolutely NON-CORROSIVE and WILL NOT RUST as it is galvanized after woven, which solders each joint and covers the entire surface of the wire with spelter (zinc) and COSTS 50% LESS to install than ordinary lathing. It will be to your interest to send for our Booklet No. 6-A. B. on Wire Lathing if you contemplate building. A post card will bring it to you. SEND FOR IT NOW.



2 1/2 Mesh, No. 20 Wire

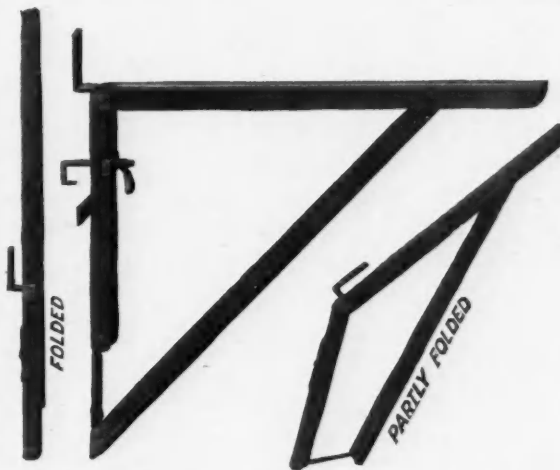


2 Mesh, No. 19 Wire

BUFFALO WIRE WORKS CO.

(Formerly Scheeler's Sons)

New York Office, 30 Church St. 316 Terrace, BUFFALO, N. Y.



Our Steel Folding Builders Brackets mean economy to the builder.

ECONOMY in time and labor, erecting, taking down and moving.

ECONOMY in material saved.

ECONOMY in storage space.

They are strong, convenient and absolutely safe. The sway brace prevents any side motion and the hook with tail screw gives additional security when fastened to the studding. They save their cost on one job in time, labor and material. Get prices from your dealer at once. If he is not posted, send us his name.

RICHARDS-WILCOX MFG. CO.,

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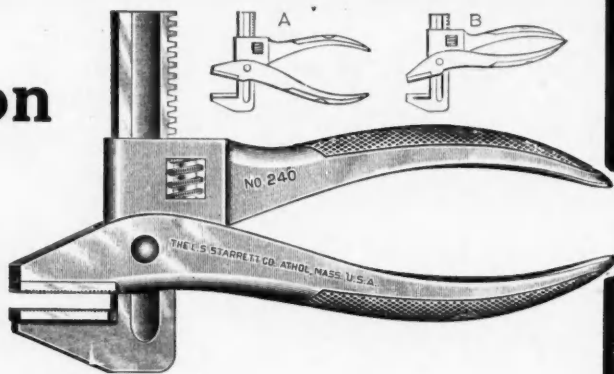
Door Hangers and Hardware Specialties.

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When Other Pliers Won't Starrett Expansion Pliers Will

Will What?

*Pull out that headless nail.
Start that rusted nut.
Loosen that stubborn bolt.*



Do a hundred "mean" jobs when other tools won't. See how they're made—the jaws are adjustable, and automatically fit the work. The fulcrum is short, giving tremendous squeeze. The handles are always right distance apart to grip with the hand.

Go to your dealers and see how the "feel" convinces you of strength and usefulness.

Ask for Catalog 19C

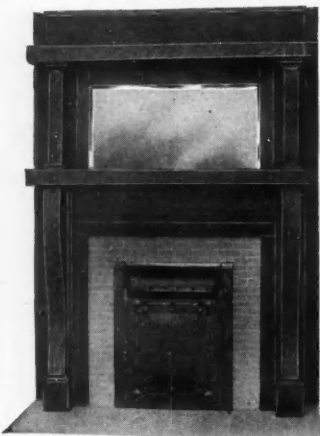
The L. S. Starrett Co. Athol, Mass.

NEW YORK

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42-5



\$28.60

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

"From Factory to You"

Price includes our "Queen" Coal Grate with best quality enameled tile for facing and hearth. Gas Grate \$2.50 extra. Mantel is 82 inches high, 5 feet wide. Furnished with round or square columns, as shown in cut. Dealer's price not less than \$40.00.

No. 875½

"Reputation and Quality Count"

Central Mantels

are distinctive in workmanship, finish and style. Twenty-five years' experience enable us to know and satisfy the needs of those who want mantels of quality, different from the rest. We build all styles—Colonial to Mission.

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

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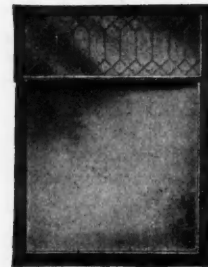
St. Louis, Mo.

Low Prices : Quality : Quick Shipments (Our Headliners)



Colonial Porch Columns \$1.33

For cap as shown add 50c net.



COITAGE WINDOW
1 1/2 in. Thick.

Glazed Clear.....\$3.75
With Leaded Top.... 4.50

SURROUNDED

By Extraordinary Bargains which are only a few of the many Money savers shown in our new Catalog of High Grade Sash, Doors, Frames, Blinds, Mouldings, Inside Trim, Grilles, Colonnades, Stair and Porch Work, Mantels, Grates, Tiling, Art Glass, Roofing and Building Papers, Wall Boards, Hardware, Paints, Hardwood and Parquetry Flooring, Rolling Partitions, Screens, Steel Ceilings, Gutters, Shingles, etc.

Write Today for Free Copy. The Huber Builders Material Co. 45-49 Vine St., Cincinnati, O.



FRONT DOOR
2-8 x 6-8 1 1/2 in. thick. Glazed \$3.87

BASE
Yellow Pine
1 3/8 x 7 1/2 in.
\$2.77
per 100 lin. ft.

CLEAT
Yellow Pine
3/4 x 1 1/2 in.
35c
per 100 lin. ft.



Front Door Set
Antique Copper
\$1.60 Inside
Door Set, 49c



CASING—Yellow Pine
4 1/4 in.
\$1.89 per 100 lin. ft.



Quarter Round
Yellow Pine.
3/4 in., 30c
per 100 lin. ft.

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Cast Iron Chimney Top Protectors

For New and Old Chimneys

Simple device for prolonging the lives of chimneys.

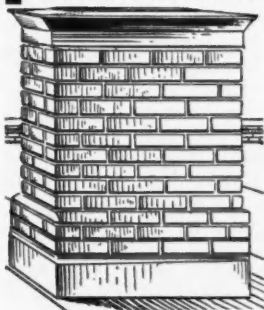
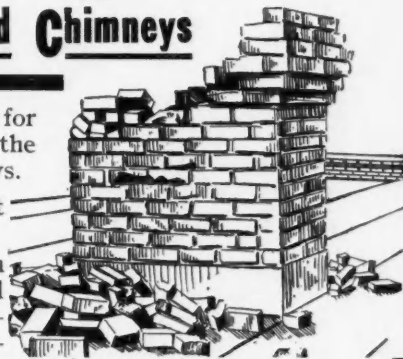
Made from cast iron.

When placed on the chimney and filled with cement, a permanent and lasting top is secured.

Does not deteriorate from the effects of the weather, and will last practically forever.

Easy to put on—artistic in appearance—and low in cost.

Made for all sizes of chimneys.



We can send you some interesting information concerning our Chimney Top Protectors. Get it—and our prices. A line today will bring this to you by return mail.

The Waterloo Register Co.
Waterloo, Iowa

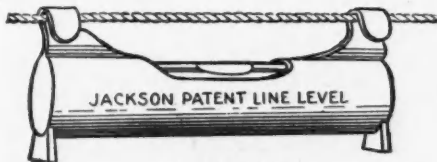


Illustration full size

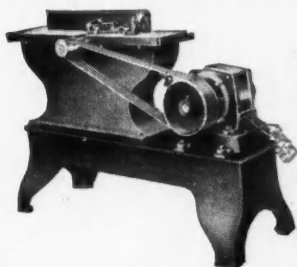
ALUMINUM LINE LEVEL

Including Attachment and 40-ft Line, Complete in Leatherette Case, Price \$1.00, Post Paid.

For Masons, Bricklayers, Carpenters, Millwrights, Contractors, Cement Workers, Architects, Engineers, Plasterers, Etc. It can be attached to any ordinary steel square or pocket rule. It takes the place of a 16-ft. straight edge. A very useful pocket level.

Ask your hardware dealer or send \$1.00 for the Level outfit complete postpaid. Send for our Catalogue of Tools.
JOS. WOODWELL CO., Sole Agents
201-203 WOOD St. Pittsburgh, Pa.

The Porter 5" Jointer



Is used for Jointing, Planing, Moulding, Beveling, Rabbeting, Grooving, and any other work that any Jointer can be used for. We furnish it with or without a countershaft, bench or motor. Just as you desire. The **Best** machine for the money on the market. We make 6 larger sizes, and Wood Lathes, Shapers, Planers, Cut-off Saws, Band Saws and Saw Tables.

C. O. Porter Machinery Co.
666-668 Front Ave., N. W., Grand Rapids Mich.



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The Few That Will Stay The Crowd That Will Go

Digging the "Big Ditch"

When the Panama Canal is finished, the few to be retained will be the experts. The crowd that will go are the 28,536 untrained workers.

No more striking example of the relative value of trained and untrained men can be found anywhere than this. Here you see exactly what happens when a large working force is to be reduced. The **trained** men stay—the **untrained** go.

You can get out of the **crowd** of untrained workers, and join the **few** whose training keeps them always in demand. The International Correspondence Schools will help you win success in your own chosen line of work.

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Then, Mark and Mail the Coupon NOW

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Building Inspector	Mining Engineering	Textile Manufact'g
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Structural Draftsman	Mechanical Drafts.	Stenographer
Plum. & Heat. Con.	Stationary Engineer	Advertising Man
Supt. of Plumbing	Electrical Engineer	Window Trimming
Foreman Steam Fit.	Electric Lighting	Commerci'l Illustrat'g
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Heat. & Vent. Eng.	Concrete Construct'n	Chemist

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DISSTON SAWS

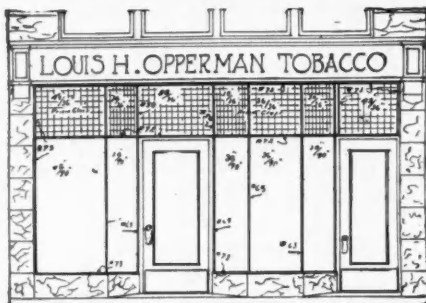
Have been sold and used continuously for the past Seventy-two Years in ever increasing quantities.

This is the supreme test of **RELIABILITY.**

HENRY DISSTON & SONS

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Keystone Saw, Tool, Steel and File Works
PHILADELPHIA, PA



FRONT ELEVATION.

The Bar That Stands the Test

Thousands of merchants are putting in the new style of store front each year. When you are called upon to specify the right bar, you can pin your faith on the "Petz."

Petz Bars have stood the test and won the approval of thousands of leading architects and builders, because they have the strength—because they are safe—because they are easy to install, and because they positively will not break glass. Insurance companies allow the lowest rates where Petz Bars are used.

Our booklet on "Metal Store Front Construction" contains facts that you should know and have at your hand for ready reference. Write for a copy now.

Detroit Show Case Co.

SOLE MAKERS

491 Fort Street, West, Detroit, Mich.

The *FORD* Single Lip Bit does **MORE** than **ANY** Double Lip Bit Can Do



This is not an idle statement, but **WORDS** substantiated by **WORK.** It's a **fact** vouched for by every mechanic who uses a **GENUINE FORD.**

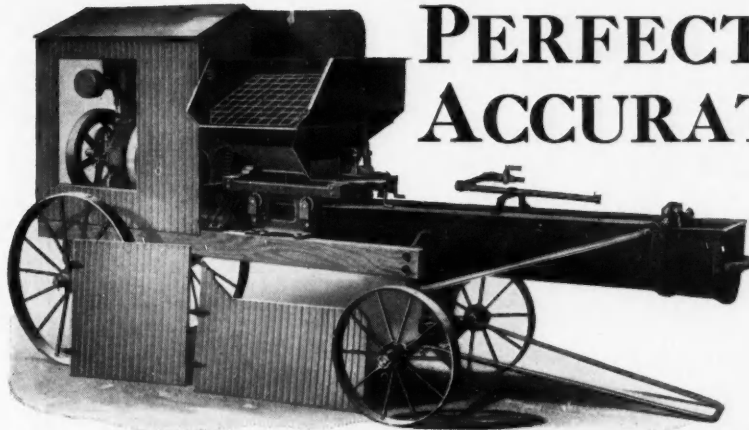
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Do not confuse the **GENUINE FORD** with its imitations or with any other Single Lip Bit. Ask for and insist upon the **GENUINE** and see that the name **FORD** is stamped on the shank. Imitations are inferior both in **WORKING** and **WEARING** qualities. If your dealer hasn't it write us. Write us anyway and we'll send you a neat memo book. Address Dept. 1d.

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The Wizard Continuous Concrete Mixer Gives You a Perfect Quality of Concrete and at a Low Cost

And that's where the profits are in the Concrete business. The Wizard Mixer has a capacity of 25 to 65 cubic yards of concrete daily according to equipment. It does all the work accurately

and works continuously. It does all the measuring, every ingredient in perfect proportion. Then mixes them thoroughly in the dry state, then moistens them just as desired, and then mixes them in the wet state. All you need to do is to keep the hoppers filled with sand, gravel and cement, and the Wizard will run 24 hours a day turning out concrete perfectly proportioned. The machine will actually save enough cement and labor to pay for itself in less than 6 months.

PRICE \$149.75 AND UP.

TEN DAYS' TRIAL.

We will ship you the Wizard Mixer on Ten Days' Trial. Use it ten days. Give it a good test, and if it is not satisfactory in every respect, ship it back to us and we will return your money including all transportation charges. If you keep it, remember Sears, Roebuck and Co.'s guarantee is back of it.

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In construction, capacity, efficiency and price, the Wizard Continuous Concrete Mixer has them all beat. Manufacturing them in large quantities and shipping direct from the factory to buyer is the secret of our low prices.

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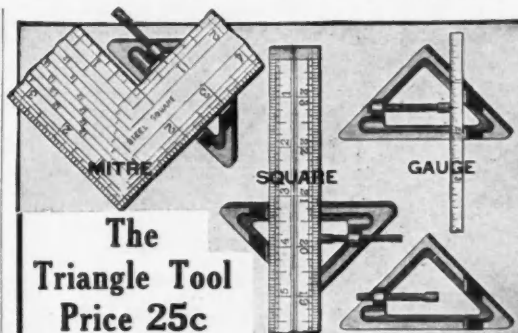
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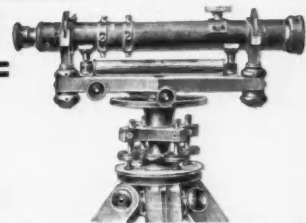
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Locks automatically when closed but can be opened from the outside—when owner wishes to avoid crawling over his Coal. There is no more excuse for blackened walls, soiled and battered Window Frames and Sashes, Littered Walks and Lawns.

Made in various Sizes
 Pile—only by special key, furnished with the Chute.

We also manufacture Sidewalk Doors (45 sizes), Coal Hole Rings and Covers, and a host of other Contractors' and Builders' Accessories.

Get our booklet "B-I" on "The Complete Line for the Contractors and Builders who know."

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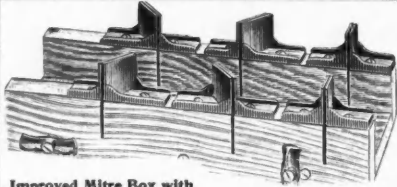
for the field is unlimited, we allow a good profit and give exclusive territory. It is easy to sell Montross Metal Shingles for they are the best and cheapest roofing money can buy. Storm, lightning and fire-proof; suitable for all buildings; easily laid—no soldering. Patent side-lock allows for contraction and expansion. Write at once for catalogue, testimonials and details of our proposition.

MONTROSS METAL SHINGLES



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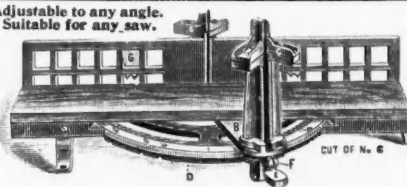
MONTROSS METAL SHINGLE COMPANY
 Second and Erie Sts., Camden, N. J.



OLMSTED'S Mitre Boxes

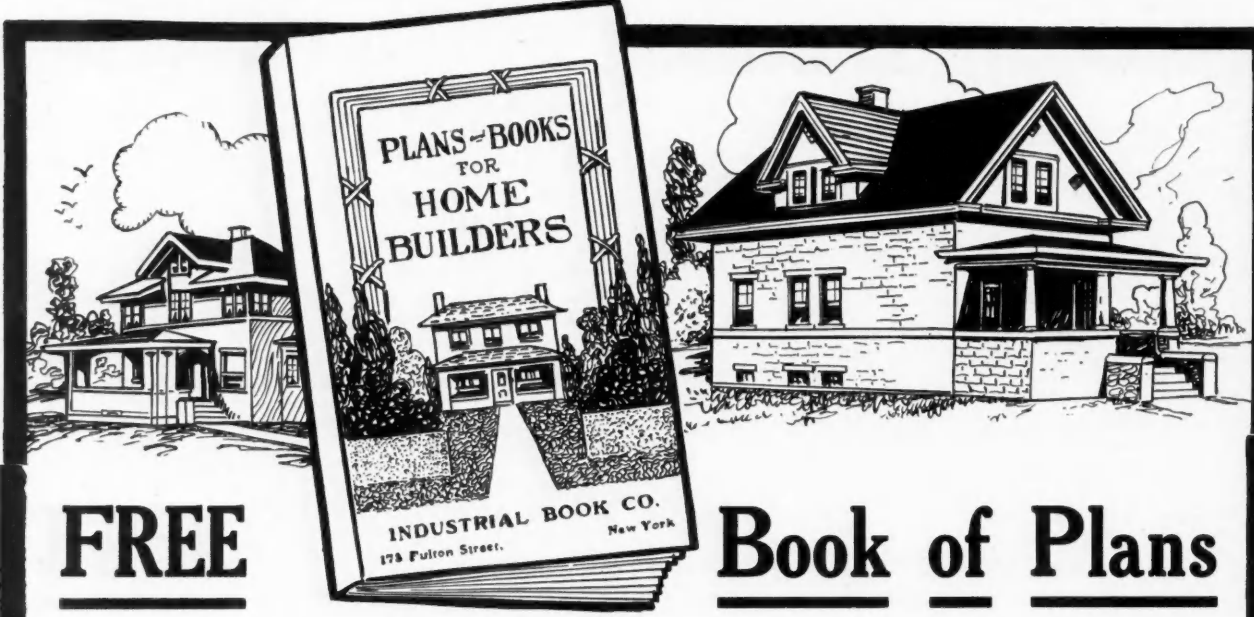
The irons in these mitre boxes are made sufficiently high and broad to make a good bearing upon the saw blade. Perfect work assured. Suitable for any ordinary cross-cut saw or back saw. Made in seven styles and sizes. Our Adjustable Mitre Box is the Lowest Priced and Best on the market. Send for catalog and price list.

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Continuous Air Chamber from Cellar to Roof**

Steel Reinforced Throughout

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being double and monolithic from footing to roof plate, with a continuous air space everywhere between—a house within a house. The walls are tied together, also steel reinforced horizontally every 9" high.

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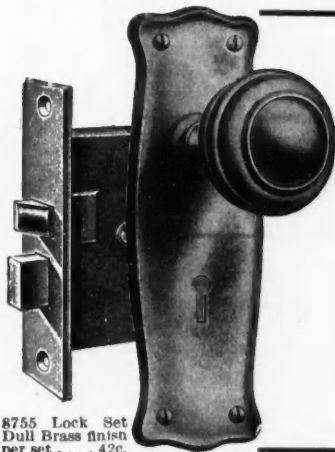
of that Pantry Door. The everlasting "flip-flop" of the Butler's Pantry Door is not only very annoying, but is extremely dangerous. It pinches fingers, bumps heads and breaks dishes.

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puts a stop to all these troubles. A perfect Floor Check at a low price.

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8755 Lock Set
Dull Brass finish
per set . . . 42c.

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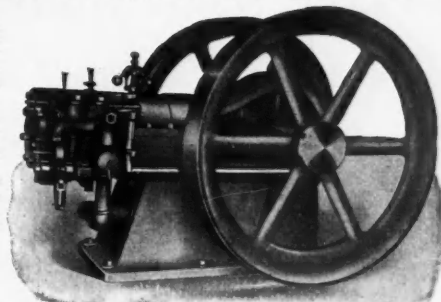


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Gas, Gasoline or Kerosene



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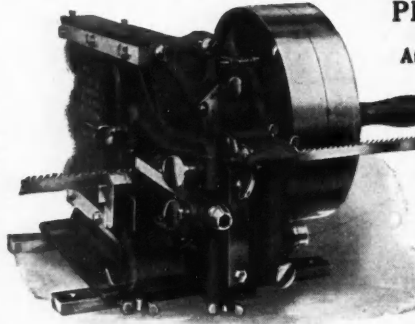
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**A Safeguard for Ventilating Rooms.
A Lock, quickly applied and operated.
Affording Sure Protection against Intruders.**

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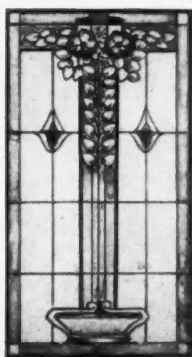
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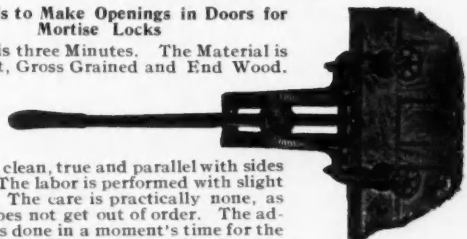
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Its Work is to Make Openings in Doors for Mortise Locks

The time is three Minutes. The Material is Hard, Soft, Gross Grained and End Wood.



The job is clean, true and parallel with sides of door. The labor is performed with slight exertion. The care is practically none, as the tool does not get out of order. The adjustment is done in a moment's time for the different sizes. The cutters are five in number and cover locks from 1/2 inch to 1 1/2 inches thick. Thin doors are handled as easily as thick doors.

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JOHNSON'S PATENT COMBINATION RULE
 Combines many devices indispensable to your trade. Use one rule instead of several Tools. Has Vernier attachment. Reads to 1/32 degree. Made of German Silver. If DEALER doesn't handle them will send one prepaid for \$1.50.
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 Is the ONLY BASE having a CENTER BEARING.
 It carries the required weight without allowing the corner supports to sink into the floor and prevents the base of column and floor from rotting.
 See "SWEET'S" page 876.
S. CHENEY & SON, MANLIUS, N. Y.

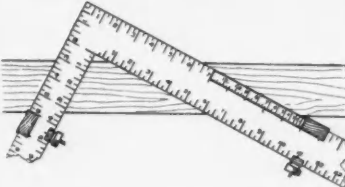


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Speedwell MOTOR TRUCKS
 4 Ton Capacity - - - \$3,500
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 Prices include standard stake or side board express body.
 Estimates will be furnished upon request—for equipping Speedwell Trucks with any style of body required
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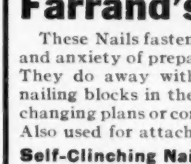
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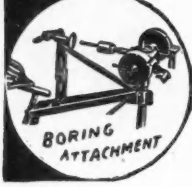
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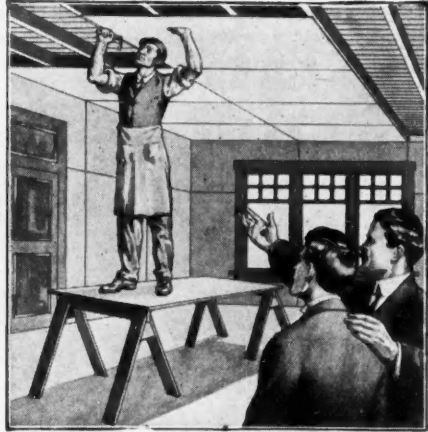
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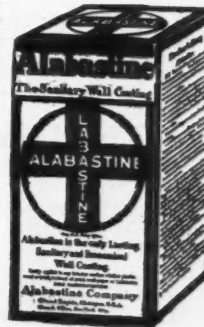
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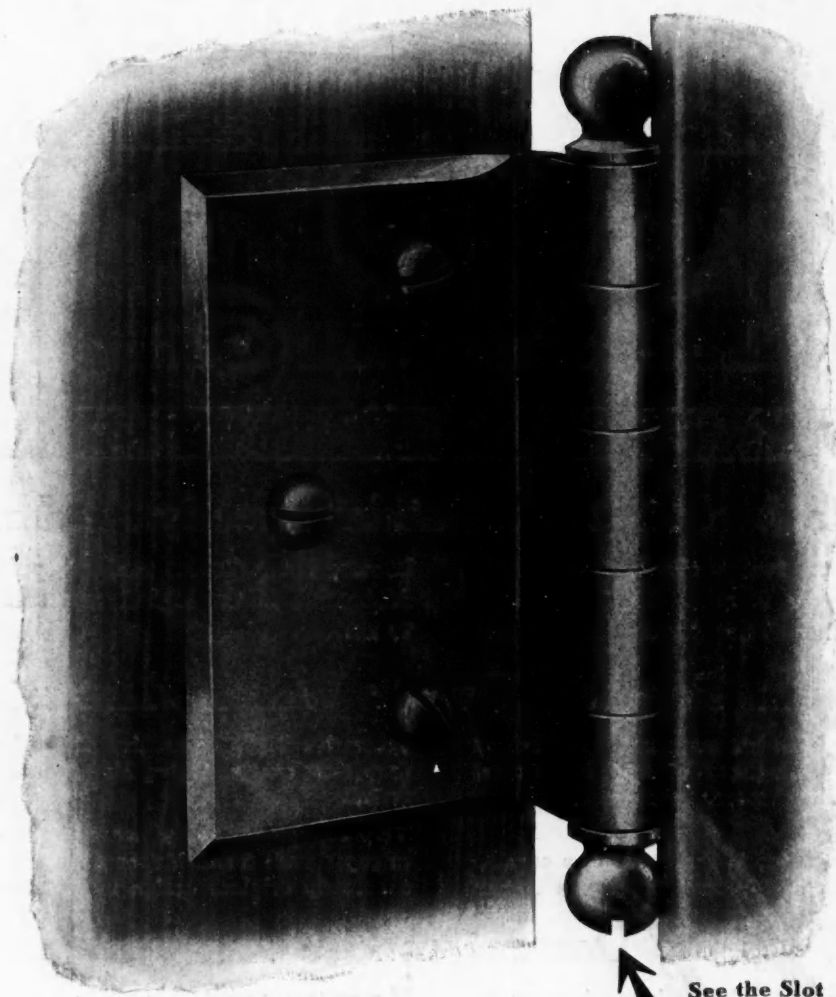
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